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## Chinese Biology Teaching Assistants' Perception of their English Proficiency: An Exploratory Case Study

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### Abstract

Many Chinese graduate students are teaching assistants (TAs) in mathematics, science and engineering departments in the U.S. universities. TAs' English proficiency has been a subject of concern or even criticism for years in the U.S. However, only one research has been found around international TAs' English proficiency per discipline. No research has been found about Chinese TAs' English proficiency. None has been done on Chinese TA's perception of their English proficiency in biology. With this gap noticed, I deployed interviews to explore what the three biology TAs perceived as to their English proficiency. The study found that their perception was more relevant to their content-knowledge preparation for teaching and their previous English-learning experience than cultural influence. These findings suggest that content knowledge and language competence are both important thus should be combined in TA training programs, in order to improve TAs' overall English proficiency in teaching.

### Keywords

Content Knowledge, TA Training, Basic Interpersonal Communicative Skills (BICS), Cognitive Academic Language Proficiency (CALP)

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## Chinese Biology Teaching Assistants' Perception of their English Proficiency: An Exploratory Case Study

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*Many Chinese graduate students are teaching assistants (TAs) in mathematics, science and engineering departments in the U.S. universities. TAs' English proficiency has been a subject of concern or even criticism for years in the U.S. However, only one research has been found around international TAs' English proficiency per discipline. No research has been found about Chinese TAs' English proficiency. None has been done on Chinese TA's perception of their English proficiency in biology. With this gap noticed, I deployed interviews to explore what the three biology TAs perceived as to their English proficiency. The study found that their perception was more relevant to their content-knowledge preparation for teaching and their previous English-learning experience than cultural influence. These findings suggest that content knowledge and language competence are both important thus should be combined in TA training programs, in order to improve TAs' overall English proficiency in teaching. Keywords: Content Knowledge, TA Training, Basic Interpersonal Communicative Skills (BICS), Cognitive Academic Language Proficiency (CALP)*

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### Chinese Biology Teaching Assistants' Perceptions of their English Proficiency

In the 2010-2011 academic year, 157,558 students from mainland China accounted for nearly 22% of the total international student population in the United States, 8 % more than India, the second largest sending country (Institute of International Education, 2011). Graduate students accounted for approximately half of the Chinese international students in the U.S. and were the biggest population compared to undergraduates and non-degree students coming from China to U.S. universities (Institute of International Education, 2011). Among those graduate students, Chinese Biology Ph. D. students have been the largest population in science fields (Fiegenger, 2009). A great number of Chinese graduate students teach undergraduate students as Teaching Assistants (TAs) when they study in the United States. In general, TAs teach roughly 40% of the undergraduate courses and approximately 60% of the introductory courses for first- and second-year undergraduates (Wert, 1998, p. xvii). However, in spite of their competence and qualifications reflected by their academic records, there is a history of international teaching assistantship recipients being the subject of complaints or even criticized, mainly regarding English proficiency by domestic undergraduate students (Bailey, 1984; Rubin, 1992; Trice, 2003). Those undergraduate students are not alone in such complaints or criticism. The students' parents and general public have had similar responses as well. The state legislatures have also responded to this linguistic problem. For instance, Pennsylvania Senate Bill 539 required the certification of all instructional faculty in English fluency (Hoekje & Williams, 1992, p. 245). Other states, such as, Florida, Minnesota, Missouri and Ohio, have passed laws requiring the states' public college and universities to test the oral English proficiency of the international TAs ("Reactions to international," 1992 December).

Prior to conducting this study, I found only one study where the researcher (Gorsuch, 2006) looked at international TAs' English proficiency per discipline, while different

domains require various English proficiency for achieving the objectives and format of classes (Gorsuch, 2006). Gorsuch (2006) observed Chinese Biology TA's instruction and suggested that interactivity be encouraged between TAs and students in the Biology department. Currently, Chinese TAs as well as other international TAs predominate in certain departments, such as, mathematics, science and engineering department (Russell, 2002) and many Chinese Biology Ph. D. students are TAs in teaching Biology lab courses.

The problem in this study was to explore the perceptions of English language proficiency of Chinese Biology TAs concerning their lab teaching at a public university in Southern United States. The primary research question was: What are Chinese Biology TAs' perceptions about their English proficiency? The secondary research questions asked from the viewpoint of the TAs were: How is cultural identity linked to their perceptions of their English proficiency? How does their content-knowledge (i.e., biology) preparation inform their perceptions of their English proficiency? What is the role of their English learning experience in their perceptions of their English proficiency?

The purpose of this study was to inform university TA training program leaders about TAs' needs and weaknesses from their perspectives, so the leaders can design training curriculum in ways that may reduce the possibility of complaints from domestic undergraduate students with regards to TAs' English proficiency. In this study, Chinese biology TAs were observed and interviewed to examine how they understood their English proficiency and to explore possible links between these understandings and their cultural and content knowledge. This exploratory study was conducted in a specific U.S. public university but the findings can be useful to a wider audience. The global significance of this local study lies in the fact that the paper will be one of the few that focus on Chinese Biology TAs' perception of their English proficiency, with reference to the fact that there has been a long history of complaints from domestic undergraduate students and been an increasing number of Chinese TAs in the U.S. This study will help fill the literature gap concerning them and more importantly, can contribute to an existing handful of research studies of international TAs in the U.S. in general. In an even wider sense, it may also be helpful to other linguistic contexts where TAs' first language is not the language they use to teach their target students. Accordingly, this paper is intended for researchers of TAs, training program directors for TAs and enrollment administrators for international graduate students, with regards to TAs' English proficiency and the impact of their English proficiency on their academic roles. It may be also beneficial to scholars in cross-cultural, intercultural or global studies. It may benefit readers who are international TAs in the sense that they can use it to reflect their own experiences and understandings and strengthen their weaknesses if possible. Applying the findings and discussions of this paper to different contexts, the training program directors may have better approaches to developing appropriate and effective programs to prepare international TAs for their instructional roles.

## **Literature Review**

### **English Proficiency**

However, in spite of the public reaction to international TAs' English proficiency, the definition of English proficiency has not been agreed upon in the existing literature.

This paper adopts Cummins' notion of English proficiency. English proficiency includes basic interpersonal communicative skills (BICS) and cognitive academic language proficiency (CALP; Cummins, 1981). In BICS, which is social, conversational, personal and survival language, utterances are in chunks, vocabulary consists of high-frequency words with general meanings. It is context-embedded and cognitively undemanding (Cummins,

1981 & 2000). In CALP, which is academic, formal and professional language, utterances and sentences are long and often contain clauses, and vocabulary consists of abstract, subject-related content words, often with specialized meanings (Cummins, 1981). It is context-reduced and cognitively demanding (Cummins, 2000).

The distinction between BICS and CALP was originally used to draw attention to the very different time periods immigrant children usually go through to acquire conversational fluency in their second language as compared to grade-appropriate academic proficiency in that language (Cummins, 1981). BICS is often acquired up to a functional level within about two years of exposure to the second language, but CALP is usually accomplished to the level of native speakers within minimum five years (Collier, 1987; Cummins, 1981, 2000; Klesmer, 1994). This paper adopts this notion of English proficiency to help analyze the three biology TAs' perception of their English proficiency.

