

In *Interdisciplinarity and General Education in the 21st Century*, eds. M. Burguet and J.-P. Connerade (Science Matters Press, Cascais, 2017) pp. 75-113

6

Humanities, Science, Scimat: A New General-Education Course

Lui Lam

My experience of teaching the new general-education course, “Humanities, Science, Scimat” (HuSS) in the International Summer School 2015 and 2016 at the Renmin University of China is presented. The course teaches undergrads of any major and of any level the proper definition of science and the relationship between the humanities and “science” from the perspective of scimat as well as recent developments in philosophy, arts and history. Concurrently, the research method is taught by guiding the students in real research, from picking topics to publishing papers. In 2015, *all* students were organized into research teams—the open-teaching mode. In 2016, part of the students formed research teams while the rest worked as individual researchers on topics taken from the textbook—the mixed-teaching mode. The textbook used in both years was *Humanities, Science, Scimat* written by the author. The conclusion is that this course can be taught by any instructor in any university in the world.

6.1 Introduction

General-education (GE) courses are offered in (almost) all universities in the United States and some other countries, as a means to bridge the gap between the humanities and “science”,¹ to prepare students to face the world after they graduate. Unfortunately, most the available GE courses are too narrow in their scope, which are confined either to the humanities or “science” and, occasionally, with some overlapping between the two. The GE course, “Humanities, Science, Scimat” (HuSS) created by Lam, offers something completely new. It is an interdisciplinary and cross-cultural

¹ In this chapter “science” with double-quotation marks means science in the conventional sense, which is the sum of “natural science” and social science but excludes the humanities (see [Lam, 2014]).

introduction to the humanities and “science” from the unified perspective of *Scimat* (Science Matters), a new multidiscipline introduced by Lam in 2007/2008 [Lam, 2008a; 2008b].

Essentially, the course introduces students to the proper definition of science and its relation to the humanities—history, arts and philosophy in particular—while the students are guided in real research from picking topics to writing and publishing papers. Here, I will present my experience of teaching this course in the International Summer School 2015 and 2016 at the Renmin University of China (RUC), Beijing.

6.2 General Education

General education, introduced in the 1930s, is an American invention in curriculum reform. While *liberal education* in the United States (starting late 19th century) looks back to the past *general education* focuses at the present and eyes the future [Miller, 1988]. There are two major books on the meaning and history of GE (Fig. 6.1): Earl McGrath’s *General Education and the Plight of Modern Man* [1976] and Gary Miller’s *The Meaning of General Education* [1988].² The latter contains more details and is more informative.

Ideally speaking, in the United States at least, the aim of GE courses [Miller, 1988, p. 5] is to develop in individual students the (1) attitude of inquiry, (2) skills of problem solving, (3) individual and community values in association with a democratic society, and (4) knowledge needed to apply these attitudes, skills, and values—to maintain a lifetime learning process and function as self-fulfilled individuals and fully participants in society. Accordingly, the characteristics of GE courses are: (1) comprehensive in scope, (2) emphasize on specific and real problems faced by students/society, (3) concern with the future’s needs, and (4) application of democratic principles in methods, procedure, goals of education. Of course, when GE is adopted in other countries, the word “democratic” could be and has been

² Earl McGrath was commissioner of education under Presidents Truman and Eisenhower, and the executive director of the Institute of Higher Education at Columbia University. Gary Miller was executive director of the International University Consortium at University of Maryland.

substituted by other social values the countries see as suitable replacements (see, e.g., [Zhang, 2017]).³

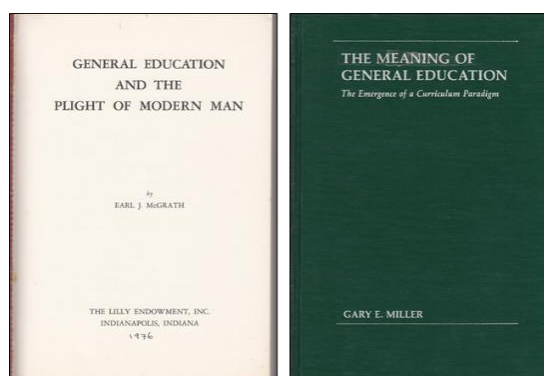


Fig. 6.1. Two general-education books by Earl J. McGrath (1976) and Gary E. Miller (1988), respectively.

6.3 Renmin University of China and Its Summer School

The Renmin University of China was founded by the Central Committee of the Communist Party of China in 1937, in Yan-an. Its present name started in 1949 with first batch of students admitted in October, 1950. RUC's curriculum concentrates on the humanities and social science, with small departments in the natural sciences. With no engineering school, RUC does have schools covering computer and information sciences. Right now, RUC has about 33,000 students whereas 45% are grad students.

Partly to promote GE (called “tongshi” or general-knowledge education in China), since 2009, an international summer school (ISS) with courses conducted entirely in English has been installed at RUC [Zhang & Xuan, 2017]. Each undergrad has to take one ISS course (no more than two, though) before graduation even though grad students are allowed to take them, too. Thus, there is a steady pool of students for these summer courses. Tuition is free for RUC students but not for external students. The latter include a number of foreign students since there are many courses on Chinese language, philosophy and culture.

³ In the text, unless specified otherwise, Chinese names are written with family name first.

The slogan of the ISS 2015 is “BEST”: Broaden your views; Enjoy excellent education; Superb service; Touch the future. In particular, the new HuSS course was offered in 2015, and again in 2016 (Figs. 6.2 and 6.3). I was paid 200 USD per 45 min teaching, which amounts to 6,400 USD for the course. And, like other summer instructors, I was given a room in the campus hotel in the Huixian Building with free parking for the month of July. Since Scimat is part of the course title, a brief explanation is in order.

<p>RUC International Summer School (course number: SH1518)</p> <p>Humanities, Science, Scimat: A Trans-Disciplinary and Cross-Cultural Experience</p> <p>Summer 2015</p> <hr/> <p>Lecture hours: Tue., Thur., 2:00 pm-5:30 pm</p> <p>Prerequisite: None</p> <p>Instructor: Lui Lam. Email: lui2002lam@yahoo.com. Phone: 1355 2008 xxx. Office hour: by appointment.</p> <p>Course language: English</p>
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Fig. 6.2. Beginning of the course description (2015).

<div style="display: flex; align-items: center; justify-content: center;"> <div style="width: 10px; height: 100%; background-color: #00b050; margin-right: 10px;"></div> <div style="text-align: left;"> <h1 style="margin: 0;">Humanities Science Scimat</h1> <p style="margin: 5px 0;">An Interdisciplinary Cross-Cultural Introduction</p> <p style="margin-top: 20px;">Lui Lam</p> </div> </div>	<p>Contents</p> <p>Prolog</p> <p>1 Introduction</p> <hr/> <p>PART I BASIC</p> <p>2 Humans</p> <p>3 Knowledge, Nature, Science and Scimat</p> <p>4 Science and Scimat, Again</p> <p>5 History</p> <p>6 Arts</p> <p>7 Philosophy</p> <hr/> <p>PART II EXTRA</p> <p>8 The Two Cultures Problem</p> <p>9 Philosophy and Sociology of Science</p> <p>10 History of Science</p> <p>11 Science Communication</p> <hr/> <p>PART III EXTRAORDINARY</p> <p>12 Why the World Is So Complex</p> <p>13 Does God Exist?</p> <p>14 Su Dong-Po's Bamboo and Paul Cézanne's Apple</p> <hr/> <p>PART IV BONUS</p> <p>15 How to Do (Good) Research</p> <p>16 On Intuition and Innovation</p> <hr/> <p>Epilog</p> <p>Index</p>
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Fig. 6.3. Textbook adopted in the HuSS course (2015). Cover shown here is from v0.3.

