

Teaching Information Systems Courses in China: Challenges, Opportunities, and Lessons for US Educators

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Abstract

In Fall of 2014, as a result of a Chinese faculty visit to an upstate New York college to observe American pedagogical techniques in teaching information systems, two US faculty members were invited to teach two separate courses at a vocational college in southeast China. The courses to be taught in China were selected by the Chinese faculty and college administration. The specific courses to be taught were on the topics of computer applications and management and database foundations and applications. This paper is a reflection of the two American faculty members on their experiences teaching information systems courses at a vocation college in southeast China. The objective of this work is to describe their experiences teaching in China, to identify pedagogical differences, and to describe the challenges, rewards, and lessons learned of this type of endeavor.

Keywords: China, Pedagogy, ESL, Database first course, Hands-on learning, culture

1. BACKGROUND

Vocational education is of paramount importance to the rising economic giant that China is becoming (Aggarwal & Goodell, 2011). To support this skyrocketing growth, the Chinese Ministry of Education has come to realize the important role that vocational education plays in the future prosperity of this nation. Thus, in order to prepare its students for employment in the manufacturing industry, curriculums in schools must contain a close connection between course subject matter and job related skills. Their goal then, is for courses

and curriculums to be developed that contain a balance between the theoretical concepts of a given subject and practical hands-on skills that allows students to gain marketable skills that suit them well for employment upon graduation (Liang, 2013; Xu, 2014).

Chinese students begin to learn English in the sixth grade and this continues throughout high school and in vocational schools (Infeld & Wenzhao, 2009). The Chinese have recognized that English is an international language and that to be an effective participant in the global

market, learning English is essential (Changlin, 2013; North & Shelton, 2014; Zengtao, 2012).

The scholarly literature on the topic of pedagogical differences between American teaching and learning styles and those of the Chinese suggest that the Chinese style reflects a Confucian influence (Smith, 1973; Thakkar, 2011; Wu, 2008). This influence centers on the premise that hard work leads to success and also to the development of critical thinking skills in students. Furthermore, the Chinese education system emphasizes that hard work is more important to student success than individual ability (Thakkar, 2011). Chinese students traditionally learn by memorization and are generally accustomed to quiet listening of lectures versus the student-centered active learning that is popular in the United States and intended to develop critical thinking skills (Chen, Bennet, & Maton, 2008).

2. INTRODUCTION

In Fall of 2014, as a result of a Chinese faculty visit to an upstate New York college to observe American pedagogical techniques in teaching information systems, two US faculty members were invited to teach two separate courses at a vocational college in southeast China. The courses to be taught in China were selected by the Chinese faculty and Chinese college administration. The specific courses to be taught were on the topics of computer assembly and management (CAM) and database foundations and applications (DFA).

As agreed upon by both the US and China institutions the courses were to be taught in English in the same format as they would be taught at the US institution. As such, English textbooks were selected for both courses and all course materials were prepared in English. While the students had taken English courses these did not include technology related courses taught in English. Therefore, students were given access to the textbook PowerPoint slides approximately one month ahead of time to allow for some translation. In addition, the Chinese faculty met with the students for approximately 8 hours before the English instructors' arrival to introduce the students to some of the technical concepts that would be introduced in these courses (e.g. Motherboard, Ethernet, relation, tuple, primary key).

The student cohort included 55 students. Per the US faculty request, the group was split into two cohorts of 27 and 28. One group took the

CAM course in the morning (8:20-10:55am) and then the DFA course in the afternoon (1:15-3:40pm). The second group had the exact opposite schedule. The DFA classroom included a computer for each student, while the CAM classroom had limited computers and required some students to bring their laptops to class. Classes met four days a week for four weeks in June 2015. For both courses, assessment consisted of various in-class activities and four quizzes, one of which was cumulative. Both instructors dropped the lowest quiz grade.