### **Non-Native-English-Speaking (NNES) TAs' English Proficiency**

No consensus has been achieved with respect to appropriate instruments to evaluate the spoken language proficiency of international TAs after their enrollment. But before their enrollment at many universities in the U.S., international or NNES TAs must submit their Test of English as a Foreign Language (TOEFL) scores in order to meet the minimum admission requirement. The TOEFL is the most widely recognized English-language test, with listening, speaking, reading and writing sections. In the speaking part, test-takers are required to "express an opinion on a familiar topic; speak based on reading and listening tasks" (ETS, n.d.). It does not test conversational fluency or communicative competence in particular, which is to say, the TOEFL score (in speaking) is not an effective parameter for NNES TAs' spoken language proficiency. Just as a faculty member in public health commented, "the TOEFL scores do not seem to be indicative of whether the students can speak English or not" (Trice, 2003, p. 390). A professor in materials science and engineering also remarked, "The TOEFL scores on our incoming students are very high. For example, one student I worked with has a very high TOEFL score, but I did not perceive that he was understanding me. . ." (Trice, 2003, p. 395). Neither is a Graduate Record Examination (GRE) score predictive of BICS or CALP in spoken English.

The purpose of the GRE is to provide a common measure to comparing candidates' qualifications; therefore it is accepted by thousands of graduate schools in the United States. The test has three sections: verbal reasoning, quantitative reasoning and analytical writing (ETS, n.d.). The three sections are designed to differentiate candidates' capacities of analysis, evaluation, synthesis, problem solving, etc. In most cases, the test, which does not measure candidates' spoken English, is compulsory for graduate candidates who come from different cultural and educational backgrounds.

Along with the scores of the TOEFL and the GRE, applicants also need to show their previous academic records (transcripts), recommendation letters and other qualifications (i.e., 10-page paper) for graduate-level study. Again, none of these tests can directly measure the spoken language proficiency or "subtleties of social interaction" of NNES TAs (Yan & Berlinder, 2011, p. 180). This mismatch may somewhat explain why international TAs' accent or fluency has been complained about by undergraduate students, regardless of their competence and qualification reflected by GRE scores or other academic records.

## **English Proficiency of Chinese TAs**

In addition to the same issues mentioned above, Chinese TAs' situation may be even more complex. The issue may be because of the extreme incongruence that has been noted between Chinese TAs' extra high scores on the GRE and the TOEFL and their ability to comprehend and interact in English (Yan & Berlinder, 2011, p. 180). Generally speaking, non-English major college students in China are faced with an inadequate level of proficiency of most Chinese EFL teachers, large class size, limited resources and equipment, traditional teacher-student relationships, and the pressure of public examinations (Burnaby & Sun, 1989; Leng, 1997). Thus, they are used to learning English "confined to textbooks," "memorizing vocabulary and grammar rules," and being exam-oriented (Yang, 2003, p.64). During their formal schooling, they study for the English tests; later in order to go to United State for graduate programs, "they study for the TOEFL and GRE" (Yang, 2003, p.64).

The complexity may be also exaggerated by domestic students' belief or perception of their Chinese TAs. Domestic students' negative perceptions of NNES TAs' language proficiency have been interwoven with ethnic stereotypes (Rubin, 1992). In other words, domestic students have believed that Chinese TAs cannot speak English fluently despite the fact that they can. Besides ethnic stereotypes, undergraduate students' ratings have been also influenced by their anticipated grades. Their grades have been relatively low in mathematics and science, many of which were taught by Chinese TAs (Rubin, 1992), who received scholarships or assistantships during university graduate school recruitment (Plakans, 1997).

In summary, no consensus has been made as to the definition and the measurement of English proficiency. TAs' English language proficiency has been negatively perceived by domestic students, especially when those students take certain subject courses, such as math and science, or when students cannot overcome their ethnic stereotypes. Moreover, Chinese TAs' voices concerning their perceptions of the English proficiency have been largely absent from the existing literature. Thus, it may be useful to hear and better understand Chinese TAs' own perceptions of their English proficiency, especially in those highly-debated subject matters.

## **Chinese TAs' Cultural Identity**

Cultural identity is formed by adopting cultural beliefs and practices of one or more communities (Jensen, 2003). These beliefs and practices as well as the relation between the two include values, rules, sanctions, satisfactions or dissatisfactions, motives, etc. (Jensen, 2011). In this article, cultural identity is the same as ethnic identity based on the fact that the three participants belong to ethnic and racial majority group, Han, in China and that the difference between research on ethnic identity and cultural identity that "the former focuses on minority groups" (Jensen, 2011, p.63) does not exist.

It is presumed that the three TAs share the same traits of cultural identity as other Chinese people in general. One typical characteristic of Chinese cultural identity is modesty. According to many scholars (e.g., Bond, Leung, & Wan, 1982), modesty is a major part of Chinese cultural traditions, and people need to minimize their personal achievements to show modesty. For instance, a Chinese may hide his/her competence by keeping silent or purposefully losing a game, which is a valued virtue.

Closely linked to modesty, shyness is another one. Shy Chinese TAs may try to maintain a low profile (modest) and fit in with others, both of which are valued in Chinese culture (Xu & Farver, 2009). Chinese people are not used to having eye contact with interlocutors in conversations.

Chinese people show their modesty and shyness by being reluctant to initiate a conversation in public. Younger generations and women are, in particular, expected not to start a conversation; they would rather listen than speak. The Chinese like to say, “He who says the least says the most” (Hays, 2008).

In the domain of Biology, there are some courses including sex, such as human biology. However, public discussion of sex-related issues, especially sexuality is a traditional taboo in Chinese culture (Zhang, Li, & Shah, 2007). Sex has never been an open topic for discussion in China.

### **TAs’ Academic Roles and Training Programs**

Administrations in different universities assigned TAs various tasks. TAs either assist instructors (e.g., University of California at San Diego, Office of Graduate Studies, 2012) or perform instructional functions independently a (e.g., University of Alabama, Graduate School, 2012). Possibly due to the differences in academic roles, TA training programs varied from none to merely language-oriented or any combination of content, pedagogy and language oriented programs (e.g. University of Maryland, Center for Teaching Excellence, 2013; the University of Alabama, English Language Institute, 2013). In comparison to TAs in general, many states have also implemented system-wide programs to assess international TAs’ English proficiency (Smith, 1992), including training programs or intensive courses to develop language skills. Administrative support has centered on developing programs that allow for international TAs to grasp the English language better for their instructional roles (Russell, 2002).

The university where the current study was conducted did not have a TA training program. Moreover, TAs in that university have various academic roles in different departments. In the biology department, TAs needed to teach regular courses or lab courses independently. TAs may have another linguistic task in the university of the case study, because the setting in this particular case study was a predominantly Spanish-speaking local community, compared to previous research studies which do not have such a linguistic uniqueness.

