Skill Development in Higher Education:

Perspectives from recent college graduates and their instructors in China

A DISSERTATION
SUBMITTED TO THE FACULTY OF THE GRADUATE SCHOOL
OF THE UNIVERSITY OF MINNESOTA
BY

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IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
DOCTOR OF DOCTOR OF PHILOSOPHY

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October 2011

Acknowledgements

I would like to express my gratitude to my dissertation committee for their support throughout this entire process. I appreciate Dr. David Chapman for introducing me to alignment issues between higher education and post-graduate employment in China and allowing me to explore my way in this field. Also thank you for your candid critiques that have helped me become a succinct and logic academic writer. I owe Dr. Joan DeJaeghere a debt of gratitude for her thorough and insightful suggestions and comments. Thank you Dr. Jean King for letting me realize the importance of being precise and accurate in writing. I will never forget Dr. Rebecca Ropers-Huilman's encouraging words on the significance of my research topic, which (in her humble opinion) provided her a fresh perspective on and a new approach to higher education.

I would like to also thank you Dr. Kaigang Yi and Danting Ba for giving me so much help I needed onsite to conduct this study. Thank you Rhiannon Williams for sharing new ideas and resources along this journey. Gratitude is also extended to Kamilah Foreman and Marshal Jarnagin for reviewing and editing my dissertation. Immeasurable gratitude is extended to my mentors and colleagues at the Office for Public Engagement: Dr. Sara Axtell, Lisa Burton, Beth Dierker, Dr. Andrew Furco, Kate Kent, Michelle Kuhl, Alfonso Sintjago, Yongling Zhang, for creating a great learning community where I felt comfortable and productive presenting my dissertation, kept my academic and non-academic lives balanced, and eventually helped me grow.

In addition, I would like to thank my dissertation support group. I appreciate Ya Liu and Li Yang in particular, for their continuous support and enthusiasm for providing valuable insights and feedbacks. Mohammed Elmeski, Matthew Walters and Diana Yefanova helped develop my ideas into a defendable oral exam. Finally, my deepest gratitude goes to my parents who always show their unconditional love and persistent faith in me.

Abstract

With a transition from a highly centralized planned economy to a decentralized market economy, Chinese higher education institutions are adapting and responding to the market change, yet at a relatively slower pace compared to the economic change. Evidence shows that work-related skills and abilities that are critical to the success in the new workplace are generally not well developed among Chinese college graduates. Skill mismatch is a problem in China, and this mismatch is detrimental to higher education institutions' external efficiency.

This study examines college graduates' and their former instructors' beliefs about work-related skill development in China. This study addresses two questions: (1) To what extent do instructors differ from graduates who are three years past graduation in the importance they assign to selected skills needed for graduates' success in their post-graduate employment? And (2) To what extent do instructors and graduates who are three years past graduation differ in their assessment of how well college courses and extracurricular activities developed students with those selected skills?

The findings revealed that graduates and instructors agreed on the importance and the extent to which the university fostered the majority of selected skills. However, they disagreed on a few number of skills. Instructors rated English skills more important to post-graduate employment than graduates, while graduates rated leadership skills more importantly than instructors. Instructors believed that college courses had developed oral communication skills to a greater extent than graduates, while graduates believed that the courses had developed their critical-thinking skills to a greater extent than instructors.

Finally, instructors believed the college had developed computer and English skills to a greater extent than graduates.

The findings are important for curriculum and instruction in Chinese higher education. For future improvement, higher education institutions need to strengthen the academia-industry link, align curriculum content and instruction with market needs, encourage the participation in extracurricular activities, integrate research into the skill development agenda, as well as to attend to faculty's own values and approaches toward the changing demand of skill development.

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CHAPTER ONE: INTRODUCTION

Skill misalignment between higher education and labor market sectors has become a serious problem in China as the new market economy takes over the old planned economy. Cai and Chan (2009) state that out of the overall 5.3% urban unemployment rate in China, over 4% is attributed to natural unemployment "caused mainly by the ineffective functioning of the domestic labor market and the mismatch of skills between jobs and workers" (p. 526).

With the changing economic structure, higher education institutions in China have started to adapt themselves to a shifting demand of knowledge and skills required in the work place. Work-related skills, such as communication, team-work, English, computer, leadership, critical-thinking, and decision-making have become increasingly crucial for college-educated working professionals. Finding out and assessing graduates' and university educators' relative importance they assign to these skills facilitates an understanding of what is valued in academia and in the labor market. Therefore, it is necessary to conduct a tracer study to explore the extent to which higher education institutions in China have developed workplace skills for graduates from the perspectives of college graduates and instructors. If there is a mismatch in perceptions between graduates and university educators in terms of skill development, there may be a lack of connection between skills provision at the university and skills that are required at the workplace. This perception gap may be further helpful in understanding the natural unemployment among college graduates in urban China.

This dissertation presents a review of literature on the perceptions of academic staff and college graduates about (a) the importance of selected skills and (b) the

adequacy of skill development. The first chapter discusses the national and regional contexts in which this study is embedded and points to a new set of skills that is needed in China. Chapter 2 summarizes empirical evidence about the perceived importance of identified key workplace skills and the extent to which universities have developed graduates with the skills for their employment. Chapter 3 proposes research questions and a methodology that is used to address these questions. Chapter 4 presents the research findings. This study found that college instructors and graduates were quite consistent in assessing the importance of the majority of selected workplace skills as well as the extent to which college courses and extracurricular activities developed these skills. The assessments of instructors and graduates only differed significantly on a few skill sets. Chapter 5 compares these research findings with previous research findings. It then discusses why consistencies and discrepancies occur between this study and past research through the lens of the national, regional and institutional context where data was collected.

Research Context

National Context of Skill Development in Higher Education: Toward a Market Economy

Chinese higher education has been profoundly influenced by market forces since 1992 when the Chinese Communist Party began undertaking an economic reform aimed at transforming the country into a market economy. In the transition from a planned economy to a market economy, one of the fundamental challenges China has encountered is "to orient institutions to a more open labor market as well as to a more open society" (World Bank, 1997, p. xiii). While college graduates' area of specialization and their post-graduate employment in China used to be heavily controlled by a centrally planned

job allocation system, the strong market forces require higher education institutions to re-orient themselves to be more adaptive to market needs and to produce employable graduates to meet the employers' demands. As a result, courses and curriculum became increasingly more "market-driven", representing practical and applied values (Mok, 1999). Responding to the changing market orientation, universities and colleges are expected to train educated students with high academic achievements, to convert knowledge to productivity, and finally to contribute to the development of both the economy and society (Liu, 2005).

The increasing demand for professional, managerial, and technical services has raised the quest for skilled labor in developing countries in Asia (Asian Development Bank, 2004). The transition economy in China is experiencing a growing demand for skilled workers, and more specifically for workers equipped with a set of skills distinct from those who were trained under the old command economy. Programs of study at higher education institutions were previously very narrow and overspecialized (Min, 2004; Wang, 2001), producing graduates that were tightly bound by subject matter. Jobs were assigned to all the college graduates within a highly controlled job allocation system and job mobility was extremely limited. To acquire transferable skills was neither an explicit goal in higher education nor a motivator for working college graduates. Operating under a regime of market economy requires a more diverse and transferable set of skills for college graduates, such as computer skills, and the abilities to think creatively in order to adapt to changing job needs and skill mixes (Dahlman & Aubert, 2001).

Beginning in the late 1980s and early 1990s, the long-held unified state job allocation system was phased out (Broaded, 1993; Ding & Warner, 2001). Government-

controlled job allocation declined sharply from 76% to 52% of the total job market between 1980 and 1992 (China Labor Bulletin, 2007). Guaranteed job assignment and life-long employment were replaced by increased job choice and mobility. By the late 1990s, job assignment by the state had virtually been abolished, allowing a great deal of flexibility in mutual choice of employment between graduate applicants and employers (Zhou, Zhu, You, Wang, Gao & Zhao, 2007). The abandonment of life-long job assignment may have reduced the mismatch between employees' skills and skills necessary for work to some extent (Lewis, 2003). Many college graduates have realized that learning a new set of skills needed in the work place would potentially enhance their employability, especially in view of a much more competitive labor market with a rapidly increasing number of graduates each year. For example, with the increasing number of South Korean companies relocating to Northeast China, Chinese students find it imperative to learn Korean in order to land a job in South Korean companies based in China (Chang, 2009).

As China strives to respond to contemporary labor market needs, it also faces tremendous pressures to accelerate the restructuring of its economy. For example, with the accession to the World Trade Organization (WTO) in 2001 and China's declared goal of becoming a middle income country by 2020 (Pigott, 2002), China is facing even more intense pressure. China's entrance to the WTO requires greater international competition in China's markets as well as further development of the new skills that China needs. These new skills are different from the technical skills mostly needed in science and engineering where Chinese education traditionally excels (Dahlman & Aubert, 2001).

Regional Context of Skill Development in Higher Education: Regionalization and Globalization

Professionals with the new set of skills are in great demand in Zhejiang Province where the majority of graduates in this study reside. This province has the most rigorous private sector in China. In 2008, the private enterprise economy comprised of over 70% of the Gross Domestic Product of Zhejiang. Among the top 50 corporations known for their superb international and overall competences, Zhejiang had the largest number and far surpassed all other provinces in number (Chu, 2009). This is an important regional characteristic to consider for a graduate tracer study since approximately 34% of Chinese college graduates work in private enterprise and 70% of the new job openings each year are provided by small to medium enterprises from the private sector, joint ventures and foreign firms (Zhang, 2008). It is proposed that the primary approach to solve unemployment is to support the development of small- and medium- sized businesses extensively. At a time when the whole world is stricken by economic crisis, this approach can greatly reduce the unemployment problem due to bankruptcies of export-oriented firms in coastal regions like Zhejiang Province (Zhang, 2008).

While privately-owned enterprises in Zhejiang have consolidated and expanded rapidly nationwide in China in recent years, they are only in their infant stage in terms of internationalization (Chen, 2008; Zhao, 2005). Zhao (2003) pointed out that Zhejiang's economic model has heavily relied on regionalization[1] which turned out to be quite successful in the last 20 years. Recent economic development in Zhejiang is marked by both regionalization and globalization. Yet, evidence of globalization has not emerged until the last decade. The majority of firms in Zhejiang are far from the highest level of globalization which is marked by the establishment of offshore manufacturers and sales departments (Zhao, 2005).

The Research Problem: Skill mismatch between Higher Education and Work

From 2008 to 2010, the ratio of active job openings to applicants holding 4 year college degrees decreased almost 0.2 in China (Ministry of Human Resources and Social Security of the People's Republic of China, 2010). This ratio is a measure of the relationship between job supply and demand. A value of 1 indicates that supply and demand meet perfectly. The larger the ratio is, the easier an applicant can find a job. Therefore, the decreasing trend indicates that college graduates faced an increasing challenge in finding jobs in the last three years. In Zhang's (2008) report of supply and demand of Chinese workforce and required workplace skills, he concluded that the misalignment of knowledge and skills between college education and the job market was one of the three main factors aggravating a bleak employment outlook for college graduates.

[1] Regionalization is the concentration of economic activities within a particular region or country, including trade in goods and services as well as movement of capital and people. (Shujiro, 2003).

Because the supply of college graduates cannot meet the demand of available jobs, higher education institutions are expected to become more responsive to emerging skill requirements by employers as well as graduates to be judged successful (Gleeson, 1993; Zhao & Guo, 2000), and to better align with shifting labor market needs. An effective alignment between higher education and labor market needs is crucial to the success of the transition economy.

As the economy is shifting to a market orientation, higher education is also experiencing rapid restructuring. Higher education institutions in China have experienced exponential growth in enrollments, particularly in comprehensive 4-year universities and colleges. Some two-year specialized colleges have upgraded to 4-year colleges. A few 4-year colleges and universities were actively involved in enlarging the size of their academic programs (Min, 2001). Quite a few second-tier institutions have merged with prestigious universities. Within a decade, the enrollment rate in 4-year bachelor's degree programs has almost grown five-fold from 0.58 million in 1997 to 2.53 million in 2006 (Ministry of Education, 2007a). There has been a huge influx of college graduates into the job market, particularly since 2003 when the first cohort of students after the enrollment expansion completed their university education. Overall, the number of graduates from regular higher education institutions[2] in 2007 was 2.3 times more (4.95 million) than in 2003 (2.12 million) (Ministry of Education, 2007a). Most graduates came from 4-year colleges and universities. Employers are able to choose from a much larger pool of candidates. In order to stand out in the job market, a lot of graduates have to acquire employable skills, such as English and computer skills.

[2] This is aggregated data including 4-year bachelor students and graduate students.

To accommodate the growth in university enrollment, policy initiatives have been continuously launched to lessen the burden of unemployment among college graduates since 1999 (Bai, 2006). Enhancing graduates' skills and abilities for post-graduate employment is one of the policy solutions to appear in a recent document issued by the State Council (State Council, 2009). Despite an effort to alleviate the problem of unemployment, the different rate of change between the relatively centralized university system and the decentralized market-oriented environment poses a challenge to the alignment of tertiary education with labor market needs (Xue, 2006). While growing in size, the market is still heavily influenced by the old command economy in which the central government plays a key role in determining many aspects of university education and management.

Evidence of Skill Misalignment in China

To the extent that misalignments between university education and the qualifications required in the workplace occur, they pose a serious problem for college students' employability. First of all, some observers argued that the majority of higher education institutions were too preoccupied with the expansion of institutional size and paid little attention to the relevance of the education that was being delivered with respect to such issues as curriculum, pedagogy and program design (Lai & Lo, 2006). One study comparing Chinese medicine (CM) programs in China and Australia showed that the CM programs based in China emphasized traditional CM theory and classical literature to a much greater extent than its counterpart in Australia. The Australian programs had more practical subjects, encouraging graduates to develop their practical skills and critical

thinking, problem solving, information literacy, effective communication and team-work skills. In Australia, these skills were incorporated into teaching and evaluation in order to achieve "a paradigm shift from teacher-centered instruction to student-centered learning, and from knowledge-oriented teaching to skill-oriented learning" (Xue, Wu, Zhou, Yang & Story, 2006, p.56). Although these skills are badly needed in Chinese medical education, they are not well incorporated in the curriculum and courses.

For the majority of Chinese higher education institutions, most instructional approaches are traditional in transmitting knowledge across multiple disciplines but are not geared toward generating students' initiatives to analyze and solve problems based on a wide breadth of knowledge and methodology. For example, interviews conducted at a non-prestigious university among both academic staff and students in a Chemistry Department revealed that twelve out of fifteen students were concerned about the teacher and textbook centered teaching method (Xie, 2005). Faculty members maintained a positive view toward the traditional method of instruction. Seven out of ten faculty members believed the didactic method was the most efficient way of knowledge transmission and they did not report a change in their instructional process. Among the other three faculty who reported an instructional change, nothing fundamental had been changed except for some heuristic teaching techniques, such as asking questions before offering standard answers. Compared to other dimensions of curriculum reform, the instructional process was the most resistant to the market impact (Qian, 2004).

Secondly, few institutions have successfully addressed the role university instructors' play in skill development. Universities do not have strong incentive mechanisms for the instructors to change their courses or to modify their programs to suit

the needs of the market (Xue, 2006). For example, the vice president at a public university in China reported that the incentives for teaching improvement were weaker compared with incentives for research at the institution. Consequently, instructors were not motivated enough to improve their teaching and to engage in curriculum reform (Zhejiang Normal University, 2009). Furthermore, college instructors lack skills and abilities to incorporate skill components into their curriculum (Zhejiang Normal University, 2009) or they are not fully aware of the value of certain workplace skills for graduates' employment (Lin, Xiong and Liu, 2005). Lin et al (2005) found that Chinese faculty in accounting programs did not sufficiently recognize the importance of critical thinking, decision-making, written and oral communication skills to post-graduate employment.

Thirdly, formal university education is losing its competitive edge to non-university based training organizations which offer more practical, up-to-date, and market-oriented courses with high-performing instructors. A large percentage of college students who have been awarded college-level English language certificates are neither able to write a job-inquiry letter in English nor communicate in English on the phone with an English-speaking client (Fang, 2005). A study surveying 500 undergraduate students indicated only one out of five (20.2%) students in Hangzhou regarded English instruction in class as sufficient for their needs. Among nearly 70% of all the respondents, classroom-based English courses were rated fair or unsatisfactory. In contrast, 63% of the students who had language classes off-campus considered the training as very satisfactory or satisfactory. The top three factors affecting satisfaction levels were pedagogical effectiveness, instructor's performance, and curriculum implementation.

University English courses have long been criticized for its instructor-centered pedagogy, as well as irrelevant and outdated curriculum that are not able to keep up with the market dynamics (Fang, 2005). The misalignment between university and post-graduate employment is a multi-dimensional problem engendering a host of consequences.

Consequences of Skills Misalignment

Skill misalignment has a negative impact on the transition from higher education into work, which directly affects the economic and social well-being of individual graduates. The lack of diversity in curriculum (Bai, 2006) and instructional approaches does not allow the graduates' flexibility and competence as they adapt to the market. In particular, the university is held responsible for the skill mismatch between the knowledge acquired at university and the skills required for college graduates.

According to a survey for college graduates who fared worst in the job market in Hunan Province, negotiation skills and complex problem-solving skills were among the top five skills that recent graduates need to master (Hunan Department of Education, 2007). A study across nine occupations indicated that less than 10% of Chinese job-seeking candidates, on average, were suitable for China-based foreign companies (Farrell & Grant, 2005). Working for foreign-owned enterprises or joint ventures is the ideal career choice for many graduates. In a sample of 1343 college graduates randomly selected from 9 job fairs in Guangdong Province, 23% of the students identified foreign-owned enterprises or joint ventures (FOEs & JVs) as their first employment choice (Mei, , Sun & Wang, 2006). However, it is very competitive to work at FOEs and JVs as these organizations require higher-level skills than state-owned enterprises and private domestic companies (Venter, 2004). Considering the significant proportion of college

graduates who want to pursue a career at foreign-owned enterprises or joint ventures where higher-ordered skills are most desirable, education-employment skill misalignment limits graduates' career opportunities.