3. CHALLENGES, OPPORTUNITIES, AND LESSONS LEARNED

Culture and Language

While the students had several years of English, communication was more difficult than anticipated. The cohort were freshman and had not taken English courses at the university level. Additionally, the material being presented was technical and likely introduced many English words that were completely new to them. As with all students, some comprehended English better than others, but the pace of the course had to be slowed significantly to mitigate language challenges. After the first day of classes the US faculty requested interpreters be available in the classroom to overcome the language barriers. However, the Chinese faculty and administrators stated that in their experience, the students would over rely on the interpreter and not attempt to understand the material in English, instead waiting for the Chinese translation. In their opinion, this defeated a major goal of having a course taught by a native English speaker.

The Chinese faculty indicated that the students were able to understand written English much better than hearing it spoken. However, it is important for them to hear the words too in order to help them improve their English pronunciation. While the courses being taught were technical in nature, it became clear that an additional major goal of the courses was to improve the students' English skills. This realization shifted the teaching strategies of both instructors. Concepts were presented on PowerPoint slides, spoken slowly, repeating each sentence several times, and writing the same concept on a whiteboard with a variety of synonyms. It was necessary to pause frequently for the students to hear the concepts, see the related text written, translate what they heard and read into Chinese, and then respond back in English. Frequently referencing related

textbook pages and highlighting key words also seemed to help the students.

The students were not always comfortable telling the US instructors when they were lost so it became exceedingly important to read body language signals. When in doubt the faculty would ask the students if they would like additional text written on the whiteboard. The students always answered in the affirmative and it was clear that this helped tremendously as you would typically hear the students reading the text as it was being written, often followed by affirmative acknowledgements of understanding such as "ooooooooohhh".

Infeld and Wenzhao (2009) explain that their experience in trying to communicate to non-native English speakers helped to make them more aware of clarity in their presentation style when teaching back home. The US instructors' experiences teaching these courses corroborate those of Infeld and Wenzhao (2009). While language difficulties were a major barrier in the first week of teaching, for most students the comprehension of spoken and written English seemed to improve as the weeks progressed.

Typically, these US instructors do not allow cellphone use in their US classrooms but they quickly discovered they needed to relax this rule in the Chinese classroom for two main reasons. One, the culture of the school seemed to be that cellphone use by students in the classroom was considered acceptable. This fact was not only told to the US faculty by the Chinese faculty but it was clearly observable in the classes taught by Chinese faculty. Secondly, and perhaps more importantly, the students would frequently use cellphones as translation tools. Nonetheless, cellphone use in the classroom could quickly become a distraction and the instructors did find that they needed to impose some restrictions. As with US students, it is easy for cellphones to be a major distraction including text messaging and gaming. The CAM instructor found that when he did completely restrict cellphone use, the quiz grades improved.

Technical

In addition to the obvious challenges of language and cultural differences, there are a variety of technical issues to overcome when teaching in another country. Operating systems and application software will likely be in the local language. While the classrooms had both English and Chinese operating systems and software installed, the students often used the Chinese version. This can be challenging when

attempting to assist students with problems, particularly error messages. Ideally, all students would use the English version but some students really struggled with English and were more comfortable using the Chinese version. As such, we did not require them to use the English version. Obviously, the icons are the same and if you are familiar with the software it is possible to navigate fairly well with some translation assistance from the students. Even the English version of the software would frequently try to translate what was being typed to Chinese, making modifications to PowerPoints on the fly and web searches challenging (see Figure 1). The automatic translation adds single quotes as you type and translates to Chinese characters.



Figure 1: Browser Search Automatic Chinese Translation

The office computer, which offered printing capabilities, had a Chinese operating system and software. If you are familiar with the software shortcuts printing is possible but again, if you receive error messages, it can be problematic (see Figure 2). A network printer that can be accessed via a personal computer is likely the best option but it is important to bring a laptop with Ethernet capabilities and the proper printer drivers installed. The US instructors brought home institution laptops for which they did not have administrator rights. Therefore, it was not possible to install any software including the printer drivers needed for the printer provided.