In summary, there is an imbalance among few research studies, increasing concern about international TAs’ English proficiency, and TA training programs with unclear objectives, goals and targets. An underlying assumption of this study was that knowing NNES TAs’ perceptions of their English proficiency would help the design of training program and further relieve the concern of domestic students. I also assumed that TAs’ perceptions of their English proficiency were linked with their cultural background and the discipline those TAs taught. Thus I chose Chinese biology TAs as a case and explored the answer to my research questions

## **My Role**

### **Background**

I decided to select this topic because I was not a total outsider since I was a Chinese Ph.D. student/TA, too. My interest from my research in the field of Teachers of English to Students of Other Languages (TESOL) in conducting this research was rooted in my curiosity about my participants’ feeling about their English level in the biology field, which has a lot of Latin and English existing terminology and how they perceived their English language proficiency.

I knew the three TAs for over one year before the study. My bias toward how they perceived their English proficiency before this study was they must feel incompetent and lack self-confidence during lab teaching, due to the Chinese cultural norm of modesty and their particular subject matter. To address my bias, I asked the three participants the same question during interviews, that is, “Do you think your perception has something to do with modesty in your culture?” I also wrote about my own self-perception of English proficiency in my reflective journal. My belief prior to the study conduction was that once they understood and consented to be participants in this study, they would tell me their perceptions truthfully. I conducted interviews to collect data as well as analyzed all of the data by myself.

### **Ethical Considerations**

I guaranteed my participants confidentiality during and after the research study, thus, I gave them the pseudonyms of Eric, Harmo and Peter with their permission. I also asked the head TA for permission to observe in lab classes. After clarifying my purpose and the process of observation as well as guaranteeing that I would not interfere with the classes, the head TA granted my request of staying. After approval from the Institute Review Board (IRB) and before my participants decided to sign their written consent forms, I had shown and explained my research study proposal to my participants. I also had notified my participants that they had the right to say “no” as to the form or any time during the process of collecting data.

I kept all field notes and audio records confidential and private, that is, I was the only person with access to them during and after the research study. During interviews, I asked my participants to omit identifiable information to make sure that the collected data had no identifiable information.

In addition to confidentiality, my participants were aware of the process, the nature and procedures of the study as well as estimated time for data collection from them before they decided to sign the consent forms. I also asked my participants to choose time and place of data collection at their convenience.

### **Subjectivities and Trustworthiness**

When I began the study, I realized that because of my close relationship with the participants as well as the topic, my subjectivities were more likely to be “shaping the collection and interpretation data” around the topic (Merriam, 2002b, p. 5). My subjectivities were monitored during data collection as well as data analysis, by the aid of doing the following. I asked the three participants to check part of their transcripts and my tentative interpretations, as “member checks” (Merriam, 2002a, pp. 25-31). For instance, I asked Eric why he used the word “perfect” to define his English level and his reply negated my previous tentative interpretation that he had not picked the right word. I also asked some fellow doctoral students to review my coding in transcripts and to independently code my transcripts. Via this peer review, I got verifications of my coding as well as new insightful coding, such as contextual factors and sub-cultural factors in the U.S. As well, I checked with my critical reflective journal “regarding assumption, worldview, and biases...to the study that may affect the investigation” (Merriam, 2002a, pp. 25-31). My reflective journal included my perceptions of English language proficiency during the time I was conducting this project, and my initial presumption prior to the study. I initially presumed that the three participants must not be confident due to their cultural heritage and the specific field they pursued, and my thoughts as I collected data that did not support that presumption. Last, I



maintained a process research journal with details of “the methods, procedures, and decision points in carrying out the study” to establish an “audit trail” (Merriam, 2002a, pp. 25-31). I took field notes and photographs for the sake of thick descriptions. I also checked my actual implementation of data collection with my original plan and modified my strategies when the original plan did not work, which helped me see what I need to do and how I should ask questions in the following interviews.

## **Methodology**

The primary goal of the study was to explore three Chinese Biology TAs’ perceptions of their English proficiency during their lab teaching. To achieve this goal, I chose an exploratory case study as my research design. Case study is an “intensive, holistic description and analysis of a single entity” (Merriam, 1998, p. 27). In this study, “a single entity” referred to all the Chinese TAs in the Biology department. They shared the same setting, were enrolled in the same program and taught the same Biology lab courses. Thus the case was a “bounded system” (Stake, 2005, p. 444), that is, the three Chinese TAs were all Chinese TAs bounded in the department of biology as an institutional and academic system. To do so, a researcher needs to access multiple sources of information such as observations, interviews, etc. to provide rich description (Creswell, 2007). Accordingly, I used lab observations prior to data collection and one-on-one interviews to collect data for the exploratory case study.

## **Participants**

I employed purposive sampling to select participants for this study. In this exploratory case study, there were only three Chinese TAs in the Biology Department, thus I observed their lab teaching and interviewed them all. They were eligible as Chinese, TAs with a major in Biology, thus they were most likely to give me the “most information about the phenomenon of interest” (Merriam, 2002a, p. 20).

As TAs, the three Chinese graduates stayed in their labs on campus so I could meet them in their working places regularly, about four to five visits for each participant (i.e., asking gatekeeper, observing the setting and lab teaching, interviewing them, etc.). During these visits, I talked with their head TAs or someone supervising lab teachings in their department for the oral permission to observe the classes; I had some casual talks with my participants before class observation without audio-recording; I observed their lab teaching at their convenience; I interviewed them with audio-recording in a more formal way in the place they chose, a few days after I observed the class and organized my field notes; I asked them to check the transcripts and my interpretations with my rough drafts; I even took photographs to help me understand their teaching context at the end.

## **Setting**

The university where this case study was conducted was a public research institute located in the South of the United States. On its graduate school website, the required credentialing of TAs followed the Southern Association of Colleges and Schools (SACS) principle 3.7.1., which required TAs with a “master’s in the teaching discipline or 18 graduate semester hours in the teaching discipline,” under “direct supervision by a faculty member experienced in the teaching discipline,” to attend “regular in-service training” and receive “planned and periodic evaluations” (“Faculty credentials,” 2006, guideline f). There was an on-line document available as to the procedure of becoming a TA. Stated in the

document, a department representative was empowered to designate whether a graduate TA should be listed as a Primary TA. It was also the department responsibility to verify whether the potential TA has attended TA training, which meant a 3-day TA workshop done by the Center for the Advancement of Teaching from the institute. The 3-day orientation program for TAs was to familiarize them with pedagogical basics, as well as with important policies and procedures of the university. It can be inferred that the TA workshop focused on pedagogical methodology and didn't cover TAs' content knowledge or English proficiency at all. As to TAs' English requirement, it was the department that must verify TAs achieve a minimum language score of 6.5 for the IELTS, 550 for the paper-based TOEFL or 80 for the internet-based TOEFL. The language requirement was exactly the same as graduate admissions required by most of the departments in the university.

In the department of biology, TAs were appointed for instruction of undergraduate labs. I found out by confirming it with my participants that TAs were fully responsible for lab teachings as Primary TAs, not Secondary merely grading or assisting instruction. There was no information about TAs' qualifications, mentorship or supervision from faculty members, or evaluation revealed on the webpage.

