EXPLORING CHINESE FACULTY PERCEPTIONS OF QUALITY STANDARDS FOR ONLINE EDUCATION

By

Xiao Dai

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ABSTRACT

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Online education has become a major component of higher education. With the rapid growth of online learning, stakeholders are concerned that higher education institutions might have increased access but lowered quality. Facing scrutiny and accountability demands, online education programs are often called to demonstrate quality. The challenge facing online education is how to widen access and reduce costs, while at the same time improving and ensuring quality.

In order to ensure quality, many organizations in the United States have developed standards and guidelines that detail the essential criteria for online programs to plan, evaluate, and improve quality. However, defining and implementing quality standards are complex issues. There are questions about the completeness of these quality standards. There are also unknowns of how much these quality standards, as developed by U.S. organizations, can be applied in educational settings other than the U.S.

This study explored how U.S. quality indicators for online education are perceived by Chinese faculty. Nine sources from the U.S. literature were identified to represent U.S. online education quality standards. Thirty-one quality indicators were assembled, and a survey was administered to 400 Chinese online faculty and their teaching assistants at a Chinese institution.

The results indicate that U.S. quality indicators for online education are perceived by Chinese faculty as relevant, with high ratings on the perceived importance of these indicators. Most respondents feel that this set of quality indicators reflects their criteria of quality; and that

China should adopt them. The study also reveals, from the open-ended questions responses, that U.S. quality standards are not fully capturing the essence of quality for online education. Quality indicators, as reflected in the U.S. quality standards, focus more on the elements and conditions that are considered as inputs, but not enough on the outcomes. This suggests that even if the Chinese institutions replicate these indicators, the quality assurance process is not necessarily going to address the concerns that come out of the open-ended questions responses.

Because of the shortcomings and the incompleteness of these U.S. quality indicators, Chinese higher education institutions should be cautious in borrowing them. In order to successfully apply these U.S. indicators in China, Chinese scholars and institutions should expand and modify these U.S. quality indicators to suit the Chinese educational environment. This dissertation further discusses what expansion and modifications are needed, and how China may go about such modification. The dissertation concludes with the study's implications for quality assurance practices in China and for future studies of the quality of online education.

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CHAPTER 1

Introduction

Online education is becoming ubiquitous and mainstream (Christensen & Eyring, 2011). Its pervasiveness and popularity have proven its value as an important component of higher education. Despite the many benefits of online education, the concern about a potential decline in academic standards has worried stakeholders (Mariasingam & Hanna, 2006; Parker, 2008; Shelton, 2011). Institutions increasingly feel pressure to improve the quality of online education, in order to comply with external accountability demands. During this process, more reliable and effective quality assurance measures are needed (Van Damme, 2002).

Many organizations in the United States have developed standards and guidelines that detail the essential criteria necessary for online programs to plan, evaluate, and improve their quality (Moore, 2011). While educators acknowledge the usefulness of these standards in helping online programs achieve quality, it is important to remember that educational quality has multiple dimensions. The definition and measurement of quality depends on what the purpose is, from whose perspective, at what level, and at what time (Mariasingam & Hanna, 2006). With many variables, quality becomes a contingent concept. It can mean different things to different people (Shelton, 2011). Understanding of quality and the implementation of quality standards become critical in order to design and implement quality standards of online education.

The different understandings of quality can cause special problems when quality standards are used in international settings. There are unknowns of how much these quality standards, as developed by U.S. organizations, can be applied in educational settings other than the U.S. at the same time, the Chinese government initiated a major higher education experiment in 2000, by granting 38 Chinese national universities the right to start online programs (Zhang,

2004). After a decade of development, online education has become a major component in Chinese higher education, with over 12% of all students in the higher education sector (Jung, Wong, Li, Baigaltugs, & Belawati, 2011). The number of students enrolled has been impressive for Chinese online education programs. What comes with the expansion and growth of online education, however, has been concerns about the quality of online education. The Chinese government and higher education institutions are looking for models that China can use to ensure quality (MOE, 2010; Zhang, 2004). Since the U.S. is considered a global leader in higher education, it is logical to ask whether there are parts from the U.S. quality standards that can be learned from.

This dissertation project explored the extent to which online quality standards developed by organizations within the United States are perceived as relevant by Chinese online faculty. The main research questions were whether the U.S. standards for the quality of online education are relevant to China from Chinese faculty's perspective; and whether the U.S. quality standards sufficiently reflect the quality of online education, based on the perspectives from Chinese online faculty.

Online education in this paper is defined as "planned learning that normally occurs in a different place from teaching, requiring special course design and instruction techniques, communication through various technology, and special organizational and administrative arrangements" (Moore & Kearsley, 2011, p. 2). Throughout this dissertation, the terms "online education," "online learning," "distance education," and "distance learning" are used interchangeably to mean the definition of online education presented above. In this chapter, the opportunities and challenges of online education in China are first presented as background

information for the study, followed by the study's problem statement, its purpose, and the significance of the study.

1.1 Statement of the Problem

Expanding access to higher education has never been more important (Hanna, 2012). The challenges that are associated with increasing access to higher education are formidable. One major barrier has been the high cost that has limited access to higher education (Heller, 2008). To increase higher education access, there needs to be a way to provide quality education without the high cost. The traditional residential-campus model does not provide much assistance in this regard (Hanna, 2012). Under the traditional brick-and-mortar residential campus model, enrolling more students means that more teachers and spaces are proportionally needed (Twigg, 2013). The current economic situation, however, tells us that the resources are not available to support this type of expansion. Universities have to go beyond traditional methods in order to provide access at a more reasonable price (Bramble & Panda, 2008; Taylor, 2009).

At the same time, several critical factors have contributed to the expansion of online learning: the need for flexible access to learning opportunities, the belief that online learning will reduce costs and increase productivity (Naidu, 2012), the technology advancement and theoretical research on using technology in teaching and learning (Mishra & Koehler, 2006), and improvements in instructors' attitudes towards online learning and pedagogical competence (Sener, 2010).

Recognizing the benefits of online education in terms of widened access, flexible learning schedules, and the possibility of reducing costs, most universities in the U.S. have implemented some form of online education program (Crotty, 2011). Students enrolled in online

programs, as a percentage of the total U.S. post-secondary enrollment, reached 31% in 2011. Online education is becoming ubiquitous and mainstream (Christensen & Eyring, 2011). Its pervasiveness and popularity have proven its value as an important component of higher education. It is anticipated that the increase of online program offerings and in online student enrollment will continue (Allen & Seaman, 2011).

The Issue of Quality

Despite the many benefits of online education, the concern about a potential decline in quality has worried stakeholders (Mariasingam & Hanna, 2006; Parker, 2008; Shelton, 2011). To comply with the external accountability demand, institutions increasingly feel pressure to improve the quality of online education. More reliable and effective quality assurance measures are needed (Van Damme, 2002). Understanding the definition of online education quality is the first step.

What is online education quality? Researchers have suggested that the meaning of online education quality is dependent on the purpose, level, and perspectives of stakeholders (Mariasingam & Hanna, 2006). With so many variables, online education quality becomes a contingent concept. Depending on the region, the needs of society, the type of institution, and the level of the program, online education quality could have different meanings to different people. Even though the notions of quality ("excellence," "standards," "quality assurance," and "benchmarks") are often conflated in policy documents and in the literature (Vidovich, 2001), the lack of consistent, agreed upon definitions of quality can be problematic. It is important to have quality guidelines as a framework to plan, implement, and evaluate online programs. The search for the clarity of online education quality standards has been the pursuit of many scholars and organizations (Meryer, 2002, p. 22).

Online Education Expansion in China

The U.S. is hardly alone in feeling the pressure to increase higher education access and to improve quality. China is one international example that is in need of providing more access to higher education. Chinese higher education had a great expansion over the past two decades. In 1995, China had 1,000 post-secondary institutions that enrolled 5 million college students. By 2010, there were 2,305 Chinese institutions that enrolled 21 million college students (Jung et al., 2011). But even the additional institutions still cannot meet the Chinese students' needs, especially those non-traditional adult students who do not pass the college entry exam and therefore are shut out of a traditional college education (Jung et al., 2011).

In the year 2000, the Chinese central government initiated an educational experiment by granting 38 national universities the right to start online education programs. After a decade of development, online education has become a major component of Chinese higher education, with over 3 million students enrolled in online programs in 2010 (Jung et al., 2011). The expansion of online education in China is not without serious challenges. The number and the scale of enrollment have been impressive for Chinese online education programs, but the remaining question is about quality.

Three years into the online education experiment, there was growing concern in China over the quality of these pilot online programs (Wu, 2006). There have been issues and challenges, including lack of teacher-student interaction, isolated student learning, and questionable recruiting practices. What happened in China reflects the findings from a recent survey in the U.S, in which one-third of U.S. academic leaders believe that learning outcomes for online courses are inferior to those of face-to-face instruction (Richardson, McLeod, & Dikkers,

2011). As China expands its online education to increase access to higher education, the quality of online education has become a significant concern to Chinese online education stakeholders.

Online Education Quality Assurance in China

If the goal for the Chinese government and institutions is to improve the quality of online education, then quality has to be defined and measured. Because online education is a recent development in China, there have not been quality standards in China that are comparable to the standards developed by U.S. organizations (such as SLOAN-C) and accreditation agencies (such as C-RAC). There is not a regional accreditation agency (such as CHEA), nor an organization like SLOAN-C, to coordinate and develop comprehensive quality benchmarks. Each Chinese institution has to experiment and establish quality criteria on its own. The results demonstrate great variation in quality among these online programs.

While Chinese institutions need quality standards as a framework to plan, implement, and evaluate online programs, the search for the clarity of online education quality standards has been the pursuit of many Chinese scholars. Over the past decade, Chinese scholars indeed have been working on developing quality standards for online education. For example, a technical standard, based on the ISO9000, was developed to enable meta-data compatibility between different online education platforms (Zhu, 2001). A national standard for the management aspects of online education was also in the process of being developed (Guo, 2009). What is lacking in the Chinese quality standards development are standards with detailed quality indicators to ensure better online program quality, with the focus on teaching and learning.

Chinese scholars have realized that additional work is needed to develop quality standards in order to help Chinese online programs become more successful (Guo, Huang, & Chen, 2009). In order to speed up the process of developing quality standards for online

education, Chinese scholars want to learn from other countries that have had more experiences in this area (Chen, 2012; Ding, 2005; Pan, 2006; Zhang, 2004). In its *2020 National Educational Plan*, the Chinese government also called on Chinese higher education institutions to improve their quality and to become better connected to the international academic community (Chinese MoE, 2010).

One country from the international community that came into the picture is the U.S., because of its highly regarded higher education. The Shanghai Jiao Tong University *Academic Ranking of World Universities* ranked 17 U.S. institutions among the world's top 20, 35 among the top 50, and 52 among the top 100 (ARWU, 2013). Because of the good reputation U.S. higher education has, it is logical for the Chinese to investigate whether there are parts of the U.S. quality standards that can be learned from.

Quality Standards from the United States

Many online education quality standards have been developed within the U.S. to help institutions plan and evaluate online programs (Bishop, 2006; CHEA, 2008; Shelton, 2010). For example, the New England Association of Schools and Colleges Commission on Institutions of Higher Education (CIHE) has proposed a set of guidelines to evaluate online program quality (CIHE, 2009), in which eight categories have been presented with guidelines that institutions can use to measure online program quality. The Council of Regional Accrediting Commissions (C-RAC) has also proposed guidelines to evaluate the quality of online learning, in which eight categories are presented with detailed aspects that institutions can follow (C-RAC, 2009). As a prominent online education promoter in the U.S., the Sloan Consortium (Sloan-C) has also proposed a five-pillar framework that includes five basic quality components within online

education, namely Learning Effectiveness, Scale, Access, Faculty Satisfaction, and Student Satisfaction (Moore, 2011).

To validate the quality standards and quality indicators that have appeared in the literature, the Institute for Higher Education Policy conducted a research project that included six U.S. institutions (Phipps & Merisotis, 2000). The study examined the applicability of common quality benchmarks available around the year 2000, and it confirmed that most of the benchmarks were appropriate and necessary to ensure the quality of online education programs. The results of the study brought research data to the heated debate about online education quality, and the results provided a more tangible meaning of quality assurance. The final report, *Quality on the Line*, identified twenty-four online program quality benchmarks that were subsequently adopted by the National Education Association.

The Issue of Applicability

Even though many online quality standards exist, there are still unknowns when applying these quality standards to practice. One of these unknowns is whether the U.S. quality standards capture the full aspects of online education quality. Another is to what extent these quality guidelines, as developed by U.S. organizations, can be applied in educational settings other than the United States.

Can these U.S. quality standards for online education be applied in China? Are criteria that are considered important by U.S. scholars perceived the same way by the Chinese? On the one hand, one could argue that the world is getting closer because of globalization, brought by the advance of technology. The quality standards developed in the U.S. may well be suited to other countries. On the other hand, educational quality is contextual and subjective. How do we know that the U.S. quality indicators capture the essence of the quality of online education in

China? While it is not clear specifically how successful the adoption and the implementation of foreign quality standards will be, there is reason to believe that the process could be problematic (Schmidt, Houang, & Shakrani, 2009). When the Chinese turn to the international community to learn about best quality assurance practices, they should do so with full knowledge of whether or not these foreign quality indicators are appropriate to the Chinese context.

1.2 Purpose of the Study

This dissertation project studied a Chinese University's online program that purported to be successful, with proven records of widening access and lowering costs. The researcher investigated these questions: 1) To what extent were the online quality indicators developed by organizations within the U.S. perceived as relevant to China by Chinese online faculty? 2) Do U.S. quality indicators, included in this study, sufficiently capture the essence of quality for online education from the Chinese faculty perspective? Faculty were the main participants for the study, because faculty decide course offerings, design course structure, develop course materials, teach courses, and evaluate students' learning. The faculty are also the group that has been facing many challenges: new technology, pedagogy for online teaching, transition from face-to-face to online teaching, new skills and requirements, and new ways of interacting with students. The faculty's perceptions and actions can greatly shape and influence online program quality. Therefore, the study focused on faculty perspectives.

Research Questions

Do Chinese faculty perceive U.S. quality standards for online education as relevant?

Sub-questions:

1. To what extent do Chinese faculty perceive the importance of U.S. online program quality indicators?

2. To what extent do Chinese faculty perceive the presence of U.S. online program quality indicators?
3. Is there any association between participants' satisfaction level for online teaching experience and the perceived presence of quality indicators?
4. Is there any association between participants' level of concern for quality and the perceived presence of quality indicators?
5. Do the U.S. quality indicators included in this study sufficiently capture the essence of quality for online education?

The study first explored whether Chinese faculty agreed that these quality indicators that are perceived as important in the U.S. are also important in China. In order for these U.S. quality indicators to be useful in China, they have to be perceived by Chinese faculty as important. Second, the degree of relevance is demonstrated in practice. The survey explored to what extent these benchmarks were being practiced by Chinese faculty. The third sub-question and the fourth sub-question were added after the initial proposal. These two questions were asked because they were related to the main research question of whether these indicators were valid to China. This was a validation for the legitimacy of these U.S. quality indicators. Second, the researcher wanted to know whether there are additional quality indicators suggested by Chinese faculty, and what the U.S. can learn from this study to improve its quality standards. The researcher identified nine major U.S. online quality standards and research publications developed by scholars and accreditation agencies. By analyzing these standards, 31 online education quality indicators were assembled, and a survey was designed. The survey was administered to 400 Chinese online faculty and their teaching assistants at a Chinese institution.

The online program at ABC University (pseudonym) started as one of 38 Chinese online education experiments in 2000. It is a dual mode institution which added online education to its previously established campus and class-based teaching. The online education curriculum at ABC University is characterized as teacher-guided and learner-centered, which encourages autonomous learning (ABC University, 2013a). The online program has demonstrated its effectiveness in providing access and lowering costs. In the 2012 academic year, ABC University's online program enrolled 75,000 students in 37 majors.