6.4 The Dao of Scimat

The new multidiscipline Scimat deals with the science of humans—a biological system made up of atoms. Scimat's *aim* is to raise the *scientificity* (scientific level) of the humanities by encouraging interaction and collaboration between humanists and natural scientists. The essence of scimat is:

1. One sentence. Everything in Nature is part of science!

2. Four tenets. *Conceptually*, scimat represents the four tenets:

- (1) Science is humans' effort to understand Nature without bringing in God or any supernatural.
- (2) Science covers everything in Nature.
- (3) Nature includes humans and all nonhuman systems.
- (4) All research on human matters, humanities in particular, are part of science.

Disciplinarily, scimat represents the collection of research disciplines that deal with humans, i.e.,

$$\text{Scimat} = \text{Humanities} + \text{Social Science} + \text{Medical Science}$$

3. One insight. The scimat's 1-2-3 *insight*:

One culture, two systems, three levels!

- There is only one culture—the scientific culture.
- All systems are simple or complex systems; the two are quite different.
- There are always three research levels (empirical, phenomenological, bottom-up) in any discipline.

4. Two messages.

- It all started with the Big Bang (everything on Earth is made up of atoms, coming from the stars).
- We are one family, descendants of fish (Fig. 6.4).

For discussion on the birth of disciplines and of science supporting the claims above, see [Lam, 2014]. For description of *The Scimat Program* concerning the international scimat movement and an action plan to establish scimat centers worldwide, see [Burguete & Lam, 2016]. See also the scimat website: www.sjsu.edu/people/lui.lam/scimat.

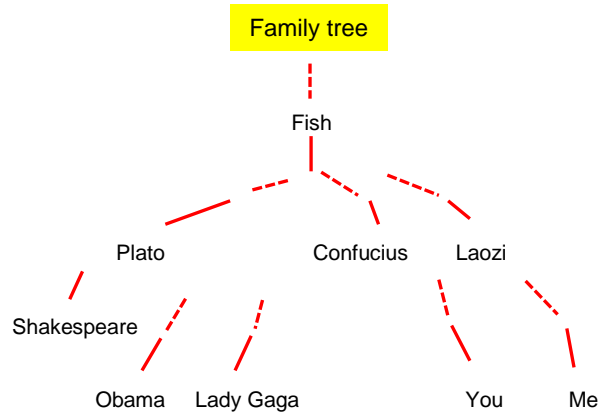


Fig. 6.4. Humans' family tree. Fish is our common ancestor.

6.5 The HuSS Course in 2015: Open Teaching

The course description (like a contract) in Section 6.5.1 was finalized after discussion with students in Day 1. Note that the “no cheating” item in “Important Remarks” is a routine warning we issue to every class in any university. To be effective, it is important to make it clear early in class and put it in writing. How the class was actually conducted is outlined in Section 6.5.2 while the extra days relating to paper writing are described in Section 6.5.3. The important last day and feedback are presented, respectively, in Sections 6.5.4 and 6.5.5. Section 6.5.6 describes how four student papers were published after summer.

6.5.1 The Course Description

This is a trans-disciplinary and cross-cultural course, taught according to Confucius' dictum of “instruction knows no social distinction; teach according to the student's aptitude”. The course consists of three parallel components:

1. The instructor will introduce the proper relationships between humanities and (natural) science, from the perspective of scimat.
2. The class (of maximum 30 students) will be divided into five teams, with 5-6 persons per team. Each team will work on a (research) project of their choice and approved by the instructor, to investigate what had been done scientifically on that topic, with the help from the web, library and

experts around the world. Students will present oral progress report in class, some with power-points. Each team will hand in a written report in English (in the form of a publishable paper) at end of course. Outside speakers could be used.

3. The teams will be treated and guided like research teams. They will learn how to do good research, make presentations and write research papers—both in English. (Some papers could be published in international research journals.)

Students are expected to attend every lecture.

Required text: *Humanities, Science, Scimat*, by Lui Lam (v0.2 will be provided free to students for their *personal* use).

Objective: At end of class, the students will learn

1. The proper definition of science
2. The proper relationships between humanities and science
3. The proper understanding of history, arts and philosophy
4. The new multidiscipline called Scimat
5. Use Excel to program, calculate and plot results of some stochastic systems (such as Random Walk)
6. How real research is done
7. Team work
8. Communicate efficiently and do *professional* presentations in MS power-point (ppt)
9. Write English papers in publishable form

Schedule:

Tuesday		Thursday	
7/7	First lecture (form teams, discuss possible topics).	7/9	Finalize team projects; start research in teams.
7/14	Oral progress report from each team; continue research; teach Chaps 2-4.	7/16	Oral progress report from each team; continue research; teach Chap 5 (History).
7/21	Oral progress report from each team; continue research; teach Chap 6 (Arts).	7/23	Oral progress report from each team; continue research; teach Chap 7 (Philosophy).
7/28	Written Exam on Chaps 2-7 of text; oral presentation of draft of paper by each team; continue research; revise paper.	7/30	Oral presentation of final paper by each team; submit team paper; revise; submit final paper.

Exam: There will be *one* (multiple-choice + fill-in answer) exam on July 28, 2015, to check that the students have actually read Chaps 2-7. *No make-up exams will be given!*

Grades:

	Maximum grade
Oral presentation*	30%
yWritten Exam	20%
Final paper	40%
Participation	10%
total	100%

* Each student has to present *at least 3* oral presentations in class, with *at least one in ppt*; asking questions after other students' presentations is counted as an oral presentation. The top two grades of oral presentations will be chosen. You are welcome to give more than 3 if there is a chance to do so.

Important remarks

- No cheating. If you cheat in any form, you will be dropped from class and receive a zero grade, and will be reported to your department.
- Extra credit will be given to students who volunteer and are chosen to do extra work and present it in class.
- Debate and prepare to defend your own ideas! Be skeptical and critical to others' ideas!
- Be responsible! Be courteous!
- Starting July 14, presentation from each team *at the beginning of class* will have to be given with ppt.

6.5.2 How the Class Was Conducted

Twenty nine students signed up for the course (maximum 30). Two came in one day and one week late, respectively, and were dropped immediately since each day's class is 3-hour long, amounting to 1/8 of the whole course. One dropped out at the end of the 2nd week because the chance to do volunteering work abroad came up, which she applied for before registering for the course. We ended up with 26 students (Fig. 6.5).

On Day 1 (and every other day), we arranged the desks in a rectangle so everyone could see the others' face (Fig. 6.6), and everyone was on a first-name basis. This is important to convey the idea that we are equal to each other, to encourage students to speak out freely—an essential part of good research. (It worked except they still called me Professor in class; only a few

called me Lui after the course was finished.) To reinforce that, the instructor has to set the example by being willing to admit his own ignorance when that is the case (Fig. 6.7).

Students were divided into five research teams by their own association. Each team has a “contact” person (not a leader) nominated by the team for me to contact. And the teams were treated as my own research teams working on five different projects under a big grant called “Understanding the World”. Thus, there was no competition between the teams and we helped and learned from each other.



Fig. 6.5. Class portrait (July 30, 2015). The gentleman on the extreme left is Li Jian-Min, my teaching assistant and a first-year master student in School of Philosophy, RUC. Individual names of 25 students are given in Figs. 6.12-6.16. A student was absent in the last class, the day the picture was taken.



Fig. 6.6. Desks are arranged in a rectangle so everyone can see others' face.



Fig. 6.7. The instructor tries to figure out how to get the computer connected to the projector but fails, under the watchful eyes of students.

The students were all from the humanities (undergrads plus 4 grad students) except for 3 physics undergrads. No art students though, perhaps because art is considered not part of humanities at RUC. I spread the 3 physics undergrads to three teams, to ensure those teams would have strong technical support. The teams then had group discussions (for about an hour), in classroom and in the corridor. Each team was asked to come up with a tentative team project and a team's name. They discussed enthusiastically among themselves and were very creative in generating names: Youth, Coal, TOB (Try Our Best), Pioneers, and Tornado—some sounding like sports teams.