### **Observations Prior to Data Collection**

I did observations during part of their teaching sessions in labs. I chose observations because observations of settings and interactions for each individual could necessarily contextualize participants' self-perceptions of their English proficiency. In addition to the reason above, observing first also provided more relevant and personalized topics for the following interviews.

I planned to observe 20 minutes at the beginning of one class session, because at that time, they instructed experiment directions to students orally. In reality, I observed them around 30 minutes before students started that day's experiment. I did field notes of their lab teaching and tried to be richly descriptive, in order to "contextualize the study," so that readers are more likely to be able to "determine how closely their situation match, and thus whether findings can be transferred" with reimagining of what happened in my research study in terms of the "external validity" (Merriam, 2002a, pp. 29-31). For instance, my participants' perceptions of their English proficiency in lab teaching had nothing to do with the physical setting of their labs, which readers can transfer the three participants' perceptions to different physical teaching setting

### **Interviews as Data Collection**

After each observation of their lab teaching, I interviewed them in English one-to-one using digital recording afterwards for at least 30 minutes based on what I had observed. I didn't stop them if they continued to talk after 30 minutes. I told them that we could only use English in interviews in order to limit my role as a translator by using the words they said. I asked prepared questions including "How do you perceive your English proficiency when you are teaching?," "How effectively do you think did your preparation for this class help you in class?," etc. I would modify my questions after I interviewed with each participant. For example, I shortened the questions after the first interview.

I followed a semi-structured, guided, responsive conversation format (Rubin & Rubin, 2005). According to Bogdan and Biklen (2007, p. 96), "skin color, race and cultural identity sometimes facilitate, sometimes complicate, and sometimes erect barriers in fieldwork" when "researchers are studying people within the same ethnic group" or in another group. This was true of my research study. Sharing the same skin color and cultural identity was one of the

main factors to inspire my research topic. Having the title in mind, I had considered more deeply the pros and cons of the shared sameness in the process of interviews: on one hand, I definitely understood more as to cultural identity, cultural values, English language learning experiences and even their English language pronunciation with Chinese accent during my field trips, due to the common ethnical and cultural background; on the other hand, the three conversational participants may have taken it for granted that I had already known those facts and therefore they might not have mentioned them or just illustrated them briefly. To minimize the shortcoming, I used some probes during the interviews, such as “Take me through the experience.” “Would you explain that?” and so on, as to ask for details and clarifications” (Bogdan & Biklen, 2007, p. 104). I also needed to explain my role as an interviewer by saying to the TAs “I can only ask you; I cannot explain for you.”

### **Data Analysis and Trustworthiness Strategies**

The analysis should be detailed and intensive “for the unit of study” (Flyvbjerg, 2011, p. 301) so that a case study can “represent the case” (Stake, 2005, p.460). I did data analysis during and after data collection to explore the three participants’ perceptions of their English proficiency in lab teachings.

According to Merriam (2002b, p. 14), “data analysis is simultaneous with data collection.” I started to analyze collected interview data (i.e., the first interview with Eric) while collecting the rest. As Stake (1995, p. 71) stated, “analysis is a matter of giving meaning to first impressions.” I wrote down my first impressions on the margin of the transcript. I did preliminary analysis by studying and coding transcripts of interviews, which gave me a clearer direction about what to ask for the future interviews. I framed “new questions” for the following interviews as a result of what had been found (Seidman, 2006, p. 113). By adding new questions to the original ones and modifying some old questions for the next interview, I “made adjustments along the way” (Merriam, 2002b, p. 14). For instance, after Eric and Harmo both mentioned that they were regarded to have an accent by their undergraduate students when students evaluated them anonymously at the end of each semester. I added a question whether having an accent matters to one’s English proficiency in Peter’s interview. I also extended the connotation of English learning experiences from merely in China to both in China and in other places they had stayed before this study. It should be noted that I avoided “in-depth analysis of the interview data” until I finished all the three interviews, because I tried not to “impose meaning from one participant’s interview on the next” (Seidman, 2006, p. 113). Thereafter I minimized “imposing on the generative” and inductive process of the interviews (Seidman, 2006, p. 113).

Data analysis began when I transcribed the first interview with Eric, which took approximately eight hours to transcribe. After the first interview, I transcribed it completely before the next interview with Harmo. After the second one, I transcribed it completely before the last interview with Peter. As an English learner with a Chinese accent, I found that some recommended computer-based voice-to-text word-processing software to assist transcribing did not work for me. I needed to do it by myself via listening to the recording and typing every single word. After I finished each of the transcripts, I coded it by writing my first thoughts on the margins of the transcript in order to read through literal words. For instance, one of my first thoughts was “parental influence” when Harmo talked about the decision his father made for him after he earned his master’s degree in the U.S. I was looking for words and phrases concerning the research questions, for example, descriptive words about their English levels. This mechanical stage of analysis facilitated deeper inductive coding for themes later on.

As part of this process, after my initial coding, I brought a non-coded transcript to a peer. She coded the transcript. Comparing her codes and mine, I could see the commonalities and differences and “seeing together the different angles...suggests the complexity and richness” (Rubin & Rubin, 2005, p. 192). I benefited a lot from this peer review because my peer, on one hand, had some identical coding as me while on the other hand, contributed some new coding that I never thought of, such as contextual factors, comfort zones and sub-cultural factors in the U.S. The concepts were relevant to the primary research question. Other codes we shared concerned the primary and secondary research questions obviously, about those objectives to describe their English level, English learning experiences, etc.

After the peer review stage, I integrated some of my peer’s codes into my developing “coding category” (Bogdan & Biklen, 2007, p. 173). The coding categories were words and phrases which represented the regularities, patterns and topics my data covered (Bogdan & Biklen, 2007). Taking a general concept “contextual factors” from my peer’s coding for instance; I developed coding categories as subset of “contextual factors,” that is, communications with native English speakers in the U.S., lack of English-speaking context in China, and lack of English-speaking context in the U.S.

Along with coding category development, I also did thematic analysis. Themes are “the relationship between two or more concepts” (Rubin & Rubin, 2005, p. 194). The relationship include “why something happened, what something means, or how the interviewee feels about the matter” (p. 194). For example, Peter said “American people like to present...so if you wanna survive in this country, you must be good ...” when he was asked about his cultural identity (i.e., modesty in this case). There were two concepts “modesty” and “academic competence” which Peter did not draw a connection directly. I did so by merging the two concepts into “To Peter, showing academic competence means losing modesty.” By building up themes, I threaded my draft with themes, categorized answers and evidence from those analyzed data.

As I compiled (Stake, 1995, p. 71) my data and analyzed the data, I needed to go back and review them at times. I also asked my participants for clarifications as part of member checking. For instance, I asked Peter whether he thought that showing academic competence means losing modesty, and it was confirmed. I often resorted to my procedure and reflective journal. I, as well, needed to check typed notes concerning observation trips, even checking the original field notes sometimes.

## **Findings**

The following findings are displayed as telling each participant’s stories, which answered the research questions and sub-questions.