Quality has been a main focus at the Online College of ABC University. Various procedures have been designed and implemented to ensure quality (ABC University, 2013b). The results from a pilot study, which was conducted in 2012, showed that online education quality is a major challenge facing Chinese higher education. Maintaining quality was repeatedly mentioned by Chinese scholars and administrators. According to the faculty and administrators from ABC University (China), a great amount of resources has been dedicated to many innovative practices to improve and ensure online learning quality. The researcher began to wonder about the quality standard of this Chinese online program. Are quality criteria that are considered important by agencies and scholars in the U.S. perceived the same way in China? If not, what is different?

ABC University's online program was selected as the study site because of its substantial experiences in online education. The ABC University has been taken as the first measure. If there seems to be evidence that the findings from this study are beneficial to Chinese online education, more institutions can be added for future study.

1.3 Significance

By studying how Chinese online faculty members view the U.S. quality indicators, this study can help Chinese scholars and administrators better understand different policies, opinions, and quality assurance practices that exist in the U.S. This study can potentially benefit both the U.S. and Chinese institutions; and it can contribute to the general knowledge of educational quality in several ways.

First, when Chinese scholars and institutions begin to explore and develop online education quality standards, it is beneficial to look around and learn from other more developed practices. However, the many contextual differences that exist between the two countries have to be taken into consideration. Some practices that are regular and common to U.S. scholars and practitioners may be difficult to understand by the Chinese, and vice versa. Knowing to what degree U.S. quality standards are relevant can help Chinese scholars determine whether to adopt the U.S. standards.

Second, it is also possible for the U.S. to learn from Chinese ways of addressing online education quality issues. The results from the study can be used to encourage U.S. institutions to reflect on what can be done differently in order to ensure the quality of online education, as the U.S. also faces a similar quality issue.

Third, higher education is becoming globalized, thanks to new technologies and new communication channels (Cunningham et al., 2000). The result of globalization is that there will be more educational exchanges (staff, students, and programs), more cross-border program offerings, and more international trade in the form of education services. Many U.S. higher education institutions will expand their operations to other countries, including China. Many of them will do so through an online education format. It is important to know how an online

program's quality is perceived, practiced, and measured in other countries, where the educational environment can be very different from the United States.

Lastly, the study also contributes to the broader conversation on the need for a global standard of online education quality. The study not only answers how U.S. quality standards are perceived by Chinese online faculty; it also has value to other international online education settings. Is the world heading toward a global convergence of online education quality assurance, regardless of different settings among countries? Or, are the contextual differences so great that it is impossible to do so? This study can potentially speak to the argument to have common online education quality benchmarks, or it cannot support the same argument.

The next chapter introduces the literature used to frame the study, and it provides a synthesis of the current U.S. online education quality benchmarks and indicators, which were used as the basis for the survey instrument.

CHAPTER 2

Literature Review

There are three bodies of literature which pertain to this study. The first is the phenomenon of online education expansion in China and the concerns for quality that have come with the expansion. The second includes the definition of quality for online education and its multidimensional characteristics. The third body of literature details online education quality standards developed by U.S. organizations. By analyzing these standards, a set of online education quality indicators were assembled to reflect current U.S. online education quality assurance practices.

Sources for the literature come from major educational research databases, such as ERIC (firstSearch) and ERIC (Proquest). Keywords used for the literature search were "online education," "quality standard," "quality assurance," and "globalization." Several handbooks in distance education and documentation from major international organizations were also referenced.

2.1 Quality Standards for Online Education: Theoretical Perspectives

Despite significant strengths and unprecedented accessibility, there are also weaknesses associated with online learning, including lack of teacher-student interaction, students studying in isolation, and uneven enrollment across disciplines (Hardy & Bower, 2004; Saba, 2005). With the rapid growth of online learning, stakeholders are concerned that higher education institutions might have increased access but lowered quality (O'Brien, 2012). Facing scrutiny and accountability demands, online education programs are often called to demonstrate quality (Parker, 2008; Shelton, 2011). The challenge facing online education is how to widen access and reduce costs, while at the same time improving and ensuring quality (Jung et al., 2011).

What is the quality of online education? How do we know if an online program has quality? The characteristics of a quality online program include 1) providing clear statements of educational goals; 2) sustaining the institutional commitment to support learners; 3) engaging in a collaborative process of discovery, and 4) improving the teaching and learning environment (Parker, 2008). In practice, however, the meaning of quality for online education is a very complex issue. It has to cover all aspects of online teaching and learning, which includes planning, faculty, students, technology, teaching and learning, and evaluation. In this study, the researcher used a framework to take into consideration the multiple dimensions of educational quality.

Quality Definition – Multiple Dimensions

There are three dimensions to be considered in order to understand the quality of online education: the purpose of defining quality, the perspective, and the level of program (Mariasingam & Hanna, 2006). The first dimension is the purpose of defining quality. Is the purpose to compare online programs in order to know which program has better quality? Or is the purpose to improve online program quality? The answer will decide how quality is defined and measured (Chaney et al., 2009). For example, when the purpose is to rank online programs, the focus could be on library volumes, faculty rank, instructional methodology, contact hours, class size, or student grade point average (Oblinger, 1998). When the purpose is to improve quality, institutional mission statements, evaluation, and improvement plans will be the focus.

Quality is also a construct relative to stakeholders' perspectives and interpretations (Cleary, 2001, p. 20). For example, institutional administrators might relate quality more to accreditation, management, and regulations, while faculty might relate quality to course material development, for which they need adequate technical and pedagogical help. Therefore, the

concerns and focus of administrators can be quite different from those of faculty (Benson, 2003). Because different stakeholder groups can interpret differently what online education quality should be (Benson, 2003), any discussion about online education quality must first ask from what perspective the quality is considered (Twigg, 2001).

The third dimension of quality is the level of the program about which quality is concerned. For example, at the course level, quality can be measured by learning flexibility, responsiveness, and teacher-student interaction. At the institution level, however, quality can be measured by technology, retention rates, persistence rates, and so forth (McGorry, 2003; Mariasingam & Hanna, 2006). Because of the multiple dimensions, the quality of online education becomes a complex and contingent concept. A clearer understanding of the concept of quality and quality standards has always been the pursuit of organizations and scholars.

Depending on the needs of society, the type of institution, and the level of the program, online education quality could have different meanings to different people. Even though the notions of quality ("excellence," "standards," "quality assurance," and "benchmarks") are often conflated in policy documents and in the literature (Vidovich, 2001), the lack of consistent, agreed upon definitions of quality can be problematic (Meryer, 2002, p. 22).

The Debate on Educational Quality Standards

How does one ensure that an online program has quality? Some scholars have suggested that rigorous and uniform academic standards must be defined in order to ensure quality. They argue that the consequence of not having standards could be a lower quality education (Schmidt et al., 2009). Many U.S. organizations have published standards for this purpose. Critics of educational standards, on the other side, claim that the U.S. is on the wrong path in using standards as the solution to fix educational problems. By strictly adopting government-set

standards, the U.S. is throwing away its global advantages. Some scholars even suggest that educational standards, implemented improperly, can actually hurt U.S. education quality (Zhao, 2009).

Internationally, common educational standards have been a controversial issue. On one side, scholars like Bill Schmidt have argued strongly for the need of educational standards that can be shared and applied across states and nations (Schmidt et al., 2009). Plenty of projects have been implemented to support such a belief. For example, Van Vught and Westerheijden proposed, as early as 1994, a general model of higher education quality assessment. They suggested integrating the basic elements of various quality assurance approaches to form educational standards that can be used cross-nationally (Van Vught & Westerheijden, 1994).

In Europe, the Bologna Declaration of June 1999 put in motion a series of reforms needed to make European Higher Education more compatible and comparable in the standards and quality of its higher education institutions. The General Agreement on Trade in Services (GATS) further promoted cross-border higher education and intensified the argument for cross-border educational standards (Knight, 2003). The Organization for Economic Cooperation and Development (OECD) is currently carrying out a feasibility study for the Assessment of Higher Education Learning Outcomes (AHELO), to see whether it is practical and feasible to assess what students know and can do upon graduation. The AHELO assessment aims directly to evaluate student performance at the global level and across diverse cultures, languages, and different types of institutions (Ewell, 2012). UNESCO has also proposed the *Guidelines for Quality Provision in Cross-Border Higher Education* (UNESCO/OCED, 2005). These efforts support the effort to develop quality standards that can be used internationally.

On the other hand, there have been strong criticisms against the common standards concept and framework. One argument is that education quality and quality assurance are localized matters. Educational quality is shaped and influenced by cultural and social factors. Educational purposes and practices, including quality standards and quality assurance, are influenced by contextual factors, such as history, culture, economics, and the political system. The socio-cultural differences that exist between countries make it challenging to apply quality standards across countries. Therefore, it appears to be impossible to have a common set of quality standards (Kogan, 1996). Critics of common standards have also pointed out the potential dangers, one of which is in exporting quality assurance and accreditation systems from the industrialized world to developing countries (Lim, 1999). Rogers, Graham, and Mayes (2007) noted the great amount of content that is being developed by the West and transported via the internet to the rest of the world. They argued that the trend highlights the need to explore international quality standards more carefully; more thought needs to be put into cultural and social differences and their influence on the divergence of quality definitions.

Riyad Shahjahan reviewed the International Assessment of Higher Education Learning Outcomes (AHELO) texts. He identified two themes that speak against cross-border educational quality standards: 1) crisis and imperial logic in policy production; and 2) Anglo-Eurocentrism in global designs and colonial relationships. He argued that through AHELO, the Organization for Economic Cooperation and Development (OECD) is striving to construct a global space of equivalence for teaching and learning in higher education, and in so doing, is perpetuating coloniality in global higher education (Shahjahan, 2013).

In summary, there are two opposing views on whether there should be common cross-border educational standards. Even though there are needs and desires to have common quality

standards, the contextual differences and other challenges make it difficult to develop and implement them. In terms of quality definitions, purpose, functions, methods, and focus (Middlehurst, 2001), the current international regulations take many forms and are often fragmented, disorganized, uncoordinated, and ineffective (McBurnie & Ziguras, 2007). It is far from certain that a model that suits one country is also optimally suited to another country.

As universities become increasingly global actors and extend their influence internationally (Amey, 2010; Irele, 2012), the lack of a shared quality framework, together with the diversity and unevenness of quality assurance practices, creates knowledge gaps and unknowns in cross-border higher education. One of the unknowns is how much these quality standards, as developed by U.S. organizations, can be applied in educational settings other than the U.S. As higher education increasingly becomes globalized, there will be more educational exchange, more cross-border program offerings, and more international trade in the form of educational services (Cremonini, Epping, Westerheijden, & Vogelsang, 2012). In order to ensure the consistency of program quality, there is a need to know how U.S. quality standards can apply to other countries.

2.2 Quality Standards for Online Education in the U.S.

Current U.S. quality assurance practices occur at three levels. First, college faculty are the primary quality assurance group. A series of activities happen at the department level, led by faculty: establishing learning objectives, managing the process for students to learn, and evaluating learning outcomes through exams and other forms of testing. Second, institutions ensure that departmental processes are in line with university requirements (such as faculty hiring, resource allocating, and program offerings). Third, external quality assurance organizations (regional accreditation agencies, state government, and discipline-specific

accreditation organizations) oversee these institutional processes by asking whether the other two levels of quality assurance work in practice. The regional accrediting bodies create standards for evaluation for education programs (Howell, Baker, Zuehl, & Johansen, 2007).

The academic structure in China is similar to what exists in the U.S. Quality assurance practice in China also has institutional and faculty components (Pan, 2006). What is missing in China is the third component of external quality assurance and related standards that are commonly present in the U.S. Therefore, this study focused on the last level of quality assurance: quality standards and indicators for evaluation purposes. The researcher's first task was to identify publications to represent quality standards in the U.S.

Quality Standards Developed by U.S. Organizations

The Western Cooperative for Educational Telecommunications (WCET) drafted an online education quality standard, titled *Best Practices for Electronically Offered Degree and Certificate Programs,* in 1995. This standard was developed to demonstrate how well-established essentials of institutional quality would apply to online learning programs. It was one of the first attempts to identify and assess the quality issue in online education. Three categories of quality evaluation were identified: curriculum and instruction, institutional context and commitment, and evaluation. The guidelines were expanded into five categories by adding faculty support and student support (WCET, 2001). Consequently, the updated WCET guidelines have been one of the most cited quality standards in the online education field. The key elements from WCET have been adopted widely by other organizations since 2001.

For the same purpose of accreditation, the New England Association of Schools and Colleges Commission on Institutions of Higher Education (CIHE) proposed a set of guidelines to evaluate online program quality (CIHE, 2009), in which eight categories were presented with

guidelines that institutions can use to measure online program quality. Similarly, the Council of Regional Accrediting Commissions (C-RAC) also proposed guidelines to evaluate the quality of online learning, in which eight categories were presented with detailed aspects that institutions can follow (C-RAC, 2009).

Online Education Quality Standards Research

The Sloan-Consortium (Sloan-C) is an organization dedicated to improving the quality of online education. It published a quality framework for online learning, which describes five basic elements needed to have a good online learning environment. These five components of quality are learning effectiveness, student satisfaction, faculty satisfaction, scale, and access (Moore, 2005).

Researchers have also joined the effort to explore the legitimacy and effectiveness of quality standards for online education. Chaney and colleagues (Chaney et al., 2009) searched 10 electronic databases with the keywords "quality" and "distance education," which yielded 165 articles and 12 books. They reviewed this pool of sources and gathered information on the quality indicators and benchmarks of distance education. The result was a list of quality indicators published in the final report titled *A Primer on Quality Indicators of Distance Education*. They argued that this is a set of online education quality indicators that all parties deem important in designing, implementing, and evaluating distance education courses and programs.

Using a similar research method, Lockee and colleagues (2010) examined online education standards maintained by a variety of organizations, focusing on commonalities and differences with regard to instructional design specifications and processes. The report, *Organizational Perspectives on Quality in Distance Learning*, categorized six quality elements.

More recently, using a meta-analysis approach, Boston and colleagues (2011) found, from 13 different published peer-reviewed studies, that scholars' views of a quality online program have many commonalities. Institutional commitment, leadership, and support were the most cited themes as part of quality measurement. Teaching and learning was the second most cited theme for indicating quality. The third most cited component was faculty support, student support, and the course development themes.

More recently, Kaye Shelton compared 13 online education standards from the literature to identify the quality elements of online education programs (Shelton, 2011). In her article, "A Review of Paradigms for Evaluating the Quality of Online Education Programs," she concluded that online education programs have many commonalities. Again, institutional support and leadership were the most cited elements when determining online education program quality. The factor of teaching and learning was the second most cited element (Shelton, 2004).

In the area of online education quality study, *Quality on the Line* is a well-known study which has gotten a lot of attention and publicity. It was conducted by The Institute for Higher Education Policy, commissioned by the National Education Association (NEA) and Blackboard Company. The goal of the study was to validate published online education quality benchmarks. The study examined the applicability of common quality benchmarks available at the time, and it confirmed that most of the benchmarks were appropriate and necessary to ensure the quality of online education programs. The study had three components. First, a comprehensive literature search identified benchmarks recommended by other organizations, as well as those suggested in various articles and publications. The study then identified institutions that have had substantial experiences in online education. The last component was to visit six U.S. institutions to assess the degree to which the campuses incorporate the benchmarks in their online programs. During

the visits, a survey was administered to faculty, administrators, and students in order to understand how stakeholders perceive the importance of these benchmarks.