To round up the day, with time left, I decided on the spot to present my ppt on "Physics Innovation", a talk I gave at the Institute of Physics, Chinese Academy of Sciences, four days ago. (Only the first half of the talk was presented due to time limitation.) During the 3 and ½ hour class, we took brief breaks whenever I sensed the need for it. Throughout this course, copies of all ppt I presented in class were emailed to students and they were free to use them in any way they wanted.

Day 2, each team was given a copy of the *The Beijing News* (Fig. 6.8), a daily selling for 1 yuan, and about 20 min to flip through it. They were asked to write down what could be potential research topics prompted by reading the daily, which covers local, national, international news as well as finance, entertainment and sports. The students were very smart; they divided the thick newspaper among the members. Each person's writing was then taped to the glass panels and doors (but not walls) in the corridor for everyone to read since this is the most efficient and cheap way to share information quickly (Fig. 6.9). Yet, after this exercise, no team wanted to change their research topic decided on Day 1.

During the 2nd and 3rd weeks, we started the class by hearing oral reports with ppt from *each* team. Every time the presenter was a different person. Yet, on July 28 when the draft of paper was presented, every team member had to get ready to do the presentation because I picked the speaker on the spot to present only one section until the whole paper was finished. And for the final presentation on July 30, only one person picked by the team presented the whole paper. After each oral presentation, questions from class followed; sometimes I called up individual students to do that (to ensure every student will speak in class at least 3 times in total). Each time the student's performance in giving presentation or asking questions, was graded with maximum 10 points. I showed them how to improve the quality

of their ppt at the end, which included spelling, color, font and style. As it turned out, ppt preparation was not a strong point of the students.



Fig. 6.8. *The Beijing News*, July 9, 2015. Newspapers report on human happenings, thus a bountiful resource for inspiring research topics in the humanities—studies on humans.

I presented my Chapters 2-7 (see Fig. 6.3) with ppt to fill up the time, at the end of the day. Each presentation lasted 1 to 1 ½ hours. The ppt also served as examples of how good ppt could look like, which were made available to all students. The talks were not particularly long because the emphasis was not on the details (which students nowadays could find easily by themselves from the Internet) but on the proper understanding and relationship between the subjects covered. In fact, the only time these chapters were revisited was on the second last day when a 20-min written exam was administered. The exam consisted of 19 problems of multiple choices and fill-ins, which was just to check that the students had indeed read those 100 pages of Part I in text.

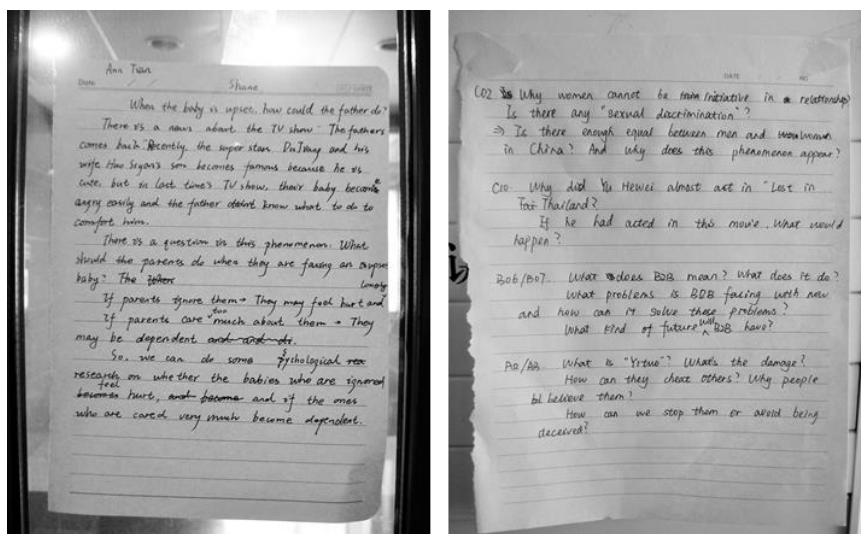


Fig. 6.9. Two samples of students' writing on questions that interested them, prompted by newspaper reading. Writing the name down is an option, which is the case on the left but not on the right display. Very interesting and insightful questions are raised.

To show the students the capacity of Excel and so they should master it, and to introduce them to two simple but powerful stochastic models (with wide applications in the humanities and social science), viz., random walks and active walks [Lam, 2005; 2006], volunteers were recruited to write Excel programs to demonstrate them. Each volunteer was given a few days to prepare before presenting it in class; both were given extra credits. Nathaniel Mitchell, an exchange math student from Warwick University, UK, took up the random walk model (4 extra points); Chen Xi-Zin from the physics department, the active walk model (5 extra points). The Excel programs were then distributed to all students with the hope that they will use or modify them in their future research.

Many students mistakenly think that they can find all the relevant literature from the Internet when researching on a specific topic and library visits are unnecessary. They are wrong for two reasons: (1) The Internet is never complete, but more importantly, (2) relevant articles may come from other topics, fields or journals that are not directly related to the topic under study. To show this to the students, in the beginning of the 3rd week, 4 extra credits were given to each who would visit the university library for 3 or more consecutive hours and submit a 1-page report on what relevant journals

and articles they found there. Eighteen students did just that. Selections from four reports:

1. Cao Shi-Peng, TOB team member working on car-sharing economy:

Query paper periodical is more useful than electronic journal. When we are looking up the paper periodical, we found it is easy to find related articles. And also some articles cannot be found in the Internet. Before this experience, we thought related articles are very few, but after the experience, we found that there are a lot of related articles; these articles put forward all kinds of different points of view. In addition, by using the method of keyword search articles on the Internet is far from enough, because a lot of related articles can be used to analogy, which are hard to find for us through keyword search...

2. Chen Zi-Xin, TOB team member working on car-sharing economy:

...The journal[s] I have read teach me a lot about how the theory of Internet plus work[s], and how those new companies use it. And in other articles, I learned a lot of information about the things we survey. I learn the related information in field of laws. I learned the political boundary met by Uber. By those information, I think I can make our paper more focused and deeper.

3. Yuan Jie, TOB team member working on car-sharing economy (italics added):

From this experience we truly collected many relevant information and also broaden our topic scope. And also from some Journals of law and policy we could know some new things and make them as example to consider our topic... Constrained by network...because [of] the keyword selection problem [maybe we] can't find much forefront academic information, while some *magazines and newspaper[s]* had found the key problems.

4. Wang Yu-Ting, Youth team member working on youth films:

In RUC library, there are some journals...like *Movie World* or *World Screen*, [which] have more entertainment and are less technical... *Movie Art* is a serious journal...Then I only read *Movie Art* and learned somethings about Chinese cinema... [S]urprisingly, I found an essay which is so relevant to our

research subject. The essay is “Creation Confusions behind the Big Bang of Youth Films” and the author is Fu Yu, a movie director and producer... This essay does make me think about our research. Firstly, it is proved that youth film is really one of focuses in cinema. It is not only because of this essay, but also [the] author mentions and quotes some other essays and papers about youth films. [Confirming to me] doing this research is valuable for us...

6.5.3 Extra Days: Research and Paper Writing

After two progress presentations, at the end of the second week, it became clear that the teams needed more guidance in their research. I offered to meet each group in campus during the weekend, July 17-19. Each meeting lasted 2-3 hours. Four teams met with me on Friday to Sunday at the Canaan Pizza and Steak Restaurant while the Pioneers team met at The Study Café on Sunday evening. The instructor paid for all the drinks, of course. Since it was a Sunday evening, when the session ended at 10 pm, I offered the Pioneers a tour in my Honda Fit. They picked four members to pack into my car and we drove counterclockwise the 3rd Ring (which took 1 hour), stopping at Hou Hai (Rear Sea). There we listened to music outside the bars and rode a motor tricycle by the lake. For some, that was the highlight of this course.