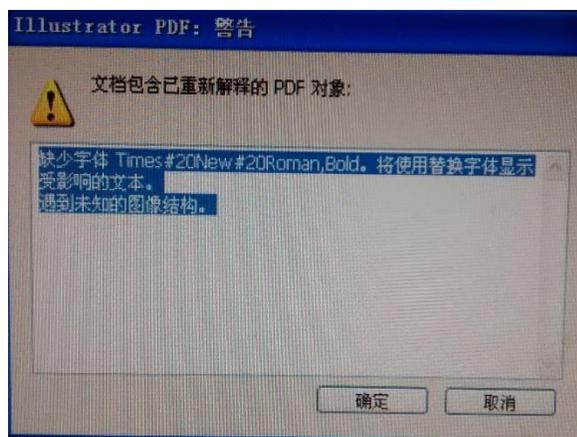


Figure 2: Microsoft Word Error Message

Some tools regularly used by faculty and students in the US are unavailable in China, such as all Google products. If you rely on Google Drive to access your teaching materials, you should download all materials locally to your computer ahead of time. If you use Gmail you may need to create another account and forward your Gmail to that account while in China. Note that many higher education institutions in the United States host their email with Google so these accounts will be blocked in China as well. Another option to overcoming these restrictions is to use a Virtual Private Network (VPN). China has begun blocking VPN protocols, including corporate VPNs, but there are some available that still work. Nonetheless, do not rely on the VPN working, always have a few backup plans. While the VPN did work on the apartment WiFi network, it did not work at the school. In addition the WiFi available at the school was very unreliable and was frequently unavailable. This was particularly challenging since one of the instructor's personal computers did not have Ethernet capabilities.

Exchanging files with students and student submission of work was not ideal. The host institution provided a file server to use but the US instructors were never able to successfully connect to it. As a workaround, the DFA instructor typically emailed the needed files for class the night before. The students all had qq.com email accounts, not institutional accounts which are typical in the US. As such, the DFA instructor's emails were often marked as spam by qq.com, even when only sending to a single class section of 28 students. The students would submit their completed work via email as well, which can be clunky to work with for review and grading purposes. An additional challenge was that all students logged into the school computers using the same credentials.

That meant that the afternoon students could see the completed files of the morning students and some simply submitted these instead of completing the work on their own.

Pedagogy

The findings of the two US faculty support those of Smith (1973), Wu (2008), and Thakkar (2011) that the Chinese students tend to learn by memorization and do not typically contribute to the class discussion unless called upon by the professor. While a couple students were willing to answer questions without being called on, most required the instructors to call on them by name to participate and were extremely nervous when doing so. Certainly part of their hesitation was likely due to fears regarding speaking in English and taking a class with an instructor they did not know. Some researchers have suggested that many Chinese students experience stress and anxiety when instructors ask a lot of questions, and that this may even negatively impact their learning (Huang & Rinaldo, 2007). Since the host school was interested in providing their students the "US pedagogical experience" active-learning was an integral part of that experience. Therefore, the instructors were careful to ease student fears by encouraging them as they struggled to respond in English and giving praise even when answers were incorrect. As the weeks progressed participation without being called on did improve a bit.

Many students seemed to struggle with being able to use an example to help them answer a related question. Often they would simply answer a different question with an exact example given earlier by the instructor or listed in the textbook. This could potentially be a result of the memorization style of learning the Chinese students are accustomed to. To mitigate this challenge the instructors attempted to use multiple examples for the same problem and tried to clarify how these are just examples and not *the* singular answer. Nonetheless, this was a frequent recurring challenge during both lecture discussions and quizzes.

As with any classroom, not all students are motivated to learn. It seems privacy of student education records is not much of a concern as there is no FERPA or equivalent in China. As such, some of the visiting teachers used this to help get unmotivated students' attention regarding poor performance. These instructors showed the spreadsheet of all student grades to the class regularly so everyone could see who is

doing poorly (i.e. not turning in assignments). Those faculty did report that this seemed to motivate some students but certainly not all. The US faculty chose to not use this particular strategy but did find that several students needed to be "threatened" with failure several times to get their attention.