Skill misalignment raises questions of the external efficiency of higher education. External efficiency refers to the "links between higher education and the wider economy" (World Bank, 2002, p.27), and external inefficiency refers to the poor alignment between skill levels of graduates and the job market demand for those skills (McMahon & Boediono, 1992).The external efficiency of education is improved when better education outcomes are produced at given education resources or fewer education resources are used in producing the same amount of education outcomes. For graduates, skill misalignment is likely to be associated with lesser paid and lower-skilled jobs after graduation. Skill mismatch affects efficiency and further economic growth by preventing the labor market from using the available human capital to its fullest potential (World Bank, 2007). Anecdotal evidence suggests that the expanding numbers of graduates may not be well matched with the rapidly changing needs of the economy (Dahlman, Zeng & Wang, 2007). The rate of private return for a Chinese college graduate was formerly much higher than graduating from a senior high school or a junior high school. In recent years, the return to higher education relative to secondary education is narrowing due to the increase in college graduates, thus increasing unemployment and lowering starting salaries (Dahlman *et al*, 2007). Consequently, misalignments between university education and work requirements are detrimental to external efficiency and potentially reduce graduates' career choices.

Significance of the Study

Studying the importance of work-related skills and the extent to which universities develop graduates with these skills from the viewpoints of graduates and academic staff will be helpful to generate new ways that higher education institutions can cope with the changing socioeconomic climate in China. One particular area that higher education institutions can start tackling the skill mismatch problem is college curriculum and pedagogy.

Due to lasting influence of the outmoded planned economy and old educational system, college curriculum and pedagogy may lag far behind demands of the labor market. As a result, it is possible that a gap exists between recent graduates and college instructors in their perceptions of the knowledge and skills needed for securing and succeeding in graduates' employment. Potential gaps will indicate areas in need of curriculum and pedagogical reform. This study will provide data for assessing the content and delivery of undergraduate programs that can be used in the redesign of curriculum and pedagogy to develop skills that meet the needs in the changing market environment.

CHAPTER TWO: REVIEW OF THE LITERATURE

This chapter reviews empirical studies of skill development in post-secondary education/university courses. Two themes are discussed in this chapter:

(a) the extent to which college course instructors differ from graduates regarding their perceptions in the importance each group assigns to an identified set of workplace skills;

(b) the extent to which instructors differ from graduates regarding their perceptions in how well higher education institutions have fostered the workplace skills needed in graduates' employment.

Skill Importance as Perceived by College Graduates and Instructors

The literature suggests nine skill areas of particular relevance in the current employment sector both in China and worldwide, including communication, team-work, computer, English, problem-solving, decision-making, critical-thinking and leadership skills. These skills will be the focus of the present study. For each skill area, literature on graduates' perceptions of skills importance will be reviewed first. Academic staff's perceptions will be reviewed next. Empirical studies conducted in other countries and in China will be both included in the literature review. These studies are included in the literature review because 1) research participants in selected studies were affiliated with business programs or similar which is comparable with the proposed population under the current study; 2) they are relatively recent studies as the importance of skills is likely to change over time. Table 1 summarizes the empirical studies conducted in China and elsewhere.

Importance of Communication Skills (Oral and Written Communication)

An increasing number of higher education institutions in Western countries teach and assess communication skills (Humphris & Kaney, 2001; Makoul, 2003). Among a sample of 955 graduates from computer science, teacher education, general educational sciences and pharmacy programs in Finland, social skills were regarded the most important for their jobs, compared to production and technical skills, motivational skills, adaptation skills and innovative skills (Tynjälä, Slotte, Nieminen, Lonka & Olkinuora, 2006). Similarly, 40% of graduates in pharmacy, 35% of teachers, 30% of other educators and 27% of graduates in computer science rated social skills as the most essential workplace competence (Tynjälä *et al*, 2006). Social skills in this study refer to oral and written communication, team-work, negotiation, presentation and other people skills. A limitation of this study is that research participants only gauged the average importance of an aggregate skill set which is comprised of the above sub-skills, but did not differentiate communication and team-work skills from negotiation, presentation and other people skills.

Waller and Hingoran (2006) found that Australian postgraduate students of a marketing program rated oral communication the most important skills for their career, among other business skills including but not limited to leadership, written communication, presentation, decision-making, creative-thinking, problem-solving and analytical skills. In addition, the importance ratings they attached to oral communication and written communication skills were significantly different. Oral communication skills were rated higher than written communication skills, which was consistent among undergraduates and postgraduates.

University faculty in a business and management program in Northern Ireland indicated that the ability to express one's thoughts orally in a concise and coherent manner as one of the most important skills to be fostered (Lecky & McGuigan, 1997). Academic staff of modern language programs at an Irish university reported that oral communication skills are important for a graduate's career, however, these skills are not regarded as the most important among all the skills examined (Curry, Sherry & Tunney, 2003).

College educators (program directors) of tourism and hospitality programs in Taiwan verified the importance of communication skills. The program directors agreed that communication are one of the most critical skills required by graduates of tourism programs (Lu, 1999). Communication skills were ranked as the second important workplace skills by the directors, among 34 skill areas. Floyd and Gordon (1998) conducted a study comparing written and verbal communication skills, quantitative and analytic problem-solving skills in New Zealand. They found that academic staff ranked the importance of communication skills higher than problem-solving skills.

In China, college graduates also consider communication skills as very important workplace skills. Liu, Liu, Qiu, Ren and Fang (2009) found that 59.5% of medical students regarded communication skills as very important to their future jobs, 34.7% of them rated the skills as important, among a stratified sample of 548 students in China. Only 0.9% of the students indicated that the skills are not important. In addition, although oral communication received a high overall ranking by all the graduates employed in various types of organization, it was only ranked eleventh by the graduates hired in organizations exceeding 1000 employees in China (Shandong Demand and Supply

Project, 2010). This finding indicates that within-group variations are likely to exist in terms of importance rankings among graduates employed in organizations of different sizes.

Lin et al (2004, 2005) found that accounting instructors in Southeast China regarded oral communication skills important. The instructors rank ordered oral communication the sixth most important skill out of a total of eighteen skills.

In summary, oral communication is generally regarded as one of the most important skills in the workplace by graduates. While academic staff considered communication an important workplace skill, they assigned lower importance to the skill compared to college graduates. When oral and written communication skills were rated separately, Chinese educators of accounting programs seemed to endorse the importance of written communication somewhat more than oral communication. Graduates perceived oral communication much more important than written communication in the workplace. Furthermore, there are some variations in importance rating within graduates. Chinese graduates working at large organizations hiring more than 1000 people did not perceive oral communication as important as those at smaller organizations.

Importance of Team-work Skills

Team-work skills are assigned very high importance or high importance for employment by college graduates and instructors in Australia and Ireland. Australian postgraduate students of a marketing program rated team-work the most important skills for their career (Waller & Hingoran, 2006). Academic staff of modern language programs in Ireland reported that team-work are important for a graduate's career. (Curry, Sherry & Tunney, 2003).

Likewise, college educators in Taiwan and graduates in Shandong Province considered team-work skills very important. Program directors of tourism and hospitality programs in Taiwan agreed that cooperative team building is one of the most critical skills required by tourism graduates (Lu, 1999). The directors ranked the team building skills the third most important workplace skills, among 34 skills. In Shandong, 793 recent college graduates ranked team-work as the most important skill, among a total of 22 skills (Shandong Demand and Supply Project, 2010). Despite the high importance rating of team-work skills, Lin et al (2004, 2005) found that accounting instructors in Southeast China regarded this skill set moderately important. They considered team-work not very important for accounting professionals, with an importance ranking of eleventh.

Importance of Computer Skills

Basic computer skills are generally considered important or very important in the workplace by college graduates and instructors. In New Zealand, university business graduates highly valued computer literacy skills. It was the third most important skill set out of a total of 24 skill areas at the workplace perceived by the graduates (Rainsbury, Hodges, Burchell & Lay, 2002).

The application of computer skills has been increasingly emphasized in work settings in China (Sun, 2002; Fladrich, 2006). In recent years, Chinese higher education institutions also put a lot of emphasis on developing computer skills and designing effective curriculum (Cao, 2007; Pan, 2009). Chen (2009) surveyed 300 college graduates in Guangdong Province. He found that 28.8% of the respondents regarded computer skills as extremely important for their employment, and 61.3% of them considered the skills important. Similar to graduates, Chinese faculty in accounting

education ranked computing skills the most important to graduates' career, among 18 skills including English, decision-making, critical and analytical thinking, written communication, team-work and oral communication skills (Lin *et al*, 2005).

In spite of the high importance assigned to computer skills by Chinese college graduates in Guangdong, a larger scale study in Shandong Province revealed otherwise. Graduates who have been in the post-graduate workforce between two to four years considered basic computer application skills not very important, only rank-ordering it the fifteenth important out of a total of 22 selected skills (Shandong Demand and Supply Project, 2010). It is not yet clear why a discrepancy occurred between the Chen's and the Shandong study. It may be due to different sampling strategies, fields of study of the graduates or length of employment. Unfortunately, these studies did not specify detailed participants' demographics and sampling schemes.

Generally, it seems college graduates and educators perceived computer skills very important or important to graduates' career. Their perceptions did not differ substantially. However, one study reported that recent graduates in Shandong Province did not think computer skills are important to their jobs. Future research needs to investigate possible explanations to such a discrepancy.

Importance of English Skills

In a comparative study of hospitality and tourism graduates in Australia and Hong Kong, King, McKercher and Waryszak (2003) found that Hong Kong graduates considered the importance of English skills highly for both their first (mean=4.08) and then current jobs (mean=4.16) on a 5-point Likert Scale, whereas, Australian graduates rated it much lower for their first (mean=2.76) and then current jobs (mean=2.80).

Considering English is the language of instruction in both countries, it would be interesting to investigate why a substantial difference occurred in terms of the importance ratings of English between Hong Kong graduates and their counterparts in Australia. Unfortunately, the main focus of the study was to examine whether significant differences exist between respondents' ratings to their first job and the then current job.

Similar to graduates in Hong Kong, college educators considered English a very important workplace competence for college graduates in the U.S. and Taiwan. Sciarini, Woods and Gardner (1995) found that faculty in hospitality and tourism education paid much attention to language skills in the U.S. Similarly, in Taiwan, Lu (1999) found that university educators in tourism programs placed the highest importance on multilingual skills, higher than communication and team-work skills. Over ninety percent (91.7%) of the educators rated multilingual skills as the most important for graduates' employment. These results are not surprising because the heart of higher education is to impart advanced academic skills and knowledge. In addition, the field of hospitality and tourism requires frequent interactions with clients from other countries. It is crucial for fresh graduates to have multilingual skills for communication purposes on a daily basis.

Graduates and faculty in China are enthusiastic about English skills, especially English. With China's market further opening up to the world and the accession to the World Trade Organization, English skills have been given enormous attention in China. According to the Requirement of College Education Curriculum promulgated by the Ministry of Education in China (Ministry of Education, 2007b), the development of general English skills, particularly listening and speaking English is stated as the main goal of college English education. Listening and speaking English is essential to the

effectiveness of written and verbal communication at the workplace as well as to the national economic development and international communication (Zhang, 2006).

Questionnaires distributed to graduates of a business program in Zhejiang Province revealed that they considered English listening, speaking, and reading skills very important to their employment. Compared to English speaking and reading skills, writing and translation skills were less important, but the graduates considered the latter skills still important. (Pang, Zhou & Fu, 2001). Lin and his colleagues (2005) reported that university educators of accounting programs in China assigned very high importance to English, ranking it the third most important skill for accounting professionals, among a total of 18 workplace skills.

Contrary to these studies, a study found graduates in Shandong Province regarded English unimportant, rank ordering it the second least important among a set of 22 skills selected (Shandong Demand and Supply Project, 2010). It is possible that Chinese graduates and academic staff of business and accounting programs valued English to a greater extent than graduates in the general population. However, without knowing the exact demographics in the Shandong Study, this is only a speculation.

In conclusion, Hong Kong graduates in hospitality and tourism industry placed high importance on English skills to both their first and then current jobs, whereas, their Australian counterparts regarded English not important to their post-graduate employment. Chinese graduates in business programs in Zhejiang Province considered English skills very important or important to their jobs in China. In contrast, recent Chinese graduates in Shandong Province did not put much importance on English as a workplace skill. College educators in China and in Taiwan consistently perceived English

or multi-lingual skills very important for graduates' employment. Since the graduates in Zhejiang were affiliated with a business program at a prestigious university, whereas, the graduates in Shandong came from a number of programs of study at several institutions, it is possible that the above inconsistent results occur within Chinese graduates due to their different program and institutional affiliation.

Importance of Problem-solving, Decision-making and Critical-thinking Skills

In a study of a total of 358 American students enrolled in business programs responded to a questionnaire seeking their opinions of the importance of a predetermined set of skills to their future work. Among nine broad skill categories, analytical and problem-solving skills[3] were ranked the least important indicators on both the importance and priority indexes[4] (Duke, 2002). Decision-making skills were moderately important, with an importance ranking of forth and priority index ranking between sixth and seventh.

Another study surveying 460 graduates and 195 faculty members of business programs in Vietnam showed very different results from Duke's findings. Unlike the low importance attached to analytical and problem-solving skills in Duke's study, problem-solving was rated the most important workplace skill by graduates and faculty, among 19 skill variables. Critical analysis was also considered very important by graduates and

[3] These skills include 5 sub-measurements: a) Comprehension of quantitative problem-solving techniques; b) ability to apply the right tools to business problems; c) comprehension of the accuracy and reliability of data; d) ability to think systematically; and 5. ability to identify relationships between problems and/or issues (Duke, 2002).

[4]Priority index is the ratio of the skill level to importance. Skill level is measured through rating learning outcomes on a Likert scale (1=strongly disagree, 5=strongly agree, in response to the statement, "In my opinion, the course have provided me with a high level of this skill."). By subtracting this result from a value of 1.0 (PI = [1 – (SL / Imp)]), a priority index can be developed that shows at a glance those criteria that need the greatest attention (higher positive scores), while lower priority criteria will have lower scores (Duke, 2002).

educators[5] (Duoc & Metzger, 2006). The discrepancy between these two studies may be due to different lengths of employment of the graduates, as well as different economic realities between the U.S. and Vietnam. In Duoc and Metzger's study (2006), the business graduates had at least three years of post-graduate work experiences in the workplace. Compared to the Vietnamese sample, student participants in Duke's study had fewer work experiences, if any. The students in Duke's study were either undergraduate business students in their early stage of college or graduating seniors. Therefore, perceptions between college students and graduates who have ample work experiences can vary greatly. For college students not having much exposure to the corporate world, it is very likely that they would rate work-related problem-solving and analytical skills lower than graduates with more work experiences. Since Vietnam's economy is in transition, the business sector desperately needs professionals who are able to examine an issue or a problem in detail and to explain their points of view thoroughly (Duoc & Metzger, 2006). It makes sense that problem-solving and analytical skills have received very high importance rankings in Vietnam. Vietnamese graduates working in the business sector seemed to keep abreast of the emerging skills as a result of the transition economy.

Academic staff in language programs at an Ireland university assigned an importance rating of 0.76 and 0.70 to critical-think and problem-solving skills respectively. Decision-making skills were assigned much lower importance (0.43). It appears that academic staff considered critical-thinking and problem-solving skills as important as these two skills were ranked sixth and ninth respectively among a total of 29

[5] Other assessed skills included communication skills, computer proficiency, leadership skills, planning and organizing, team-work, time-management, and decision making (Duoc & Metzger, 2006)

skills investigated. Decision-making skills seem to be neither important nor unimportant as it received a ranking of thirteenth (Curry *et al*, 2003).

Chinese faculty members of accounting programs reported that critical-thinking is an important skill to an accounting career (Lin *et al*, 2005), regarded it the fifth most important skill, out of a set of 18 skills. The accounting instructors believed that decision-making skill is moderately important, rank ordered it the eighth. Unlike faculty members, Chinese graduates rank ordered decision-making as one of the least important skill at their workplace (Shandong Demand and Supply Project, 2010). Yet, among a total of 22 skills, the graduates rank ordered problem-solving the sixth most important workplace skill, which was much more important than decision-making (Shandong Demand and Supply Project, 2010).

In conclusion, importance ratings assigned to problem-solving skills are high in Vietnam and China. Graduates of business programs in Vietnam considered the skills very important for their employment. Likewise, Chinese graduates considered problem-solving important for their employment. Academic staff of language programs in Ireland believed problem-solving important to post-graduate employment.

Graduates attached low importance to decision-making skills. In particular, Chinese college graduates believed the skills were one of the least important in the workforce. Faculty members of business programs in China seemed to perceive decision-making as more important workplace skills than graduates did.

Literature showed that academic staff in and outside of China agreed that critical-think is important in the workplace. Unfortunately, no comparative study from the perspective of college graduates is found. A lack of literature on critical-thinking skills in

China is perhaps because critical-thinking, problem-solving and decision-making skills are rather new concepts in the literature and in higher education curriculum in China. Wu (2004) stated that "…by 2000, there had not appeared a single article directly relating to critical thinking in major education journals in China…There has not been any literature about critical thinking until the most recent three or four years." (p. 10). Interviews with a group of Chinese postgraduate students studying in the U.K. showed that students were not certain about critical thinking skills partly because they were vague in understanding the skill. They reported that there is a disconnection between critical thinking and its application to their future employment. Their undergraduate education did not address the link (Huang, 2008).

Importance of Leadership Skills

Duke (2002) examined two groups of students just completing lower division core course requirements, and graduating seniors completing the entire college curriculum in the U.S. He found business and marketing students gave moderate importance to leadership skills[6], while assigned the skills a high priority index of 0.196. A high positive index score means leadership skills deserve growing attention and resources than lower scores or negative scores. Negative score indicates "overskill" and might result in reduced resource allocation. In other words, U.S. college students believed that leadership skills are neither very important nor very unimportant to their future employment, and more efforts and resources should be directed to consolidate the skills at college. Business graduates at a New Zealand university put a lower importance rating

[6] In this study, Leadership skills are defined as ability to (1) serve as a team leader; (2) use different leadership styles; (3) support shared team values; and (4) facilitate conflict resolution.

on team leadership skills[7], rank ordering it as one of the least important workplace competencies (Rainsbury *et al*, 2002).

Academic staff in Ireland considered leadership one of the least important competencies to their students' careers (Curry *et al*, 2003). University educators in language programs rank-ordered the importance of leadership skills twenty-fifth among a total of 29 skills. Curry and colleagues (2003) provided a possible explanation of the low importance attached to leadership skills: this set of skills is perhaps perceived to be more applicable to commercial activities rather than language learning. This study implies that leadership skills are generally assumed to be important to post-graduate employment for business graduates.

In China, leadership is regarded as a skill set of moderate importance by university educators and graduates. Accounting educators in China rank ordered leadership the ninth most important workplace skill out of a total of 18 skills (Lin *et al*, 2005). In another study, Chinese graduates rank ordered leadership and organizational the fourteenth most important skills to their employment among a set of 22 skills, which is of moderate importance (Shandong Demand and Supply Project, 2010). Yet, it should be noted that variations in importance rating exists among graduates working at organizations of different sizes. For Chinese graduates employed at organizations exceeding 1000 employees, they ranked leadership and organizational skills much higher (fifth) than the average ranking (fourteenth) (Shandong Demand and Supply Project, 2010).