Quality on the Line brought research data to the heated debate about online education quality, and it provided a more tangible meaning of quality assurance. This study revealed that most of the assembled benchmarks were considered important by stakeholders. The final report, *Quality on the Line*, listed 24 benchmarks from seven categories (Phipps & Merisotis, 2000). These quality benchmarks were subsequently adopted by the National Education Association. Institutions have striven to incorporate these benchmarks into their policies, practices, and procedures.

Quality Indicators and Categorization

In order to understand better the aspects of these quality indicators, most U.S. quality standards use a categorization to represent the factors that contribute to the quality of online education. A typical categorization has five to eight themes: institutional support, faculty support, student support, course development, teaching, and evaluation. Chapter Three describes in detail how this study proposed a categorization and organized quality indicators into themes. Table 1 lists some of the online education quality indicators identified from literature (Chaney et al., 2009).

Table 1. Common Quality Indicators of Online Education

Student–teacher interaction	Active learning techniques
Prompt feedback	Respect diverse ways of learning
Student support services	Faculty support services
Program evaluation and assessment	Strong rationale for distance education that correlates to the mission of the institution
Clear analysis of audience	Appropriate tools and media
Documented technology plan to ensure quality	Reliability of technology
Institutional support and institutional resources	Implementation of guidelines for course development and review of instructional materials
Course structure guidelines	

2.3 Online Education in China

The Current State

Chinese online education started by following the model of the British Open University, an online institution that was founded in 1969 on the belief that technologies can bring learning to students who would otherwise not have the opportunity for a college education (Katz, 2008). By adopting open admission and learning practices, the British Open University permits all kinds of students to learn, without barriers from age, gender, or time constraints (Cooper, 2010). British Prime Minister Mr. Edward Heath visited China in 1978 and shared the success story of the British Open University with Mr. Deng XiaoPing (then leader of China). Mr. Deng proposed the establishment of China Central Radio & TV University (CRTVU), with the purpose to use this education model as a way to widen higher education access. This was the advent of Chinese distance education. The purpose of Chinese online and distance education programs is defined to serve Chinese society by meeting the needs of lifelong education (MoE, 2010). The focus of Chinese online education is on serving working adults, integrating theory and practice, and educating students with applicable skills (Hao, Feng, & Chao, 2007). The curriculum is open admission (no national college entry exam required), and open campus (not limited to a certain campus or city), and there is a flexible timeline to finish (within eight years to graduate).

Course offerings are flexible, depending on market needs. There is also a major pedagogical shift. In the traditional Chinese instruction, instructors give lecture style instruction to deliver content knowledge. Online classes have changed this teaching style of instruction, by adopting a self-guided learning format. Instructors provide guidance in this process. Classes are mostly in a self-directed asynchronous format. Most course materials are available on the internet. The learning is self-paced, and interaction is encouraged among students. Support is

available through local learning centers, and through email and online discussion with the instructors and teaching assistants.

Students enrolled in Chinese online programs are mainly part-time working adults. This group of students may have failed the national college entry exam, and therefore did not have opportunities to attend traditional campus-based high education. They are not as academically strong as their counterparts from the traditional age of college students. Attending school part-time means more challenges to balance study and other life obligations (Fidishun, 2000). To help adult part-time online students succeed, institutions evaluate these students' ability and preparation at the beginning of their online program. Based on their preparedness, there could be remedial courses added.

The instructors for the online courses are mostly recruited from the national universities. Most instructors are also teaching the same title course in a face-to-face format. In addition to teaching, they are actively engaged in research and in other scholarly work. They are teaching online courses as an additional workload that is not considered for faculty promotion evaluation. They are being paid with stipends for their work.

Online Education Quality Assurance in China

As China expands its online education to increase access to higher education, quality has become a significant concern to Chinese online education stakeholders. In response, the Chinese Ministry of Education (MoE) ceased granting approval for new online programs in 2003. The MoE introduced the Annual Reporting and Censorship procedure, which involves annual internal reviews by institutions and external audits by the Distance and Continuing Education Office of MoE (Jung et al., 2011). A closer look at the procedures, however, reveals that the data collection focused on the demographics of programs, not on teaching and learning processes.

The existing Chinese way of collecting data for evaluating online programs, according to Chinese scholars, emphasizes infrastructure and program management. There is no indication that the collected data is used for for quality improvement. Chinese scholars have suggested that China should develop more comprehensive online education quality standards and procedures, so that the emphasis can gradually shift from governmental management to the teaching and learning process, and to the effective use of resources (Guo, Huang, & Chen, 2009).

Because online education is a recent development in China, there are not Chinese quality standards that are comparable to the standards developed by U.S. organizations. There is no Chinese regional accreditation agency, nor a Chinese organization like SLOAN-C, to coordinate and develop comprehensive quality indicators. The existing Chinese way of collecting data for evaluating online programs, according to Chinese scholars, emphasizes infrastructure and program management.

Chinese scholars have suggested that China should develop more comprehensive online education quality standards and procedures, in which the emphasis should gradually shift from governmental management to the teaching and learning process and to the effective use of resources (Guo et al., 2009). When Chinese scholars and institutions begin to explore and develop online education quality standards, an understanding of quality standards and quality assurance practices are theoretically valuable and empirically necessary. It is beneficial for China to learn about good practices from the international academic community.

Why Should China Care about the U.S. Quality Standards?

As the Chinese learn about best practices for quality assurance from the international community, they find many sets of them. There is a variety of best practices that exists internationally with respect to online learning. The U.S. is one model, but Europe can be another.

With so much information available, how do the Chinese decide which one to choose? For the scope of this study, the researcher first chose the U.S. standards, because U.S. higher education is highly regarded worldwide, especially in China (ARWU, 2013), with the goal to include standards from other regions in the future. Before going any further with the exploration of the applicability of the U.S. quality standards to China, it is important to think about the theoretical perspectives of educational quality in general.

2.4 Chapter Summary

The quality of online education programs is a complex and difficult concept to define and to measure. It depends on a range of factors, from the student, the curriculum, the instructional design, technology, and faculty quality (Meyer, 2002, p. 101). The understanding of online quality definition and measurement relies on the specifics of the purpose, the perspective, and the levels (Benson, 2003).

Many U.S. organizations and accreditation agencies have developed quality guidelines that detail the essentials of what a quality online program should be (Moore, 2011). Many studies have been conducted to explore the legitimacy of these quality standards. After years of experiences, these U.S. standards could serve as great resources for other online programs that are in the process of improving quality. While these quality standards do help online programs, there is still a lot more to be learned about the practical use of these standards. One of the unknowns is to what degree these quality standards, as developed by U.S. organizations, can be applied in educational settings other than the U.S. As the globalization trend in higher education continues, cross-border higher education has become a key element of internationalization in higher education (Cremonini et al., 2012). In order to have consistency in our programs and to

explore the possibility of a global common online education program standard, it is important to know whether quality standards developed in the U.S. can be applied in other settings.

At the same time, China is in need of quality standards to help ensure the quality of its online education. Chinese scholars are learning from the best practices of the international community to help with their process of standards development. As discussed above, the concept of quality is complex and is often a local matter. Considering the major differences that exist between the U.S. and China (socially, politically, and culturally), it is difficult to know for sure how U.S. quality standards might apply to Chinese educational settings. This study aims to answer part of this question, by exploring faculty perceptions, so that U.S. quality standards can be successfully adopted by the Chinese with confidence. Chapter Three discusses the research methodology.

CHAPTER 3

Methodology

3.1 Introduction

In order to maximize the potential of online education, Chinese institutions are looking for ways to improve the quality of online education. One of the tasks is to develop quality standards that detail the essential criteria for online programs. The Chinese government has also suggested that Chinese institutions learn about good practices from other countries and connect to the international academic community. In order to be of any value, though, these international standards and benchmarks first have to be considered valuable and relevant by Chinese faculty.

The purpose of the study was to investigate to what extent the online quality benchmarks developed by U.S. organizations are perceived as relevant by Chinese online faculty. The study set out to replicate the *Quality on the Line* study (Phipps & Merisotis, 2000), with some variations. First, the study included the U.S. online education quality standards developed over the past 13 years, and the assembled benchmarks reflect the quality criteria changes which happened during this period. Second, the study put the U.S. online education benchmarks to test in international settings, by surveying Chinese online faculty perceptions of these benchmarks. The Chinese faculty responses help the U.S. to view our quality standards from a different perspective. Third, unlike *Quality on the Line,* this study focused on faculty, because the faculty group is the most relevant group for online program quality. By studying faculty members' perceptions, the study has a more focused target group. That is not to say that other groups' opinions are not important; those opinions could be significant, but they necessitate separate studies. This study aimed to answer the following research questions:

Research Questions

Do Chinese faculty perceive U.S. quality standards for online education as relevant?

Sub-questions:

1. To what extent do Chinese faculty perceive the importance of U.S. online program quality indicators?
2. To what extent do Chinese faculty perceive the presence of U.S. online program quality indicators?
3. Is there any association between participants' satisfaction level for online teaching experience and the perceived presence of the quality indicators?
4. Is there any association between participants' level of concern for quality and the perceived presence of the quality indicators?
5. Do the U.S. quality indicators included in this study sufficiently capture the essence of quality for online education?

This study used exploratory approach to investigate how quality standards from the U.S. are perceived by faculty from China. In this study, the degree of relevance was explored through faculty members' perceptions, at two levels. First, in order for these benchmarks to be of any value to online education in China, they have to be perceived by Chinese faculty as important. Second, if these quality indicators are relevant to Chinese online education, they need to be present in Chinese online programs' quality assurance practices. Therefore, the study explored the perceived importance and the actual existence of these quality indicators in China, through the ratings and the answers to open-ended questions. In the study, the term "benchmark" and "indicator" are used interchangeably, referring to the U.S. quality indicators selected for the study.

The study used a survey to collect both quantitative data (ratings) and qualitative data (open-ended question responses). The survey was administered at a Chinese national university to a group of selected Chinese faculty who were involved in online teaching. Even though the study was based on individual faculty members' perspectives, the unit of analysis was the online program at this Chinese institution. This chapter discusses the context of the study, the processes to develop the survey, and the strategy to collect and analyze data.

3.2 Context

ABC University was selected as the research site because of its success in online education by providing access and its desire to continue improving quality. Various procedures have been designed and implemented by this online program to ensure quality, and several procedures have been adopted by other online programs in the country (ABC University, 2013b).

ABC University is one of 38 Chinese universities that started offering online programs in the year 2000. After 13 years of development, the ABC University online program has demonstrated its effectiveness in providing access and in lowering costs, with its program officially approved by the Chinese Ministry of Education. In 2012, ABC University's online program enrolled 75,000 students in 37 majors (ABC University, 2013a).

The online education curriculum at ABC University is characterized as "teacher-guided and learner-centered," which encourage autonomous learning. A typical online course has two to three credits, and it lasts 15 weeks. There are two semesters, fall and spring, in one academic year. The spring semester lasts four months, from February to June. The fall semester lasts four months, from September to January. Students can take classes online, via TV broadcasting programs, or they can go to one of the 240 study centers to take face-to-face classes. Students have the choice to study on their own or to collaborate with other students. Its curriculum has a

credit system that is similar to that of U.S. higher education institutions. A supervisory committee is responsible for monitoring the quality of the online program. Committee members assess teaching quality as well as courseware quality. Exams are used as the main method to measure student learning. Individually, students also use an Assessment Information System to self-identify their learning problems and to improve their learning. One such tool in the Assessment System is the electronic portfolio that students build over the length of their student career in the program.

Administratively, a two-tier model is utilized. The Online College of ABC University is responsible for marketing, operation, management, and coordination, while other colleges within the university are responsible for course planning and instruction delivery, including recruiting instructors. Externally, institutional partnerships are established to create study centers where various administrative and academic services are provided. Two hundred forty study centers have been created in 24 provinces, to provide satellite TV, computer labs, Internet connectivity, and tutoring services.

3.3 Participants

The participants were recruited by a brochure that was distributed with the final exam grading materials. The sample population included faculty members and teaching staff who were involved in undergraduate online programs at ABC University. The sample population in the study had 400 faculty members and the same number of teaching assistants. Many faculty members have developed online course materials and are responsible for course content updates. Some of them are teaching the same course in a face-to-face format. The faculty profile at ABC University is similar to other Chinese national universities, such as Jilin University in the north, Yunnan University in the south, and Xiamen University in the east. This study provides a

rationale for future studies in which more Chinese institutions, of different types and from different regions, can be selected to represent Chinese online faculty.

3.4 Survey Development

There were nine processes involved in the survey development process:

1. Prior studies and their findings.
2. Identifying U.S. quality indicators for online education.
3. Expert review of the selection of quality indicators.
4. Survey rating questions.
5. Open-ended questions.
6. Demographic information.
7. Translation and reverse translation.
8. Pilot test.
9. IRB approval.

Prior Study

A preliminary study was conducted to identify areas within online education that had the potential to be research topics of this study (Dai, 2013). The researcher visited ABC University in the year 2012 and interviewed faculty, staff, and administrators. The findings from the prior study helped the researcher understand the Chinese online educational environment, the ABC University Online College as an organization, and online faculty practices in developing and teaching online courses. These findings led to the selection of the current study topic and the inclusion of open-ended questions to complement the fixed answer questions in the questionnaire.

U.S. Quality Standards Selection

Nine sources of U.S. literature were identified. The references that led to the identification of the sources came from the *Handbook of Distance Education* (Moore, 2013), the Sloan-C web site and documentation, and frequently cited online quality research articles. Standards of online education quality published by major online quality assurance organizations (Sloan-C, CIHE) were the first ones included. Other standards were selected, based on their influence in online education, their publication date, and their relevance to quality assurance. In addition, three recent research articles on online education quality were also included. These nine sources are as follows:

1. *Quality on the Line,* by the Institute for Higher Education Policy (IHEP, 2000).
2. *Guidelines for the Evaluation of Distance Education* (CIHE, CRAC, 2009).
3. *Quality Guidelines*, by Southern Regional Education Board (SREB, 2006).
4. *Distance Education and Training Council,* by Accrediting Commission (DETC, 2013).
5. *SLOAN-C Quality Score Card Tool* (SLOAN-C, 2013).
6. *Best Practices For Electronically Offered Degree and Certificate Programs* (WCET, 2002).
7. *Examining Standards For Distance Education Systems* (Lockee, 2010).
8. *A Primer on Quality Indicators of Distance Education* (Chaney, 2009).
9. *Benchmarking Quality in Online Degree Programs* (Mariasingam & Hanna, 2006).

Analyzing these standards revealed that all nine sources had some kind of categorization for their included quality indicators. The presence of such categorization was aggregated into a spreadsheet, as shown in Table 2. Each category was marked with the letter "Y" when it appeared in the source. The list of categories was filtered by appeared frequency.

Table 2. Quality Indicators Category Selection

Category	Sources of quality standards 1	2	3	4	5	6	7	8	9	# of appearance
Institutional support	Y	Y		Y	Y	Y		Y	Y	7
Technology and support			Y		Y			Y	Y	4
Course design and development	Y	Y	Y	Y	Y	Y	Y	Y	Y	9
Teaching and learning	Y		Y		Y	Y	Y	Y	Y	7
Faculty support	Y	Y		Y	Y	Y	Y	Y	Y	8
Student support	Y	Y		Y	Y	Y	Y	Y		7
Evaluation and assessment	Y	Y	Y	Y	Y	Y		Y	Y	8

The categories with the most appearances across the nine sources were included as the categories in the current study. The cut off frequency of appearance was four. When a category appeared four or more times across these nine sources, the category was included; otherwise it was excluded. For example, institutional commitment and support as a category was included because it appeared in seven out of the nine sources. Course development was also included because it appeared in nine out of the nine sources. Faculty support was included because it appeared in eight out of the nine sources. On the other hand, while the cost and scale theme is an important concept for online program quality, only SLOAN-C listed it as a category, and it was not mentioned in other sources. Therefore, it was not included in the final list of categories.