### **Demographic Information**

During those visits, I learned many things about the participants such as experiences they shared in common and other experiences that were unique to them. First, they all studied or worked in English-speaking locations for several years before their Ph.D. study. Eric studied in a state university in the United States as a master’s student in biochemistry and teaching assistant for one year. He also stayed in another English-speaking country for two and a half years to finish his master’s degree. Peter lived in a northern city in the United States and worked as an assistant in a hospital lab for a year. Harmo earned a Master’s degree in Business Administration in a northern state and then volunteered to work in his current lab almost a year until he was officially admitted to the program.

Second, they all went to public schools and universities in China. All three earned bachelor's degrees in Biology. Eric and Harmo earned their master's degrees abroad. Peter finished his bachelor's and master's degrees in China in biology. Accordingly, part of their content knowledge in the domain of biology was in Chinese Mandarin.

Third, all of their fathers were well-educated, influenced them and had high expectations for them. At least one of the parents had a bachelor's degree.

## **Eric**

### **Eric's story**

Eric was a middle-aged Chinese man from a developed province. He went to an average primary school and junior middle school, but to a key senior high school (like an "A" school in the U.S.) in the city he was born. He went to a non-prestigious university with an extremely high score in the Entrance Exam. He did not lose heart; instead, he worked hard to learn English and biology as an undergraduate and finally after graduation, he got a graduate assistantship and admission to a university in New Mexico in the United States.

Unexpectedly, he had his student visa checked in the following summer when he was back in China and applied for a new visa. Possibly because of Sino-American issues at that time and his sensitive major, he waited for 3 months instead of 3 weeks which was regarded as a regular check time period. As a result, it was too late for him to go back to the university and the department decided to cancel their sponsorship of him. This might have stopped his dream of studying abroad, but it didn't. He kept learning English after work. He applied for a university in another English-speaking country for his master's degree and was enrolled in the program. Two and a half years later, he was back in the U.S. as a Ph.D. student.

### **Eric's perception of his English proficiency**

During my interview with Eric about his lab teaching, he perceived his English proficiency as "perfect" and mentioned the word "perfect" several times. From my understanding, the word "perfect" means the "best" without any mistakes. Later on, I asked him for clarification in the interview. He said for his lab teaching, he wanted to give his students a "perfect" impression of his English so he used the word "perfect" deliberately.

When it came to measuring the aspects of spoken language, that is, accuracy, fluency and complexity, Eric ranked fluency as highest and accuracy as lowest of his English language (Yuan & Ellis, 2003). He mentioned that there were inaccuracies in his English sometimes and he wanted to pick the "perfect" words, in both basic interpersonal communicative skills (BICS) and cognitive academic language proficiency (CALP; Cummins, 1981). Slang was very hard for Eric and other non-native English speakers to acquire. He was longing to manage those slang expressions by reading some informal and less academic materials.

### **From his perspective, how Eric's cultural identity affects his English proficiency**

Eric had more self-confidence than the other two participants in terms of his English proficiency. Eric didn't see the influence of Chinese culture on his perception; a perception that may possibly be related to his family's westernized and democratic environment (e.g. he can make a family decision as his parents do.), Eric's toils in academic pursuit, and his long-term practice of English.

His response during the interview of his lab teaching astonished me. With the same ethnic origin and cultural background, I would never use the word “perfect” to describe my English on any occasion. During the time he mentioned factors contributing to “perfect” English proficiency, he used the word “perfect” many times. It can be inferred that he may have perfection exactitude. He also mentioned that his evaluation of his English as “perfect” was not congruent with typical Chinese opinions, which demonstrates that he knew how Chinese people perceive in general.

Most of Chinese people, they are not, yeah, most of them are not going to say themselves perfect or something like that. They try to be modest to, yeah, so, like don't want others to look them very different between others...( Interview with Eric about his lab teaching)

I am not sure that his distinctive opinion, which was against Chinese unstated norm, was linked to his family education, his experiences abroad or both. On the other side, he admitted that “I have some Chinese accent,” however, he did not “feel it a lot.” “It” refers to “some negative effect” on his study in the U.S. He thought that “in the States, many people, even American citizens, they still have very different accents” so he didn't think “that is a big deal in the States.” Correspondingly, he was satisfied with the status quo of his accent by saying that “I am not going to try to improve it on purpose, but...if I speak more with native speakers here, I think I will have some improvements in my accent.”

### **From his perspective, what the role of Eric's English learning experience is in his English proficiency**

Later on, he explained the factors contributing to his perception of his English language proficiency. The primary factor is practice in his English learning.

In China, we don't have a good language environment for us to practice our English, particularly oral English, spoken English. So it's hard to practice, to speak with others, speak with others in English to, to make your oral English better 'cause it's hard in China 'cause it's hard to have native speaker. It's hard to speak to English native speaker.

### **From his perspective, how Eric's content-knowledge preparation influences his English proficiency in lab teaching**

Eric also thought that content knowledge helped his English by saying “I need to have enough knowledge in the specific field.” He thought it was important to know how to use appropriate terminology in his field in English, by saying:

'Cause you know for some of those terms, I know how to speak them in Chinese, but actually before I started to teach this class in last spring, no, in last fall, I didn't know some of them, I mean, I didn't how to speak some of them in English, so it's really important for you to know how to say some of the terms in English, and also you need to use those terms scientifically, correctly or accurately to your student...

As well, preparation was also important from his perspective.

...actually before every section, I mean every week, I need to prepare the slides which I included some useful information in all those slides. And I also need to go through the lab manual for each week's lab session. And I need to go through it before I teach my students. I need to know it perfectly before I can; I can give the knowledge to my students perfectly.

### **Other factors contributing to Eric's English proficiency from his perspective**

Communications with others in his lab and in Biology department was important to Eric's English compared to his learning experiences in another state back in 2003-2004. He said that he didn't feel shy in the current lab, with a feeling of speaking in English as if in Chinese. He had been shy and less talkative when he was first abroad in another state in the U.S. One reason to change his shyness was the period when he stayed in another English-speaking country, when he had fewer Chinese friends to rely on but had a lot of chances to speak in English academically and in his daily life.

Eric realized that his English proficiency was vital to his future, in specific, his future professional career in an institute or university in the U.S.

...if you don't have an English proficiency, it's really hard ... in an English-speaking country, to fill/complete your Ph.D. program... like for the qualifying exam...also for your proposal defense, or your dissertation defense, you need to speak before maybe a lot of people. ...you want to attend some conferences and you need, you should take that chance to communicate with other scientist in your field. So if you don't have a good English proficiency, it's hard for you to communicate with others and so it's hard to get information, get knowledge from your colleague, from your peer, from the others in your field...

## **Harmo**

### **Harmo's story**

Harmo was a 30-year-old Chinese man from a capital city of a developed province. Harmo went to public schools and an average university, where he finished his bachelor's degree in the city of his birth. After he graduated, he came to a northern state to pursue his MBA in 2005. After the two years in the United States, he decided to find a place to get a Ph.D. in biology. Hence, he worked in his current lab as a volunteer for almost a year and proved that he had willingness as well as competence to continue his lab research as a Ph.D. student. At the time of doing this case study, he was already a Ph.D. candidate and dedicated to working on his dissertation.