[7] In this study, leadership skills mean being in charge, having vision, concerning for subordinates, building sense of group purpose, as well as having group motivation.

Overall, college graduates and academic staff considered leadership skills of moderate importance or low importance. It seems graduates and academic staff did not differ much in the importance rankings they assigned to leadership skills. In addition, one study found Chinese graduates working at larger organizations of 1000 employees or more rated the importance of leadership substantially higher than graduates employed at smaller organizations.

Low or moderate importance ratings of leadership skills maybe due to a lack of understanding the skills in the workplace as well as a clash of values between academia and the corporate world. Leadership skills are less commonly understood by recent college graduates because "leadership is a skill that probably only applies to established employees seeking promotion and is not an attribute that would normally be expected from a new entrant into the workforce, even if many have opportunities to demonstrate this in school or other settings" (Curtis & McKenzie, 2001, p. 41). Academic staff may perceive leadership as being pertinent to commercial activities (Curry *et al*, 2003), rather than a set of skills that is critical to academic work. Thus, university educators are likely to overlook the importance of leadership skills in the workplace. Leadership is typically regarded as an important attribute in the corporate world rather than in academia where the students' priority is to deal with scientific inquiry and much less with cultivating charisma and other leadership abilities.

A Summary of the Importance of Selected Workplace Skills to Graduates' Employment

Firstly, the majority of studies concluded that college graduates and educators considered communication and team-work skills important or very important to post-graduate employment, despite some inconsistencies in the literature.

Secondly, academic staff and graduates considered leadership only moderately important or not important to graduates' jobs. Perceptions of the importance of leadership skills in the workplace did not seem to differ much.

Thirdly, there is comparatively less literature on problem-solving, decision-making and critical-thinking skills. It is not yet known whether college educators differ from graduates in the importance they assign to problem-solving and critical-thinking skills. Educators and graduates gave mixed ratings to the importance of problem-solving as a workplace skill. Academic staff rated critical-thinking as an important workplace skill, yet, no graduates' data can be found with which to compare. It appears academic staff consider decision-making more important in the workplace than graduates.

Fourthly, computer skills were generally regarded as important or very important to post-graduate employment by graduates and academic staff. They did not seem to differ much in importance ratings they assigned to basic computer skills. However, one study in China revealed that recent graduates in Shandong Province rated basic computer skills not very important to their employment.

Finally, academic staff seemed to value English skills to a greater extent than graduates, but this is an inconclusive statement as the research is inconsistent. College educators in China and in Taiwan regarded language skills as the most important out of a selected number of workplace skills and one of the most important competencies for graduates' career. However, Chinese graduates did not rate the importance of language skills consistently. Graduates of business programs in Zhejiang Province regarded English very important or important to their jobs, whereas graduates in Shandong Province in multiple academic programs assigned a low importance rating to English

skills. Since the Shandong study did not specify the graduates' program of study, it may not be the most relevant study to draw definitive conclusions.

College-based Skill development as Perceived by College Graduates and Instructors

This section discusses the extent to which college course instructors and graduates differ in their beliefs in terms of how well higher education institutions have developed graduates' work-related skill. This question measures two dimensions of university education: the extent to which college courses and extracurricular activities fostered student skills and abilities.

In a comparative study between college instructors and students across seven fields of study[8] in Northern Ireland, Lecky and McGuigan (1997) found a statistically significant difference in ratings that academic staff and students assigned to oral expression skills, logical and systematic thinking skills, effective group member skills, conflict resolution skills as well as stress-coping skills. While academic staff was confident about having effectively fostered the development of skills in Northern Ireland, college students maintained that their universities inadequately developed the skills that are needed in future employment (Lecky and McGuigan, 1997). This finding is inconsistent with a research conducted in Vietnam. Business graduates, faculty members and employers in Vietnam differed significantly in their assessment of the quality and skills ability of graduates. When compared with business graduates and employers, faculty gave the lowest mean scores on 19 skills that measure graduates' abilities and skills (Duoc & Metzger, 2006). Although reasons of low ratings provided by the faculty

[8] These fields of study include Art and Design, Business and Management, Education, Humanities, Informatics, Science and Technology, as well as Social and Health Science.

are unknown, it is clear that the business faculty in Vietnam were the most critical in evaluating the quality of graduates' skill sets when comparing the faculty's assessment with graduates' and employers'.

A random sample of 1888 polytechnic graduates in Finland reported that their undergraduate education did not well provide them with self-regulation and practical skills[9]. Engineers reported more often than business, health and social services graduates that they had gained less working-life competencies than were required at their work. The health and social services graduates had gained, in their opinion, more theoretical knowledge than skills that they needed in working life (Stenström, 2006). Practical and self-regulation skills may fit the skill sets identified in the current study, however, without a definition explicated stated, caution should be executed in drawing a parallel between the skills in Stenström's study and the skills proposed in this study.

In an alumni satisfaction survey measuring five dimensions of Australian students' university experiences, graduates were significantly more satisfied with the aspects of curriculum[10] and staff attributes[11] than with the development of key competencies (Martin, Miline-Home, Barrett, Spalding & Jones, 2000). Competencies include information collection and analysis abilities, communication, planning, organizing, team-work, problem-solving and technological application. Student satisfaction with employment preparation was measured at local, national and international levels by questions such as "to what extent do you think your qualification prepared you for employment in the Western Sydney Region?" Study results show that

9 The definitions of self-regulation and practical skills are not provided in this study.

[10] It comprises eight items pertaining to depth and breadth of subject content, range of electives, and relevance of subjects to career (Martin *et al*, 2000).

[11] It includes teaching quality, theoretical and practical competency, and assessment skills (Martin *et al*, 2000)

respondents perceived better employment preparation at the local and national levels than at the international level. Graduates who were satisfied with academic support/resources[12] and the development of key competencies reported greater employment preparation at the local level. Satisfaction with curriculum and academic support and resources were positive predictors of national and international employment preparation respectively (Martin *et al*, 2000).

One of Martin et al.'s (2000) unexpected findings was the relatively low strength of association between competencies perceived by graduates and employment preparation (R=0.19). Graduates, in contrast to the employers who adhered to the significance of graduates' competencies in work preparation, did not give substantial importance to the role competencies and skills play in the preparation for employment at the local level which refers to Western Sydney Region in Martin et al. study. The authors pointed out an explanation to the weak association between skills and employment preparation. Graduates might possibly underestimate the extent to which their institutions have prepared them for work.

However, Martin and his research team did not provide correlation data on the graduates who were employed at the national and international levels. Without the correlation between graduates' skill abilities and employment preparation, readers do not know whether graduates working in national or international organizations would rate universities higher on skill development than those who are employed locally. These ambiguities can be clarified if the authors had provided these two sets of association between competency and respective employment at national and international levels.

[12] It addresses staff/student ratio, access to academic staff, quality of supervision, and quality of performance feedback (Martin *et al*, 2000).

Low association may mean higher education does not develop skills adequately for graduates in the labor force. Or alternatively, higher education is not capable of providing relevant skill sets for graduates to become more skillful at work.

In China, graduates and academic staff agreed that college education has not provided graduates with some important workplace skills (Shandong Demand and Supply Project, 2010; Lin *et al*, 2005). In one study conducted among college graduates of geographic information system programs, nearly half (43.9%) of the respondents indicated that what had been learned in college was not helpful in finding a job (GIS Association, 2009). In another study examining graduates' perceived skill levels in China, results revealed that they rated leadership, decision-making, English and computer skills poorly developed upon their graduation (Shandong Demand and Supply Project, 2010).

Lin and his colleagues (2004, 2005) studied Chinese faculty members of accounting programs in terms of their perceptions of the importance and development of workplace skills at college. They pointed out that decision-making, analytical and critical thinking, oral communication, leadership, and team-work skills have not been well developed for accounting professionals. These skills were all believed to be highly important for an accounting career, yet were inadequately fostered to a great extent at college.

There is little empirical research comparing Chinese faculty members and college graduates directly in terms of their respective perceptions of the extent to which college education has developed skills required at the workplace. Although both college graduates and educators agreed that college education does not sufficiently develop skills

required in graduates' employment, evidence implied that graduates are likely to attribute this lack of skill development to curriculum and instruction. College educators tended to believe graduates themselves are the most responsible for the acquisition of workplace skills. Chinese graduates of geographic information system (GIS) programs reported that inappropriate curriculum was the most important reason that employment was so difficult for graduates, whereas they believed their own skills and abilities had little to do with poor employability. In contrast, a college instructor from a GIS program commented that, "…employability eventually depends on graduates' own skills and abilities…, which requires our graduates to enhance their skills and abilities" (GIS Association, 2009, p. 16). In addition, higher education institutions in China generally have a common notion that workplace skills cannot be primarily developed through regular college classes, but rather these skills would be best acquired through general education or through other informal curriculum (Liu, 2006). Since the majority of college educators teach basic academic subjects associated with a particular major instead of general education which has stronger connection with skill development, most Chinese instructors are likely to believe developing workplace skills are not their main responsibility, rather it is the responsibility of a few of their colleagues who deliver liberal education and the responsibility of students.

In conclusion, the majority of instructors felt quite confident about the way they had developed skills in their classes, but did not think graduates had adequate workplace skills upon their graduation. Of all the literature reviewed, college graduates were dissatisfied with college education in fostering work-related skills. Chinese college graduates and course instructors seemed to concur that college does not develop

workplace skills well. In China, many graduates believed that college curriculum and instructors should be held most accountable for the absence of skill development in college, however, instructors believed students are expected to take the initiative to acquire workplace skills through liberal education and other informal approaches. Although no direct comparison is found in the literature, in terms of the extent to which college has developed workplace skills between graduates and instructors, based on the evidence, it can be speculated that graduates may perceive the inadequacy of skill development to a greater extent than academic staff.

Research Questions

Research questions are proposed below. In response to each question, a proposition is put forward based on the literature review.

Research Question 1: To what extent do Chinese course instructors differ from Chinese graduates who are 3 years past graduation in the importance they assign to selected skills[13] needed for graduates' success in their post-graduation employment?

Based on the literature review in the previous chapter, faculty members and graduates seemed to regard work-related skills very important or important. Graduates consistently gave higher importance ratings to communication and team-work skills than academic staff. When assessing oral communication and written communication skills separately, graduates were more likely to rate oral communication more important than written communication to their employment, compared to academic staff. On the contrary, one study in China indicated that faculty members of accounting programs viewed written communication slightly more important to graduates' employment,

[13] The selected skills refer to verbal and written communication, decision-making, problem-solving, team-work, leadership, computer, and English skills.

compared to graduates. In addition, a few studies implied that graduates and academic staff did not differ much in their assessment of the importance of leadership skills to post-graduate employment.

The importance assigned to other workplace skills is quite inconclusive in the literature. It appears academic staff considered computer, English, and decision-making skills more important to the workplace than graduates. However, a few studies in China indicated that there may not be noteworthy differences in importance ratings graduates and academic staff assigned to computer, English, and decision-making skills respectively.

Proposition 1: It is expected that graduates and instructors will agree on the importance of most selected skills to post-graduate employment except for English skills.

Research Question 2: To what extent do Chinese course instructors and Chinese graduates who are 3 years past graduation differ in their assessment of how well college curriculum and extra-curricular experiences have developed skills deemed important in the workplace?

Evidence from studies cited above indicated that Chinese graduates and instructors were both critical about the capacity of college education in providing adequate skills required at the workplace for graduates. However, no previous study comparing perceptions of college graduates and instructors is found, in respect to the extent to which higher education institutions have provided graduates with workplace skills. This research implies that graduates were more dissatisfied with workplace skills they have received at college than academic staff. While Chinese graduates tended to attribute inadequate workplace skills to college curriculum and instructors, college

educators seemed to believe graduates are the most accountable for skill development and acquisition at college. One study in Northern Ireland also indicated that college instructors believed that their courses had built skills and abilities needed in graduates' post-graduation employment.

In this study, the concepts of curriculum and extra-curricular activity were pre-determined, based on previous scholarly work. The definition of curriculum is two-fold: courses from which students choose what subject matters to study; and the process of teaching, learning and assessment materials available for a given course of study (Kelly, 2009). Extra-curricular activity is defined as programs and events, bearing no academic credit, sponsored and organized by students' organizations or by the educational institution, designed to develop students' interests and abilities. The activity is subject to some measure of control by the institution (Good, 1945). Although the definition of extra-curricular activity was initially introduced more than half a century ago, it is still widely used by Chinese researchers (Fung, 1988; Lam & Wong, 1997; Wong, 1994).
Proposition 2: It is expected that college instructors will believe that their courses have developed the majority of selected skills to a greater extent than graduates will indicate.

CHAPTER THREE: METHDOLOGY

Overview

This chapter describes the research methodology used in this study. The study is a retrospective tracer study using mixed methods. There were two phases of data collection in this study: survey and interview. In combining quantitative and qualitative approaches, this mixed methods study provides a more complete understanding of research problems than either approach alone (Creswell & Clark, 2007). In addition, since any method used alone has inherent limitations, the mixture of methods can help neutralize the limitations of using a single method exclusively (Creswell, 2003).

Zhejiang X University is the study site. A random sample of Zhejiang X University graduates from the School of Business Administration and all course instructors from that school are the research participants. These business graduates and course instructors received an online survey inquiring about their perceptions of skill importance and the extent to which the business school had developed these skills. Follow-up interviews were conducted with a smaller number of instructors and graduates to further probe these issues.

Research Site: Zhejiang X University in China

Zhejiang X University is a 4-year comprehensive university offering a number of academic programs. It offers six major disciplines including management, economics, liberal arts and humanities, science, engineering and law (Zhejiang X University, 2009). It is a provincially prestigious university that used to be considered a second tier

university[14] in China. The university has expanded from a baccalaureate college focusing exclusively on management and business education before 1998 to a comprehensive university. The university's governance changed in response to its expansion. Prior to 1998, the university was governed jointly by the former Ministry of Commerce and the Ministry of Domestic Trade. Since 1998, primary governing authority was taken over by the local government of Zhejiang Province, with a secondary support from the central government (Zhejiang X University, 2009). This change of governing body allows the university to become increasingly decentralized in curriculum, instruction and overall management.

Firstly, Zhejiang X University was selected because it represents a particular type of university which focuses primarily on teaching, with a secondary mission of research (*jiaoxue yanjiu xing*) (Zhejiang X University, 2009). The *jiaoxue yanjiu xing* university is a newly developed concept that has become widely adopted in China in the last decade. This type of institution is comprised of a quarter of all 4-year higher education institutions in China (Changsha University of Science & Technology, 2009).

To be considered a *jiaoxue yanjiu xing* university, the institution need to meet the following baseline criteria: a) it was founded in the 1950s and has a solid teaching and research history; b) it has no less than 15,000 students; c) it has bachelorette, master and doctoral programs and can confer respective degrees; d) at least 15% of the student body

[14] On the top tier are universities that are large in scale and high in academic standard. Their main task is to train graduate (Doctoral and Master) and undergraduate students. The quality and academic level of these universities are close to world-class universities; the universities at the second tier are teaching and research-oriented universities. They mainly train masters and bachelors students, with a few specific programs targeting for doctoral students; the universities at the third tier are mainly teaching-oriented, and train predominantly undergraduates or a small number of Master students. Finally, professional training schools and junior colleges which only provide 2-3 year's college study are at the bottom of the hierarchy. The latter two categories of universities covers 90% of the all the higher education institutions in China (Zhao & Guo, 2002).

is graduate students; e) it aims to foster students extensive and multi-faceted knowledge base, adaptability, development and application of technology as well as potentiality of research; f) it has a certain number of remarkable research achievements, including high quality research papers published abroad and on National I peer-reviewed journals which is considered the top journals in China; g) it has adequate research funding: for comprehensive universities and liberal arts colleges, the annual funding is no less than 50,000,000 *Yuan*; and for science and technology universities, the annual funding is no less than 100,000,000 *Yuan;* h) it usually ranks within the top 200 institutions in China and are not the Project 985 and 211 institutions which have received substantial national funds (Changsha University of Science & Technology, 2009;Wu, Jiang, Wen & Sun, 2005). Because *jiaoxue yanjiu xing* university has been pressured to put much more emphasis on research over teaching, examining this emerging type of institution may have significant implications for skill instruction.

Secondly, an internal evaluation report from the university reveals that the quality of its academic staff was not particularly impressive (Zhejiang X University, 2009). This report suggests that course instructors and the classes they teach may be sources of the skill mismatch. Therefore, it is worthwhile to examine the extent to which curriculum and instruction at the university have built graduates' workplace skills and abilities.

Finally, Zhejiang Province has the most vibrant private sector in China. The province has the largest private enterprise sector measured in number and in scale. In the meanwhile, like many other provinces, the state-owned enterprise is on the decline in Zhejiang. The private enterprise absorbs almost half of the newly graduated college students. In 2008, the private sector nationwide employed 40.2% fresh college graduates,

with a total number of 1. 975 million people (Mycos, 2008). As a hub of private enterprise, Zhejiang Province during the transition economy is a critical place within which Zhejiang X University is located. This larger social and economic context is an additional reason for focusing the proposed study on Zhejiang X University.

In conclusion, Zhejiang X University is selected because: a) it represents a particular type of university as a result of the economic decentralization in China; b) it permits investigation of business courses and the role of courses in developing students' skills and abilities; and c) it is embedded in a larger socioeconomic context reflecting key characteristics of the immediate workplace in which nearly half of all college graduates in China are employed.

School of Business Administration

The data collection took place at the School of Business Administration (SBA) of Zhejiang X University. Most current programs of study offered by the SBA used to be major academic components of Hangzhou X College before 1998 when the expansion decision was made and the college became Zhejiang X University. Therefore, the school has been traditionally very strong in course offerings, teaching and curriculum. The SBA is consisted of four departments. They are Marketing Management, Enterprise Management, Human Resource Management, and Engineering Management (Zhejiang X University, 2009). Among these departments, the Enterprise Management is particularly reputable. The former Ministry of Domestic Trade granted the Enterprise Management as a key discipline of study in 1996. In 1999, Enterprise Management was once again selected as a provincial-level key discipline, with a good national reputation as well. In addition, the school offers three provincial-level "courses of excellence" (*jingpin*

kecheng)[15], including Marketing Predication, Survey and Research and Entrepreneurial Leadership.