On July 28, after a 20-min written exam, a preview of the team papers was presented by each team. Every team member had to prepare for the whole paper since I called them up randomly to present one section each and the averaged grade was shared by the whole team. It was obvious that those papers were not good enough to get published. I therefore arranged a room, the conference room at the philosophy department, to be available for the whole day of July 29, Wednesday, from 8 am to midnight and invited the teams to work there. That was the last push to get the papers finalized and ready to be presented the next day, the last day. Everybody (except one) showed up, with one student coming in at 7:30 am and the last two left at 11 pm. Dinner was called in from outside (each person paid her/his own). At the end, everyone was exhausted. We called that the “jam” session (Fig. 6.10). A major part of the jam session was to teach them to format the papers, including the proper way of inserting footnotes and diagrams and the proper style of references. I taught these to two teams, then asked them to teach it to the others. We helped each other and worked like a big research team, like a

big family in fact. (The extra-day sessions were conducted in Chinese most of the time whenever everyone present could speak Chinese.)



Fig. 6.10. The jam session (July 29, 2015).

At this point, the five papers were in publishable form. Mission accomplished. And it was time to decide whether to get them published in journals or not. The considerations were twofold: (1) Even though the papers were in publishable *form*, they still needed to be polished before submitting to journals. And that meant more work for me, the instructor. (2) To get the papers published and appeared in print in a few months' time, we have to submit them to journals that required page charges. That would amount to about 1,000 USD and who would pay for that? After much soul searching, and simply not to disappoint the eager students who worked *so* hard the whole month *and* to show the world that RUC students are world-class students, I decided to go ahead. To that end, each team was asked to provide a "publisher" who would work with me after the course. They were: Guo Yue (Youth), Yan Run-Yu (Coal), Chen Zi-Xin (TOB), Yan Xi (Pioneers), and Tian Yan (Tornado). The first three were chosen because they lived locally and could worked with me in person before I left Beijing later in August. This was an advantage since correcting a Chinese-authored manuscript without the author sitting by your side could be a nightmare,

from my past experience. What happened afterward regarding paper publishing is described in Section 6.5.6.

6.5.4 Last Day: Paper Presentation and Party

On the last day, July 30, I offered to return the written exam to the students. They refused. They didn't want to see it again. The reason: Except for a few students who scored highly, the rest were just average (for lack of preparation time). We then started the final-paper presentations. Each paper was presented by one person of the team's choice, with the grade shared by the whole team (Fig. 6.11). They were professionally presented, followed by rigorous Q & A.



Fig. 6.11. Two final-paper presentations (July 30, 2015).

The papers' titles are:

1. *Youth*: The Youth Image in Chinese and American Youth Films.
2. *Coal*: Relationships between Mobile-Phone/Internet Usage and Socio-economic Development Level.
3. *TOB*: Sharing Economy Encountered Legal Quagmire: When Private Cars Entered the Taxi Market.
4. *Pioneers*: From Arranged Marriage to Autonomous Marriage: Marriage Liberalization in India, Ancient Rome, United Kingdom and China.
5. *Tornado*: Teachers' Awareness of Cross-Cultural Communication in Confucius Institute.

The authors from each team are identified in Figs. 6.12-6.16. Some papers' focus had been revised more than once after progress presentation and discussion. For example, for comparison, Didi was added to the Uber case in the TOB paper on car sharing.

As it turned out, the choice of topic for three papers had something to do with the major/background of the team members. For the TOB paper on the legality of car-sharing, one author was from the School of Law, another from the School of Economics. Two of the authors of the Tornado paper on teachers were majoring in education from the School of Liberal Arts. The Pioneers paper on marriage was more interesting. It was prompted by team discussion on marriage categories after a minority Tibet student talked about the phenomenon of one wife-two husbands she personally knew exists in the area⁴ of Tibet.



Fig. 6.12. The Youth Team.

⁴ This kind of marriage is depicted in the recent movie *De Lan* which won the Golden Goblet Award at the Shanghai International Film Festival 2016 [Zhu, 2016].



Fig. 6.13. The Coal team.



Fig. 6.14. The TOB team.



Fig. 6.15. The Pioneers team.



Fig. 6.16. The Tornado team.

It was time to party. My never-failing TA already had the drinks and food ready (the instructor paid, of course). And we had a ball (Fig. 6.17). Concurrently, I passed around a little black book and asked them to

volunteer any feedback (see Section 6.5.5). Finally, it was time to say goodbye. No handshakes, no hugs—the Chinese style.



Fig. 6.17. Party after paper presentation (July 30, 2015).

6.5.5 Feedback

I bought a little black book with the RUC logo from a small shop inside the campus the day before the last day (Fig. 6.18, left). The students wrote down their feedback there before their final grades were known—not the best way to get honest feedbacks, only second best. But it was practical. Still, every student wrote down something (some was in Chinese). From the way they wrote, one can easily pick out those that really came from the bottom of their hearts.

A selected few are presented in Figs. 6.18-6.20. A common theme of these remarks is that the instructor was “rigorous”, very rigorous (Fig. 6.18, right). This reflects my insistence on every detail, from punctuations, spellings to the font color in ppts and in debates (see Section 6.5.6 for more). Others were amazed that it was possible to learn so much in a month—this was because I was very efficient in managing time and drove them very hard, with extra days, say. Some students said the (forced) presentations helped them overcome their shyness in public speech. And a few said they would try to use scimat in their future research. Additionally, a personal experience of the course was recounted in some detail by one of the students [Luo, 2017].

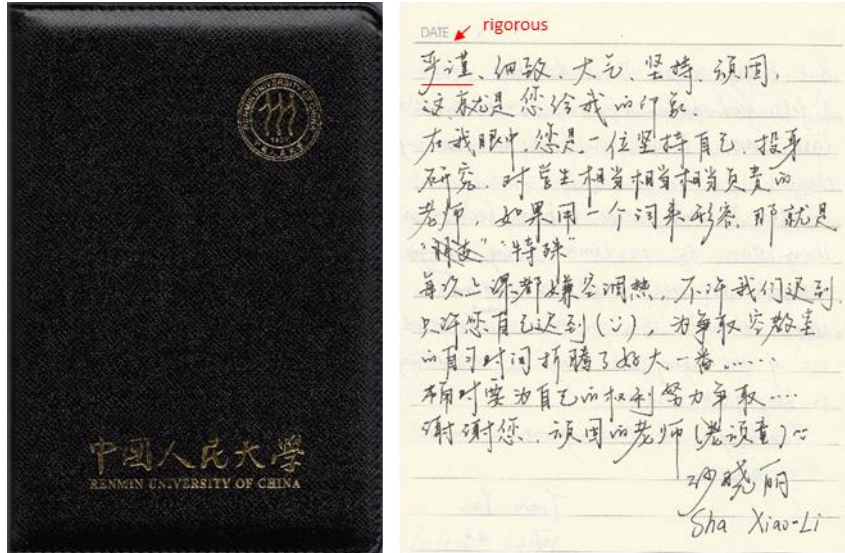


Fig. 6.18. Feedback 1 (July 30, 2015).