Two hundred sixty-five quality indicators were extracted to reflect the current U.S. online education quality standards and quality assurance practices. These quality indicators were organized into seven categories. These indicators were further edited by removing redundant statements, splitting statements with multiple meanings, and merging items with similar meanings. The result was a set of indicators with 48 statements (Appendix 1). Items 1 – 6

represent the institutional support categories; items 7-12 represent the technology category; items 13-20 represent the course design and development category; items 21-31 represent the teaching and learning category; items 32-37 represent the faculty support category; items 37-42 represent the student support category; and items 43-48 represent the evaluation and assessment category.

Expert Review

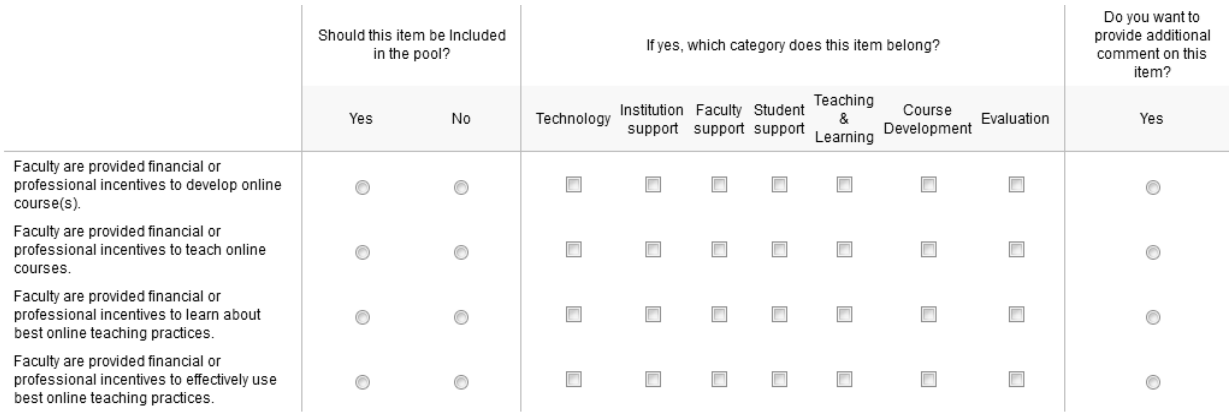
In the current study, content face validity was assured in the process of selecting the U.S. online quality standards and including the final 48 quality statements. Part of the U.S. online education standards were developed by professional organizations, such as Sloan-C, which themselves have a certain credibility and their own sense of validity. The other part of the benchmarks came from the body of literature that represents a group of scholars' opinions. Together, this set of benchmarks has been reviewed and agreed upon by many scholars. They have also been practiced by many U.S. institutions. The origin and the influence of these benchmarks ensure that the selected benchmarks represent the quality benchmarks in U.S. online education.

At the dissertation proposal meeting, the feedback from the dissertation committee was to "look hard and know why each statement is included." Based on this suggestion, and to improve the face validity of the survey, the 48 statements were sent to five scholars in the field of online education, to see how these indicators appear to experts. The experts received a questionnaire (Appendix 1), in which they were asked to review each item's legitimacy in relation to online program quality, and to comment on whether the benchmark should be included.

Forty-eight quality indicators were included in this questionnaire. An example of a question is shown in Figure 1. The 48 indicators provided to experts are in Appendix 1. The experts were asked to provide their opinions on whether each item should be included in the

study, and to comment on the choices they make. One important piece of feedback from the experts was that the categorization was difficult to conduct because some items can belong to several categories.

Figure 1. The Question Example to Ask Online Education Experts



Based on the feedback and suggestions from these five experts, the quality indicators in the pool were edited, and the number of statements was reduced from 48 to 31. Table 3 shows the indicator reduction process and its results. Because the categorization was questioned by the dissertation committee and the experts, this led to the need to use Confirmatory Factor Analysis (CFA) to verify the legitimacy of the categorization.

Table 3. U.S. Quality Indicators and Their Categorizations

Benchmark statements category	Initial #	# Indicators	# of Indicators
Institution support	26	6	**4**
Technology	16	6	**3**
Course design and development	65	8	**6**
Teaching and learning strategy	37	11	**5**
Faculty support	21	6	**5**
Student support	53	6	**4**
Evaluation and assessment	47	6	**4**
Total	265	48	**31**

Institutional policy and support category includes benchmarks of institutional mission statement, infrastructure development, resource allocation, and incentives for faculty to get involved in online education.

1. Online learning is incorporated into the institution's governance and academic oversight.
2. Faculty clearly understand the value of online education.
3. The institution provides sufficient resources to support online course offerings.
4. The institution has clear, specific, published policies related to academic integrity.

Technology and technology support category includes benchmarks of policies and processes regarding technology and technical support, technical standards, technical skills for teaching and learning, and training.

5. There is a documented technology plan that guides the technology investment choice and implementation.
6. The institution has clear, specific, and published policies related to the use and safeguarding of student information.
7. Prerequisite technical skills are identified and clearly stated before faculty teach online courses.

Faculty support category includes benchmarks of providing support to faculty members when they develop and teach online courses, both technically and pedagogically.

8. Faculty are assisted in the transition from classroom (face-to-face) teaching to online teaching.
9. Faculty receive training and materials related to fair use, plagiarism, and other relevant legal and ethical concepts.
10. Faculty are trained with respect to the best practices of online teaching and learning.
11. There is an active peer-mentoring program for online faculty.
12. Faculty are trained with respect to learner needs.

Student support category includes benchmarks of helping online students to prepare themselves for online learning, engage faculty, interact with other students, and use resources such as the library.

13. There is an institutional structured system to address student complaints.
14. The institution provides orientation when students start the online program.
15. Students have access to effective academic, personal, and career counseling services.
16. The institution regularly evaluates the effectiveness of the student support services for improvement purposes.

Assessment category includes benchmarks related to policies and procedures that address how the institution evaluates online learning, including assessment of courses, student learning, and faculty teaching online courses.

17. All students are encouraged to evaluate the course at the end of the class.
18. The results of student assessment are available to the instructor of the course for improvement purposes.
19. Ongoing assessments are conducted to verify each student's readiness for the next segment.

20. Student opinions are systematically sought as one basis for evaluating and improving teaching purposes.

Course design and development category includes benchmarks of policies and procedures that are related to course structure, design, and content development processes.

21. Guidelines are used to design and develop online courses.
22. Instructional materials, course syllabi, and learning outcomes are reviewed periodically.
23. Online courses are designed to require students to engage themselves in analysis, synthesis, and assessment as part of their courses and program requirements.
24. Each learning segment has an overview that describes objectives and activities.
25. Expectations for student assignments, grade policy, and faculty responses are clearly provided in the online course syllabi.
26. Online course design provides opportunities for appropriate instructor-student, student-student, and student-content interaction.

Teaching and learning category includes benchmarks of online student preparedness, course learning objectives, faculty teaching practice, and teacher-student interactivity.

27. Netiquette expectations regarding lesson activities and email communications are clearly stated.
28. Information literacy and communication skills are incorporated and taught as an integral part of the curriculum.
29. Students are instructed in the proper methods of effective research, including assessment of the validity of resources.
30. Feedback on student assignments and answers to student questions are constructive and are provided in a timely manner.
31. Tutoring is available as a learning resource for students.

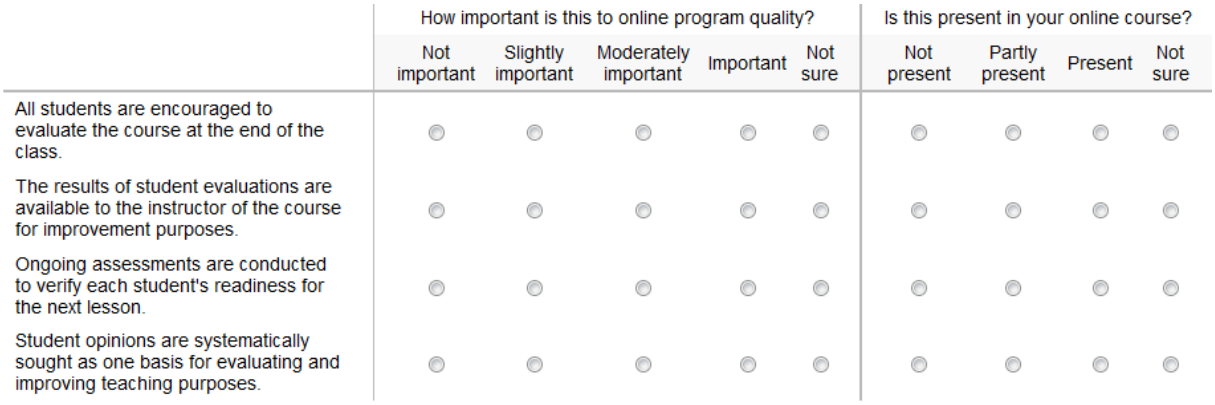
Survey Rating Questions

The survey included two types of questions. One was to ask the respondent to rate the importance and the presence of these indicators. The other type was the open-ended questions. The survey instrument started with a question that asked faculty to rank the perceived importance of the seven themes that were identified. The order of the survey question (Appendix 4) took the sensitivity of the problems into consideration (Babbie, 2013). The participants were first asked to rank the importance of the seven factors. This gave participants an opportunity to provide their opinion of what matters the most, in terms of online education quality, without the influence of the other survey questions. Then the participants were asked about the institutional

practices related to online education quality. Subsequently the participants were asked about more sensitive questions related to faculty members' teaching practices, and the reasons that explain such behaviors. The rating questions included 31 quality indicators, divided by the seven categories.

Figure 2 shows one example of the questions that were sent to the experts. In the left column, the participants were asked to rate the importance of the U.S. quality indicators. In the right column, the participants were asked to rate the presence of the indicators in their practices.

Figure 2. The Question Example for the Rating of Indicators



	How important is this to online program quality?					Is this present in your online course?			
	Not important	Slightly important	Moderately important	Important	Not sure	Not present	Partly present	Present	Not sure
All students are encouraged to evaluate the course at the end of the class.	○	○	○	○	○	○	○	○	○
The results of student evaluations are available to the instructor of the course for improvement purposes.	○	○	○	○	○	○	○	○	○
Ongoing assessments are conducted to verify each student's readiness for the next lesson.	○	○	○	○	○	○	○	○	○
Student opinions are systematically sought as one basis for evaluating and improving teaching purposes.	○	○	○	○	○	○	○	○	○

Open-Ended Questions

The ratings of the indicators provided the measurement of the Chinese faculty's perceptions on the importance and the presence of these quality indicators. Because of the differences between these two countries, there may be nuances of meaning that are not necessarily illuminated by the ratings. The ratings, as quantitative measures, may not unveil the details of how Chinese faculty think of these U.S. quality indicators; may not provide the detailed information about the quality problems as perceived by faculty; and may not show the suggestions Chinese faculty might have to improve quality. In order to get more detailed perspectives, qualitative data and analysis were necessary.

The researcher designed eight open-ended questions in order to ask the respondents to explain more fully why they responded the way they did, whether they had any reservations about their responses, and so on. The open-ended questions provided the respondents with the opportunities to express their views on issues of quality and quality assurance practices in China with more flexibility and less restrictions.

The open-ended questions were designed with two focuses: one was on participants' perceptions of the relevance of these U.S. quality indicators to China; the other was on faculty satisfaction with their online teaching experiences. Questions 1-6 were located at the beginning of the survey. These questions asked for the unfiltered opinions on what matters to Chinese faculty, such as the objectives of online programs (Q1); the perceived characteristics of high quality online education programs (Q2); the satisfaction faculty may have (Q3); the concerns faculty may have (Q4); and the suggestions they have to improve quality (Q6). Questions 7-8 were located at the end of the survey. These two questions asked faculty to reflect on the relevance of these benchmarks to Chinese faculty practice (Q7) and to Chinese online programs (Q8).

Q1. What are your beliefs about the objectives of online education?

Q2. What are the characteristics of online education programs with quality?

Q3. Are you satisfied with your online teaching experience? Why?

Q4. Is there any concern for the quality of current online education? Why?

Q5. If you have a choice, will you teach an online course in the future? Why?

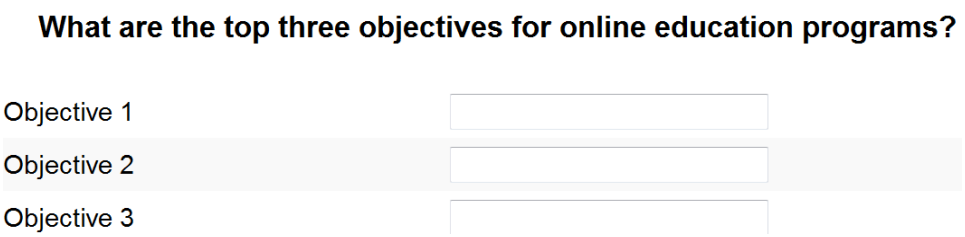
Q6. What do you suggest to improve the quality of online education in China?

Q7. Do these benchmarks reflect your criteria of quality for online education? Why?

Q8. Should China adopt these selected U.S. quality benchmarks? Why?

The format of the open-ended questions took two concerns into consideration. One concern was that there might be more than one response to the question. To address this concern, each open-ended question asked the respondents to provide three possible answers. The other concern was that the respondents might give too little information to form a coherent response (Schuman, 1966). In this study, each open-ended question balanced these two concerns by providing respondents with three possible responses; each had space for 20 words (Figure 3).

Figure 3. The Example of Open-ended Questions



There were three open-ended questions designed to explore faculty's satisfaction about online teaching and their concern for quality. Faculty satisfaction is considered an important factor in the quality of online learning (Bolliger & Wasilik, 2009; ChanLin, Hong, Horng, Chang, & Chu, 2006; Moore, 2011). Faculty satisfaction can contribute to many factors, including the factors listed in this study (institutional policy and support, faculty support, student support, teaching and learning, and assessment). Therefore, the researcher wanted to explore the relationship between the level of faculty satisfaction for online teaching and the presence of the quality indicators, to see whether there was any linkage between the quality indicators and faculty satisfaction.

The result of having or not having association partly reflected the relevance of these quality indicators. If there is an association between the practice of these indicators and the faculty satisfaction level, it could be argue that this implies that there is a need to practice more of these indicators; if the practice of indicators is found to have no relationship with faculty's

satisfaction, the finding could cause reasonable doubt about the relevance of these quality indicators.

With a similar goal, the researcher explored the association between the level of concern for quality and the practice of the quality indicators. The idea was that if these quality indicators are indeed relevant to Chinese online education, one would expect to see the result of having an association between the practice of these indicators and the concern for quality.

Demographics

In addition to these 31 quality indicators and the open-ended questions, demographic information was collected, including the faculty members' gender, discipline, years of teaching in higher education, and years of teaching online courses. In this study, demographic information was collected to provide a feel for the nature of the population. It was not intended to look at the individual differences among the respondents in terms of their perceptions of quality.

Translation and Reverse Translation

Because the survey took place in a foreign country and the data was collected in Chinese, translation work was necessary. To ensure translation accuracy, the survey instrument was independently translated by two scholars. The translation differences were discussed, and the revised Chinese version was sent to another translator for reverse translation. The reverse translation results were compared with the original 31 English statements, to ensure that the meaning was the same (Appendix 2).

Pilot Survey

A pilot was conducted with three Chinese visiting scholars at Michigan State University. The three scholars were asked to take the survey and to verbalize their thoughts while they

answered the questions. The cognitive interview process was to ensure that the questions were easy to understand and could be interpreted without ambiguity. This process enabled the researcher to understand how individuals interpreted the questions (Willis, 2005). Based on the feedback, the instrument was revised and made ready for field testing. The cognitive interview protocol is in Appendix 3.