The SBA had approximately 400 graduates annually in the past three years, which adds up to approximately 1200 alumni in total. There are 51 full-time faculty members among whom 13 are affiliated with Marketing Management, 11 are affiliated with Human Resource Management, 12 are affiliated with Engineering Management, and 16 are affiliated with Enterprise Management. Based on the principal of "solid foundation, broad application, advanced abilities and skills", the college claims to promote students' practical skills and all-around development, such as analytical and problem-solving skills.

Sample

A survey was sent to all 52 course instructors who have teaching responsibilities at the School of Business Administration (SBA) of Zhejiang X University. Interviews were conducted with 7 course instructors randomly selected from all the instructors in the SBA.

Like the instructors, a random sample of 695 SBA graduates within three years past graduation at the SBA were selected to complete a survey. Only SBA alumni graduated from undergraduate programs were included. Altogether, there are approximately 1000 graduates who have completed their undergraduate programs during the academic years of 2007, 2008 and 2009. A simple random sampling was utilized in drawing a sample of the SBA graduates. In Teddlie and Tashakkori's (2009) tabulation of probability sampling techniques, they suggested that a sample size of 278 is required for

[15] According to the Ministry of Education (2004), "course of excellence" refers to courses of first-class quality in six dimensions including excellent instructors and teaching staff, course content, advanced pedagogies and approaches, delivery of course materials, as well as selection, incentive and evaluation mechanisms. For more details, please refer to http://www.moe.edu.cn/edoas/website18/21/info3621.htm

a population size of 1000, to ensure a 95% chance that the sample statistic is representative of the population parameter. Given an anticipated low return rate of graduate surveys in China[16], surveys were distributed to 695 graduates, with an estimate return rate of 40%, to obtain a sample size of 278. Individual interviews were conducted with a random sample of 12 graduates selected from the entire body of graduates from the SBA in the past three years.

In order to secure the sample, permission was obtained to access to a list of SBA graduates who have completed their programs in the past three years, as well as a list of course instructors. The graduates' list was obtained from the Center of Graduates' Employment and Guidance (*Biyesheng jiuye bangong shi, daxuesheng jiuye zhidao zhongxin*) at the university. The faculty's list was obtained from the Division of Academic Affairs (*Jiaowuchu*). The graduates' list contains their programs of study, contact information at the time of graduation (e.g., phone number, email address, home address, work address, etc.), age and gender. The instructors' list contains their affiliated departments, contact information (e.g., office phone number, email address, etc.), age, academic rank, and gender. All the graduates and instructors who were not affiliated with the SBA, and graduates who left the college prior to the academic year of 2006-2007 were excluded from the sampling frame.

Instrumentation

There are two versions of survey. One is for graduates and the other is for course instructors. Both alumni and instructor's surveys are self-designed instruments with core survey items adapted from an empirically tested alumni survey. Items were adapted from

[16] A survey return rate of 50% among Chinese graduates is considered to be fairly high (Mycos, 2008).

the Workplace Relevance Scale (WRS) (Kabanoff, Richardson & Brown, 2003; Richardson & Kabanoff, 2003) which is derived from the Course Experience Questionnaire (CEQ). Alumni and course instructor's surveys measure same key concepts using same scales. Whenever necessary, survey content and wording were tailored to the target survey audience.

Likewise, there are two versions of semi-structured interview, one for graduates and one for instructors. Quantitative and qualitative data were then analyzed and the findings from the two data sources were integrated to construct a more comprehensive understanding of the proposed research questions. The following sections discuss the survey and interview instruments separately for graduates and course instructors.

Alumni Survey

The survey is based on likert-type scales (Appendix A for the English version, Appendix B for the Chinese version). Graduates responded to questions concerning their perceptions of the importance of selected workplace skills to their employment, as well as the extent to which the university has developed these skills. The alumni survey contains four sections including graduates' job selection and career choice (section A), importance of employability skills (section B), skill development at college (section C), as well as a section inquiring about graduates' academic and occupational background (section D). Section A provides basic employment information about the graduates, such as their year of graduation, number of jobs they had since graduation, employment status, sector in which graduates are employed, as well as size of the company or organization where graduates work. Section B asks graduates to indicate the extent to which they assign the importance to selected workplace skills. Section C asks graduates to assess the extent to

which their overall college education and courses in developing work-related skills. Section D provides graduates' basic demographics, such as gender and programs of study.

Course Instructor Survey

Course instructor's survey is based on likert-type scales as well (Appendix C for the English version, Appendix D for the Chinese version). Course instructors assess the importance of the same skill sets that appear in the alumni survey, in relation to their former students' post-graduate employment. Instructors rate on how well the courses they taught have developed graduates' work-related skills. The instructor survey has four sections. Sections A and B of the instructor's survey are closely aligned with sections B and C of the alumni survey. Section A invites instructors to evaluate the extent to which they assign the importance to selected workplace skills. Section B asks instructors to rate the extent to which graduates' overall college education and courses have developed work-related skills. The last section (C) asks instructors to report their basic personal and professional background, such as their gender, academic rank, courses they teach, etc. Table 2 illustrates the sections on alumni and instructors' surveys.

Alumni Interview

There are 7 questions on the alumni interview protocol. Appendix E provides all the interview questions in English (See Appendix F for the Chinese version). Before the interview, alumni's basic demographic information were collected, such as their academic and occupational background, their year of graduation and number of jobs held since graduation if applicable.

The interview protocol asks graduates to describe their current employment, what skills and knowledge are required at work, the extent these skills and knowledge have been developed in college, their evaluations of college preparation for their current jobs, and their suggestions for improving the relevance of college education. The last question asks graduates to share any additional thoughts or comments that they want to.

Instructor Interview

Like alumni interviews, course instructors were first invited to talk about their teaching and professional background. They were then asked about questions concerning their classroom teaching, any integration of workplace skills in their courses, their understanding about and the importance of these skills, their ratings of graduates' overall skill development in college, the role they had played in this process, their evaluation and suggestions of the development of skills in college. Like the graduates, the last interview question invites instructors to provide any additional thoughts or comments that are not included in the interview. Appendices G and H are the English and Chinese versions of the interview protocol for instructors respectively.

Piloting Instruments

The survey and interview were piloted before in-country data collection with a group of college graduates and course instructors who closely resemble the survey's target population. To improve the survey instrument and the interview protocol, several cognitive interviews (think-alouds) were conducted with recent graduates as well as course instructors from second-tier universities in Hangzhou. The goal of the think-aloud interview is to "determine whether respondents comprehend questions as intended by the

survey sponsor, and whether questions can be answered accurately" (Dillman, 2007, p. 142).

Graduates and instructors were invited to respond to a respective questionnaire individually, to think out loud as they went through the draft instrument, and to tell everything they thought. After hearing what they said about each survey item, respondents were probed about their interpretation of the survey. Research participants were also invited to provide definitions of each selected skill during the pilot. Their definitions were documented and summarized (Table 3). These definitions were provided to survey participants later during the fieldwork to ensure that understanding of the skills is generally consistent among graduates and instructors. Approximately 10 graduates and another 10 course from a few second-tier universities in Hangzhou were then selected to receive an electronic copy of the survey. Revisions of the survey were adjusted according to their feedback. Survey data from the pilot tests were not included in the main study, to avoid data contamination (Teijlingen & Hundley, 2001). The same group of graduates and instructors were also invited to review the interview protocols prior to the in-country fieldwork. Revisions were made based on their feedback and comments.

All instruments were translated to English to ensure precision of the language. During the pilot stage, all instruments were sent via email. The think-aloud interviews were conducted via Skype, an online telephone call and video conferencing service.

In-Country: Main Study

During the main study, surveys were launched on Tencent QQ which is the most popular free instant messaging computer program in Mainland China. It currently has

over 300 million users in China. The QQ is a feasible tool to collect data because the majority of graduates have Internet access either at their workplace or at home and have at least one QQ account.

Several strategies were employed to increase survey return rate from the graduates. One or two research liaison(s) were designated in each graduate's former class. The liaison(s) maintain(s) up-to-date contact information of the graduates before disseminating the first-round of the survey. The college graduates were then notified by the classroom liaison(s) by phone about an upcoming survey. The liaison(s) ensured that an online survey invitation could be delivered to the graduates electronically. For those graduates who did not have email or Internet access, a structured phone interview was scheduled. The graduates had up to three chances to complete the survey. After the first notification, two additional emails or phone reminders were followed up with those graduates who were not able to submit their surveys for the first round of data collection.

Compared to graduates, it was much easier to know the whereabouts of course instructors; however, having the instructors return a complete survey took extra effort. To ensure adequate survey response rate, the survey was distributed during two faculty meetings when most faculty gathered.

In this study, online surveys were the primary modality of survey data collection, and phones or in-person contacts were the secondary approach for graduates only. A paper-pencil survey was administered to course instructors. For the interview part, a face-to-face interview was conducted with each individual graduate and instructor whenever possible. For those graduates or instructors who were not able to attend a face-to-face interview, phone interviews were then conducted.

In total, 695 surveys were distributed to graduates and 271 of them were returned, with a return rate of 39%. Because faculty surveys were handed out in person, all but one instructor in the college returned their surveys, with a return rate of 98%.

Data Analysis

First, survey data was analyzed descriptively. Next, ANCOVAs was used to test the statistical significance of differences between graduates and instructors, controlling for graduates' and instructors' program of study and gender as well as the size and sector of which graduates are employed. For group differences that are statistically significant, effect sizes were calculated to determine the magnitude of the difference between groups. Qualitative data were content analyzed looking for themes that emerged from the interviews. Table 4 summarizes the analytical procedures of survey and interview data, in relation to each research question.

Quantitative Data Analysis

All survey responses were entered into SPSS 17.0 statistical analysis software. A descriptive statistical analysis was first conducted to display the nature of the data. Means, standard deviations, maximum and minimum values were used to analyze close-ended survey questions. Bivariate *correlations were conducted* between skills to examine the extent to which skill assessments are correlated with each other. Multiple ANCOVA tests determine whether there is a statistical significant difference in the perceptions between graduates and course instructors. Effect sizes (omega square[17]) for ANOVAs were then calculated to obtain the magnitude of difference between the aforementioned groups.

[17] Although reporting eta square η^2 is often what is required in publications, Fields (2005) argues that "this measure [η^2] is slightly biased because it is based purely on sums of squares from the sample and no

Rationales for Control Variables

There are a number of variables to control for: program of study, organizational size and type where graduates are employed and gender. Holding these variables constant ensures the statistical model only measures the effects of group membership (graduate vs. instructor) on assessment ratings. Rationales for selecting them as control variables are provided below.

Firstly, an increasing body of literature found that discipline is a determining factor with regard to the importance (Lecky & McGuigan, 1997) ascribed to a number of skills as well as the extent to which these skills were developed in college (Fallows & Steven, 2000; Schneider & Andre, 2005; Smart & Umbach, 2007). Lecky and McGuigan (1997) found that Northern Ireland undergraduates in Business and Management, Education, and Humanities regarded good oral communication skills as one of the most important skills to be fostered, whereas their counterparts in the Engineering and Informatics program thought otherwise, emphasizing more one the importance of knowledge base rather than skills. Management students in Canada reported positively about skills preparation for workplace skills, Political Science students reported positively, yet Communications Studies students reported negatively (Schneider & Andre, 2005). Another study conducted in Canada revealed that graduates of applied fields reported a greater development of team-work skills than graduates of pure fields. Graduates of soft fields reported greater development of writing and oral communication skills than graduates of hard fields (Kwok, 2004). In examining how faculty members designed and structured their courses, Smart and Umbach (2007) concluded that U.S.

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adjustment is made…" (p. 357). He recommends using a slightly more complex measure called omega square, ω^2 which uses the variance explained by the model, and the error variance.

faculty members in Enterprising environments (e.g., business administration, marketing, communications, finance, industrial engineering, pre-law and public policy analysis) put much more emphasis on helping students acquire work-related skills than faculty members affiliated with Social environments (e.g., American history, counseling psychology, elementary education, home economics, nursing, and student personnel services) who stressed seeking solutions to interpersonal problems to a greater extent.

Secondly, studies showed that differences exist between graduates employed in smaller organizations and those employed in larger ones. For example, graduates working at smaller organizations (no more than 1000 employees) rated oral communication more important to their jobs than those working at bigger organizations (more than 1000 employees). Graduates working at larger organizations rank ordered the importance of leadership much higher than those working at smaller organizations (Shandong Demand and Supply Project, 2010).

Thirdly, the extent to which skills are deemed important is related to the type of organization in which graduates are employed. For instance, Venter (2004) noted that foreign-owned enterprises in China seek a wider range of skills in the recruitment process than state-owned enterprises or domestic private companies. Graduates working at a foreign-owned enterprise in China may feel less compelled to agree that one's perceived skill level has little to do with employment preparation at college. Employees in foreign-owned enterprises are more likely than those in other types of organizations to give an accurate assessment of skill development at college. This further reiterates the importance to examine the effect of the type of organization in which graduates' are employed. The

organizational type may have a direct impact on how graduates perceive skills importance to their employment differently.

Qualitative Data Analysis

Summative content analysis was used to code interview transcripts. This approach counts words or content first, and then extends the analysis to include meanings and themes. The analysis appears quantitative, but it aims to explore the usage of the words or indicators inductively (Hsieh & Shannon, 2005). Interview content that does not directly fit the coding scheme and research questions was retained for further analysis searching for implicit meanings of the content.

The transcripts were coded around eight main themes: instructors' role in skill development; connection and/or disconnection between the university and the workplace; the process of skill development in classroom; the process of skill development in extracurricular activities; mechanisms needed for evaluating graduates' workplace skills; incorporating skill development in college curriculum and instruction; inclusion of skill development in instructors' evaluation; and different types of skill determine the importance and the extent to which the skills were developed (e.g., subject-specific skills such as computer and English; essential skills such as communication, team-work, problem-solving; advanced skills that are thought to be less applicable to recent graduates such as leadership, decision-making and critical-thinking).

CHAPTER FOUR RESEARCH FINDINGS

This chapter first describes demographic characteristics of both graduates and instructors. It then presents findings for the two proposed research questions. For each question, survey results are given first, followed by interview findings to help elaborate the former.

This research revealed that by and large graduates and instructors at the X University agreed on the importance of the majority of selected skills as well as the extent to which these skills were developed at college, except for a few skills with which they disagreed. Instructors rated English skills more important to post-graduate employment than graduates, while graduates rated leadership skills more important than instructors. Instructors believed that college courses developed oral communication skills to a greater extent than graduates, while graduates believed that the courses developed their critical-thinking skills to a greater extent than instructors. Finally, instructors believed the college developed computer and English skills to a greater extent than graduates. The following sections explain the research findings in detail.

Survey Findings

Demographics of Graduates

A total of 271 graduates completed the survey. A hundred and thirty-six graduates (50.2%) are male and a hundred and thirty-five (49.8%) are female. Fifty-two (19.3) graduates were in engineering management program, eighty-eight (32.6%) were in enterprise management program, seventy-three (27.0%) were in human resource management program, and fifty-seven (21.1%) were in marketing program.

A hundred and twelve (41.3%) of them graduated in 2007, eighty-seven (32.1%) graduated in 2008, and seventy-two (26.6%) graduated in 2009. In responding the number of jobs they had after graduation, 5.9% of the graduates indicated that they did not have any job after college, 43.9% indicated that they had one job, 29.9% indicated that they had two jobs, 14.0% indicated that they had three jobs, 8.9% indicated that they had four or more jobs.

In terms of graduates' current employment status, 9.2% of them reported not having a job and 90.8% reported having a job. The majority of graduates (64.5%) were employed in small to medium sized organizations that have employees of less than 500 (Table 5). Table 6 presents the distribution of employment sectors of graduates. With the dominance of private sector in Zhejiang, it is not surprising to find that the privately-run enterprise absorbed almost half of the graduates (42.8%), greatly surpassed the second largest sector which employed 20.8% of the graduates. The third largest employment sector was the Chinese-foreign cooperative or foreign-funded enterprise (14%).

Demographics of Instructors

A total of fifty-one instructors participated in the survey. Forty were males (78.4%) and eleven were females (21.6%). Engineering management program had ten (19.6%) instructors, enterprise management had fifteen (29.4%) instructors, human resource management and marketing programs each had 13 (25.5%) instructors.

Research Question 1: To what extent do Chinese course instructors differ from recent Chinese graduates in the importance they assign to selected skills needed in post-graduation employment?

Because bivariate correlations between dependent variables are high (Tables 7, 8 & 9), the Bonferroni method for controlling Type I error rates for multiple comparisons was used. Each ANCOVA analysis was tested at the 0.006 level (0.05/9=0.006) as there were nine skills.

Table 10 shows the descriptive statistics of the importance ratings graduates and instructors assigned to the selected skill sets. After controlling for gender, program of study, employment sector and employer's size, ANCOVA tests indicated a significant difference between graduates' and instructors' assessments of the importance of leadership and English skills (p=0.006). Instructors rated the importance of leadership in post-graduate employment significantly lower than graduates did (F(1,309)=11.88, p=0.001, partial eta^2=0.04[18]) (Table 11). An average rating of this skill assigned by instructors was 3.84, and that by graduates was 4.39. The effect size (omega square[19]) is 0.19 which is considered small. In addition, Appendix S shows that instructors rated English skills (mean=4.57) significantly more important to post-baccalaureate employment than the graduates did (mean=3.76) (F(1,310)=19.68, p<0.001, partial eta^2=0.06). The effect size is 0.22, which is small.

Graduates and instructors did not significantly differ on the remaining seven skills, including oral-communication, written-communication, problem-solving, team-work, decision-making, critical-thinking, and computer skills (Table 12).

Interview Findings

Demographics of Interview Participants

[18] The value of 0.04 indicates that 4% of the between subjects variance is accounted for by group membership (graduate vs. instructor).

[19] The formula used to calculate Omega Square is $r_{contrast} = \sqrt{\frac{t2}{t2+df}}$

Twelve graduates were randomly selected for the interview. Two were in the engineering management program, four were in the enterprise management program, three were from the human resource management program, and another three were in marketing program. Five of the graduates are female, and seven are male.

Seven instructors were randomly selected for the interview. The enterprise management, human resource management and marketing programs each had two instructors participated, and one instructor were from the engineering management program. Two instructors are female, and five are male.

Leadership

Most instructors considered leadership a somewhat important skill in post-graduate employment while interview findings showed mixed responses from the graduates in terms of the significance of leadership skills in their employment. Half of the graduates indicated that these skills are not essential as they are junior employees and do not yet have the power to exercise this capacity or do not need it at work. For example, one graduate holds an entry-level job and thought leadership would be more important if she held a middle-management position or higher, a view shared by several other interviewees. Another graduate interviewee added, "Organization and coordination skill[s] may be more appropriate instead of leadership skill in my case."