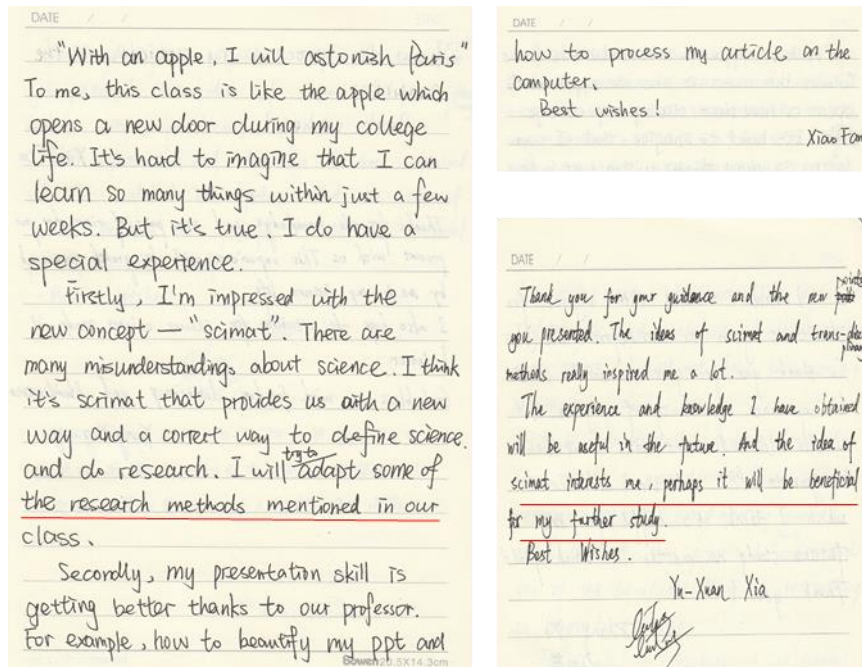


Fig. 6.19. Feedback 2 (July 30, 2015).

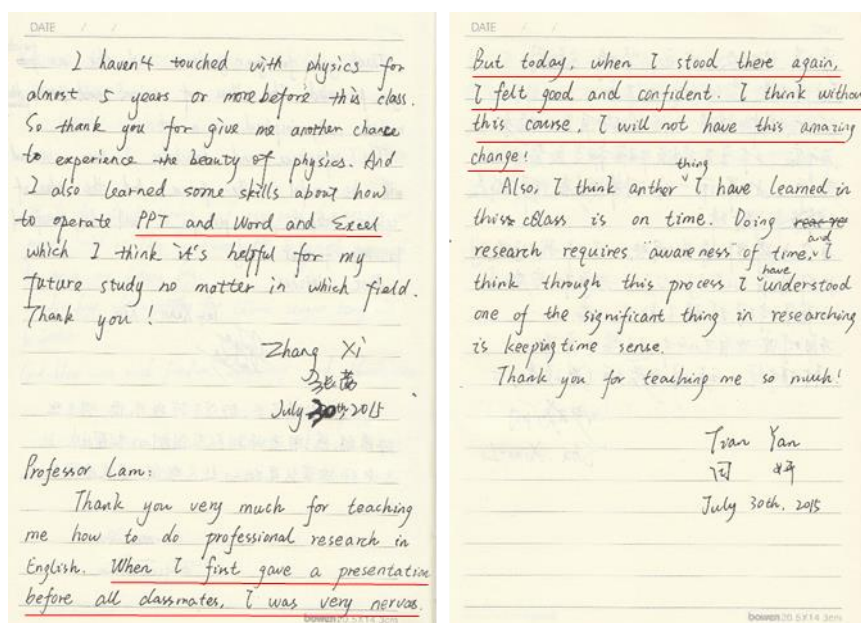


Fig. 6.20. Feedback 3 (July 30, 2015).

6.5.6 Post Course: Paper Polishing and Publishing

In August, I worked a couple of days with each of three publishers (Guo Yue, Chen Zi-Xin and Yan Run-Yu) to refine their papers in Beijing. Papers nos. 1, 4 and 5 on youth films, marriage and teachers, respectively, were relatively simple and straightforward. Before submission, they needed only improvement on English, and footnote and reference stylings. Number 3 on car sharing needed, in addition, clarifications and proper translation of legal terms. Number 2 by the Coal team on phone usage was a different story. Yan Run-Yu, the publisher of this paper, and I spent a lot of time exchanging emails before mid-October to replot the diagrams (restoring dropped data points), ascertained the accuracy of information quoted and found some new results in the process.

Eventually, papers nos. 1 and 2 were submitted to the *International Journal of Humanities and Social Science* (Fig. 6.21) in October; nos. 3 and 4, in November, 2014. They were swiftly accepted and published by the journal (Figs. 6.22-6.25) [Guo et al, 2015; Jiao et al, 2015; Cao et al, 2016; Ciren et al, 2016]. The publication charge for each paper is 200 USD, paid by me first and reimbursed by RUC. Unfortunately, paper no. 5 (Appendix

6.1) was submitted in January 2016, which, due to delay of the journal, was never published. The reason was that we could not meet the technical deadline of claiming the publication charge from RUC, which was set to be mid-March 2016.

In October 2015, Guo Yue was invited to orally present her team's paper on youth films at the Fifth International Science Matters Conference on "Interdisciplinary Education and Teaching in the 21st Century", October 28-30, 2015, Cascais, Portugal. Her expenses were paid by RUC. After the conference and when the four papers appeared online, the editor of the journal *Pantaneto Forum* found them to be "exceptionally good" and reprinted them in their Issue 63, July 2016 (<http://www.pantaneto.co.uk>). Thus, in this area, the high quality of RUC students has been demonstrated and RUC has attained world-class level.

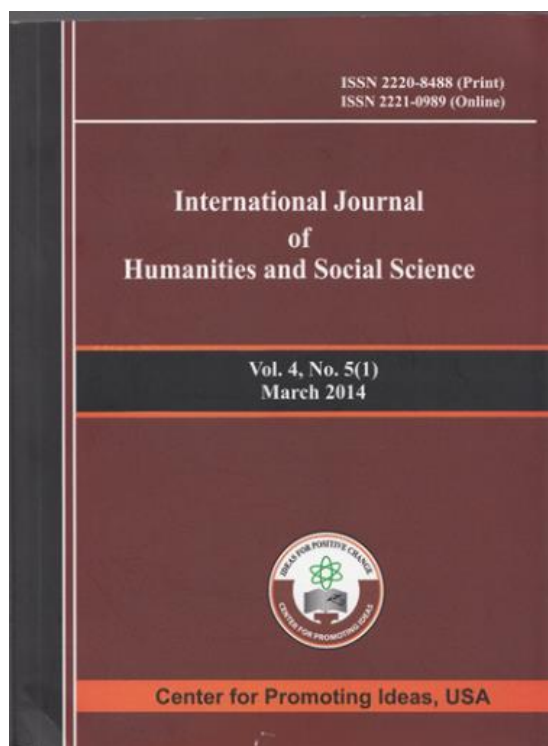


Fig. 6.21. The journal *International Journal of Humanities and Social Science*, which is published both online (ijhssnet.com) and in print, with ISSN numbers.