### **Harmo's perception of his English proficiency**

When I interviewed Harmo about his lab teaching, he said about his English "I think it's OK. It's basic biology scientific English, my major, so I think it's OK. ...It's OK. It's good at least for me." Harmo perceived his English proficiency in his lab teaching, from the perspective of other more competent English speakers.

The standard is based on... maybe in China, the standard is OK, but I always feel it's based on our department, because our department only before, only

me as a Chinese, all others are Indian students and also Cuban students. And based on their standard, it (my English proficiency) is not still very good because they stayed longer years or even they were born here...

His perception of his English language proficiency relied on factors, like “practice,” “talk too much,” “my major,” and so on. When it came to accuracy, fluency and complexity of the English language (Yuan & Ellis, 2003), Harmo ranked fluency as highest by giving an example of his teaching. He mentioned that there were occasional inaccuracies when he spoke English in his lab teaching. He said he could not speak out those complex words but recognized them in reading, like those very long and low frequency GRE words.

### **Harmo’s cultural identity informs his perception of the English proficiency**

Harmo mentioned his identity as a “lonely” foreigner in the United States many times during the interviews. For example, when asked why he repeated in his instruction, he answered “Because maybe I am a foreigner also, they [his students] can’t understand my English very well. So I repeat maybe they can get more what I said.” Harmo attributed his inaccuracy in English language use to his identity of not being a native English speaker, by saying that “I am not a native America, or native English speaker, I couldn’t pick the very accurate [word].”

As to shyness and reluctance to initiate a conversation, which can be seen as typical Chinese personality, Harmo’s answer was not what I expected during the interview.

For me, it’s OK. I can initiate [a conversation with native English speakers] if there are a lot of friend together. We can talk about our culture, even political views or any other interest, like personal interest...maybe only when I first came to America, at that time, I even couldn’t speak fluent English, like very little English at that time...[ I am in the United States for] already six years. Only the first year, I felt very shy...after teaching experiences...you’ll never feel that shyness again, you’ll improve a lot.

### **The role of Harmo’s English learning experience in his self-perception of his English proficiency**

I didn’t take elementary school here...or high school middle school, so of course, my English is not that, I like two words “folksy” and “charming.” That means like native American English. For sure, it’s not. For those [undergraduate] students, they think I couldn’t communicate very well.

He mentioned that he didn’t have any exposure to knowledge of pragmatics or contextual connotations in English, but he thought that both are worth teaching in China. I also agree with his point, as an English language learner and English language instructor for over 19 years.

### **Harmo’s content-knowledge preparation influences his self-perception of his English proficiency in lab teaching**

Harmo thought that his English in teaching was better than he first had taught the class, since he was much more familiar with the teaching content after teaching five times. “I teach so many years, so many times already, I know the class, so I prepared very well.. From



his 3-years teaching experiences, it can be seen that preparation means more than merely content, but the word choices, as Harmo said “which word I will pick so that day my English is good, is fluent.”

### **Other factors contributing to Harmo’s perception of his English proficiency**

“I don’t have too much time.” “I do research every day. The boss is pushing me.” Harmo mentioned this fact to explain why he didn’t have chance to communicate with other English speakers, or to learn English from mass media, or other ways of practicing English. “...but because of the time, I don’t have too much time practice my English. I don’t take English class here but only in China.” “In the future, if I have more time, I can do more.”

“Environment” is also an important factor in Harmo’s English. “I don’t have so many friends, who are native America.” “Only chance to practice my English is my lab mates or my students.” “In the future...if I have better environment,...I can speak more.” Harmo realized that in the current Spanish-speaking location, it was harder for him to practice English. Harmo compared the English speaking context where he previously stayed for two years with the current location by saying:

My spoken English was still poor at that time and but there I got more chance to speak because everybody speak English only so if I go to any occasion or any activity, I talk to people in English. But here usually people they speak Spanish so I couldn’t understand I don’t got a chance to talk to them, not too many chance to, even to listen English. So yeah, that may be the difference. There although not too much also, there I got a little more chance to talk to people.

Harmo’s highlight on culture in terms of language improvement was striking, too. He associated literature and history in American culture with the American English and expressed his willingness to go to English literature class.

## **Peter**

### **Peter’s story**

Peter was a Chinese man from a capital city of a Northeast province. He was the only child of his family. His parents were typical Chinese parents, with rigid manners and values which influenced Peter. They both were quick-tempered and punctual, which Peter internalized as his own personality. Peter was proactive and showed initiative but at the same time conscious of others’ views about him. So at times, he would sacrifice his true feelings to save his face or to be looked at as more publicly acceptable.

Peter went to public schools and a prestigious university in the city of his birth. He did his bachelor’s and master’s degrees in biology in the same university. After his graduation as a master, he came to the United States. I did not find out what he did in the first year of his arrival in the United States, since he only mentioned his second year, working as an assistant in a lab in a hospital institute. After the two years, he was enrolled as a Ph.D. student and offered a teaching assistantship at his current university.

Possibly because that he was the son of a person in power in the Chinese political bureaucracy, he was sensitive to exposing his real thoughts, feelings and life to others, including to his close friends. During interviews, he made jokes and was loudly defensive

and evasive, and intentionally dragged the interview off the topic. The following was chosen from my reflective journal, after interviewing Peter about his lab teaching.

Peter showed self-protection by speaking irrelevant words both in Chinese and English.

### **Peter's perception of his English proficiency**

Speaking about his English proficiency when he was teaching today, Peter said it was perfect [shouting]...terrible...I don't know...I had no idea about my English skill... understandable, maybe there are a lot of grammar problems, a lot of sentence problems, but they [students] can understand...

For the first half of our interview about his lab teaching, Peter was joking and kidding all the time. When he got more serious, he defined his English proficiency as "understandable." When it came to accuracy, fluency and complexity of the English language (Yuan & Ellis, 2003), Peter intended to make his English accurate because "I don't want to misspell or misspeak the wrong word to make students confused so accuracy is more important in the lab compared with fluency and complexity." Peter attached great importance to speaking to native English speakers, in the light of improving BICS, but Peter spoke highly of reading academic papers, talking to his major advisor, and attending seminars, workshops and professional conferences, so as to improve his CALP.

### **Peter's cultural identity affects his perception of the English proficiency**

Peter didn't think that modesty or other cultural identity play a role in his perception of his English proficiency. He said many times that his English should be judged by others—Native English speakers. Contrary to his English, he felt confident and authoritative to judge his Chinese. "My Chinese was much better than my roommates in pronunciation...because normally North people speak Chinese, pronunciation better than the people in the South."

Peter thought keeping or losing cultural identity depended on different contexts. He wouldn't show any modesty in an academic meeting and as such, while in daily life, "I will keep that [modesty]." Compared with Chinese people, "American people like to present...so if you wanna survive in this country, you must be good ..."

### **The role of Peter's English learning experience in his self-perception of the English proficiency**

I learned English from 10...in Grade 3...in elementary school...That's Chinese English...I feel the English teachers in China, they teach English in a different way. They focus on reading, writing and I think you'll say that during the TOEFL [Test of English as a Foreign Language] exam, the Chinese students they have higher reading but their speaking and listening are like of poor, because we are not in an English environment, so it's hard to practice... Reading skills, I learned a lot from China...