The times that the three visiting scholars took to finish the survey were 20 minutes, 23 minutes, and 28 minutes. This sense of time provided information about the properness of the length of the survey and the expected time to finish. Based on the piloting test, the expected time to finish the survey was 25 minutes. The final Chinese version of the survey is in Appendix 3. A matching English version of the survey is in Appendix 4.

IRB Approval

The current project used an anonymous survey to gauge online instructors' perceptions of quality indicators. The subjects were not identifiable during the data collection or analysis processes. The questions had no sensitive information as defined by Michigan State University's sensitive data management policy. In addition, each participant was informed of the purpose of the study and the likely impact on participants **(**Creswell, p. 64). At the beginning of the survey, participants were also informed of their right to participate voluntarily, and their right to withdraw at any time. The participants were also informed that the data would only be viewed by the researcher and would not be shared with other individuals or other institutions. In order to ensure confidentiality, the survey excluded any sensitive information. The collected data was stored in a secure server at Michigan State University, and it will be kept for three years after the project is finished. The study plan was approved by Michigan State University's Institutional Research Board.

3.5 Data Collection

The participants were recruited by ABC University. A request was sent to the ABC University's Online College to gain access to the sample. After the approval, the survey was administered using a secured online survey application called Qualtrics. The survey was first sent to 20 ABC University faculty members who were teaching online courses in the fall of 2013, with the hope to uncover some survey implementation issues. There was no response after a week. That prompted a strategy change, in which a decision was made to offer a small incentive to the participants. Each faculty participant was provided with a $10 value gift card after the survey was completed. The survey advertising brochure was delivered with the semester final exam grading material to the faculty who were teaching online courses. At the same time, the College of Online Education posted an announcement in the Course Management System (CMS), which contained the web link to the survey. An email reminder was sent out one week later and the second reminder was sent out one week after that, as the last reminder.

3.6 Data Analysis

Data Cleaning and Preparation

After the survey was closed, the data was exported from Qualtrics into an Excel file. The survey received a total of 338 returns. The first task was to decide which returns to include in the analysis. During this process, Excel was used to help understand the data distribution, and descriptive statistics were calculated. The results showed some respondents did not finish the survey, and other respondents finished it in a very short time (less than 5 minutes). A data scrubbing process was used to decide what cases to include in the analysis.

One of the criteria for data cleaning was that if the respondents repeated the same rating for more than four indicators, then the case was excluded. This was based on the assumption

that if a respondent repeatedly provided the same rating for different indicators, then the answers may not accurately reflect his/her opinion. Therefore the responses should not be included. Another criterion was about the time it took to finish the survey. If the respondents took less than six minutes to complete the survey, then the case was not included. The assumption was that when the time spent to finish the survey was far less than the expected 25 minutes, the respondents did not spend enough time reading and reflecting on the questions, and paying attention to the answers. Therefore the responses may not reflect his/her real opinions. After filtering out the unwanted data, 307 responses were retained for statistical analysis.

Statistical Analysis

Based on U.S. documentation, seven factors/categories were proposed by scholars. These seven factors are considered by U.S. scholars as important to the quality of online education programs. But this categorization had not been verified with empirical data. The lack of verification prompted wondering about whether such categorization was logical. During the proposal meeting for this study, committee members also wondered about the rationale of the categorization, because some indicators can belong to multiple categories. Later the experts also questioned whether the categorization of benchmarks was logical. Are these seven categories also perceived by Chinese faculty?

Confirmatory Factor Analysis (CFA) was used to verify whether the seven categories fit the data. The result was that the seven factors/categories did not fit well with the data. The categorization was modified; the number of factors was reduced from seven to five; and the indicators were reduced from 31 to 19. The results show that the modified five factors categorization reasonably well fits with the data and can be used to study the quality of online

education in China. In the new categorization, each factor includes three to four quality indicators. The mean of these indicators was used for further statistical analysis.

To gauge the perceived importance and the presence of these quality indicators, the mean of the indicators within each factor was used. The association between the perceived importance of these indicators and the demographics was also explored. Lastly, an analysis was done to explore the association between the presence of these quality indicators and faculty satisfaction and concern for quality.

Open-ended Question Analysis

The eight open-ended questions were analyzed using a coding process (Lombard et al., 2006; Artstein and Poesio, 2008). First, all of the responses were carefully read. Each response was given a code for possible themes. All responses for the same theme were grouped together, and a descriptive statement was composed to represent the meaning. After the coding, 10% of the coding results were randomly selected to be verified by an independent scholar. The results from the independent coder were compared with the results coded by the researcher, and a few modifications were made. Detailed results for the open-ended questions are in Appendix 8.

Post Hoc Analysis

After the quantitative and open-ended question analysis, there were two unexpected findings that emerged from the analysis: the first was the "management factor" in online education. Management has not appeared often in the U.S. literature as a factor for the quality of online education. The Chinese faculty from the study, however, mentioned it as very important in their program. Why did the Chinese emphasize so much the function and the importance of the management factor? A post hoc analysis was conducted to look for possible reasons.

The second unexpected finding was that the data did not fit with the original seven factors model. After the factors were reduced from seven to five, the model had a better fit. If the number of quality factors was reduced to get a better fit in the previous analysis, could the five factor model be reduced even more? Will fewer factors provide more informed findings? The researcher conducted a post hoc analysis for the five factors to see whether the five factors could be grouped in anyway.

Bias

The researcher's bias and subjectivity was born in mind during the study design, data collection, and data analysis. Because of the researcher's working experience of supporting educational technology and online education, the researcher tried to put his own opinions aside; instead, the researcher focused on using the data and evidence to make decisions. During the research design process, efforts were made to ensure the selection of unbiased quality indicators. Five experts in the field of online education were invited to provide scrutiny on each indicator. The feedback and comments from the experts were used to reduce the indicators from 48 to 31. The comments from the experts about the quality factors were used later in the data analysis to confirm the model. After the development of the survey, the survey was piloted by three visiting Chinese scholars, who provided their opinions on the design and the content of the questions.

The most likely place where bias could have happened in this study was the process of data analysis. The researcher made an effort to ensure that the findings and the conclusions were not based on pre-existing knowledge or opinions, but on the data itself. In the discussion section, interpretations were made to connect this study with other studies in the field. The researcher also discussed the findings with other scholars, including a trip to the ABC University in 2014. The feedback from other scholars challenged the researcher's thinking and provided alternative

points of views. This process improved the reasoning of the conclusions and reduced the likelihood of bias.

3.7 Chapter Summary

This chapter presented the methodology employed in the study, including the survey's development and the techniques for analyzing the data. Chapter Four presents the findings from data analysis.

CHAPTER 4

Presentation of Findings

The purpose of the study was to understand whether the U.S. quality standards for online education are perceived as relevant by Chinese online faculty. The specific research questions were: 1) To what extent do respondents perceive U.S. online education quality benchmarks as important? 2) To what extent do respondents perceive the presence of these quality benchmarks? 3) Is there any association between participants' satisfaction level for online teaching experience and their perceived presence of the quality indicators? 4) Is there any association between participants' level of concern for quality and their perceived presence of the quality indicators? 5) Do the U.S. quality indicators included in this study sufficiently capture the essence of quality for online education?

Part one (4.1) presents the results from statistical analysis, including model fitting results and a five factor model for the quality of online education. Part two (4.2) presents the findings from the open-ended question analysis, to explore further the relevance of the U.S. benchmarks to Chinese online education. Part three (4.3) presents the findings from post hoc analysis, including the management factor and further reduction of factors.

4.1 Statistical Analysis

Respondents' Characteristics

A survey was administered at a Chinese institution. As shown in Table 4, the survey participants were evenly divided by gender; 48% of the respondents were female and 52% were male. Forty-six percent of the respondents were between 35 and 50 years old, and 6% were over 50 years old. In terms of academic ranking, 47% were faculty (professor and associate professor), and 53% were teaching assistants. The respondents came from all academic

disciplines, with the exception of military study. Thirty percent of the respondents were from the education discipline, 14% from engineering, 10% from literature, and 10% from science. The disciplines with the lowest percentage were history (3.8%), philosophy (3%), and law (2.4%).

In terms of teaching experience, 43% of the respondents had worked less than five years in higher education institution(s), 32% had worked six to ten years, and 25% had worked over ten years. Fifty percent of the respondents had less than two years of online teaching experience, 30% had less than five years, and 20% had more than five years. Most of the respondents (87%) were also teaching the same course in a face-to-face format. Sixty-three percent of the respondents' online courses had fewer than 100 students, 24% had 100 to 200 students, and 13% had more than 200 students.

Table 4. Summary of the Respondent Demographics

Gender	51% Male	49% Female	
Age	47% < 35 years	46% 35-50 years	7% > 50 years
Teaching at college level	43% 1-5 years	32% 6-10 years	25% > 10 years
Academic ranking	13% professor	34% associate Prof	53% instructor
Years of teaching online	50% 1-2 years	30% 3-5 years	20% > 5 years
Do you teach face-to-face?	87% yes	13% no	
Course type	25% introductory	44% major required	31% both
# online course (s) taught	66% 1-2 courses	30% 3-4 courses	4% > 4 courses
Average # of students	63% 1-100	24% 100-200	13% > 200
Times repeated the course	33% 1-2 times	28% 3-4 times	39% > 4 times

Categorization for the Quality Indicators of Online Education

Chapter Three proposed a seven factor categorization that has 31 quality indicators which underlie the quality of online education in the U.S. This section describes the model fitting process which was used to confirm the proposed model for the quality of online education in

China. This process empirically tested the proposed quality model against the data collected from the survey.

In the survey, the participants were asked to rate their perceived importance of each quality indicator. Each rating was between 1 and 4, where 1 represented the perception of "not important" and 4 represented the perception of "important." When the answers were left blank or selected as "not sure," the responses were marked as missing data. Of the perceived importance ratings, the missing data ranged from 1% to 4%. The missing data was excluded from the analysis. Confirmatory Factor Analysis (CFA) was used to verify whether the preliminary model fit with the collected data. Pearson's chi-square ($\chi 2$), the Comparative Fit Index (CFI), and the Root Mean Square Error of Approximation (RMSEA) were used to determine the model's fit with the data.

Pearson's chi-squared test ($\chi 2$) is a classic goodness-of-fit tool. The null hypothesis was that the implied or predicted covariance matrix Σ is equivalent to the observed sample covariance matrix S, which means $\Sigma=S$ (Albright & Park, 2009). When $\chi 2$ is $<.05$, the null hypothesis can be accepted with confidence. However, the $\chi 2$ tool is sensitive to sample size (Albright & Park, 2009). This study additionally used the Root Mean Square Error of Approximation (RMSEA) to measure the fitness, because RMSEA is not sensitive to sample size. The Comparative Fit Index (CFI) was another tool used to evaluate the fitness of the model. The possible value of CFI ranges from 0 to 1, where 0 indicates a poor fit and 1 indicates a perfect fit.

In order to claim the model has a reasonably good fit, the ideal results are: $\chi 2 < .05$, RMSEA <= .06, and CFI >= .95 (Albright & Park, 2009; O'Rourke & Hatcher, 2013). The results from the initial CFA showed that the RMSEA = .060 and CFI = .88 (shown in Appendix 6). The initial categorization thus did not fit the data very well. In order to get a better fit

between the model and the data, the model was modified, in order to get the CFI larger than .95 and the REMSA less than .060.

Category Reduction

During this modification process, there were four things considered. The first was how many factors were needed to represent the quality of online education. The initial CFA results showed that the "Institutional support" factor and the "Technology" factor were highly correlated (the correlation was .94); these two factors were combine into one, labeled as the "Institutional support" factor. Similarly, the "Course design" and the "Teaching and learning" factor were highly correlated (the correlation was .94). These two factors were combined into one, labeled as the "Teaching and learning" factor. After this process, there were five factors left in the model: institutional support, faculty support, student support, teaching and learning, and assessment.

Quality Indicator Reduction

To achieve a better fit between the model and the data, the quality indicators with lower standardized factor loading (< .60) were removed one by one. After each removal, CFA was conducted to check the key parameters of $\chi 2$, CFI, and REMSE. This process was repeated until the key parameters met the requirement. During this indicator reduction process, each factor was to have at least three indicators, and the total benchmarks in the model should be below 20 (O'Rourke & Hatcher, p. 192). At the same time, attention was paid to ensure that the items within each factor were content-wise consistent.

The CFA results (Table 5) showed that the Comparative Fit Index (CFI) = .95 (>=.95 preferred). The Root Mean Square Error of Approximation (RMSEA) = .050 (=<. 055 preferred), and the upper bound 90% confident limit for RMSEA was .06 (=< .09 preferred), and P=.000).

Comparing the results against the suggested characteristics of an ideal fit (Hatcher 2013, p. 250), the collected data had a good fit with the five factor model.

Table 5. The CFA Results

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.888	.850	.948	.929	.947
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.050	.040	.060	.484
Independence model	.188	.181	.195	.000

Internal Consistency Test

Before accepting this modified model, however, Cronbach's Alpha tests were conducted to assure the internal consistency of the items within each factor. For the items within each factor to be consistent, Cronbach's Alpha, as an index of internal consistency, needs to be greater than .70, with the ideal range being .80 to .90 (O'Rourke & Hatcher, 2013).

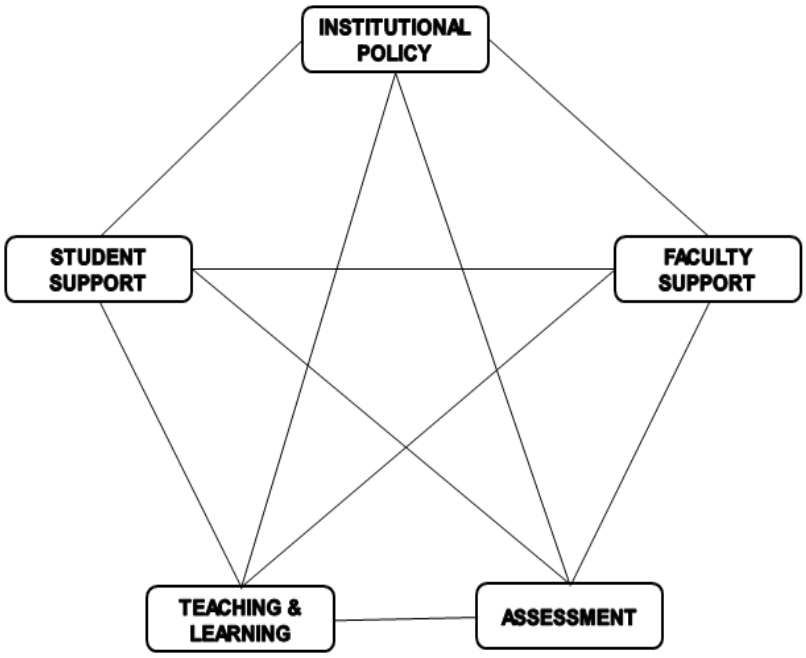
Table 6. The Reliability Test Results for Five Factors

Factor	# of indicators	Cronbach's Alpha
Institutional support	4	0.73
Faculty support	4	0.72
Student support	3	0.76
Teaching and learning	4	0.80
Assessment	4	0.79

In Table 6, the reliability tests show that all five factors' estimated internal consistency were within the acceptable limits (i.e. alpha >= .70). There were two factors (teaching and learning, assessment) for which the Cronbach's Alpha values were close to .80, which indicated the items within these two factors were highly consistent.

After the CFA analysis, the content consistency checking, and the Cronbach's alpha internal consistence test, the modified five-factor categorization (shown in Figure 4) had a reasonably good fit with the data. This categorization originated from the U.S. literature and was confirmed as a fit with the data collected. For the rest of the analysis, this categorization was used to measure the quality of online education in China.