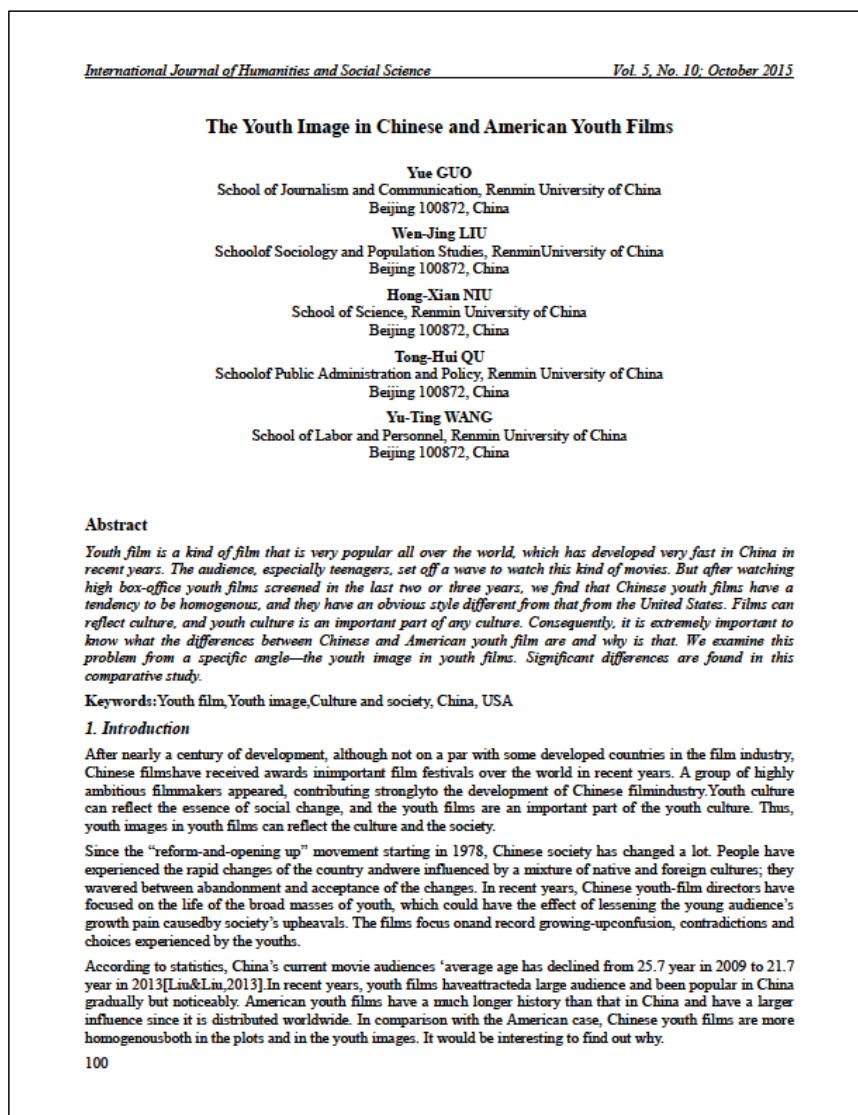


Fig. 6.22. The 1st student paper published in *International Journal of Humanities and Social Science*, in October 2015. It is from the Youth team. The authors’ names are arranged alphabetically. Note the various schools with which the students are affiliated.



Fig. 6.23. The 2nd student paper published in *International Journal of Humanities and Social Science*, in October 2015. It is from the Coal team.

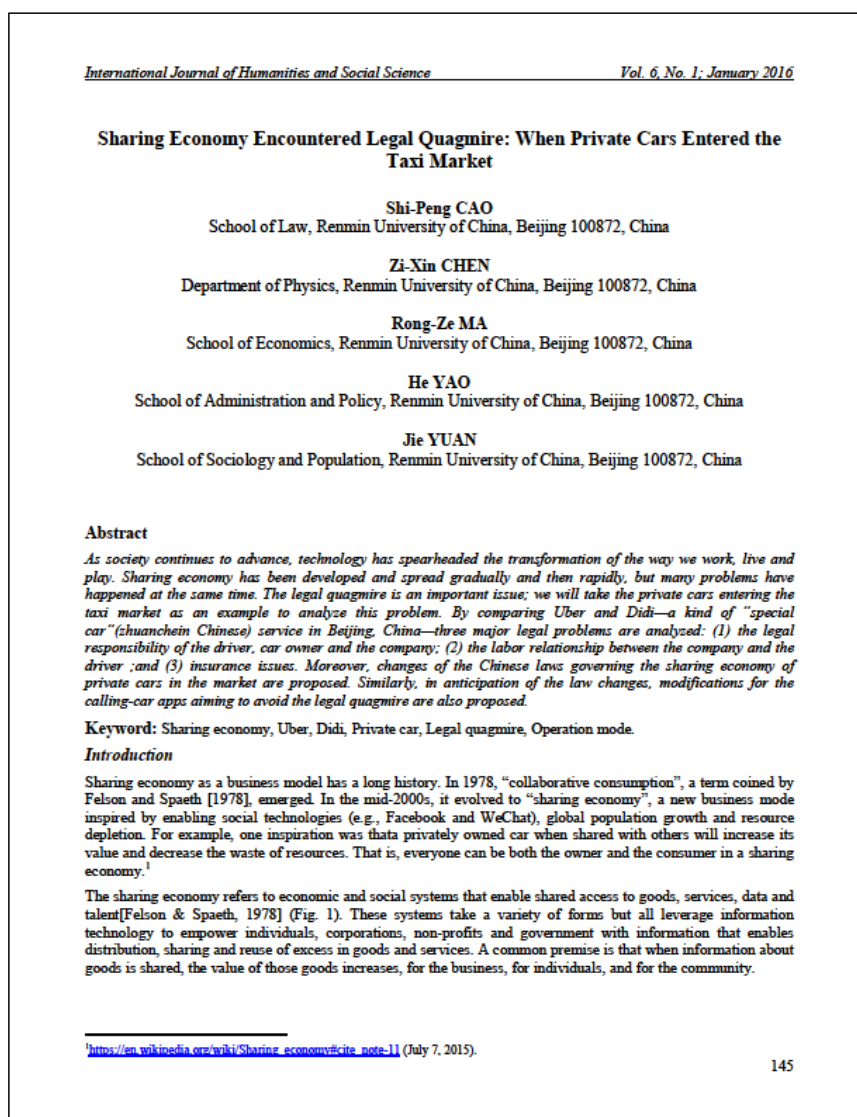


Fig. 6.24. The 3rd student paper published in *International Journal of Humanities and Social Science*, in January 2016. It is from the TOB team.



Fig. 6.25. The 4th student paper published in *International Journal of Humanities and Social Science*, in January 2016. It is from the Pioneers team.

6.6 The HuSS Course in 2016: Mixed Teaching

In July of 2016, the HuSS course was taught again at RUC, with the name changed slightly to “Humanities, Art, Science”. The idea was to attract students from the arts but it was not successful. Out of the 26 students who showed up in the first class, there was no art student. A major difference between HuSS in 2016 and that of last year is that in 2016, all students are first and second year undergrads while those in 2015 include some seniors and grad students. Some knew about the fame of the course from their classmates who attended last year.

6.6.1 Course and Schedule

The class consisted of 20 students (Fig. 6.26). In contrast with the case of 2015, students were given two choices: (1) they could form research teams to work on a paper or (2) they could each pick a section from the textbook, teach it in class and write a paper on that topic. After a warning that the first choice would be very time consuming, nine students decided to form two research teams and the rest opted for sectional teaching—the mixed-teaching mode. Accordingly, the class schedule was designed like this:

Tuesday	Thursday
7/5 First lecture (some form teams, discuss possible topics; others pick topics). Instructor reviews HuSS course of last summer.	7/7 Teams: oral progress report with ppt; finalize team projects. All start research. Instructor talks on research and innovation. TA teaches Chap 2.
7/12 Teams: oral progress report with ppt. All continue research. Instructor teach Chaps 3-4.	7/14 Written Exam 1 (Chaps 2-4). Teams: oral progress report with ppt. All continue research. Instructor/3 students teach Chap 5 (History).
7/19 Teams: oral progress report with ppt. All continue research. Instructor/4 students teach Chap 6 (Arts).	7/21 Teams: oral progress report with ppt. All continue research. Instructor/3 students teach Chap 7 (Philosophy).
7/26 Teams: oral report with ppt. on draft of paper . All continue research; revise paper. Instructor/2 students teach Chap 7 (Philosophy).	7/28 Written Exam 2 (Chaps 5-7). Teams: oral report with ppt. on final paper. All: submit final paper, ppt and collected e-materials in an e-folder.

Note that the written exam was split into two this time.



Fig. 6.26. Class portrait (July 28, 2016). The photo of 17 students was taken at the end of the farewell dinner at the campus' Huixian Restaurant. Three students could not attend the dinner and were absent here.

The “Aim High” team of 4 students worked on “Climate change: Decision making under intrinsic uncertainty”. The “High Five” team of 5 students worked on “Dream”, a survey of dream analysis from the angle of humanity, art, physiology and psychology. The quality of the two team papers was not as high as that of last years’ because the students this time were first and second year undergrads only. Note that for each chapter, even with students teaching some of the sessions, the instructor still had to teach the introductory and concluding sessions, giving an overview and picking up where the students left off.