In explaining why instructors believed leadership is not very important to post-graduate employment, one instructor suggested, "Leadership skill is much more important to graduates from world-class universities [than to Graduates of the X University]." "It's unnecessary to foster leadership skills because most Graduates of the X University need only to follow leaders. They can work on their technical skills and

excel in those skills. So the importance of leadership skills really depends on individuals." Yet another instructor observed that leadership capacity is only important when graduates move up to middle management and become team leaders after a few years of working. She suggested that implementation abilities are more vital than leadership skills for young graduates: "The ability to carry out leaders' decision[s] is very important [to young professionals]."

English

While surveys indicated that instructors rated English skills as significantly more important to the workplace than did graduates, interviews offered a more nuanced picture, in which the majority of graduates and instructors of the X University seemed to downgrade the importance of English in post-graduate employment. They regarded it as inconsequential because most graduates are not employed in sectors where the language is used frequently, such as international trade or the hospitality industry. A few graduates and instructors, however, acknowledged that this skill might become important if graduates' companies go global.

The majority of graduates thought the English language is not important for their current jobs, which primarily required them to work with domestic clients or partners. The only graduate working in international trade believed that the language is a practical skill, but he observed that only basic, oral English is frequently used in his work. He also commented, "We usually chat with our clients in English online. If we have a technical word or phrase, we usually seek help from some language software. Anyways, [having] some basic, oral English-language skills is enough." While admitting that English is not essential at work, a few graduates pointed out that having this skill is a plus and will

potentially enhance their employability. Another graduate, whose company aspires to become global, noted, "The further development of our company requires English-language skills. It does no harm for us to learn more. Maybe we'll be using the skills one day even [though] they are not so important right now." Another graduate provided an example that further validates the potential importance of English at his work: "For instance, our hotel needed an English name. I was asked to come up with one because I know English. People first thought of me. English language is a plus skill on top of all your basic skills. However, I'm not in international trade; English language is never a basic skill in my skill repertoire."

Research Question 2: To what extent do Chinese course instructors and recent Chinese graduates differ in their assessment of how well university courses and extracurricular experiences developed skills that are important in the workplace?

Survey Findings

Tables 13 and 14 present the descriptive statistics regarding the extent to which study participants believed college courses and extracurricular experiences advance oral communication, written communication, problem-solving, team-work, leadership, decision-making, critical-thinking, computer and English skills. Multiple ANCOVA tests were conducted to test the significance of difference between graduates' and instructors' assessments of how well the college courses encouraged these selected skills. After controlling for gender, program of study, employment sector and employer's size, there was a significant difference between graduates' and instructors' assessments of the extent to which the courses developed oral-communication and critical-thinking skills

(p=0.006). Instructors believed the university courses fostered oral-communication skill (mean=4.30) to a greater extent than did graduates (mean=3.74), F(1,312)=12.91, p<0.001, partial eta^2=0.04 (Table 15). Yet, the effect size of the difference is small ($\omega^2 = 0.20$). In addition, instructors (mean=3.14) believed that college courses developed critical-thinking skills to a much smaller extent than did graduates (mean=3.95), (F(1,314)=24.13, p<0.001, partial eta^2=0.07). The effect size of the difference between graduates' and instructors' assessment on critical-thinking skills is small ($\omega^2 = 0.27$) (Appendix W).

Graduates and instructors did not differ significantly in assessing how well the courses developed written-communication, problem-solving, team-work, leadership, decision-making, computer, or English skills (Table 16).

ANCOVA was used to test the level of difference between graduates' and instructors' assessments of how well students' extracurricular experience helped them develop the selected skills. After controlling for gender, program of study, employment sector and employer's size, Table 17 indicates that there was a significant difference between graduates' and instructors' assessments of the extent to which the extracurricular experience developed computer (F(1,313)=34.73, p<0.001, partial eta^2=0.1) and English skills (F(1,313)=26.26, p<0.001, partial eta^2=0.08) (p=0.006). Instructors believed that the extracurricular experiences developed computer and English skills to a significantly greater extent than graduates did. The magnitude of the difference between graduates and instructors regarding the extent to which they rated the development for computer skills is 0.32 which is a medium effect size. The effect size for English skills is 0.27 which is small.

Graduates and instructors did not differ significantly in assessing how well the extracurricular experience aided oral-communication, written-communication, problem-solving, team-work, leadership, decision-making, or critical-thinking skills (Table 18).

Interview Findings

Oral Communication

In general, graduates had a positive impression of the university courses in developing their oral-communication skills. They reported that classroom activity and the required internships helped improve this form of communication.

Most graduates mentioned that classroom activities, such as group discussion and PowerPoint presentations, enhanced their oral communication to some extent. Conducting case studies as part of classroom assignments was also helpful in developing this attribute. As one graduate observed, "Many courses require doing case studies outside of class. My classmates and I distributed paper surveys or online surveys to get people's opinions on certain products. This let us talk to different kinds of consumers through which our oral-communication skill was greatly enhanced."

Many graduates mentioned that their internships improved their oral communication. One graduate worked at a real estate agency. He commented that oral communication was definitely needed when his bosses or coworkers told him what to do. Doing his job required appropriate communications with them, which means he had to understand what they meant to try to make them happy.

Similar to graduates, the majority of instructors held a positive view of the various classroom opportunities they provided to students to advance this skill. Nearly all instructors reported that graduates had ample opportunity to develop their oral

communication through group discussions, case studies, and PowerPoint presentations in class. No instructors mentioned the required internships in encouraging this skill. A few instructors reported that developing oral communication is not an intentional process in their classes. Instructors were not convinced that they were responsible for fostering oral-communication skills in their classes.

Instructors also pointed out skills such as communication, problem-solving, team-work, leadership, decision-making as well as critical-thinking are implicitly embedded in college courses, and they did not intentionally develop the skills in class. Course content is quite specialized; therefore, instructors usually did not have an agenda to explicitly promote these skills in class. Instructors indicated that because these workplace skills did not directly relate to their subject matter, the skills are neither their responsibility to incorporate in class nor a curriculum objective that the institution intends to fulfill. One instructor commented, "Our courses are specialized, so the primary goal of the class is not to develop oral communication or team-work skill, well . . . at least not to develop these skills intentionally. On your list of workplace skills, English and computer are the only two skills that I would consider specialized and academically related. The university organizes some seminars and activities where oral communication and team-work are supposed to be developed. As far as I know, there is not a separate course specifically for workplace skills and career development in our university."

Critical Thinking

Interview findings revealed that both graduates and instructors indicated that the college courses do not foster critical thinking and that it is not an important skill in the workplace. Thus, they were not concerned about the courses incorporating this skill.

Graduates believed that it should be used selectively, depending on whom they interact with at work. One graduate explained, "Critical thinking should be used conditionally. Some people just cannot accept it [being treated critically]." Another two graduates mentioned that when interacting with their supervisors, following is more practical than thinking critically. They thought that leaders could think this way but not junior employees. Another graduate expressed that critical thinking is very valuable for self-reflection and improvement; yet, he was not certain whether this skill should be a component in the curriculum. "If a person becomes too critical about his/her colleagues or stuff at work, it is obnoxious to be around with [that person]."

Like the graduates, quite a number of instructors pointed out that most leaders in the corporate world do not want their employees to have critical-thinking skills. Because of this environment, the instructors also agreed that critical thinking is not always helpful for graduates' personal development. Thus, they suggested critical thinking should be developed with great prudence in China where the social-cultural climate does not necessarily encourage it. While acknowledging the importance of critical-thinking in advancing a society, one instructor's comment is typical among the majority of instructors, "…yet in China, the norm is to obey. An employee won't get promoted if he/she always brings up different perspectives or even goes against his/her boss' will."

Computer

Graduates pointed out that they learned basic computer skills at college; however, they did not learn relevant skills in classes. Rather, they acquired work-related computer skills outside of class. Instructors seemed very confident that the university curriculum and experience developed graduates' computer skills to a great extent. The majority of

graduates agreed that they spent a lot of time working on computers outside the curriculum because it is not merely a survival skill but also an indispensable part of their lives. However, they also pointed out that in their spare time, they did not intentionally develop computer skills that are important to the workplace. Instead, they primarily used computers for entertainment. One graduate remarked, "I'm OK with basic computer skills, such as basic features in Word, PowerPoint, Excel, etc. But [in] the workplace, we have to be familiar with advanced features of commercial programs sometimes. I'm not familiar with those. . . . At college, I goofed around a lot, always online chatting and surfing aimlessly, killing time. Well, I guess chatting really helped my typing speed, which is kind of important to the workplace, but nothing more than that." This response was typical among the graduates.

Graduates also argued that the mandatory National Computer Skill II Exam is irrelevant to their current jobs. They suggested it be removed from a list of mandated exams for a baccalaureate degree. One graduate commented, "To be honest, I spent lots and lots of time in memorizing the programming language of Visual Basic to fulfill the exam requirement. When we were out in the job market, was it useful? Like us, non-computer majors, it absolutely makes no sense to learn programming. It does make sense, however, to teach us how to use . . . Office, how to make impressive PowerPoint presentations, Excel sheets, and Word documents. [That] advanced stuff."

None of the interviewed instructors taught computer courses. When they talked about the extent to which the courses developed these skills, they most often mentioned that the courses furthered their former students' applied computer skills, such as facility with Office. They hold the same view as the graduates, saying that their former students

spent a lot of time on computers in their dorms. “They were very computer-savvy. [They made] good PowerPoint slides in class presentations. [They were] very helpful in helping us instructors to troubleshoot in class.” In addition, instructors believed that other extracurricular opportunities cultivated their former students’ computer skills. For example, one instructor was a campus advisor for a student-led on-campus Taobao website, which is analogous to Amazon.com.

He commented, “We had a team to work on a website that ran [a] business on used items, like used books, clothes, etc, for about a year. The students used computers and other communication tools to collaborate with off-campus businesses. Students who participated in this project have greatly developed their computer skills for sure.”

English

All instructors believed that exam-oriented English skills were taught intensively at the university, but some believed that what was learned in the classroom was not relevant to post-graduate employment. They thought that the institution has to improve students’ ability to speak, listen, interpret, and translate English. Unlike the instructors, most graduates were not able to assess how well the institution developed their English skills as many have jobs requiring little or no English. Therefore, it is challenging for them to gauge the extent to which the university developed this skill, which is important to their employment.

Most instructors were critical about the overemphasis on irrelevant English at their institution. The foci of the complaints were exam-oriented English pedagogy and a one-size-fit-all strategy of English teaching and learning. “All students have to pass the College English Band 4 Exam to obtain their degrees,” as one instructor indicated,

"regardless of whether the student is in international trade or in [a] hard-science program." Instructors specified that the development of English skills needs to be individualized depending on students' programs of study, employment plans after graduation, and career aspirations. In addition to the traditionally emphasized area of reading and writing, the institution needs to strengthen English speaking, listening, interpretation, and translation.

While graduates also agreed that English is irrelevant to their post-graduate employment, their argument for this skill is different from that of the instructors. Most graduates said that English is so rarely used at work that they can hardly assess the extent to which the college developed this skill set. For a small number of graduates who regularly use English at work, they indicated that only basic, oral English is needed to communicate with their business collaborators. They felt the English they learned at college is adequate for daily exchange.

CHAPTER FIVE DISCUSSION

This chapter discusses the research findings, including possible explanations for the survey and interview results. The discussion focuses on skills that were rated significantly different between graduates and instructors (Table 19). Findings of the current study are compared with those from the previous literature. Implications for current and future research on workplace-skill development in higher education in China are also explored. Finally, limitations of the current research are presented.

Finding 1: Graduates and instructors differed significantly in the extent to which they assessed the importance of leadership skills to post-graduate employment.

Instructors rather uniformly regarded leadership as a somewhat important skill for graduates while graduates had a mixed assessment of this skill depending on their job positions or interpretations of the skill. While more than half of the graduates interviewed considered leadership skills inconsequential to their post-graduate employment, the remaining graduates believed it is necessary.

The mediocre valuation of leadership skills given by the instructors is somewhat expected, as the finding is consistent with previous studies. It is possible that the instructors believed that leadership is not relevant for post-graduate employment because many Graduates of the X University hold entry-level jobs and were considered as subordinates. Chinese workplace culture commonly maintains a strong hierarchical relationship between supervisors and subordinates. Chen (2000) and Zhao (2005) pointed out that the majority of small size privately-run emprises in Zhejiang still operate in a way like a family business. The family business model is characterized by centralized

decision-making and low level of democratic participation. For the graduates sampled in this study in particular, almost half of them were hired by individually- or privately-run enterprises (42.8%) where the hierarchy and centralized decision-making tradition remain strong. In studying 204 privately-owned enterprises in Wenzhou, Zhejiang, Chen (2004) found that company owners made 61% of high-level decisions all by themselves, only 28% of the decisions were made jointly by owners and employees, 11% of the remaining decisions were made by external experts. Therefore, it is unsurprising for the instructors to view leadership skills as less significant compared to the majority of other skills for recent graduates in this study.

Graduates assigned a much higher importance rating to leadership skills than did instructors. It is likely that college graduates are particularly interested in participating in decision-making of important aspects of corporate affairs in order to feel a sense of ownership. Xiang and Zeng (2004) reported college graduates in a few state-owned enterprises in China were significantly less satisfied than non-college graduates with the degree to which employees can participate and make their opinions count in the decision-making process. College graduates rank ordered this as the forth least satisfying aspect. It is also possible that as new professionals, these graduates are ambitious about their future careers and want to acquire leadership skills to get promoted soon. Thus, they saw this skill set extremely vital for them to develop in the workplace. If they become a member of leadership team, they will have more opportunities to participate in high-level decision-making for many important aspects at work.

According to a number of studies (Rainsbury *et al*, 2002; Curry *et al*, 2003; Shandong Demand and Supply Project, 2010; Lin *et al*, 2005), both graduates and

instructors considered leadership moderately important or unimportant to post-graduate employment. This finding from previous studies is generally consistent with this study's result. Across the nine workplace skills in this study, graduates ranked leadership the second lowest important skill to their post-graduate employment (m=4.39) and the instructors considered it the lowest (m=3.84) (Table 10).

Finding 2: Graduates and instructors differed significantly in the extent to which they assessed the importance of English-language skills to post-graduate employment.

Instructors valued English skills to post-graduate employment significantly higher than graduates did. Likewise, the interview also found that graduates attached low importance of English skills to their employment. This outcome was expected given that the majority of graduates (63.1%) in this study were employed by domestic enterprises (state-owned or privately-owned) demanding little English at work. Coupled with the fact that most firms in Zhejiang still focus on domestic market, and globalization has just emerged in recent years, it is possible that these graduates may not know what the need is for English as they see little opportunities beyond their current job. Only 14% of the graduates surveyed worked at foreign-invested enterprises that may possibly require using English to a great extent. This inference is supported by a study of 300 employers representing 10 employment sectors in China. In this study, Dai and Zeng (2007) concluded that 74.2% of the foreign-invested enterprises surveyed had English language requirements during recruitment. This percentage is much higher compared to privately-owned (39.1%) or state-owned enterprises (30.4%). Furthermore, the majority of foreign-invested enterprises placed much heavier emphasis on both employees' actual ability of

English and language certificates (86.9%) rather than the certificates alone (13%), compared to privately-owned or state-owned enterprises where the certificates were highly valued than graduates' actual ability.

Dai and Zeng (2007) also found that once employees can communicate basic ideas in English, employers shifted their emphasis more on employees' subject knowledge and skills. This may explain why basic English language skills are sufficient even when they are needed at work.

Contrary to the survey findings, instructors interviewed reported that English is not an important workplace skill to graduates. The discrepancy between survey and interview findings in terms of instructors' importance rating of English skills is puzzling and needs further investigation.

Instructors in previous studies believed that English is important to post-graduate employment (Sciarini, Woods & Gardner, 1995; Lu, 1999; Lin *et al*, 2005). While business instructors in this study considered English skills important to the workplace, they slightly downgraded the skill set more than the previous literature would have suggested. In contrast, graduates in previous studies (except for Pang, Zhou & Fu's study) believed English is not important to their post-graduate employment. This result is consistent with the current study, where the graduates in particular considered English skills the least important to their post-graduate employment among the nine selected skills, corroborating a study in Shandong Province. Similar to this study, the Shandong study found out that graduates believed English is the second least important skill in the workplace out of a set of 22 selected skills (Shandong Demand and Supply Project, 2010).

Finding 3: Graduates and instructors differed significantly in the extent to which they assessed how much college courses developed graduates' oral-communication skills.

Graduates believed that the college courses advanced their oral communication to a much lesser extent than instructors did. The ratings of this skill for the majority of graduates were between somewhat under-developed and somewhat developed. In spite of this survey finding, graduates and instructors interviewed considered oral communication well developed during college. Both believed that graduates had various opportunities to improve this skill in class and through required internships. In particular, they acknowledged that the curriculum-based internships greatly enhanced their oral-communication skills. It is possible that graduates who took the survey were solely focused on classroom-based curriculum but not fully aware of the impact internships had on fostering the skills. During the interviews, however, the way internships furthered graduates' oral communication skills was specifically discussed. Given the important role internships played in developing these skills, the graduates interviewed are likely to believe that the college courses (both in class and through internships) made a greater contribution to their oral-communication skills than the graduates surveyed thought. Future research can investigate classroom-based curriculum and internships separately to examine their respective effects on the development of oral-communication skills.

This study is consistent with previous studies. Academic staff in one previous study thought the university developed oral communication skills to a significantly greater extent than graduates did (Lecky and McGuigan, 1997). A few other studies assessing only graduates' belief about the extent to which oral-communication skills were

improved all came to the conclusion that this skill was poorly developed at their institutions (Lin *et al*, 2005; Martin *et al*, 2000).

Finding 4: Graduates and instructors differed significantly in the extent to which they assessed how much college courses developed graduates' critical-thinking skills.

Based on the survey, graduates believed that the college courses aided their critical thinking to a significantly greater extent than instructors did. However, interview findings contradict this survey finding. Both graduates and instructors interviewed thought that the courses did not foster graduates' critical-thinking skills well. They believed this skill needs to be used cautiously in China, where it may not be appreciated, especially for young professionals holding junior-level positions. Given that critical thinking may not be encouraged, let alone taught in China, it casts some doubt on graduates' survey responses. More research is needed to determine why graduates believed college courses developed their critical-thinking skills.

This study is consistent with a previous study in terms of instructors' assessment of the extent to which the university developed critical-thinking skills. Based on Lin and colleagues' study (2005), instructors in an accounting program in China believed that the university developed critical-thinking skills to little extent, which this study confirms. The instructors in this study believed that college courses fostered graduates' critical-thinking skills to the smallest extent compared to all other selected skills.