Figure 4. Five Factor Categorization for Quality Indicators



Description of the Categorization

The following section describes the content of this model and its quality indicators. This model has five factors or components: institutional support, faculty support, student support, teaching and learning, and assessment. Each factor includes three to four quality indicators. The

institutional support factor has four benchmarks that reflect institutional support. The first indicator is about faculty's understanding of the value and purpose of online education in China. The underlying statement is that in order for an online program to have quality, each faculty member needs to understand the purpose and objective. The level of understanding reflects the institutional support and practice of promoting and supporting online programs.

In addition, institutions need to ensure sufficient resources for online course offerings. As resources become scarce in higher education, online education is competing with other programs for resources. The third benchmark is to have clear, specific, and published policies to safeguard student information. When student information becomes available online, it is easy to access anywhere and anytime. But the convenience also makes it easier to lose student information if a security breach happens.

The faculty support factor includes four indicators, which require that assistance be provided to faculty in the transition from face-to-face teaching to online teaching. One format of the assistance is through faculty professional development, through which faculty are trained with respect to the best practices of online teaching and learning.

The student factor includes three indicators, which ensure that the institution provides orientation when students start the program; that students have access to effective academic service and career counseling services; and that there is an institutional structure to address student complaints.

The teaching and learning factor includes four indicators that cover course design, course content development, and the teaching and learning process. For example, each learning segment needs to have an overview that describes the objectives and activities. The courses should be designed to require students to engage themselves in analysis, synthesis, and

evaluation as part of their learning requirements. The evaluation and assessment factor includes four indicators. For example, there should be ongoing assessments to verify each student's readiness for the next segment. All students are encouraged to evaluate the course at the end of the class. The results of course evaluations are available to the instructor for improvement purposes.

Ratings for the Importance of the Quality Indicators

The respondents were asked to rate the importance of each indicator statement on a scale of 1to 4, where 1 is "Not important," 2 is "Slightly important," 3 is "Relatively important," and 4 is "Important." The average of the ratings within each factor was used to represent the rating for the factor. The missing data was excluded from calculation. [a]

Table 7. The Distribution of the Perceived Importance

Factor	<2.5	2.5 - 3	3 - 3.5	3.5 - 4
Institutional support	3.6%	13.4%	27.0%	56.0%
Faculty support	6.3%	18.4%	29.0%	46.3%
Student support	4.9%	23.0%	13.4%	58.7%
Teaching and learning	4.9%	16.6%	24.8%	53.7%
Assessment	4.9%	16.7%	26.6%	52.3%

From the summary of the statistics in Table 7, the ratings for the factors ranged from 1.5 to 4.0. The distribution was positively skewed, which means more respondents rated indicators with high ratings. Using "Institution support" as an example, the ratings indicated that more than half (56%) of respondents gave the institutional support factor a rating of 3.5 to 4.0 (Table 7).

[a] Institutional support had one missing response; faculty support had two missing responses; and the assessment factor had nine missing responses. Every factor's missing data percentage was below 5%.

When the factor had four items, a score of 3.5 and above means a respondent needed to rate two indicators as 4.0, and two as 3.0, which is a strong indication that faculty agreed with the importance of the factor and the indicators included. Another 27% of respondents rated 3.0 to 3.5. Combining these two groups, 83% of the respondents rated the institutional support factor a 3.0 and above, indicating a strong perception of the importance of the factor. Only 3.6% rated this factor as below 2.5. The other four factors' ratings presented a similar distribution pattern. The results from Table 7 show that the majority of respondents perceived all five factors as important.

Ratings for the Presence of Quality Indicators

The survey also asked the respondents to rate the presence of these U.S. benchmarks in their online programs on a scale of 1 to 3, where 1 is "Not present," 2 is "Somewhat present," and 3 is "Present." The average for the ratings within each factor was used to represent the rating for the factor. The missing data was excluded from calculation. [b]

Table 8. The Distribution of the Perceived Presence

Factor	<1.5	1.5 – 2	2 - 2.5	2.5 – 3
Institutional support	6.3%	17.0%	26.2%	50.5%
Faculty support	10.5%	22.0%	30.2%	37.3%
Student support	6.8%	22.3%	24.3%	46.6%
Teaching and learning	4.0%	17.2%	31.5%	47.3%
Assessment	8.9%	18.5%	34.2%	38.4%

Table 8 shows the ratings for the presence of the factors. Half (50.5%) of the respondents

[b] Faculty support had 12 missing responses (4%), institutional support had 6 (2%), and teaching factor had 3 (1%). Assessment and student support had the highest missing responses, each with 15 (5%). Every factor's missing data percentage was below 5%.

a 2.5 rating, the respondent needed to rate two indicators with 3.0 and two with 2.0. A score of

gave the institutional support factor a rating of 2.5 - 3.0. For a factor with four indicators to have 2.5 and above indicated a presence for the factor. Overall the perceived presence was not as strong as the perceived importance, and there was variation among the five factors. The faculty support factor and the evaluation and assessment factor had the least presence, and the institutional support factor had the highest presence. For the faculty support factor, there were 32% of the respondents who rated it lower than 2.0, which is an indication of the less strong presence of this factor.

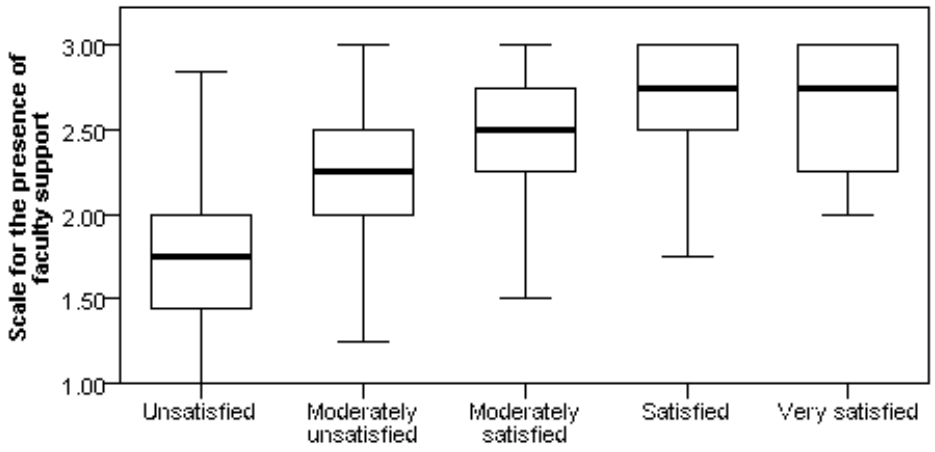
Presence and the level of satisfaction. The Kruskal-Wallis H test (also called the "one-way ANOVA on ranks") is a rank-based nonparametric test to determine if there are statistically significant differences between groups of an independent variable. The Kruskal-Wallis test was conducted to understand whether the presence of these factors (which represents the level of practice of the quality indicators) differed by the satisfaction level for online teaching. The dependent variable was the presence of each factor and the independent variable was the level of satisfaction. The null hypothesis was that the presence of the factor was not different by the satisfaction level of teaching online. Based on the results in Table 9, the null hypothesis can be rejected (.05 significance). The presence of these five factors was associated with respondents' satisfaction level for online teaching.

Table 9. The Association Between the Five Factors and the Satisfaction

Factor	Null	Sig.	Satisfaction level
Institutional support	Reject	0.000	Associated
Faculty support	Reject	0.000	Associated
Student support	Reject	0.027	Associated
Teaching and learning	Reject	0.000	Associated
Assessment	Reject	0.000	Associated

The results of Kruskal-Wallis test show that the five factors did have association with the level of satisfaction. The significance level was .05. Taking the faculty support factor as an example, the detailed results of the Kruskal-Wallis test indicated that the presence of the faculty support factor was positively associated with the satisfaction level of the online teaching experience. As shown in Figure 5, the perceived presence of faculty support was positively associated with satisfaction for the online teaching experience. In other words, the more these quality indicators were being practiced, the higher the satisfaction level for teaching online was. The other four factors had a similar positive association between the rating for presence of the factor and the level of satisfaction level for online teaching experiences.

Figure 5. The Association between Faculty Support and Satisfaction



Presence and concern for quality. The ratings for the presence of these factors were further examined, to understand whether the perceived presence of these factors was associated with the level of concern for quality. The dependent variable was the factor and the independent variable was the level of concern. The null hypothesis was that the presence of a factor did not differ by the level of concern, which indicated that there was no association between the presence of factor and the level of concern for quality.

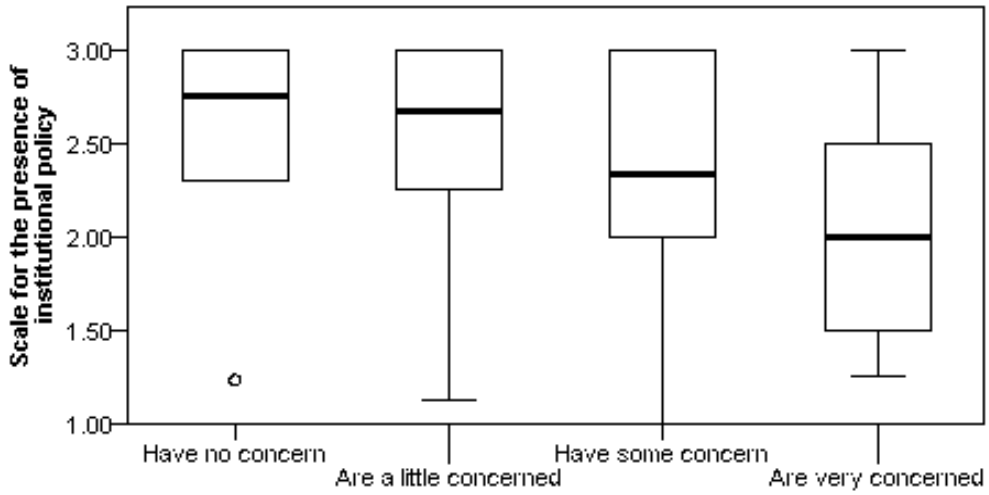
As shown in Table 10, the perceived presence of four of the five factors was associated with the level of concern, with an .05 significance level. The teaching and learning factor was not associated with the level of concern.

Table 10. The Association Between the Five Factors and the Concern for Quality

Factor	Null	Sig.	Concern for quality
Institutional support	Reject	0.000	Associated
Faculty support	Reject	0.000	Associated
Student support	Reject	0.017	Associated
Teaching and learning	Accept	0.384	Not associated
Assessment	Reject	0.000	Associated

Taking the institution support factor as an example, the detailed Kruskal-Wallis test showed that the presence of institutional support was associated with the concern for quality. As shown in Figure 6, the perceived presence of institutional support was negatively associated with the level of concern about quality. In other words, the higher the presence of faculty support, the less likely the faculty were concerned about quality.

Figure 6. The Association between Institutional Support and the Concern for Quality



The Kruskal-Wallis tests were repeated for all five factors, with the results indicating that the presence of these factors was mostly associated with the satisfaction level and the concern for quality. Table 11 shows that the presence of all five factors was positively associated with the respondents' satisfaction for online teaching; the presence of four out of five factors was negatively associated with the respondents' concern about quality.

Table 11. The Summary of the Association

Perceived presence	Satisfaction level	Concern for quality
Institutional support	Positive association	Negative association
Faculty support	Positive association	Negative association
Student support	Positive association	Negative association
Teaching and learning	Positive association	Not associated
Assessment	Positive association	Negative association

Why was the teaching and learning factor not associated with the faculty's concern for quality? One possible reason is that teaching and learning are complex processes with which a lot of possible quality indicators are involved. The current study only included four indicators which may not have been enough to reflect diverse opinions of faculty. The number of quality indicators included in this study was not enough to reflect faculty's perceptions. Further study is needed to focus on the teaching and learning aspects of online education, for which is possible to include more quality indicators.

Section Summary

The results from the rating analysis show that these quality indicators were rated high on importance. The results also show that the ratings of the presence of these indicators were positively associated with faculty satisfaction from teaching online and negatively associated with their concern for quality (with one exception, the teaching and learning factor). Both

findings confirmed that the quantitative data analysis suggests that the U.S. quality indicators for online education are perceived as relevant by Chinese faculty. The next section explores the perceived relevance from the open-ended questions.

4.2 Open-Ended Question Analysis and Findings

In addition to asking the respondents to rate the importance and the presence of the quality indicator, the survey also included eight open-ended questions that were designed to provide the respondents with the opportunity to express their opinions and suggestions on quality assurance. These open-ended questions asked about the purposes of online education, the characteristics of quality programs, the faculty's satisfactions with the teaching experience, and the relevance of the U.S.-based benchmarks to Chinese online programs. The detailed results are shown in Appendix 8.

Data Preparation

Open-ended question responses were filtered before data analysis. For the open-ended question responses, two hundred and one records were included and the criterion was to retain faculty respondents' responses. A comparison was made to ensure that there were no meaningful information loses when the 201 cases were used. Because each question asked the participants provide three answers, there were 343 to 493 responses for each question (Appendix 8).

Coding Process

The open-ended question analysis included several processes. All responses were first read to gain a sense of the emerging themes. Whenever a meaningful theme appeared, the theme was assigned a code and a description. For each question, there was a code table. Each response was read carefully. Based on the interpretation of the response meaning, the response was

labeled with the appropriate code. After all responses were coded, 10% of the coding results were randomly checked by an independent Chinese scholar, to ensure coding accuracy and to avoid the researcher's own biases affecting the data. Patterns and trends were identified as findings.

How Do Participants View the U.S. Quality Standards?

Faculty responses and comments provided a deeper understanding of their opinion on quality assurance. The results from the open-ended question analysis were presented by taking faculty's words that appeared in the responses and rearranging the words to tell the story. The key points of the meanings derived from the themes from each open-ended question. The presentation of the results is divided into two sections: The first is to present the findings related to the Chinese faculty's overall perception of the relevance of U.S. quality standards. Then a more in depth investigation can be utilized to look at Chinese faculty responses relative to the individual factors.

Figure 7: The Answers for Whether the Respondents Had Concern for Quality

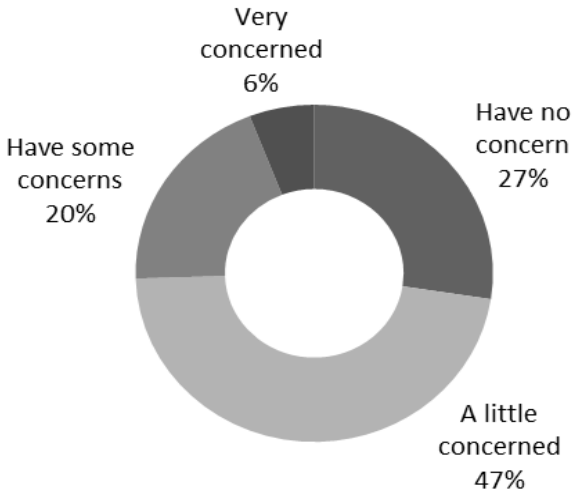


Figure 7 shows an example of the open-ended question analysis process. In this open-ended question, the participants were asked "Is there any concern about the quality of online

education?" Twenty-seven percent respondents had no concern, 47% were a little concerned, 20% had some concerns, and 6% were concerned.

The respondents provided 339 responses for their reasoning on this question. These responses were coded, and the aggregated results were organized in Table 12. The left column is the themes derived from the responses; the middle two columns are the number and the percentage of responses for each theme; and the right column is the example of responses.