Approximately halfway through the course the host institution met with the US faculty to discuss progress and any challenges. The students reported to the Chinese faculty that the use of uppercase words was a struggle for them. The CAM instructor typically wrote in all capital letters on the whiteboard and had to learn to adjust this habit in order to help the students with translation. Many words in the DFA course were typically written in uppercase (e.g. SELECT, ORDER BY), including in the textbook. It seemed students need to "translate" these uppercase words to lowercase words in order to understand (see Figure 3).

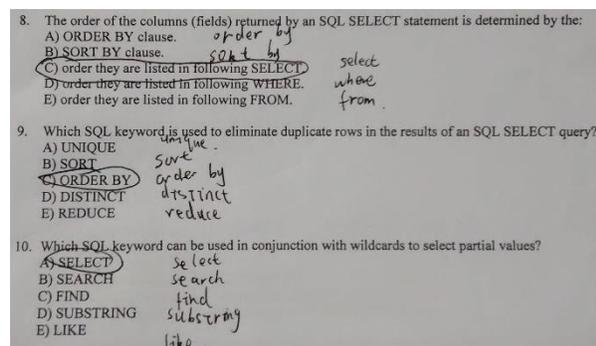


Figure 3: Database Foundations and Applications (DFA) Quiz

Unlike most US college students, Chinese students are not accustomed to homework assignments that are expected to be completed outside of the classroom (Schell, 2014). As such, the US instructors gave adequate class time to complete all required assignments. Therefore it is imperative to have the appropriate resources in the classroom to allow the students to complete their work. In the case of technology related courses, this includes access to computers with the appropriate software.

4. CONCLUSIONS

While teaching in the Chinese classroom, the instructors became very aware of the importance of every word spoken. The language challenges made them very conscious of the speed of their speech, the clarity of their speech, and the need to avoid the use of slang.

Lecture became a very conscious task even though the US faculty were very comfortable with the subject matter and experienced at teaching such courses in the United States. At times the instructors felt like they were moving at glacial speed only to find out at the end of class that most of the students had difficulty understanding. The take away from this experience was that faculty must be vigilant and always conscious when lecturing and discussing subject matter in the classroom. Although one may feel that we have made the point crystal clear, it is important to recognize that there may be students in the classroom that just did not understand.

Teaching in another country is a unique journey that allows one to embed themselves in the daily life and culture of that country, providing a deeper understanding than a traditional tourist experience. In addition to the Chinese faculty at the host institution, there were three Australian faculty members teaching courses in business and engineering. The US faculty were afforded the opportunity to meet, socialize, establish friendships, and exchange teaching ideas with these faculty. The interactions and relationships with foreign faculty introduced new ideas for teaching and, since two of the three Australian faculty members have taught in China for many years, their experiences teaching in China helped the US faculty adjust their pedagogical methods and techniques to adapt to the needs of their Chinese students. Their advice included:

- Be more flexible with the pace of the course so that the students have adequate time to process the lecture material and translate the concepts from English to Chinese.
- Use more hands-on activities so the students can immediately apply what they have just learned. This also provides early and more frequent assessment of learning goals, which helps determine the appropriate pace for the course.
- Use multiple types of assessment. In addition to quizzes/exams, include various assignments and presentations (individual and team).

The experience of teaching abroad can help faculty understand the host country better, in this case China, including students from that country. As more students from other countries come to the US to study, an increased understanding of their culture and unique needs offers tremendous benefits to both the

international students studying in the US and the US institutions hosting them.

There are a variety of opportunities for US educators to teach in China. These faculty just need to be prepared to adjust their typical pedagogical methods, slow their pace to accommodate language barriers, and have workarounds for technical limitations.

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