Finding 5: Graduates and instructors differed significantly in the extent to which they assessed how much extracurricular experiences developed graduates' computer skills.

Instructors indicated that the extracurricular experiences developed graduates' computer skills to a much greater extent than graduates did. Instructors interviewed believed that graduates were very proficient with computers, and relevant computer skills were extensively furthered outside the curriculum. While graduates interviewed agreed that their basic computer skills were well developed outside the curriculum, some advanced and applied computer skills that are needed for their work were not as well developed, such as management and graphic software, as well as advanced features of the Office software. Graduates reported that they have a long way to go to learn relevant computer skills on their own, especially since those taught in college are so outdated and irrelevant to their everyday work. In contrast, previous research indicated that college graduates believed the university did not adequately develop computer skills (Heyboer & Suvedi, 1999; Shandong Demand and Supply Project, 2010; Martin *et al*, 2000). This study reflects these previous findings.

Finding 6: Graduates and instructors differed significantly in believing the extent to which extracurricular experiences fostered graduates' English skills.

Instructors indicated that extracurricular experiences developed graduates' English skills to a much greater extent than did graduates. The majority of graduates interviewed reported that English is seldom used at work. Even the few graduates working in international trade indicated that they only needed basic English to interact with their overseas partners. Therefore, English learned in class is sufficient for their daily work. Since most graduates have learned basic English in class rather than through

extracurricular activities, it makes sense for them to believe that extracurricular experiences contributed significantly less to their English skills than instructors did.

In conclusion, among the 9 skills examined, only a few skills were found to have significant different assessments between graduates and instructors. For the skills that were found to be significantly different, the magnitude of the difference is small for most skills. Medium effect size was only found for one skill, regarding the extent to which extracurricular activities fostered student computer skills. In another words, the differences between graduates' and instructors' assessments are not big enough to be practically important for the majority of the selected skills. This is an important finding for the institution to take into account in its planning and reform. The institution needs to prioritize these skill sets and determine the most efficient way of allocating resources in order to realign these skills. Moreover, for the majority of the skills that were not assessed significantly different, issues still remain. It is possible that graduates and instructors considered that certain skills were developed to little or a small extent, and both assigned low ratings. Although their assessments are not significantly different, attention needs to be paid if a skill is deemed important but not well developed in college, such as problem-solving and decision-making skills in this study.

Study Implications

Findings from this study have implications for higher education institutions, academic staff, and college students in China. Chinese universities need to connect higher education with the job market more closely to reduce a skill mismatch that may prevent employment. Higher education is expected to be useful to prepare young professionals

for employment. This argument "is based on an instrumental and extrinsic model of higher education rather than the more altruistic and intrinsic model of liberal education and is in line with the human capital approach towards higher education" (Agarwal, 2006, p. 51).

To strengthen the academia-industry link, institutions should enhance the supervision and assessment of practicum and internships. The majority of Graduates of the X University interviewed gave considerable credit to internships and practicum in developing their workplace skills. However, interview data revealed that these curriculum-based opportunities lack professional supervision. College instructors and site supervisors were not obligated to assess students before, during, or after the practicum or internships in significant ways. Students were only assessed by a final internship or practicum report that they submit as well as a final presentation they make. Quite surprisingly, graduates and instructors admitted that the institution, like many others in China, had a high tolerance for students who did not participate in mandatory internships as long as the students returned with an official proof of participation (authentic or counterfeit) from the internship site. The lack of a tracking system directly affects the usefulness of an internship that would otherwise be a valuable experience.

Another consideration to enhance the institutional efficiency is the alignment of course content and market demands. It needs to be evaluated early and improved during the first- and second-year of college. Chinese universities do not have any mechanisms for assessing skill alignment. Early-career interventions and skill assessments are necessary for students. These preventative mechanisms would allow students adequate time for improvement well in advance of post-graduate employment. Furthermore, it has

to be acknowledged that institutions may have reduced capacity to deliver relevant English and computer skills, unless exams address practical and applied aspects of these skills. For example, it has been a long-standing practice for most Chinese institutions to test Visual Basic as the only assessment of non-computer majors' computer skills in college. This practice triggered a lot of controversy and discontent among students and graduates since the Visual Basic is rarely used outside the field of computer and electronic engineering.

Despite the mandatory exams, higher-education institutions can still initiate deliberate efforts in class to maximize the relevance. In class, instructors may consider using an integrated teaching and learning strategy. The core of this approach is to improve the coherence, relevance, and integration of instructors' pedagogy. For example, the instructors reported that they usually did not collaborate with their colleagues in class and had little contact with support services, such as the college's career center. Such an non-collaborative and fragmented collegial culture greatly limits students' skill development. Research shows that student learning depends on the quality of teaching, especially in the curriculum's academic coherence and sequence (Agarwal, 2006). Only when instructors are collectively involved in keeping each other abreast of the knowledge and skills needed in the workplace can they promote a relevant education agenda. Cooperative action may include curriculum restructuring as well as a redesign of course sequences and requirements.

In addition, Liu (2006) proposed that management educators in China could practice Kolb's learning cycle in the sequence of concrete experience, reflective observation, abstract conceptualization, and finally active experimentation. This approach

is particularly applicable to the development of Chinese students' critical-thinking and leadership skills. In a society where the hierarchical relationship of supervisor and subordinate holds strong, instructors need to encourage students to identify areas where they are capable of initiating and implementing change. When teaching a specific academic subject, the instructors can integrate critical-thinking and leadership skills into the targeted curriculum, bridging the gap between classroom learning and students' future employment. Students are encouraged to not only reflect on and make sense of their work practices but also begin feasible changes in their organizations.

Extracurricular activities, such as student clubs and associations, are great venues to develop oral-communication, leadership, and computer skills. Yet, these activities were neither credit-bearing nor a major component for scholarship selections or job offerings. The interviews indicated that Graduates of the X University tended to withdraw from these programs after the first year of college. Higher-education institutions need to incentivize student participation in extracurricular activities through which workplace skills can be developed.

Because the X University is urged to upgrade from a traditional second-tier university to a *jiaoyu yanjiu xing* university, faculty members, particularly junior faculty are faced with pressure of conducting research to be considered for promotion. Instructors interviewed in this study were concerned about an increasing demand for research at the expense of teaching quality. This trade-off could eventually jeopardize the development of workplace skills. While the intention is to motivate academic staff to participate in more significant research endeavors, it may become detrimental for students as the quality of teaching is likely compromised. Research accomplishment is

heavily weighted in faculty promotion and tenure, while teaching becomes only a minor factor to consider in this process. Faculty members have to pay more attention to research rather than teaching at this institution where the founding mission is to deliver excellent teaching. While in theory, teaching and research are supposed to be mutually beneficial for instructors at jiaoyu yanjiu xing universities (Li, 2004; Wang, 2005), there is little empirical evidence to prove this claim in China. It would be ideal to integrate research with the teaching and development of work-place skills without downplaying the aspect of teaching in faculty's evaluation. This is a challenging task. Based on instructors' interviews, this study suggests that the development of students' work-related skills relies on instructors' teaching more than their research, emphasizing research over teaching may adversely affect the development of workplace skills.

Moreover, the average age of instructors in this study is approximately 43. This finding indicates that the majority of the instructors received their university education either during the guaranteed job-assignment period or the transition time prior to China's move to a market economy. For future faculty-training programs, the post-graduate employment context under which instructors were educated is an important factor to consider. It is likely that instructors' approaches and values to skill development were heavily influenced by the centralized economy at a time when they received their college education and early-career practices. They were trained to be instructors under the old planned economy, and may continue the way they were taught at college. This is a speculation but has some evidence to support it. In comparing knowledge and skill development between U.S. and Chinese accounting students, faculty and graduates, Lin, Xiong and Liu (2004) suggested that accounting courses in China did not leave much

room for critical-thinking and decision-making skills. This is largely due to the remaining influence of planned economy as well as many mandatory state regulations and policies associated with it.

Beyond a single institution discussed in this study, a broader implication can be drawn for cross-border education. With international partnership being one of the top priorities for Chinese 4-year universities, whether Chinese institutions share common ground with their foreign collaborators about the notion of student learning is of a great concern. For example, leadership and critical-thinking skills are widely acknowledged as very important to and highly encouraged among college students and graduates in many developed countries. However, it seems Chinese educators are not enthusiastic to foster student leadership and critical-thinking, partly due to the workplace hierarchy ingrained in Chinese society. Academic staff from universities whose primary goals and/or missions are not geared toward leadership and critical-thinking development, such as the Zhejiang X University, tend to neglect these important areas that would ultimately promote international partnership. As the partnership forges, it is likely that the misaligned institutional missions on teaching and learning will become a potential source of tension for further collaboration. In addition, research shows that students' poor ability is the biggest obstacle for the level of internationalization for Chinese institutions like the Zhejiang X University which is not nationally renowned (Hu, 2009). This study raises a potential red flag for international collaborations between Chinese institutions and overseas education providers, given their different beliefs and approaches to student learning and development.

Limitations and Future Research

The scope of the current study involves only college graduates and instructors from one higher-education institution in China, posing several limitations.

Firstly, findings are not generalizable since the study focuses on only one business college at one type of higher-education institution in China. Lessons learned might be applicable to other countries in a transition economy where the emerging market requires new sets of workplace skills. But more research is needed to determine how applicable the research findings are in different institutional, regional and national contexts. A broader array of institutions needs to be included in future studies to gain a better understanding of other efforts aimed at work-related skill development in China and other countries in transition.

Secondly, this study is limited by individual self-reporting. The variables measured are perceptual and not observed. Different individuals may define skills uniquely. Future research can use objective indicators to gauge how well universities actually develop these selected skills.

Thirdly, the participants of this study are limited to college graduates and instructors. The needs and perceptions of college students, administrators, and employers were not taken into account. All these stakeholders are important to obtain a comprehensive assessment about the extent to which higher-education institutions improve important skills and abilities for the workplace.

Fourthly, it is not yet clear about research participants' understanding of some key concepts, such as curriculum and extra-curriculum. These terms need to be defined by graduates and instructors to ensure that the concepts are aligned explicitly between the

researcher and the research participants. Future research can use a participatory approach to make sure that key definitions are shared, understood and aligned across the board.

Finally, this study focuses on the extent to which an institution and its instructors foster workplace skills for post-graduate employment. It does not address the role graduates (or former college students) play in acquiring these skills. Future research can study how much work-related skills can be attributed to students' own learning and development in college. Additionally, graduates in this study are limited to recent graduates, who may have unique responses that are not shared with their counterparts who have been in the workforce longer.

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Table 1:

Summary of the Importance of Selected Workplace Skills to Graduates' Post-graduate Employment

	College Graduates in Other Countries	College Instructors in Other Countries	College Graduates in China	College Instructors in China
Communication In the majority of studies, faculty and graduates rated communication and very important or important to post-graduate employment. They seemed not to differ much in their assessment on these skills.	Very high importance for employment (Zaid & Abraham, 1994; Lu, 1999); The most essential workplace competence in Finland (Tynjälä, Slotte, Nieminen, Lonka & Olkinuora, 2006); Most important skills among other business skills for Australian postgraduates (Waller and Hingoran, 2006)	Very important if not the most important for graduates of modern language in Ireland (Curry, Sherry & Tunney, 2003); One of the most critical skills required by graduates of tourism programs in Taiwan (Lu, 1999)	Very important by graduates in Shandong Province; written less important than oral communication (Shandong Demand and Supply Project, 2010); 59.5% very important, 34.7% important, 0.9% not important by medical students in China (Liu, Liu, Qiu, Ren and Fang (2009)	Chinese faculty members rated written communication slightly more important than oral communication for accounting professionals (Lin, Xiong & Liu, 2005)

Team-work In general, graduates and faculty rated team-work very important or important to post-graduate employment.	Australian postgraduate students of a marketing program rated team-work the most important skills for their career (Waller and Hingoran, 2006);	Irish academic staff of modern language programs reported that team-work skills are important for a graduate's career (Curry, Sherry & Tunney, 2003).	Recent college graduates in Shandong Province indicated that team-work and oral communication skills are very important at work (Shandong Demand and Supply Project, 2010). Graduates ranked team-work as the most important skill among a total of 22 skills (Shandong Demand and Supply Project, 2010). .	Chinese faculty members in accounting programs rated team-work not very important for accounting professionals (Lin, Xiong & Liu, 2004, 2005) Tourism and hospitality program directors in Taiwan agreed that cooperative team building is one of the most critical skills required by graduates of tourism programs. Cooperative team building skills were ranked as the third most important workplace skills by the directors, among 34 skill areas (Lu, 1999).
Leadership Moderate to low importance by both groups, did not differ much in importance ratings	Moderate importance by business students in the U.S. (Duke, 2002) Low importance by business graduates in New Zealand (Rainsbury et al, 2002)	One of the least important competencies by academic staff of modern language programs in Ireland, 25/29 (Curry *et al*, 2003)	Moderate importance, 14/22, Within-group variations exist among graduates working at organizations of different sizes, (Shandong Demand and Supply Project, 2010)	Moderate importance by accounting educators, 9/18 (Lin et al, 2005)
Problem-solving, Decision-making & Critical-thinking **Problem-solving:** generally rated important by both graduates and instructors **Decision-making:**	Analytical and problem-solving were ranked the least important by college marketing students in the U.S. (Duke, 2002) Problem-solving was rated the most important (1/19) by business graduates in Vietnam (Duoc & Metzger, 2006)	Problem-solving was rated the most important (1/19) by faculty members of business programs in Vietnam (Duoc & Metzger, 2006) Critical-thinking (6/29) and problem-solving (9/29) were rated important by academic staff in language	Decision-making was rank ordered the least important skill in Shandong; Yet, problem-solving was rated important (6/22) (Shandong Demand and Supply Project, 2010)	Critical-thinking and decision-making were rated important to an accounting career by faculty members of accounting programs (Lin et al, 2005);

moderate importance by Irish graduates; Chinese educators seemed to rate it higher than graduates **Critical-thinking:** research is lacking for graduates		programs in Ireland; Decision-making: mediocre importance (13/29) (Curry, Sherry & Tunney, 2003);		
Computer Graduates and faculty's perceptions seemed not differ substantially	High importance, 3/24 by business graduates in New Zealand (Rainsbury, Hodges, Burchell & Lay, 2002);	No empirical research is found	28.8% graduates in Guangdong: extremely important;61.3%: important (Chen, 2009) **Not very important by graduates in Shandong, 15/22 (Shandong Demand and Supply Project, 2010)**	The most important, 1/18 by faculty in accounting education (Lin *et al*, 2005)
English Results are inconsistent from the graduates' perspectives, therefore, cannot conclude with certainty	Australian Hospitality and Tourism graduates considered English of low importance to their first (mean=2.76) and then current jobs (mean=2.80) on a 5-point Likert Scale (King, McKercher & Waryszak (2003).	Much attention was paid to the skill by faculty in tourism and hospitality programs in the U.S. (Sciarini, Woods & Gardner, 1995) 91.7% educators in hospitality and tourism education rated it as the most important (Lu, 1999)	English listening, speaking and reading: very important, Writing and translation: important by business graduates (Pang, Zhou & Fu, 2001); Hospitality and Tourism graduates in Hong Kong considered the importance of English skills highly to their first (mean=4.08) and then current jobs (mean=4.16) on a 5-point Likert Scale. **Unimportant by graduates in Shandong, 21/22 (Shandong Demand and Supply Project, 2010)**	Very high importance by accounting educators, 3/18 (Lin *et al*, 2005)

Appendix A:
Zhejiang X University Alumni Survey

A. Job Selection & Career Choice

1. When did you graduate from the Zhejiang X University?

- ❒ 2007
- ❒ 2008
- ❒ 2009

2. What was your employment status **by the end of June** of your last year at the university?

- ❒ I already signed a job contract.
- ❒ I was waiting to sign the job contract.
- ❒ I was waiting for employer's final confirmation.
- ❒ I decided to start my own business.
- ❒ I decided to go to graduate school in China or abroad.
- ❒ I found job(s) but didn't accept it (them)
- ❒ I was not able to find any job.
- ❒ Other(s), please specify _____

3.How many job(s) have you held since graduation?

- ❒ 0
- ❒ 1
- ❒ 2
- ❒ 3
- ❒ 4
- ❒ 5 or more

4. Do you have a job right now?

- ❒ Yes
- ❒ No

5. How many people in total work for your organization? Your best estimate is fine.

- ❒ Under 10 employees
- ❒ 10-24 employees
- ❒ 25-99 employees
- ❒ 100-499 employees
- ❒ 500-999 employees
- ❒ 1,000-4,999 employees
- ❒ 5,000+ employees
- ❒ I am not employed

6. Which one of the following statement best describes your current employment situation?
(If you do not currently have a job, please select one of the first three choices.)

- ❒ I have never been employed after graduation
- ❒ I am looking for a job and am not currently employed
- ❒ I am not employed and have no intention to work currently
- ❒ I am employed by a state-owned enterprise
- ❒ I am employed by an individually/privately-run enterprise
- ❒ I am employed by foreign-invested enterprise including Sino-foreign joint ventures, cooperative businesses, and exclusively foreign-owned enterprises in China
- ❒ I am employed by a party or government organization
- ❒ I am employed by a school or research-based institution
- ❒ I am self-employed and running my own business

B. Importance of Workplace Skills and Abilities

7. Please indicate how important the following skills are to the post-graduate employment.

	Not Important at All	Not Important	Somewhat Unimportant	Somewhat Important	Important	Very Important
Oral Communication	❒	❒	❒	❒	❒	❒
Written Communication	❒	❒	❒	❒	❒	❒
Problem Solving	❒	❒	❒	❒	❒	❒
Team-work	❒	❒	❒	❒	❒	❒
Leadership	❒	❒	❒	❒	❒	❒
Decision-making	❒	❒	❒	❒	❒	❒
Critical-thinking	❒	❒	❒	❒	❒	❒
Computer skills	❒	❒	❒	❒	❒	❒
English	❒	❒	❒	❒	❒	❒

C. Development of Workplace Skills at College

8. To what extent did your university courses develop the following skills? The courses…

	Not at all	Little Extent	Small Extent	Some Extent	Large Extent	Very Great Extent
Improved my skills in oral communication for work	❒	❒	❒	❒	❒	❒
Improved my skills in written communication at work	❒	❒	❒	❒	❒	❒
Enhanced my confident about tackling workplace problems	❒	❒	❒	❒	❒	❒
Helped me to develop my ability to work as a team member	❒	❒	❒	❒	❒	❒
Developed my leadership skills at work	❒	❒	❒	❒	❒	❒
Developed my decision-making skills at work	❒	❒	❒	❒	❒	❒
Sharpened my critical thinking skills for work	❒	❒	❒	❒	❒	❒
Enhanced my computer skills at work	❒	❒	❒	❒	❒	❒
Enhanced my English skills	❒	❒	❒	❒	❒	❒

9. To what extent did your extracurricular activities develop the following skills?

	Not at all	Little Extent	Small Extent	Some Extent	Large Extent	Very Great Extent
Oral Communication	❒	❒	❒	❒	❒	❒
Written Communication	❒	❒	❒	❒	❒	❒
Problem Solving	❒	❒	❒	❒	❒	❒
Team-work	❒	❒	❒	❒	❒	❒
Leadership	❒	❒	❒	❒	❒	❒
Decision-making	❒	❒	❒	❒	❒	❒
Critical-thinking	❒	❒	❒	❒	❒	❒
Computer skills	❒	❒	❒	❒	❒	❒
English	❒	❒	❒	❒	❒	❒

D. Academic and Occupational Background

10. What is your gender?

❒ Male
❒ Female

11. Which department were you enrolled in at the School of Business Administration?

❒ Engineering Management
❒ Enterprise Management
❒ Human Resource Management
❒ Marketing Management

Thank you very much for completing this survey!