6.6.2 “Under the Tree” Office Hours

This time, office hours that run one to two hours starting 3 pm on every Wednesday and Friday were introduced, which were conducted in Chinese since all students spoke the language. They were used regularly by the two

teams and also by other students. I offered each one who showed up 2 extra credits for each visit. But that turned out to be unnecessary since they were motivated. RUC, like most Chinese universities, does not provide professors with individual offices. For lack of a proper place, I conducted the office hours outdoor near the Teaching Building #4 where our classroom was located. They were thus called “under the tree” office hours (Figs. 6.27 and 28). We even held it with an umbrella in hand when it rained. A lot of fun.



Fig. 6.27. An “under the tree” office-hour visit (July 13, 2016). The left 3 students belonged to the High Five team (the two team members absent here are Wei Ying-Ying and Xu Ying-Qi). Not shown here is the instructor’s small, blue, plastic folding low chair, located in front of the students and bought with 40 yuan. We named the nearest tree behind students “the scimat tree”.

In addition to regular office hours, I still met several times on the weekends with the Aim High team since their topic on climate change was quite complex and was of direct interest to me (see [Lam, 2014, pp. 82-83]). On two of these occasions, I tried to pass to them more systematically some of my personal experiences in doing research. They took very good notes so

I asked them to write it up which was then distributed to the whole class (Appendices 6.2 and 6.3).

On July 27, Wednesday, the whole day before the last day, like last year, a jam session was held in a conference room of the philosophy department. The two teams and a few other students came in to get help in improving the writing of their papers.



Fig. 6.28. The Aim High team “under the tree” (July 17, 2016).

6.6.3 Take Home Message

On July 28 the last day, after a brief written Exam 2, each team presented their final paper orally by one person (about 40 min). Qi Wei-Jie, a physics undergrad and volunteer, gave an introduction of random walk with Excel programs. Then every team/individual presenter submitted their final paper, ppt and collected e-materials in an e-folder. These materials will help the instructor in his next teaching of the course. I ended the course with 3 slides of “take home message” (Fig. 6.29). Instead of a farewell party, we had a farewell dinner at the Huixian Restaurant in campus. The instructor paid, of course. No hugs, no handshakes, just a photo (Fig. 6.26). Later, a few

students joined me in a car ride for a counterclockwise round on the 3rd Ring. It rained and we didn't stop at Hou Hai.

Science

- Everything started with the Big Bang (made up of atoms).
- **We are one big family** (descendants of fish).
- Humanities are part of science.

Scimat Chicken Soup

Take one step back, the sea is wide and the sky is high. 退一步，海阔天空。

Could be better here

You are here

There are multiple gardens in life !

Or here

Be Romantic

Be a rational romanticist !
(not just a rationalist or a romantic rationalist)

Do something romantic:

Blow snow at west gate (西门吹雪)








Fig. 6.29. Take home message (July 28, 2016).

6.7 Discussion

In principle, I could teach the course like a traditional course, covering the core Part I and supplemented it with some topics from the rest of the textbook—what I call the “closed-teaching” mode [Lam, 2017]. The course would still be interesting and worthwhile for the students. I decided not to do this on these two occasions for two reasons. Firstly, a GE course should not be about details but more on the basic concepts and connections between different topics/disciplines so that the students (from all disciplines) could

apply them to their future studies. If so, I would be left with plenty of time in the course since it would not take long to teach Part I.

Secondly and more importantly, educators have been urging undergrads to participate in research as early in their careers as possible, to find out how real research looks like and to be trained in handling real-world problems. For a small number of students, this is achieved by joining the professors' research part time and/or in summer, in their upper-division years. Even for these lucky ones (more in natural sciences than in humanities), writing a paper is usually not part of the training. Therefore, while teaching the core Part I, using the HuSS course to train undergrads to do real research, presentation and paper writing becomes a viable and excellent option, especially in places where research and English paper writing in the humanities are less developed.

While the open-teaching mode (Section 6.5) of conducting the HuSS course, with all students working in research teams, is most exciting and rewarding, for both the students and instructor, it is also very exhausting for both, especially when the course is conducted in the short span of one month. In comparison, the mixed-teaching mode (Section 6.6), with only a few research teams, is more relaxing. The drawback is that only a few motivated ones, not all students, would gain the experience of going through the rigorous training of doing research.

Finally, it should be noted that there exists a fourth mode of teaching—the all-teaching mode, in which each student will teach a section and write up a paper, no research teams. This is most relaxing for the instructor, of course while students do pick up something in the research method.

6.8 Conclusion

This HuSS course is important for everyone on Earth for the following reasons. For students, through the teaching of the core Part I,

1. We try to impart to them the two basic forms of knowledge (Big Bang and common fish ancestor) which are essential in shaping their worldviews, leading, hopefully, to a fruitful and happy life.
2. By introducing the correct definition of science, we hope to clarify to them the perplexing issues on science and religion, science and arts, etc.
3. By clarifying the relationship between the humanities (history, philosophy and arts, in particular) and science, we hope to help them in

choosing courses and majors in their student years which really suit their interests.

For teachers and everyone else, we note that

- This is the only GE course that clarifies the connection between all the disciplines in a university, from a historical and unified perspective.
- This is the only course that systematically teaches all undergraduates to do research by really doing it, from picking topics to publishing papers.
- The course provides the basic and core understanding about where we come from and why we are what we are, which should be shared by every living human being (in particular, the political leaders, present and future) in this world.
- This course is cross-cultural and interdisciplinary, taught with everything recommended by the experts on how it should be done.
- With a textbook [Lam, 2017] available, this GE course can be taught by any instructor in any university worldwide.

Appendix 6.1: Abstract of the Unpublished Student Paper

This unpublished paper is from the Tornado team of 2015.

Teachers' Awareness of Cross-Cultural Communication in Confucius Institute

*Ze HU*¹, *Xiao-Li SHA*², *Yan TIAN*³, *Lei YANG*⁴ and *Xi ZHANG*⁴

¹ School of Science, Renmin University of China, Beijing 100872, China

² School of International Studies, Renmin University of China, Beijing 100872, China

³ School of Philosophy, Renmin University of China, Beijing 100872, China

⁴ School of Liberal Arts, Renmin University of China,

Abstract

Confucius Institute (CI) is a non-profit educational organization affiliated with the Ministry of Education of the People's Republic of China. The Institute's aim is to promote Chinese language and culture, support local Chinese teaching internationally, and facilitate cultural exchanges. Needless to say, Chinese teachers play an important role in the CI. Accordingly, this paper focuses on the cross-cultural awareness of the Chinese language teachers in the CI when they are first in touch with another culture. It is well known that difficulty in communication could occur between any two persons, even if they grow up in the same family and share the same culture for a long time. Thus, it

is not hard to imagine what difficult times a Chinese teacher would go through when this person teaches Chinese language and culture in the CI abroad in an unfamiliar environment far from home. In this paper, we investigate what kinds of problem these Chinese teachers will encounter, why they experience these problems, and how they can overcome them. Our results are obtained by analyzing returned questionnaires we prepared ourselves and through interviews with the CI teachers who have worked abroad. Suggestions for the future are also given.

Appendix 6.2: On Literature Search and English Learning

Literature Search and English Learning

Aim High

On Saturday 7/9/16, three of us (Kang, Liu, Wu) met with Lui, our instructor, under the tree. Here is what we learned.

Literature search

Search engines

Two search engines are most helpful in literature search: Google Scholar and Bing Academic. It would be better if we were able to log in to Google Scholar. If we can't, Bing is a "good" substitute for it. The former is product of Google and the latter is from Microsoft, both are typical search engines. Baidu Scholar is inappropriate for our search, because it's not scientific, rigorous and comprehensive enough.