Table 12: The Reasons for Having Concerns for Quality

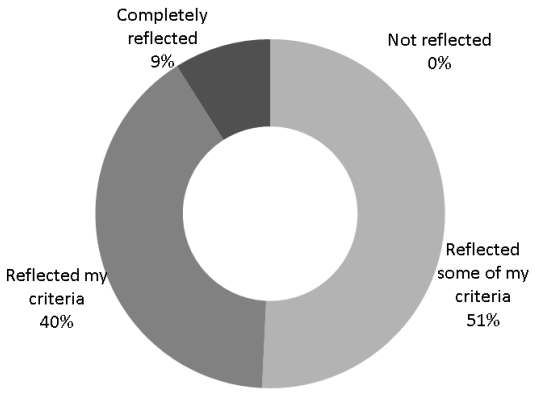
Inductive themes	N		Example responses
Student motivation	86	25%	Some students did not put effort into learning.
Faculty quality	53	16%	Online teachers lack motivation.
Assessment	40	12%	It is difficult to know the learning results.
Content	37	11%	Course materials are not updated regularly.
Management	29	9%	There is not enough monitoring and managing process.
Interaction	31	9%	There should be more timely communication and interaction between students and teachers.
Quality focus	26	8%	The quality of online education cannot be trusted.
Policy issue	14	4%	Online environment needs to be regulated.
Acceptance	15	4%	Online education has not being widely accepted.
Other	8	2%	Miscellaneous or not making sense

The reasons for the Chinese faculty to have concerns for quality included: students are not motivated, some faculty are not qualified to teach online, management and organization are not adequate, and the assessment methods are not able to assess student learning. These reasons for concern were more related to the outcomes of quality assurance, while the quality indicators included in the study were elements and conditions that were inputs for quality assurance. The

responses from the open-ended question showed that Chinese faculty's concern for quality was not fully covered by the U.S. quality standards.

To understand more about Chinese faculty's attitudes toward U.S. quality standards of online education, two additional questions were asked: "Do these benchmarks reflect your criteria for the quality of online education?" and "Should Chinese online programs adopt these benchmarks?" The results illustrate the complexity of understanding and applying educational standards across borders. Every participant in the study agreed that these U.S. benchmarks reflected his/her criteria for quality.

Figure 8: The Answers for Whether the Indicators Reflect Criteria for Quality



The majority of respondents indicated that this set of U.S. quality indicators reflected their criteria of quality (Figure 8). They commented that these indicators covered a wide range of quality issues in online education. Some of them also regard this set of benchmarks as practical and can be applied in practice. It is clear that the majority of respondents perceived this set of benchmarks as beneficial. Faculty were also happy to know what areas the U.S. quality standards cover and what details the U.S. quality indicators provide.

Should China adopt these U.S. quality standards? Every participant indicated that China should at least partially adopt this set of U.S. quality benchmarks (Figure 9). They provided reasons such as "China is at the beginning stage of online education." "China needs to develop

quality standards in order to ensure quality." Even though the Chinese government and institutions had put forth a great deal of effort, the respondents felt that China is still far from having quality standards that reflect the best online teaching practices. They argued that China needs to learn from more advanced practices, including the quality standards from the U.S.

Figure 9: The Results for Whether China Should Adopt the U.S. Quality Indicators

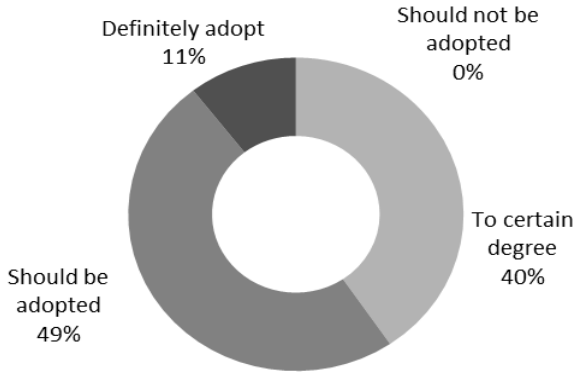


Table 13: The Responses for China's Adoption of the U.S. Quality Indicators

Inductive Themes	N		Example responses
China needs standards	119	34%	China cannot reply on other countries' standards; it should develop its own.
China can learn from the U.S.	66	19%	China can learn from US in quality standards.
Useful or partially useful	65	19%	This set is very useful or partially useful.
Country difference	29	8%	There are differences between U.S. and China.
Shared value	19	6%	China should adopt these Us benchmarks because there are shared value for quality.
Other	20	6%	
Internationalization	17	5%	China needs to connect with international standards.
Benchmarks need more work	10	3%	This set of benchmarks needs more work.

In addition, the respondents emphasized the importance for China to connect with the international community by adopting international standards. Some respondents argued that the

quality of online education has shared principles that are independent from the environment. Overall the respondents made their argument for adopting these U.S. based quality indicators (Table 13).

On the other hand, the respondents pointed out the difficulty of applying the U.S. quality indicators to Chinese online education. Ten percent of the responses indicated that educational standards are subjective to local matters. The respondents argued that the U.S. educational environment is quite different than China. Because of the historical, cultural, political, and economic differences that exist between China and the U.S., it was expected that education standards should reflect such differences. Therefore, it is difficult to apply U.S. standards directly in China and China cannot rely on other countries' standards; instead, China should develop its own standards.

In addition, 13% of the responses indicated that there were limitations with these benchmarks. Even though this set of benchmarks covered a lot of generic quality issues at the program level, it does not include specific benchmarks to be applicable to specific disciplines. The survey participants, being teachers, wanted to see more about benchmarks related to the courses they were teaching. The results did not reveal variation in open-ended question responses by demographics such as gender, experience of teaching online, and disciplines.

The conclusion is that these benchmarks were perceived by Chinese faculty as relevant. The results suggest that the participants viewed the U.S. quality standards for online education as very important to their work and to Chinese online education programs. The participants also viewed that these U.S. quality standards need to be carefully studied and modified to suit the Chinese educational environment.

Findings Organized by Factors

The previous section presented the overall perception of Chinese faculty regarding the relevance of the U.S. quality standards. This section presents detailed qualitative comments, organized around five quality factors that were proposed in CFA. What the researcher was looking for is whether the comments from Chinese faculty were in any way different from the content of U.S. quality indicators. The results show that, in their own language, in their own words, the responses to the open-ended questions reflected the content of the U.S. benchmarks. That added validity to the conclusion that these U.S. benchmarks are relevant to China.

Findings Related to Institutional Support. Institutional support covers a wide range of topics, including policies that contribute to the acceptance of online learning. Respondents were very clear about the objectives of online education in China. According to the respondents, Chinese online education programs are perceived as to build a lifelong learning environment; to provide open access and flexible learning opportunities; and to ensure education equality by widening channels for knowledge dissimilation.

Enabling anywhere and anytime teaching and learning is a major objective and characteristic of Chinese online education. This point was reflected in 22% of the responses. Flexibility is also a main reason for faculty members to enjoy their online teaching experiences. The flexibility enables faculty to better manage time and to use various ways to teach. In addition, the convenience of online learning was also considered by participants as a great service to students.

Resource-wise, online education was considered by participants as having a major advantage in comparison to face-to-face education. Some respondents felt that the online course

material can be repeatedly used and shared beyond institutional boundaries. Being able to share educational resources was mentioned in 14% of the responses.

While online education was perceived as important and beneficial, online education is still not widely accepted in China. Part of the reason for the low acceptance is the perceived low quality of online education. Seventy-two percent of the respondents indicated having some concerns about the quality of online education in China. They argued that online environment needs to be better regulated to ensure quality. Some respondents also suggested that online education in China needs more support from the government and better acceptance from society.

Another reason contributing to the low acceptance of online learning is the lack of attention from the institution. Some respondents commented that their institution focused too much on making money from online program; not enough on student learning. They argued that the institution should pay more attention to developing policies that relate to academic quality and integrity. One particular issue mentioned is the importance of teaching online, being perceived by both faculty and the institution. Some respondents complained that the online teaching experience was not considered as part of promotion evaluation.

Findings Related to Faculty Support. Faculty are one of the most important factors to successful online education (Fuller, 2006). In order to effectively teach online, good quality faculty members need to have knowledge about their field of teaching, need to have clear teaching and learning objectives, need to have understand the technology, and need to be able to teach in various ways to match with different student learning styles. This view of the importance of faculty was agreed upon by the respondents in this study. In reality, these desired attributes for online faculty are not easy to develop.

Half of the respondents were concerned about online faculty quality. One of the reasons for having such concern is that online faculty members have uneven qualifications. The respondents argued that not all faculty are qualified to teach online. The current practice at the institution is to identify the main instructor for the face-to-face course. If he/she agrees to teach the same course online, he/she will be the lead faculty and will be in charge of designing and teaching the course. The respondents felt there should be a more rigorous screening process when hiring online faculty. The institution should provide incentives to attract more highly qualified faculty to join online teaching. Motivating faculty in online teaching is easier said than done, since the contribution to online teaching is not considered when faculty are evaluated professionally.

In addition to the recruiting process, challenges also occur when faculty switch from face-to-face teaching to online teaching. Forty-five percent of the respondents were teaching face-to-to face versions of the course. Some faculty members were teaching online courses as if they were teaching face-to-face courses. Many faculty members have an inadequate understanding of technologies for online teaching. One suggestion was that faculty members should be assisted during the transition from face-to-face teaching to online teaching, and the school should regularly train online faculty, continuously develop faculty in terms of understanding the online teaching pedagogy and technology. In terms of the areas for faculty professional development, the respondents mentioned the need to know the best practices of online teaching, online pedagogy, educational technology, and standards from other countries. They also argued that online programs should require faculty to effectively utilize educational technology.

The respondents suggested that developing more responsible and competent faculty who understand the purpose and pedagogy of online education should be a priority for institutions. Many respondents welcomed the professional development opportunities. Getting more training and professional development is not a burden to them. It is actually a motivation. Some respondents perceived that online education is the future and they need to know more about it. Getting involved in online courses is good for their career. As one participant responded, "Teaching online helps improving my professional knowledge and course designing skills."

The results show that Chinese faculty agreed that online faculty need to have proper qualifications in order to be effective in online teaching. They also suggested that the institutions should do more to recruit qualified faculty, and to provide more professional development opportunities.

Findings Related to Student Support. Most students in ABC University's online programs are full time working adults. They have to balance pressure among study, work, and family obligations. How to provide proper support to these students has been a focus for ABC University. The support to students comes from a mixed structure of between 240 regional student learning centers, online learning materials, faculty virtual office hours, and student learning groups. According to the respondents, a good online program should recruit motivated students who are self-disciplined to participate in online learning. Currently, students who are enrolled in ABC University's online program most likely did not pass the Chinese national college entry exam. Some respondents felt that some students getting into online programs are not well prepared for online learning.

But the biggest challenge for student support is about students' lack of motivation. Student motivation was mentioned by respondents as both a necessity and a challenge. Some

respondents noticed that students' attitude toward learning is questionable. They mentioned that many online students focus not on learning, but on getting the diploma. Students lacking motivation to succeed in online learning has negatively affected the learning results and the quality of the degree. It has even negatively affected faculty's satisfaction with teaching online. Thirty-five percent of the respondents who said they had reservations about teaching online in the future listed student lack of motivation as a main reason. The respondents suggested that the institution should have more effective student support structure, including improving the orientation process prior to taking online classes and providing more guidance for students to navigate the learning once they are in the program. They also suggested that the online program needs to be more selective during admission.

The results showed that supporting online students is an important task. One of the most challenging tasks is to motivate online students. Chapter Five discusses more on what is needed to motivate online students.

Findings Related to Teaching and Learning. Teaching and learning are at the core of online education. Many respondents enjoyed their online teaching experiences because online teaching provides easy and flexible access, enables rich teaching styles, and individualized learning. In order to have quality online teaching, the respondents believed that the courses should be designed so that students can engage themselves in analyzing and evaluating their own learning process and faculty should understand the content, the online teaching pedagogy, and the technology. There were two major themes that emerged from the responses: interaction and technology use. Both themes are critical to the success of online teaching and learning.

Interaction was mentioned as a key issue for online teaching and learning. It is also a major concern for many respondents. Without adequate interaction, it is difficult to know how

students are learning. Some faculty members felt they did not get to know students enough. One respondent answered, "Unlike my face-to-face teaching, I do not know my online students. I do not know their learning style, their struggles, and their thinking. It is very challenging and unrewarding when a teacher does not know students at the end of the semester."

Technology know-how and the proper use of technology in online teaching is another issue. In the face-to-face format, faculty can talk to students and see their reactions. In online education, technologies become the principal means of communication, which is not the case in a classroom. When the technology is not available, or the instructor does not know how to use the technology, or uses the technology improperly, the effectiveness of online teaching and learning can be greatly handicapped.

Findings Related to Assessment. To the respondents, a good online program needs to systematically evaluate the processes and the results. The evaluating process needs to be standardized and properly managed. In practice, many respondents acknowledged that too often they do not know how much students learn and cannot provide timely feedback to students. The respondents suggested there should be multiple ways to evaluate student learning.

The current assessment method at the ABC University relies heavily on the final exam, which is required for every online class. The final exam at ABC University is a very formal process. During the final exam week, online students go to regional learning centers around the country to take the final exam in person, for every course they are taking. The institution sends staff members to different locations to monitor the exam process, in order to ensure that the procedures are followed. However, the final exam happens once per semester. If faculty members relied on final exams to gauge student learning, they would not have much success. By

the time the results of final exam are available, the class is probably finished. There is not much for the teacher to do to help students.

Inadequate evaluation structure and methods was mentioned as one major issue at the ABC University. To ensure teaching quality, the Online College at ABC University has developed procedures to monitor teaching activities. This process involves a data collection process that covers seven categories, at 53 check points. The data collection includes how fast the teacher responds to student questions, the time a teacher spends in the virtual office, the number of posts a student makes in the discussion forum, etc. The results from the evaluation are directly linked to the financial payment to faculty members. The teaching and leaning could be even more effective at the ABC University if the data is carefully analyzed and the results are used for improving teaching and learning processes. What is needed is a deeper understanding of the purpose for assessment and evaluation and being able to use the evaluation results to guide the teaching process. Some respondents suggested that there should also be evaluation of how that virtual office time is used.

Finally, the authenticity of student work was questioned by the respondents. As one respondent answered, "How do I know the homework was actually finished by the student himself?" Currently, there is not a good way to verify students' identity and their work. It is even more difficult when plagiarism is not clearly defined or understood. For example, cheating during the final exam is well understood by Chinese students as plagiarism. But using other's work without proper citation may not be considered so.

Summary of the Open-Ended Question Findings

The analysis above used comments from the responses to the open-ended questions to build a story about Chinese faculty's perceptions of quality status and quality assurance at ABC

University. The results show that the quality indicators from the U.S. are relevant to China, evidenced by respondents' concerns, desires, and suggestions through their comments. What the open-ended question responses confirmed was that the Chinese faculty had similar concerns for the quality of online education. They viewed that these U.S. quality indicators reflected their own criteria for the quality of online education. They suggested that China should at least partially adopt these quality standards. But they also strongly argued that these foreign quality indicators should be modified to fit Chinese online educational settings because of the differences existing between the two countries.

4.4 Post Hoc Analysis

The previous section was built around the five quality factors that were based on the U.S. quality literatures. The quantitative and qualitative results confirmed that these five quality factors were perceived as important and relevant by Chinese faculty. It is time to step back and revisit the data and see what else might stand out.

Management Factor

A five factor categorization has been proposed so far as a framework to study online education quality in China. These five factors are institutional support, faculty support, student support, teaching and learning, and assessment. There is another factor that emerged from the open-ended question responses, the "management" factor. According to respondents, the "management" factor is an important part of the quality assurance. They mentioned that a quality program should have a systematic management procedure and a high efficiency management structure and team. The respondents were concerned when management was lacking. They were especially concerned about not enough monitoring and managing process.

In order to improve the quality of online education, the respondents viewed developing effective managerial procedures as a very important step to improve the management of online teaching and learning. They also suggested enhancing the management function in the teaching platform and improving the management function within academic units. Chapter Five discusses more about what the "management" factor means to the model of online education quality proposed in the study and what might be the cause for this factor to be perceived as very important, even though it has not been mentioned widely in the U.S. literature.