Appendix B:

大学毕业生就业能力调查问卷(毕业生)

各位同学：衷心感谢你接受本次有关大学本科毕业生就业能力培养的！本次调查完全匿名，无任何商业目的，只供学术研究之用。请你在百忙之中抽出 5-10 分中的时间，就以下问题选择打钩，答案没有对错之分，**所有题目都请单选**。如果采用电子邮件方式返还问卷，则麻烦你在选择打钩的位置用黄色高亮显示，如❒，以便识别，谢谢！

A．工作和职业选择

1．你哪一年大学毕业？

❒ 2007　　❒ 2008
❒ 2009

2．你毕业那年截至六月底（离校前）的就业状况是？

❒ 已经签了工作合同。　　❒ 在等待签约。
❒ 已经决定自主创业。　　❒ 准备在国内或出国攻读研究生。
❒ 已经找到了工作但是没有接受。　　❒ 还没有找到工作。
❒ 其他，请注明_____

3．毕业至今已经做过几份工作?

❒ 0 份　　❒ 1份
❒ 2 份　　❒ 3份
❒ 4 份　　❒ 5份或多于5份

4．你现在有工作吗？

❒ 有　　❒ 没有

5．你现在的工作单位有多少员工？（如果现在没工作，本题不填）

❒ 10人以下　　❒ 10-24人
❒ 25-99人　　❒ 100-499人
❒ 500-999人　　❒ 1000-4999人
❒ 5000人或以上

6．下列哪一种说法最符合你现在的情况？

❒ 待业　　❒ 在国有企业工作
❒ 在民营或个体企业工作　　❒ 在三资企业工作(中外合资、合作或外资企业)
❒ 在党政机关工作　　❒ 在事业单位工作（学校，科研，医疗等单位）
❒ 自己创业　　❒ 在国内或国外读研
❒ 其他，请说明：_____

B．就业技能的重要性

7．你认为下列就业技能对毕业后的工作有多重要?

	很不重要	不重要	有些不重要	有些重要	重要	很重要
口头表达能力	❒	❒	❒	❒	❒	❒
书面表达能力	❒	❒	❒	❒	❒	❒
解决实际问题的能力	❒	❒	❒	❒	❒	❒
团队合作能力	❒	❒	❒	❒	❒	❒
领导能力	❒	❒	❒	❒	❒	❒
决策能力	❒	❒	❒	❒	❒	❒
批判性思维能力	❒	❒	❒	❒	❒	❒
计算机能力	❒	❒	❒	❒	❒	❒
英语能力	❒	❒	❒	❒	❒	❒

C．大学就业技能的培养

8．大学课程对培养你工作中所遇到的就业技能所起的作用有多大?

	完全没作用	作用小	作用较小	有些作用	作用大	作用很大
对口头表达能力的提高	❒	❒	❒	❒	❒	❒
对书面表达能力的提高	❒	❒	❒	❒	❒	❒
对增强处理问题的能力	❒	❒	❒	❒	❒	❒
对团队合作能力的提高	❒	❒	❒	❒	❒	❒
对领导能力的提高	❒	❒	❒	❒	❒	❒
对决策能力的培养	❒	❒	❒	❒	❒	❒
对批判性思维能力的增强	❒	❒	❒	❒	❒	❒
对计算机运用技能的提高	❒	❒	❒	❒	❒	❒
对外语运用能力的提高	❒	❒	❒	❒	❒	❒

9．你认为大学教育对就业技能的培养所起的作用有多大?

	完全没作用	作用小	作用较小	有些作用	作用大	作用很大
口头表达能力	❒	❒	❒	❒	❒	❒
书面表达能力	❒	❒	❒	❒	❒	❒
解决实际问题的能力	❒	❒	❒	❒	❒	❒
团队合作能力	❒	❒	❒	❒	❒	❒
领导能力	❒	❒	❒	❒	❒	❒
决策能力	❒	❒	❒	❒	❒	❒
批判性思维能力	❒	❒	❒	❒	❒	❒
计算机能力	❒	❒	❒	❒	❒	❒
英语能力	❒	❒	❒	❒	❒	❒

D．基本信息

10．你的性别？

❒ 男　　❒ 女

11．你所学的专业是？

❒ 工程管理　　❒ 工商管理

❒ 人力资源管理　　❒ 市场营销管理

谢谢您的合作！

Appendix C:
Zhejiang X University Course Instructor's Survey

A. Importance of Workplace Skills

1. Please indicate how important the following skills are for the workplace.

	Not Important at All	Not Important	Somewhat Unimportant	Somewhat Important	Important	Very Important
Oral Communication	❒	❒	❒	❒	❒	❒
Written Communication	❒	❒	❒	❒	❒	❒
Problem Solving	❒	❒	❒	❒	❒	❒
Team-work	❒	❒	❒	❒	❒	❒
Leadership	❒	❒	❒	❒	❒	❒
Decision-making	❒	❒	❒	❒	❒	❒
Critical-thinking	❒	❒	❒	❒	❒	❒
Computer	❒	❒	❒	❒	❒	❒
English	❒	❒	❒	❒	❒	❒

B. Development of Employability Skills at College

2. To what extent did the university courses developed graduates with each of the following skill at work? The courses…

	Not at all	Little Extent	Small Extent	Some Extent	Large Extent	Very Great Extent
Improved oral communication skills at work	❒	❒	❒	❒	❒	❒
Improved written communication skills at work	❒	❒	❒	❒	❒	❒
Enhanced problem-solving	❒	❒	❒	❒	❒	❒
Developed the ability to work as a team member	❒	❒	❒	❒	❒	❒
Developed leadership skills	❒	❒	❒	❒	❒	❒
Developed decision-making skills at work	❒	❒	❒	❒	❒	❒
Sharpened critical thinking skills	❒	❒	❒	❒	❒	❒
Enhanced computer skills	❒	❒	❒	❒	❒	❒
Enhanced English skills	❒	❒	❒	❒	❒	❒

3. During the last three years, to what extent did extracurricular activities develop the following skills for graduates?

	Not at all	Little Extent	Small Extent	Some Extent	Large Extent	Great Extent
Oral Communication	❒	❒	❒	❒	❒	❒
Written Communication	❒	❒	❒	❒	❒	❒
Problem Solving	❒	❒	❒	❒	❒	❒
Team-work	❒	❒	❒	❒	❒	❒
Leadership	❒	❒	❒	❒	❒	❒
Decision-making	❒	❒	❒	❒	❒	❒
Critical-thinking	❒	❒	❒	❒	❒	❒
Computer skills	❒	❒	❒	❒	❒	❒
English	❒	❒	❒	❒	❒	❒

C. Academic Background

4. What is your gender?

- ❒ Male
- ❒ Female

5. What is your age?

- ❒ Under 30
- ❒ 30-40
- ❒ 41-50
- ❒ 51-60
- ❒ Over 60

6. What is your academic rank?

- ❒ Lecturer
- ❒ Associate Professor
- ❒ Professor

7. Which department(s) are you affiliated with at the School of Business Administration? (select all that apply)

- ❒ Engineering Management
- ❒ Enterprise Management
- ❒ Human Resource Management
- ❒ Marketing Management

8. Please list all classes you taught during the last three years.

_____
_____
_____
_____
_____

Thank you very much for completing this survey!

Appendix D:
大学毕业生就业能力调查问卷(老师)

尊敬的老师：衷心感谢您接受本次有关大学本科毕业生就业能力培养的问卷调查！本次调查完全匿名，无任何商业目的，只供学术研究之用。请您在百忙之中抽出5-10分中的时间，就以下问题选择打钩，答案没有对错之分，**所有题目都请单选**。采用电子邮件方式返还问卷，则麻烦您在选择打钩的位置用黄色突出显示，如❒，以便识别，谢谢！

A. 就业技能的重要性

1. 您认为下列就业技能对本科毕业生就业的重要性有多大？

	很不重要	不重要	有些不重要	有些重要	重要	很重要
口头表达能力	❒	❒	❒	❒	❒	❒
书面表达能力	❒	❒	❒	❒	❒	❒
解决实际问题的能力	❒	❒	❒	❒	❒	❒
团队合作能力	❒	❒	❒	❒	❒	❒
领导能力	❒	❒	❒	❒	❒	❒
决策能力	❒	❒	❒	❒	❒	❒
批判性思维能力	❒	❒	❒	❒	❒	❒
计算机能力	❒	❒	❒	❒	❒	❒
英语能力	❒	❒	❒	❒	❒	❒

B．大学就业技能的培养

2．请评价一下大学课程对培养学生下列技能起多大作用？

	完全没作用	作用小	作用较小	有些作用	作用大	作用很大
对工作中口头表达能力的提高	❒	❒	❒	❒	❒	❒
对工作中书面表达能力的提高	❒	❒	❒	❒	❒	❒
对增强处理工作中遇到的问题的能力	❒	❒	❒	❒	❒	❒
对工作中团队合作能力的提高	❒	❒	❒	❒	❒	❒
对工作中领导能力的提高	❒	❒	❒	❒	❒	❒
对工作中决策能力的培养	❒	❒	❒	❒	❒	❒
对工作中批判性思维能力的增强	❒	❒	❒	❒	❒	❒
对工作中计算机运用技能的提高	❒	❒	❒	❒	❒	❒
对工作中外语运用能力的提高	❒	❒	❒	❒	❒	❒

3. 您认为大学教育对本科生下列技能的培养起了多大作用？

	完全没作用	作用小	作用较小	有些作用	作用大	作用很大
口头表达能力	❒	❒	❒	❒	❒	❒
书面表达能力	❒	❒	❒	❒	❒	❒
解决实际问题的能力	❒	❒	❒	❒	❒	❒
团队合作能力	❒	❒	❒	❒	❒	❒
领导能力	❒	❒	❒	❒	❒	❒
决策能力	❒	❒	❒	❒	❒	❒
批判性思维能力	❒	❒	❒	❒	❒	❒
计算机能力	❒	❒	❒	❒	❒	❒
英语能力	❒	❒	❒	❒	❒	❒

C. 基本信息

4. 您的性别？

❒ 男　　❒ 女

5. 您的年龄？

❒ 30岁以下（包括30岁）　　❒ 31-40
❒ 41-50　　❒ 51-60
❒ 60岁以上

6. 您的职称？

❒ 讲师及以下职称　　❒ 副教授
❒ 教授

7. 您所在的系？

❒ 工程管理　　❒ 工商管理
❒ 人力资源管理　　❒ 市场营销管理

8. 请填写您在最近三年中主讲过的课程名称。

_____
_____
_____
_____
_____
_____

谢谢您的合作！

Table 2:
Survey Sections

Section		Item	
Alumni Survey	Instructors' Survey	Alumni Survey	Instructors' Survey
A Job Selection and Career Choice	n/a	1-6 Self-designed	n/a Self-designed
B Importance of Employability Skills Scale (IES)	A Importance of Employability Skills Scale (IES)	7 Self-designed	1 Self-designed
C Development of Employability Skills Scale (DES)	B Development of Employability Skills at College Scale (DES)	8 & 9 Adapted from the CEQ (cited in Richardson & Kabanoff, 2003)	2 & 3 Adapted from the CEQ (cited in Richardson & Kabanoff, 2003)
D Occupational Background and Demographics	C Academic Background and Demographics	10 & 11 Self-designed	4-8 Self-designed

Appendix E:
Interview Protocol for College Graduates

A. Understanding and Importance of Work-related Skills at the Workplace

1. What specific employability skills are important to your post-graduate employment? (Give some examples) (Probe) How do you define those skills?
How important is *** skill (*** refers to each of the eleven target skills in this study. Bring these skills up if the graduate doesn't mention them)? (Probe) How do you define those skills?
Why do you think those skills are important or unimportant to your employment?

B. Work-related Skill development at College

2. What work-related skills were taught in college classes?
(Probe)What about *** skills (*** refer to the eleven target skills in this study. Bring these skills up if the graduate doesn't mention them)?
What course(s) had integrated those work-related skills?
(Probe) Could you please describe your experience of learning these skills in classes?

3. How did the instructor(s) integrate the work-related skills aforementioned (specify each target skill if needed) in courses?
How did the instructor(s) make these skills applicable to your post-graduate employment?

4. What kind of help and support did you receive from your institution in developing your work-related skills (specify the target skills if needed)?
(Probe) Who or which university department/division(s) had significant impact on your skill development during college (or played a major role in this process), are there any? How so?
(Probe) What role(s) has your institution played in building your work-related skills?

5. In addition to classroom teaching and learning, what are other components that are counted toward university curriculum?
What workplace skills were learned from those components (e.g., internships and practicum), as part of the university curriculum?
(Probe) Could you please describe your experience of practicing these skills during your internship and/or practicum (specify each target skill if needed)?

C. Suggestions of Work-related Skill development at College

6. What do you suggest the university would have done differently to improve graduates' work-related skills?

(Probe)What would the instructors have done to enhance graduates' workplace skills?

(Probe) What would you have done to acquire work-related skills?

(Probe) What were some challenges for you and your instructors in doing so?

7. Is there anything else that we did not talk about you would like to share with me?

Appendix F:
大学毕业生就业能力访谈(毕业生)

A．就业技能的理解和技能的重要性

1. 哪些就业技能对你毕业后的工作是重要的？（回答请给出具体技能和相关例子）
对这些重要的技能，你是怎么理解和定义他们的？
（如果毕业生没有提及十一个所要研究的技能中的任意一个，问）*** 技能对毕业后工作有多重要？你怎么定义***技能？你为什么觉得这种技能对于你的工作是重要或是不重要的？

B. 大学就业技能 的培养

2．教师在课堂中平常都教些什么就业技能？
（如果毕业生没有提及十一种所要研究的技能中的任意一个，问）老师在课堂中教授***技能吗？
有什么课程结合了就业技能，特别是这十一种技能呢？
（追问）请描述一下你在课堂中学习这些就业技能是怎么样的？

3.你的老师是怎样把就业技能融合到课程里呢（针对十一个技能逐个询问）？
老师是怎么把这些就业技能和你们毕业生的工作联系起来的？

4．在培养就业技能方面，你得到了学校（学院）怎样的帮助（针对十一个技能逐个询问）？
（追问）哪个个体或是哪个工大的部门对你的技能培养有着重要影响（起了主要作用）？他们（某人或某部门）是怎么帮助你培养就业技能的？
（追问）工大（学院）在培养你的就业技能方面起着什么作用？

5. 除了课堂教学外，课程设置还包括别的什么部分？
你从别的课程设置部分（比如实习和社会实践）中学到了什么就业技能呢？
（追问）请你描述一下在实习或实践过程中，你是怎样培养自己的就业技能的（针对十一个技能逐个询问）？

C．对大学就业技能 培养的建议

6．工大可以采取一些什么不同的措施来提高毕业生的就业能力？
（追问）教师可以做些什么不同的尝试来提高毕业生的就业技能？
（追问）作为毕业生，你可以做些什么不同的尝试来获取就业技能？
（追问）对于教师和毕业生来说，要进行这些尝试有什么困难/挑战之处？
7．您还有什么想法要补充？

Appendix G:
Interview Protocol for Course Instructors

A. Understanding and Importance of Work-related Skills at the Workplace

1. What specific employability skills are important for post-graduate employment? (Give some examples) (Probe) How do you define those skills?
How important are *** skill (*** refers to each of the eleven target skills in this study. Bring these skills up if the instructor doesn't mention them)? (Probe) How do you define those skills?
Why do you think those skills are important or unimportant to post-graduate employment?

B. Work-related Skill development at College

2. What work-related skills were taught in college classes?
(Probe)What about *** skills (*** refer to the eleven target skills in this study. Bring these skills up if the instructor doesn't mention them)?
What course(s) had integrated those work-related skills?
(Probe) Could you describe recent graduates' experience of learning these skills in those classes?

3. What courses did you teach during 2007 and 2009?
Could you describe the course content for the last three years?
Are there any course areas that have integrated work-related skills? (Probe)What are those areas?
How did you help recent graduates to learn work-related skills (specify each target skill iteratively)?
How did you make these skills applicable to graduates' post-graduate employment?

4. What kind of help and support did recent graduates receive from this institution in developing their work-related skills (specify the target skills if needed)?
(Probe) Who or which university department(s) or division(s) had significant impact on recent graduates' skill development during college (or played a major role in this process), or are there any? How so?
(Probe) What role(s) has your institution played in fostering graduates' work-related skills?

5. In addition to classroom teaching and learning, what are other components that are counted toward the university curriculum?
What workplace skills were graduates learned from those components (e.g., internships and practicum), as part of the university curriculum?
(Probe) Could you please describe recent graduates' experience of practicing these skills during their internship and/or practicum (specify each target skill if needed)?

C. Suggestions of Work-related Skill development at College

6. What do you suggest the university would have done differently to enhance graduates' skills?
   (Probe)What would you have done differently to enhance graduates' workplace skills?
   (Probe) What would the graduates have done differently to acquire work-related skills?
   (Probe) What were some challenges for you and the graduates in doing so?
7. Is there anything else that we did not talk about you would like to share with me?