Even if Peter's English teachers in China were from English speaking countries, he thought there would be no difference with regards to the way how his English was taught, because "you are living in a non-English environment." "Language is that, I believe if you practice more, you learn more." Peter's emphases on practice and chances to practice threaded his interview about his lab teaching.

### **How Peter's content-knowledge preparation influences his self-perception of the English proficiency in lab teaching?**

Peter thought that his previous research experiences in experiment and his accumulations in reading papers contributed tremendously to his English proficiency, especially in the phases of experiment instruction at the beginning and review at the end of his classes. He didn't prepare specifically for the class.

We are at a graduate level so we read a lot of papers and we do a lot of experiment so we are familiar with those professional languages, professional word, professional English, other than the daily English.

Peter practiced after he listened to the native speakers, for instance, undergraduate students in his lab, in order to make his English accurate in front of his students in terms of "grammar, and sentence constructions." He admitted that "I am going to mimic their speaking English, how they speak, what words they use, not what I learned in China." It can be seen as indirect preparation in terms of Peter's accurate English. For some job interviews or other occasions where Peter may be asked unexpected questions, he still thought preparation may make his English adequate for the challenges.

### **Other factors contributing to Peter's perception of his English proficiency**

"Environment is really important." An English-speaking context plays an important role in Peter's English. Peter thought "it's hard to practice English" in China because it was a non-English environment. Communications with Chinese people in Chinese in this current location was a hindrance to Peter with regards to chances to speak English. As he mentioned, he had two Chinese roommates, but he still preferred to live with Chinese people, because they share the same living habit. Even in his lab with more English speakers, he said there was less chance to talk when they started to work.

Peter emphasized several times that his English proficiency should be evaluated by "others"— native English speakers in the U.S. instead of himself. In terms of catering to his students, most of whom were English native speakers, in lab teaching, he said that "if they can understand me, that's fine" and that "if my students understand what I am talking about, I don't care about others," because "they are native English speakers, they are easy to understand a foreigner's English." "They can easily understand, but doesn't mean that I speak English very well." Peter once asked native English speakers (i.e., his lab mates and undergraduate students) whether they could understand his English and got affirmation.

Peter thought there was neither positive nor negative effect of his first language (L1)—Chinese on his second language (English), by saying that "language is language. They cannot influence each other...they don't conflict with each other." But he guessed that Spanish and English have something related, because they are "kind of the same."

Peter had audience responsibility, seen from his lab teaching. The following reflective journal entry is from my observation in his lab class.

I like Peter's class, which was more interactive and communicative. He started a simple daily example to arouse students' curiosity about human biology. I left because I felt shy when students played a game relevant to sexually transmitted diseases.

He chose to teach interactively and communicatively because he was “not sure about the audience.” He said “you may not sure the level of audience...You have to talk your project from the surface to the deeper...step by step...absorb their attention.”

## **Discussion**

### **Participants’ Perceptions of their English Proficiency**

All of the three participants, Eric, Peter and Harmo mentioned others’ viewpoints on their English proficiency when they perceive theirs. Eric said he knew he had Chinese accent, from the feedback of evaluation form from his students. Harmo perceived his English proficiency from the perspective of more “authoritative” English speakers. Peter was even reluctant to evaluate his English because he thought that his English should be judged by “others”—native English speakers.

Their resorting to more authoritative English speakers may be due to their “internalized notions of being linguistically inadequate” (Wynne, 2002, p. 206). I, as well, speak English with a Chinese accent and mostly with Chinese thinking style, which is often not considered as “right English” or Standard English. I have felt the same way as English learners in the chapter “The Skin That We Speak” (Wynne, 2002). Our skin color represents the presumption that we don’t belong to a group whose native language is English. On most occasions, others around take the presumption for granted as well. This finding echoes what Rubin (1992) found, in which domestic students’ negative perceptions of international TAs’ language proficiency were interwoven with ethnic stereotypes.

### **Their Cultural Identities Losing an Effect on their Perceptions of their English Proficiency**

Peter thought keeping or losing cultural identity depended on different contexts. He wouldn’t show any modesty in an academic meeting and as such, but in daily life, “I will keep that [modesty].” Eric’s self-confidence was incongruent with Chinese modesty. Harmo thought that he overcame his shyness and reluctance to initiate a conversation, both of which are a part of Chinese culture traditional virtues. What can be seen from the transition of their cultural identity was in accordance with Bullivant’s statement (1989, p. 32) that “the traditions and customs have increasingly less pragmatic survival values.” My participants realized how important it was to demonstrate their knowledge, ability and research confidently in public. Hence, they had to accustom themselves to a society that values initiation and communication.

However, it was obvious that their cultural identities were retained to some extent. One typical instance is their exactitude as a Chinese attitude. Eric mentioned a lot of times “perfect” to display his complex of “perfection.” Peter asked his major advisor or lab mates for correct pronunciations. Harmo could still recall a word that he misused in a meeting. I have the same exactitude in study. I scrutinize every detail for perfection.

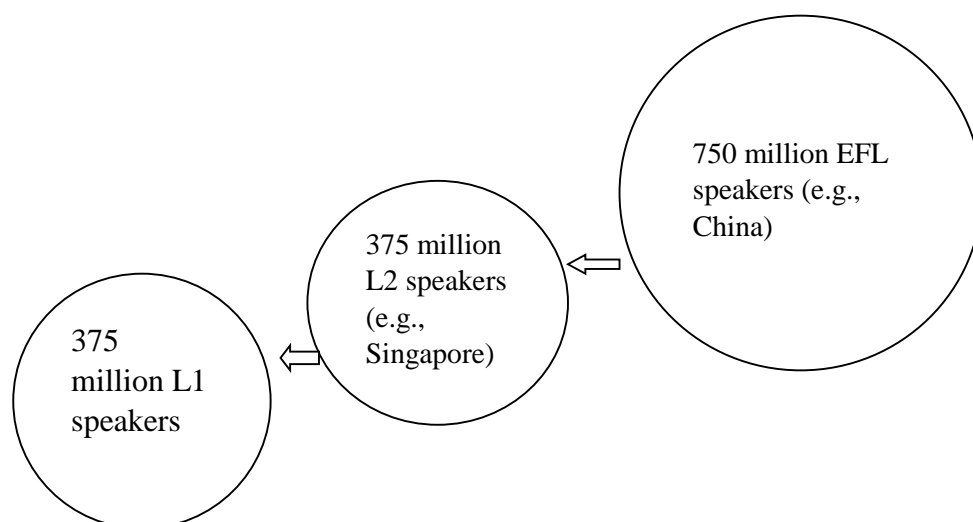
### **English Learning Experience in Self-perception of their English proficiency**

None of my participants spoke highly of the English education they had received in China. Eric only mentioned how he learned and tried to speak by himself when he was an undergraduate. Peter stated that English teachers in China only focused on reading and writing; as a result, students were poor in speaking and listening. Harmo compared English

learning with Chinese learning by saying that the former had no pragmatic part in China, such as how to use English in different contexts.