Type in "Bing" on a common search engine, and we will find the entry of Bing. What we need is English literature, so we should type in key words in English and choose Academic. For example, our topic is "decision making under uncertainty" and a typical situation is climate change, so we type in "decision making under uncertainty" and search for relevant information in Bing first. Furthermore, we add "climate change" into the key words for more information about this case. The search results in Bing cover all of the key words, while that in Baidu sometimes just cover some of the key words and are mixed up with some less relevant information. That's why Baidu is not recommended.

Choice of literature

Scanning the pages of search results, we can easily obtain a number of relevant documents. (If we cannot download for lack of authorization, we

may go to the library for help, which will be discussed below.) After we preliminarily decide on our topic, what we need to do is read as much relevant literature as possible to grasp core concepts and make our research approach clear. For example, our topic is “decision making under uncertainty”, so we need to know how many types of uncertainty and how many types of decision making people come up with and cover them when we are giving a review. Specifically, the latest *PhD theses* and *reviews* (both from Europe or America) are good material helping us to have a basic understanding of research status in this area and get much useful information about this topic. Besides, latest papers contain latest research progress and may inspire our thinking. The publisher of a journal and the author’s affiliation are important reference factors. For example, “uncertainty of climate change” is more of an atmosphere problem than a geography problem, which is a reference factor in literature choosing, and English literature is more valuable than Chinese literature generally. *Wikipedia* in English is also a good start (it has same level of accuracy compared to *Encyclopedia*).

Review

When doing a literature review, the most important thing is reviewing what has been done about the topic. For example, our topic is “decision making under uncertainty” and climate change is a perfect example we decide to use, we are able to get a lot of literature including these key words. As noted above, while doing review, we should tell how many types of uncertainty and how many types of decision making under uncertainty are known. Moreover, when it comes to special cases, such as climate change, we should give more description of it and give specific explanation in terms of the topic. Those works will influence and guide our further research.

Library search

After discussion “under the tree”, the three of us followed Lui to the library to search the resource we need. Here is what we did.

First of all, after picking out our topic in the library’s computer, we put the key words of it into Bing and get many scholar papers. Then we looked through the papers to find out which journals they came from. And the journals would be our main aims.

Second, we consulted the database of school library for the journals. Unfortunately, the result is none. Therefore, there was nothing else to do but

walking and looking through the shelves in the area of Chinese and foreign journals.

Once we saw and thought the title/contents of the shelf is relevant to our topic, we checked carefully of it. Looking through the contents of the journals, we found some related articles at last.

The last thing we need to is to take a picture of the related journals and articles so that we can find more information of them online and print the papers. You can choose to print it in the library, too. Ask for help from the helpdesk if you need it.

English improvement

English learning can be divided into four parts: listening, speaking, reading and writing. Lui thinks that there is no rush for us to make the first two parts perfect, as we will only need them badly when we study abroad. The best way to improve one's speaking skill is communicating with native-speakers all the time, and this is the reason why Lui asks us *not to* spend a lot of time hanging around with Chinese when we live abroad and have a chance to talk to foreigners.

As to reading and writing, different from the popular belief, Lui said that it was not so helpful for us to read too much. In other words, intensive reading is more important than extensive reading, especially when you want to improve your writing skill or the grammar. We were suggested to buy the thinnest grammar book. Then he recommended several newspapers to us: *New York Times*, *Los Angeles Times*, *Washington Post*, etc. *New York Times* is the best, and we should focus on the editorial, read slowly to learn how their words are organized, and more importantly, to learn the critical thinking by noticing how the writers try to convince you. The news can be ignored because they are usually written in a hurry. Our aim is not the content but the style of writing. When reading an article, we ask ourselves: what and how I would write if I was the writer? This is actually a process of learning. And we can learn how to write the last sentence of a piece which should be brief and forceful to express attitude and feeling.

Two or three paragraphs per day will be enough for us, and the point is perseverance. I remembered that Lui once said: "English is always a second language for us". So the key to perseverance, personally, might be the confidence and self-encouragement. We may not be as good as a native speaker, but we can become better.

Advice on life

Towards the end of the talking, Lui mentioned that we students should value our time, try to live simply and focus on study. To be more specific, he advised that we should avoid getting addicted to computer games (as well as TV entertainments and so on) and spend less time buying things on Taobao or Tianmao. The philosophy of Lui Lam is “Never buy anything unless you have to”. And try to save time by reducing the need for decisions. For example, he has ten pairs of socks which are exactly the same, so he doesn’t have to worry about choosing which socks to put on daily. Then he added: By the way, it is different if you are a girl who wants to find a boyfriend.

Note added by Lam (Sept. 24, 2016). As literature search is concerned, it turns out that sometimes, the latest research is found in *magazine* (rather than journal) articles. An example is the BBC article “What we learnt from reading people’s dreams” by Chris Baraniuk [2016], which contains important, new developments on dream research not noted by the High Five team in their extensive literature search.

Appendix 6.3: On Preparing Notes before Writing Papers

Preparing Complete Notes before Writing a Paper

Aim High

On Sunday 7/17/16, the whole team met with Lui, our instructor, under the tree. Here is what we learned.

Here is an important step in *doing* a paper before you sit down and want to *write* the draft of a paper. Before writing the paper, you’d better prepare a complete “notes” detailing everything you have been doing. Of course, this step could and should be done when you are near the end of the research period. The notes don’t ask for complete sentences (better not, just like in a ppt) but *should contain all details*. Write the notes in the format of a Master or PhD thesis, without complete sentences though, putting all details in appendices. (You write complete sentences in draft of the paper, of course.)

For writing up a paper the notes are made up of five main sections:

1. The 1st section is Introduction. You should introduce briefly what people have published, why you choose the topic, what the paper talks about, and the meaning of your research.

2. The 2nd section is previous studies in some detail, i.e., background—with your own comments. You may use a table to summarize them since it is just notes.
3. The 3rd section is the scimat perspective if you are doing an individual paper. For a team, you start with your team’s research. This section can have subsections or followed by other sections on your research results.
4. The 4th section is discussion and conclusion, ending with take home message. Consult the four published student papers of last year.
5. Last but not least, the reference part. Once you quote others’ ideas, words, data, experiment results and anything belonging to others, you need to give references *in text*. Otherwise, the reader will understand it to be your own contribution and you just commit the “crime” (worth than crime, in fact, because you are polluting the literature in print once published) of *plagiarism*. So check carefully that every reference quoted in text is in the reference list, vice versa. The reference must be complete, including the title, author, and journal/book name (in former, volume and issue number, page numbers from beginning to end, too; in latter, publisher and city). Whenever possible, always try to quote the first paper that proposed it—giving proper credit to the originator; otherwise, quote a paper/book that mentions it and say so (e.g., ...as reported in...).

Note that every researcher who publishes has a *professional reputation* that follow her/him for the rest of this person’s career/life. People won’t tell you in the face, but your colleagues know and will affect your employment and funding prospects, too.

You should *keep the notes for the rest of your life*. Reasons: You will need it to further the work or when challenged 30 years later or sooner by your fellow professionals.

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Lui Lam, humanist and physicist, obtained his BS (First Class Honors) from University of Hong Kong, MS from University of British Columbia, and PhD from Columbia University. He is a physics professor and recipient of the Distinguished Service Award (2016/17) at San Jose State University, California, and guest professor at Chinese Academy of Sciences *and* the China Association for Science and Technology. Lam invented Bowlics (1982), one of three existing types of liquid crystals in the world; Active Walks (1992), a new paradigm in complex systems; and two new disciplines: Histophysics (2002) and Scimat (Science Matters, 2007/2008). He published 16 books and over 180 scientific papers. He is the founder of the International Liquid Crystal Society (1990); cofounder of the Chinese Liquid Crystal Society (1980); founder and editor of two book series: Science Matters (World Scientific) and Partially Ordered Systems (Springer). His current research is in philosophy and complex systems. *Email: lui2002lam@yahoo.com*