Appendix H:
大学毕业生就业能力访谈(教师)

A． 就业技能的理解和技能的重要性

1．哪些就业技能对毕业生的工作是重要的？（回答请给出具体技能和相关例子）
对这些重要的技能，你是怎么理解和定义他们的？
（如果教师没有提及十一个所要研究的技能中的任意一个，问）*** 技能对毕业后工作有多重要？你怎么定义***技能？你为什么觉得这种技能对于毕业生的工作是重要的或是不重要的？

B．大学就业技能 的培养

2. 教师在课堂中平常都教些什么就业技能？
（如果教师没有提及十一个所要研究的技能中的任意一个，问）老师在课堂中教授***技能吗？
有什么课程结合了就业技能，特别是这十一个技能呢？
（追问）请描述一下最近几年大学毕业生在课堂中学习这些就业技能是怎么样的？

3．2007 到 2009 年期间，你教了什么课程？
请描述一下最近三年您所教的课程的内容。
有哪些课程或课程的某一环节融合了就业技能的培养呢？（追问）是哪些课程环节？
您是怎么帮助近几年的毕业生掌握这些就业技能的（针对十一个技能逐个询问）？
您是怎么把这些就业技能和毕业生的工作联系起来的？

4．最近几年工大（学院）在培养就业技能方面是怎样帮助毕业生的（针对十一个技能逐个询问）？
（追问）哪个个体或是哪个工大的部门对近期毕业的大学生的技能培养有着重要影响（起了主要作用）？他们（某人或某部门）是怎么帮助毕业生培养就业技能的？
（追问）工大（学院）在培养毕业生的就业技能方面起着什么作用？

5. 除了课堂教学外，课程设置还包括别的什么部分？
毕业生从别的课程设置部分（比如实习和社会实践）中学到了什么就业技能呢？
（追问）请您描述一下在实习或实践过程中，最近几届毕业生是怎样锻炼他们的就业技能的（针对十一个技能逐个询问）？

C．对大学就业技能 培养的建议

6．工大可以尝试一些什么不同的方法来提高毕业生的就业能力？
（追问）您作为教师可以做些什么不同的尝试来提高毕业生的就业技能？
（追问）毕业生可以运做些什么不同的尝试来获取就业技能？
（追问）对于教师和毕业生来说，要进行这些尝试有什么困难/挑战之处？

7．您还有什么想法要补充？

Table 3:
Selected Skills and Descriptions Defined by Research Participants

	Description
Oral Communication	1. Make self understood and clear 2. Verbal skill: talk with logic, conciseness, fluency, appropriateness, persuasion, guidance, charm, and care (e.g. being considerate about customers' concerns and needs) 3. Transfer and communicate information and perspectives; provide effective oral feedback
Written Communication	1. Make one's writing accurate and easily understood 2. Types of writing: email, employee manuals, meeting minute, business inquiry letters, report summaries, contracts, standardized work orders, or solution/service proposal 3. Skillful writing: organized, certain flexibility which reduces misunderstanding in writing; use appropriate and formal language
Problem-solving	1. Finish assigned tasks on time, deal with repeated tasks, emergencies, trivial at work; come up with and implement feasible plans or methods to resolve a problem based on realities 2. Interpersonal communication: being flexible and understanding in certain situations 3. Find out key points of a problem, know who to seek out solutions from and solve problems with the help of others, particularly from one's supervisors, 4. Solve problems efficiently, effectively and creatively (toward new problems)
Team-work	1. Understand, communicate, coordinate, negotiate, distribute and streamline tasks between and within multiple parties and departments 2. A team can be only formed and operate efficiently if a systematic and mature performance evaluation is in place 3. Being a team-player: organize, lead and unite people to make contributions to one's organization; compromise, interact and collaborate with others in a team; be clear about one's position in a team and the team's goals; establish rapport with others, do not create conflicts; provide constructive feedback 4. Maintain external relations

Leadership	1. Management: set goals, direct and innovate, make breakthrough; organize, coordinate details, guide customers properly to navigate the company's products 2. Relationship to subordinates: respect and appreciate subordinators' suggestions and perspectives; treat subordinates with democracy 3. Types of leaders: manage human resources (considered as high-level leader) vs. manage things and techniques (considered as low-level leader) 4. Require more qualities than management skills, a step further than management skills: have personal charm and vision, far-sighted, compelling, willing to be led; motivate staff to take initiatives; independent thinker, decision-maker, implementer
Decision-making	1. Suggest and propose feasible plans 2. Select one proper plan out of a few to implement 3. Make an informed decision that is a win-win interaction between self and clients 4. Part of leadership skills 5. Make good judgment about policy directions 6. Prioritize, balance pros and cons, determine shoulds and should nots 7. Being able to decide, not being ambivalent
Critical-thinking	1. Independent thinking and judgment; non-linear, creative and counter-intuitive thinking that always asks why 2. Analysis based on multiple perspectives and being able to think both sides
Computer	1. Basic skills include the OFFICE(WORD), EXCEL, PPT, QQ/SKYPE/MSN (instant messaging tools), EMAIL, calculator; web search 2. Advances skills include marketing, accounting and management software, such as Office Automation System and graphic design
English	1. Speaking 2. Listening 3. Translation 4. Writing 5. Reading

Table 4:
Data Reduction, Display and Analysis Plan

Research Questions	Instrument	Data Display	Data Analysis
Research Question 1: To what extent do course instructors differ from graduates who are 3 years past graduation in the importance they assign to selected skills needed for graduates' success in their post-graduation employment?	**Survey** (Question 7 in Alumni Survey; Question 1 in Instructors' Survey)	Descriptive Statistics; Multiple one-way ANCOVAs Significant results from ANCOVAs are presented	IV: groups (graduates and instructors) DV 1: importance ratings of the 9 selected skills
	Interview (Question 1 in both Alumni and Instructors' Survey)	Thematic coding	Content analysis
Research Question 2: To what extent do course instructors and graduates who are 3 years past graduation differ in their assessment of how well the university has developed skills deemed important in the workplace?	**Survey** (Questions 8 & 9 in Alumni Survey; Questions 2 & 3 in Instructors' Survey	Descriptive Statistics Multiple one-way ANCOVAs Significant results from ACNOVAs are presented	IV: groups (graduates and instructors) DV 2: ratings of the development (courses and extra-curricular activities) of the 9 selected skills
	Interview (Questions 2-5 in both Alumni & Instructors' Survey)	Thematic coding	Content analysis

Table 5

Organization Size in which Graduates are Employed (N=248, excluding 23 graduates never being employed after graduation or who did not report)

	Below 10	10-24	25-99	100-499	500-999	1000-4999	5000 or above
N	12	17	56	75	32	25	31
%	4.8%	6.9%	22.6%	30.2%	12.9%	10.1%	12.5%

Table 6:
Employment Sector of Graduates (N=271)

	N	%
Unemployed	6	2.2
State-owned enterprise	55	20.3
Individually/privately-run enterprise	116	42.8
Foreign-invested enterprise including Sino-foreign joint ventures, cooperative businesses, and exclusively foreign-owned enterprises in China	38	14.0
Party or government organization	18	6.6
School or research-based institution	8	3.0
Self-employed	12	4.4
Graduate school in China or abroad	16	5.9
Others, please specify	2	0.7

Table 7:
Pearson Correlation Matrix among Importance Ratings of the Selected Workplace Skills to the Post-graduate Employment (N=305)

	1	2	3	4	5	6	7	8	9
1.Oral Communication	1	.603**	.639**	.607**	.497**	.573**	.341**	.659**	.480**
2.Written Communication		1	.643**	.527**	.655**	.666**	.495**	.555**	.615**
3.Problem-solving			1	.623**	.530**	.683**	.463**	.701**	.506**
4.Team-work				1	.580**	.557**	.397**	.619**	.482**
5.Leadership					1	.630**	.551**	.529**	.680**
6.Decision-making						1	.509**	.686**	.569**
7.Critical-thinking							1	.485**	.525**
8.Computer								1	.512**
9.English									1

**p < 0.01

Table 8:
Pearson Correlation Matrix among Ratings of the Extent to which College Courses Developed the Selected Workplace Skills (N=305)

	1	2	3	4	5	6	7	8	9
1.Oral Communication	1	.603**	.639**	.607**	.497**	.573**	.341**	.659**	.480**
2.Written Communication		1	.643**	.527**	.655**	.666**	.495**	.555**	.615**
3.Problem-solving			1	.623**	.530**	.683**	.463**	.701**	.506**
4.Team-work				1	.580**	.557**	.397**	.619**	.482**
5.Leadership					1	.630**	.551**	.529**	.680**
6.Decision-making						1	.509**	.686**	.569**
7.Critical-thinking							1	.485**	.525**
8.Computer								1	.512**
9.English									1

**p < 0.01

Table 9:
Pearson Correlation Matrix among Ratings of the Extent to which College Education Developed the Selected Workplace Skills (N=304)

	1	2	3	4	5	6	7	8	9
1.Oral Communication	1	.630**	.553**	.458**	.536**	.528**	.455**	.389**	.403**
2.Written Communication		1	.442**	.475**	.584**	.515**	.403**	.492**	.352**
3.Problem-solving			1	.525**	.567**	.656**	.495**	.325**	.278**
4.Team-work				1	.571**	.567**	.468**	.348**	.167**
5.Leadership					1	.832**	.528**	.261**	.286**
6.Decision-making						1	.567**	.261**	.272**
7.Critical-thinking							1	.358**	.305**
8.Computer								1	.667**
9.English									1

**p < 0.01

Table 10:

Means, Standard Deviations, Maximum and Minimum Values of the Importance of Selected Workplace Skills Assigned by Graduates and Instructors (pair-wise deletion)

	Group	N	Mean	SD	Max	Min
Oral	Graduate	269	5.40	0.74	6	2
Communication	Instructor	51	5.45	0.64	6	4
Written	Graduate	267	4.99	0.90	6	2
Communication	Instructor	51	5.33	0.68	6	4
Problem-solving	Graduate	267	5.54	0.64	6	3
	Instructor	51	5.47	0.61	6	4
Team-work	Graduate	268	5.11	0.78	6	3
	Instructor	51	5.31	0.65	6	4
Leadership	Graduate	264	4.39	1.10	6	1
	Instructor	51	3.84	0.90	6	2
Decision-making	Graduate	263	4.54	1.17	6	1
	Instructor	51	4.04	0.94	6	2
Critical-thinking	Graduate	262	4.50	1.12	6	1
	Instructor	51	4.39	1.11	6	2
Computer	Graduate	263	4.50	0.93	6	1
	Instructor	51	4.55	0.88	6	2
English	Graduate	265	3.86	1.38	6	1
Language	Instructor	51	4.57	0.83	6	3

Table 11:
Analysis of Covariance for the Importance of Leadership and English Skills

Skill		Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Leadership	Graduate vs. Instructor	13.70	1	13.70	11.88	0.001††	0.04
	Error	356.47	309				
	Total	6210.00	315				
English	Graduate vs. instructor	30.51	1	30.51	19.68	0.000††	0.06
	Error	480.66	310	1.55			
	Total	5545.00	316				

†† $p < 0.006$

Table 12:
Analysis of Covariance for the Importance of Oral Communication, Written Communication, Problem-solving, Team-work, Decision-making, Critical-thinking, and Computer Skills

Skill		Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Oral Communication	Graduates vs. instructors	0.24	1	0.24	0.43	0.50†	0.00
	Error	164.29	314	0.52			
	Total	9522.00	320				
Written Communication	Graduate vs. instructor	5.00	1	5.00	6.79	0.01†	0.02
	Error	229.51	312	0.74			
	Total	8245.00	318				
Problem-solving	Graduate vs. instructor	0.13	1	0.13	0.34	0.56†	0.00
	Error	117.08	312	0.38			
	Total	9837.00	318				
Team-work	Graduate vs. instructor	1.81	1	1.81	3.14	0.08†	0.01
	Error	179.95	313	0.58			
	Total	8627.00	319				
Decision-making	Graduate vs. instructor	10.32	1	10.36	8.05	0.01†	0.03
	Error	394.69	308	1.28			
	Total	6663.00	314				
Critical-thinking	Graduate vs. instructor	0.48	1	0.48	0.38	0.54†	0.00
	Error	387.42	307	1.26			
	Total	6690.00	313				
Computer	Graduate vs. instructor	0.17	1	0.17	0.20	0.65†	0.00
	Error	260.32	308	0.85			
	Total	6641.00	314				

†p >0.006

Table 13:

Means, Standard Deviations, Maximum and Minimum Values of the Extent to which Courses Developed Selected Workplace Skills by Graduates and Instructors (pair-wise deletion)

	Group	N	Mean	SD	Max	Min
Oral	Graduate	267	3.72	1.06	6	1
Communication	Instructor	51	4.35	0.74	6	2
Written	Graduate	267	3.85	1.08	6	1
Communication	Instructor	51	3.90	0.92	6	1
Problem-solving	Graduate	267	3.69	1.07	6	1
	Instructor	51	3.63	0.75	5	2
Team-work	Graduate	268	3.84	1.06	6	1
	Instructor	51	4.20	0.69	6	3
Leadership	Graduate	266	4.04	1.04	6	1
	Instructor	51	3.84	0.93	6	2
Decision-making	Graduate	264	3.61	1.01	6	1
	Instructor	51	3.29	0.88	5	1
Critical-thinking	Graduate	269	3.95	1.07	6	1
	Instructor	51	3.14	0.98	5	1
Computer	Graduate	267	3.58	1.07	6	1
	Instructor	51	3.75	0.82	5	1
English	Graduate	269	4.03	1.12	6	1
	Instructor	51	3.86	1.10	6	2

Table 14:
Means, Standard Deviations, Maximum and Minimum Values of the Extent to which Extracurricular Activities Developed Selected Workplace Skills by Graduates and Instructors (pair-wise deletion)

	Group	N	Mean	SD	Max	Min
Oral	Graduate	266	4.18	1.02	6	1
Communication	Instructor	51	4.24	0.84	6	2
Written	Graduate	264	4.04	1.12	6	1
Communication	Instructor	51	4.29	0.83	6	2
Problem-solving	Graduate	264	3.67	1.04	6	1
	Instructor	51	4.02	0.97	6	1
Team-work	Graduate	267	4.05	0.98	6	1
	Instructor	51	3.78	0.78	5	1
Leadership	Graduate	265	3.60	1.09	6	1
	Instructor	51	3.51	0.81	5	2
Decision-making	Graduate	265	3.67	1.06	6	1
	Instructor	51	3.61	0.90	6	2
Critical-thinking	Graduate	264	3.79	1.05	6	1
	Instructor	51	3.53	1.08	6	1
Computer	Graduate	268	4.14	0.96	6	1
	Instructor	51	5.04	0.96	6	1
English	Graduate	268	4.16	1.09	6	1
Language	Instructor	51	5.00	1.02	6	1

Table 15:
Analysis of Covariance for How well College Courses Developed Oral Communication and Critical-thinking Skills

Skill		Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Oral Communication	Graduate vs. instructor	13.22	1	13.22	12.91	0.000††	0.01
	Error	319.54	312	1.02			
	Total	4978.00	318				
Critical-thinking	Graduate vs. instructor	26.86	1	26.86	24.13	0.000††	0.07
	Error	349.55	314	1.11			
	Total	5048.00	320				

††$p < 0.006$

Table 16

Analysis of Covariance for How well College Courses Developed Written Communication, Problem-solving, Team-work, Leadership, Decision-making, Computer and English Skills

Source		Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Written Communication	Graduate vs. instructor	0.10	1	0.10	0.09	0.76†	0.00
	Error	341.81	312	1.10			
	Total	5087.00	318				
Problem-solving	Graduate vs. instructor	0.50	1	0.50	0.48	0.49†	0.00
	Error	324.51	312	1.04			
	Total	4647.00	318				
Team-work	Graduate vs. instructor	3.95	1	3.95	4.01	0.05†	0.01
	Error	308.42	313	0.99			
	Total	5166.00	319				
Leadership	Graduate vs. instructor	1.64	1	1.64	1.64	0.20†	0.01
	Error	310.86	311	1.00			
	Total	5425.00	317				
Decision-making	Graduate vs. instructor	4.87	1	4.87	5.05	0.03†	0.02
	Error	297.74	309	0.96			
	Total	4301.00	315				
Computer	Graduate vs. instructor	1.03	1	1.03	0.97	0.33†	0.00
	Error	332.20	312	1.07			
	Total	4477.00	318				
English	Graduate vs. instructor	1.75	1	1.75	1.45	0.23†	0.01
	Error	379.65	314	1.21			
	Total	5516.00	320				

†p >0.006

Table 17

Analysis of Covariance for How well College Extra-curricular Activities Developed Computer and English Skills

Source		Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Computer	Graduate vs. instructor	32.35	1	32.35	34.73	0.000††	0.10
	Error	291.55	313	0.93			
	Total	6185.00	319				
English	Graduate vs. instructor	30.23	1	30.23	26.26	0.000††	0.08
	Error	360.32	313	1.15			
	Total	6289.00	319				

††$p < 0.006$

Table 18

Analysis of Covariance for How well Extra-curricular Activities Developed Oral Communication, Written Communication, Problem-solving, Team-work, Leadership, Decision-making, Critical-thinking Skills

Source		Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Oral Communication	Graduate vs. instructor	0.09	1	0.09	0.09	0.76†	0.00
	Error	301.36	311	0.97			
	Total	5867.00	317				
Written Communication	Graduate vs. instructor	3.20	1	3.20	2.85	0.88†	0.01
	Error	347.35	309	1.12			
	Total	5611.00	315				
Problem-solving	Graduate vs. instructor	4.53	1	4.53	4.21	0.04†	0.01
	Error	332.77	309				
	Total	4714.00	315				
Team-work	Graduate vs. instructor	2.99	1	2.99	3.32	0.07†	0.01
	Error	281.10	312	0.90			
	Total	5392.00	318				
Leadership	Graduate vs. instructor	0.29	1	0.29	0.26	0.61†	0.00
	Error	340.96	310	1.10			
	Total	4418.00	316				
Decision-making	Graduate vs. instructor	0.27	1	0.27	0.26	0.61†	0.00
	Error	326.72	310	1.05			
	Total	4571.00	316				
Critical-thinking	Graduate vs. instructor	3.10	1	3.10	2.87	0.09†	0.01
	Error	334.37	309	1.08			
	Total	4777.00	315				

†p >0.006

Table 19

Mapping of Skills that were Rated Significantly Different between Graduates and Instructors (indicated by an "x")

A bolded, bigger "**x**" means that mean ratings of the instructors were higher than the graduates'; a regular, smaller "x" means that mean ratings of the graduates were higher than the instructors.

	Importance assigned to each skill	The extent to which college courses developed each skill	The extent to which the extracurricular activities developed each skill
Oral Communication		**x**	
Written Communication			
Problem-solving			
Team-work			
Leadership	x		
Decision-making			
Critical-thinking		x	
Computer			**x**
English Language	**x**		**x**