I agree with what they said about English education in China, as an English learner and English instructor. The curriculum was unbalanced in general among reading, writing, speaking and listening. The syllabus even in universities was test-oriented and designated to be uniform throughout the country. “Teacher-centered textbook-analysis-based Grammar-Translation Method” of English teaching has had dominance in China for years (Yang, 2000, p. 19).

This commonality in their English learning experience can be partly rationalized by the relation of first language (L1) speakers, second language (L2) speakers and English as a foreign language (EFL) speakers. The relation can be represented by Figure 1 below (Graddol, 1997, p.10). The two arrows mean possible language shift.



*Figure 1.* Showing the three circles of English as overlapping makes it easier to see how the “center of gravity” will shift toward L2 speakers or foreign English at the start of the 21<sup>st</sup> century

China as an EFL context cannot provide high-context English-speaking culture to English learners. This may be why the three English learners felt it hard to practice oral English in China. They all mentioned that their experiences in English-speaking countries, as high-context culture, empowered them to be competent, comfortable and confident to speak and learn from L1 English speakers. Harmo also stated that people in the current location spoke Spanish, where he found harder to practice his English. In this sense, the population of L2 speakers also includes Spanish-speaking people in the current place, despite the fact that it is in the United States.

### **Content-knowledge Preparation’s Positive Role in the Perception**

The content knowledge preparation can be seen interwoven with the participants’ perception of their English language proficiency. Whether they were well prepared determined their perception whether their English was good or not when they taught.

Language is not isolated from content knowledge. The more and deeper content knowledge the participants had, the more fluent and accurate English they would use. Hence, content-knowledge preparation positively informed the participants’ perception of their English proficiency.

## Other Contributing Factors

### English-speaking context

Figure 2 below can be seen as the world of my participants from Wink's book *Critical Pedagogy* (1999, p. 96).

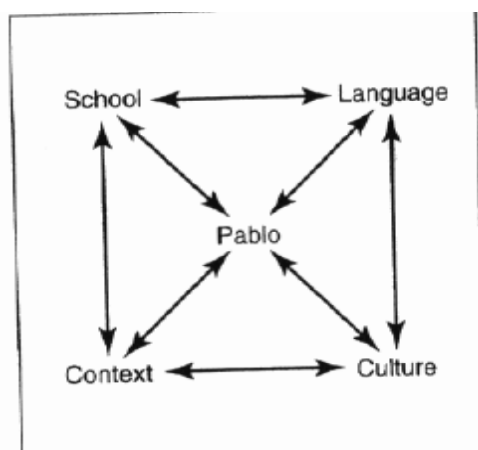


Figure 2. The world of Pablo

Replacing Pablo with my participants, I can analyze their English speaking environment in the United States in terms of context, school and culture. At the university, they were provided with the most chances to communicate with others in English, during lab teaching, presentations, lab meetings, academic conferences and seminars. Lab atmosphere was vital to their English speaking. Both Eric and Peter mentioned that they spoke with other native English speakers in labs, which was improving their English. While in Harmo's lab of tension, he had little chance to speak with his lab mates because the lab mates preferred to speak in Spanish. In Harmo's case, Spanish was spoken in his lab where he stayed for most of his daytime, so he did not get richly English-speaking environment as Eric and Peter did. Eric even extended his English speaking circle to some events or activities held on campus.

However, out of the university (context), they had low-context to speak English, especially in the city of this study, a Spanish-dominant city. In most cases, they just needed to use body languages or survival Spanish when they went to groceries or restaurants. Moreover, they had their Chinese sub-culture. All of the participants had Chinese significant others to talk to. As well, they were expected to maintain contact with their parents in Chinese. They had firm rapport with other Chinese people in the Spanish-dominant city, to whom they always spoke in Chinese. So language, if referring to English only, is closely linked with the university (school) other than out of the university (context) and Chinese sub-culture.

### Practice

All of my participants thought that practice is important to their performance in English improvement, lab teaching and lab presentations. Peter said twice that "The more you practice, you learn more." In terms of BICS, Peter practiced his English by communicating with native English speakers, mimicking the way native English speakers speak, and asking them for correct pronunciations. Eric wanted to eradicate his Chinese accent by speaking more with native English speakers. Harmo, in his limited time, preferred to watch English movies or soap operas to practice. BICS refers to "conversational

language,” which is social, conversational, personal and survival language (Cummins, 1981). In BICS, utterances are in chunks and vocabulary consists of high-frequency words with general meanings. Conversation topics are embedded in contexts (Cummins, 1981).

When it comes to CALP, which is academic, formal and professional language. In CALP, utterances and sentences are long and often contain clauses; Vocabulary consists of abstract, subject-related content words, often with specialized meanings (Cummins, 1981). Eric ranked BICS as the basis for CALP. He stated that “for the academic level of my English,...I need to have enough knowledge in the specific field. Then at the same time, I have the good English proficiency I can I can speak out.” Peter thought that reading papers and talking with his major advisor were effective in his progress in CALP. Harjo thought his BICS was not as good as his CALP, saying that “Scientific one is OK...Just the other small ones, just like daily speaking English those parts it cannot be improved like right away, or in a short time period.”

### **Concluding Thoughts, Limitations and Implications for Future**

This study has investigated participants’ self-perception of their English proficiency as Biology TAs and factors contributing to their self-perception. I undertook this study to answer the research question, “What do three Chinese Biology TAs perceive their English proficiency to be in teaching lab courses?,” from three perspectives, which are cultural identity, content-knowledge preparation and their English learning experience. I found that their cultural identity, especially some typical characteristic of Chinese people, played a small role in their perception. I also found that content-knowledge preparation was vital to their perception of their English language proficiency, in particular, in CALP. Moreover, their content knowledge was mainly in their first language – Chinese, instead of English. As to their English learning experience, there seemed little merit to the English education they received in China. Instead, they valued the chances to practice their BICS in other parts of the United States as a high-context surrounding, than the current location (i.e., a Spanish-speaking city). The last finding is also critically important to English learners and educators in low-context cultures, in this case, EFL contexts.

This case study only explored Chinese Biology TAs’ perception of their English proficiency in their lab teaching. It did not go further to investigate the participants’ perception of their English proficiency on other occasions. It did not cover other people’s perception of the three TAs’ English proficiency (including their head TA, students and faculty members in the department). Future studies might select other participants from other academic disciplines to examine the correlation of content knowledge with their perception of their English proficiency. Moreover, in order to get a broader picture of TAs’ English proficiency, students’ and faculty members’ perceptions about the topic would be explored.

TA training program directors may consider the role of content knowledge in improving trainees’ CALP and pairing international TAs with domestic graduate students to create chances to better their BICS, in addition to language training or pedagogical training as current TA training. Furthermore, the design of the program should take the fact that which language is dominant in the community into consideration, and in the long run provide high-context culture of English speaking, with portfolios to record and assess TAs’ development.

This being said, I hope that findings of this research study will contribute to the existing handful research studies of international TAs regardless of various academic disciplines in the United States.

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