Reducing the Number of Factors

In the CFA, two factors were removed because of their strong association with other factors. The technology factor was combined with the institutional factor and the course development factor was combined with the teaching and learning factor. The result was a five-factor categorization that fits with the data. Then the question was can these five factors be analyzed again to see whether their number can be further reduced? Will a further factor reduction provide more understanding of the quality assurance issue in online education?

Table 14. Further Factor Analysis Results

	Factor	
	1	2
Institutional support	.328	**.684**
Faculty support	.285	**.665**
Student support	**.600**	.535
Teaching and learning	**.669**	.375
Assessment	**.789**	.291

For this purpose, factor analysis was conducted to explore whether more factors could be reduced. The factor reduction results show that these five factors can be clustered into two

groups, as shown in Table 14. One group has the institutional support factor and the faculty support factor. The other group has three factors. Chapter Five discusses more about what these two groups mean and how to go about understanding online education program quality using this two-factor approach.

4.5 Chapter Summary

This chapter first presented the CFA findings of the model fit with the quality of online education. The results show that the data did not fit well with the proposed seven-factor categorization, which was then modified by removing some indicators and re-organizing others. In addition, the seven factors were reduced to five. The result was a five-factor categorization with 19 indicators. Each factor included three to four quality indicators. The average of these indicators' ratings was used to represent the rating for the factor. These ratings for factors were used for further analysis.

The results show that respondents perceived these U.S. based benchmarks as very important, but the level of presence of these indicators varied. The perceived presence of these benchmarks was positively associated with faculty's satisfaction with online teaching, and negatively associated with their concern for quality (with one exception: the teaching and learning rating did not show an association with the concern for quality).

Responses to open-ended questions were also analyzed to understand faculty beliefs, concerns, and suggestions related to the quality of online education in China. The results show that Chinese online faculty agreed that China needs workable quality standards for online education. China needs to develop quality standards. During the process of developing such standards, China should learn about and maybe borrow other good practices, including the quality standards used in the U.S. The respondents also recognized the internationalization trend

within higher education. They regarded adopting standards from other countries as an important step for Chinese institutions to connect to the international community.

On the other hand, the respondents perceived the process of adopting international quality standards as a complex process due to educational setting differences. The differences that exist between China and the U.S. are tremendous. The respondents cautioned that, even with their great value, the U.S. standards cannot be blindly copied and applied in China. Instead, China should learn from and borrow the U.S. standards, and modify them to reflect the Chinese educational environment. Ultimately, China should develop a set of quality standards that works for China.

The findings from the study also shed light on the details of the quality issue in China. Before this study, concerns about online education quality were often without details. This study provides more specifics about the quality issues of online education from the faculty perspective. The description of the problems and their causes can be useful to address the quality problem. Chapter Five discusses the meaning of the findings and the practical implications for online education and quality standard development in China.

CHAPTER 5

Discussion

5.1 Summary of the Study

Online education has the potential to help address the higher education access problem. Online education has become a major component of higher education (Jung et al., 2011). The quality of online education, however, has been a major concern for stakeholders. In order to ensure quality, quality standards are necessary and need to be understood for the appropriateness and applicability of online higher education.

This study aimed to understand whether the U.S. quality standards for online education are relevant to the Chinese educational environment. Nine sources of U.S. literature within the field of online education were identified. The U.S. literature included quality standards from major U.S. accreditation agencies and research publications. The analysis of these U.S. quality standards led to 31 quality indicators that were categorized into seven factors. A survey was administered at a Chinese institution, and the participants were asked to rate the importance and the presence of these quality indicators. Three hundred seven valid responses were collected and statistically analyzed. Two hundred one responses were used for open-ended question analysis. The following sections discuss the relevance of the U.S. quality standards to China from four points of view.

Are the U.S. Quality Standards Perceived as Relevant?

The ratings. Chinese faculty were asked to rate the importance and the presence of these indicators. The results show a homogeneous high rating on importance, indicating that the U.S. quality standards are highly regarded by Chinese faculty. It is reasonable to believe that these U.S. benchmarks are considered important and valuable by Chinese faculty. The ratings also

indicate that the majority of these U.S. based indicators are present in this Chinese institution, even though the degree of the existence varies. This finding suggests that the Chinese are already practicing many of the quality indicators themselves. In addition, the presence of these U.S. indicators was found to be positively associated with participants' satisfaction with online teaching, and negatively associated with their concern for quality. This implies that the more these quality indicators are practiced, the happier the faculty will be, and the less concern they may have for quality. This finding confirms the perceived relevance of these quality indicators.

The open-ended questions. The results from the open-ended questions analysis further add to the validity of the claim that the U.S. quality indicators are perceived as relevant. Take the comments about the faculty support as an example. The respondents perceived that faculty members need to have knowledge about their field of teaching and the institution should provide incentives to attract more highly qualified faculty to join online teaching. In addition, the school should regularly train online faculty, and continuously develop them to understand better online pedagogy and its technology. In their own language, their own words, what the respondents are saying about faculty support reflects the U.S. quality indicators' content. Similar patterns can be found within the comments on the other four factors. This finding adds validity to the relevance of the U.S. quality standards to Chinese online education.

Criteria of quality. When asked whether the U.S. quality indicators reflected their criteria of quality, half of the respondents answered totally reflected or reflected. The other half answered reflected some. The detailed comments show that the difference between the answers from these two groups was not in the content of these quality indicators, but in the context in which they will be applied. Many respondents think that educational standards should reflect the

environment differences. According to the respondents, because China is very different than the U.S., this set of benchmarks needs to be modified and customized to suit Chinese environment.

In summary, the findings suggest that the U.S. quality indicators are perceived by Chinese faculty as important, and that Chinese faculty have similar concerns about quality to those that were appeared in the U.S. literature. Most respondents also agreed that China should at least partially adopt these quality indicators and integrate them into Chinese online education quality assurance practices. At the same time, the respondents cautioned that the adoption of foreign standards can be a complicated process. The premise is that while the U.S. quality standards are perceived by be faculty as relevant and applicable to the Chinese context, these indicators have not adequately covered all aspects of quality for online education. In order to successfully adopt these indicators in China, they need to be modified to fit with the current Chinese online education environment. The remainder of the chapter explores this premise fully by discussion of: 1) whether the U.S. quality indicators adequately covered the quality issue for online education; 2) how to go about doing the modifications necessary for U.S. quality indicators to work in Chinese settings; 3) how this study relates to other quality studies of online education; and 4) what the implications of the study are for quality assurance practice and research.

5.2 Are the U.S. Quality Standard for Online Education Adequate?

This study went through methodological procedures to have an argument for identifying quality indicators in which the online quality is perceived in the U.S. These quality indicators were then tried in a Chinese institution. The results indicated that the Chinese faculty perceived these U.S. quality indicators as important, and that these quality indicators have been practiced in

China. There was overlap of the quality indicators used by China and the U.S. This implies that the U.S. based quality indicators for online education can be shared across borders.

Measuring Quality - Inputs vs. Outcomes

The analysis of open-ended question responses revealed more findings and raised more questions (Table 15). For example, when respondents were asked about the characteristics of quality for online education programs, the respondents mentioned expanding access (28% responses), shared resources and reduced costs (18%), having qualified faculty (12%), and good management (8%). These were aspects not mentioned in the indicator pool included in this study.

Table 15. The Perceived Characteristic for Online Programs with Quality

Inductive Themes	N		Participant Responses
Expand access	155	28%	Provide access and flexible learning opportunities.
Share resources	99	18%	Have adequate resources and utilize resources efficiently.
High quality faculty	63	12%	Have responsible and competent faculty.
Good management	42	8%	Have systematic process to evaluate teaching.
Create equality	38	7%	Open educational opportunities to variety of students.
Good interaction	32	6%	There is interaction between teacher and students.
Motivated students	32	6%	Students have the motivation to online learning.

Most of the quality indicators in the U.S. pool included in this study were conditions and elements that are necessary for an online program to have quality. They are indicators being considered as inputs. They do not measure quality from the perspective of outcomes. What were mentioned by the Chinese, however, were indicators related to outcomes. If the effort of quality assurance focuses on inputs but ignore outcomes, then we are missing half of the battle to improve quality. This finding suggests the incompleteness of the U.S. Quality Standards. While the U.S. quality indicators were perceived as important and relevant by the Chinese respondents,

responses from the open-ended questions indicated that there are aspects that are not covered by the indicators included in the pool. Two examples are online student motivation and online program management.

The Incompleteness of the U.S. Quality Standards

Student motivation has been mentioned many times in the study as an important quality indicator. The open-ended question responses provided such a view as perceived by the Chinese faculty: a quality online education program needs to have motivated students. But the current state is that online students are not motivated to learn, which has become one of the major quality concerns for faculty. To help motivate students, there should be systematic efforts from institutions to motivate online students. But the U.S. quality standards did not provide quality indicators in this regard. Once again, the U.S. indicators addressed the inputs measure, such as there is an orientation; students have access to services; and the institution has a structure to address student complains. To measure student motivation, which is an outcome measure, requires a different way of thinking about quality and a different set of indicators.

Management is another example that was missing from the U.S. quality indicators. Managing an online program is a complicated undertaking. It involves many tasks that cover a wide range of issues, including curriculum, staffing faculty, program outcomes, technology, and institutional relationships (Kearsley, 2012). The results from the post hoc analysis show that "management" was repeatedly mentioned by Chinese faculty as necessary to ensure the quality of online education. Why has the management factor not appeared frequently in the U.S. literature? Why did the SLOAN-C, as a major promoter of online learning, only recently begin the discussion of efficiency and management within the online education community?

One possible explanation is that the management issue becomes more prominent when online programs increase in scale. In the U.S., online programs are usually developed based on existing academic programs. The online programs in the U.S. are often small scale. They are often managed by the institution's academic units instead of a special unit on campus; the class size is often small so that teachers can provide one-on-one assistance to students. When an online program is small, management is less of an issue. But when an online program increases in scale to the level similar to the ABC University, which has 75,000 online students, and half of the classes have more than 100 students, management and efficiency issues become more prominent. Even delivering exam materials becomes an organizational challenge, considering the 240 locations around the country for the administration of final exams. In a large scale online program, teaching and learning are important, but the administration must also ensure that money, personnel, and time are managed so that courses are produced on time and many work tasks fit together (Moore & Kearsley, 2011, p. 18).

Another possible reason for the management factor being repeatedly mentioned by Chinese faculty is in the structure of the organization. At ABC University, there is a two-tier organizational structure, where the Online College is responsible for all aspect of administrative tasks, and the other colleges within the university are responsible for teaching tasks. There is a lot of coordination involved. For this reason, each college designated a liaison to oversee the online teaching from an academic perspective. Externally, there are 242 learning centers around the country, and some are thousands miles away. Who is in control? What responsibility does each party have and how do they account for the actions when involving separate organizations?

These two examples suggest that the U.S. quality standards are not perfect. The study indicated even if Chinese online programs did adopt these indicators, the Chinese faculty will

still have concerns on quality because these indicators do not cover all aspect of quality. The findings indicated that the original quality model from the U.S. has shortcomings. If the goal is to know whether online programs have quality, it is necessary to know more than what are described in the U.S. standards.

What Does this Mean to the U.S.?

From the open-ended questions, the researcher identified some themes that were not included in the original U.S. based literature. This implies that the issue of quality for online education is indeed complex. Even the much researched U.S. quality standards do not cover everything. The conventional ways of thinking about quality, represented in this study by U.S. quality indicators did not fully capture the whole aspects of quality. This is consistent with views of quality of academic programs that are solely using the inputs, not outcomes. There is a need to re-think the quality of online education and the completeness of the U.S quality standards. How do the findings from this study inform the conversation of online education quality in the U.S.? Should the quality standards also include outcome measurement? The answers to these questions bring us back to the conversation of quality, which was raised at the beginning of the dissertation.

What Does this Mean to China?

Based on the results from this study, even if the Chinese replicate these indicators, the quality assurance process is not necessarily going to deal with the concerns that came out of the open-ended questions. In order for China to effectively adopt the U.S. quality standards, the respondents from this study suggested that there is something beyond the indicator pool that should be included in their quality assurance practice. The U.S. quality indicators need considerable modification to suit the Chinese local settings. This modification process uncovers

quality indicators that are unique to Chinese stakeholders and Chinese settings. It also includes details that can be used as the base for action plan in China.

5.3 The Modifications Needed to Adopt the U.S. Quality Indicators

In order for China to effectively adopt the U.S. quality standards, the U.S. quality indictor pool needs considerable modification. This modification process can be complex, because it is influenced by stakeholders, policy, organizational structure, and the resources available. What in particular needs to be modified in the U.S. indicators? Can it be assumed that this modification process also applies to other international settings? The following sections discuss what modifications are needed and how this modification process might be applied across borders. There are two main areas that need attention: the modification to reflect local needs, and the modification to provide the details needed for implementation purposes.

Modifications to Expand the Coverage of Indicators

Most of the quality indicators extracted from the U.S. quality standards for online education are inputs by nature. These are the elements and conditions that are traditionally considered as necessary in order for online programs to have quality. But the conditions and pre-requisites will not necessarily guarantee good results. From the open-ended questions responses, what emerged from the results is that Chinese faculty also care about the outcomes of quality assurance. For example, the respondents prefer to see online programs achieve expanded access, shared resources, high quality faculty, good interaction between teacher and students, and good management. This implies that additional indicators are needed to measure outcomes.

The results also indicated that additional indicators are needed to reflect local needs. The study so far has compiled a set of U.S. quality indicators and verified their relevance to Chinese faculty. The results of the open-ended questions indicate that there might be issues and areas

that are perceived as important by the Chinese, but were not included in the indicator pool. For example, the management-related indicators were not included in this study when the survey was developed. But the responses to the open-ended questions indicated a strong argument from Chinese faculty that management is very important to the quality of online education in China.

There is also the need to modify the quality indicator pool to include additional indicators that cover the management aspects of online education. Another example relates to learning centers. The ABC University has 240 learning centers located in various regions of China to provide student support. There was no quality indicator included in the pool to represent U.S. quality assurance for these centers, because most online programs in U.S. do not have regional learning centers to provide student support, as ABC University does. A modified quality standard should include such indicators to cover learning center quality issues.

Additional indicators are also needed to reflect different perspectives of quality. In this study, the faculty was the only stakeholder group surveyed. But quality assurance also matters to, and is influenced by, other stakeholders, including the local educational authority, the institutional administration, the staff, the employers, and the students. Different stakeholders may bring different foci and opinions in terms of what should be included as quality indicators (Twigg, 2001). The indicator pool should reflect such opinion differences.

Figure 10: Additional Coverage of Quality Indicators to Reflection Different Perspectives

Figure 10 shows the concept of modified quality standards that include indicators unique to difference stakeholders. The center circle is the selection of the U.S. quality indicators for online education, agreed-upon by various groups of stakeholders as important and that should be adopted. In the outer ovals, there are unique indicators that are perceived by different groups of stakeholders as important.

Modification to Provide the Details as Action Plans

Having quality indicators is not enough. The purpose of having quality indicators is to apply them for quality assurance purposes. The indicators included in the survey so far have no details that can be used for implementation purposes. In practice, each quality indicator should be carefully examined and modified for its applicability because of contextual differences. There are many indicators, and each one of them requires attention to detail. The process of providing the details for each quality indicator is where the majority of the modification work needs to be.

Take the course revision indicator as an example. The indicator states that instructional materials, course syllabi, and learning outcomes are reviewed periodically. In order to apply this indicator in practice, several questions need to be answered: How do faculty members go about course material revision? How often should changes being made? How much change is needed? Where will the resources come from? And when should the content be revised? Another example is an indicator from the teaching and learning category. The indicator states that online course design provides opportunities for appropriate instructor-student, student-student, and student-content interaction. In order to apply this indicator in practice, there is a need to know what kinds of interaction are appropriate, which may differ from course to course. How much interaction is needed, based on the differences, by instructor and students? How to measure

interaction based on the organizational structure? In particular, there are several key aspects which need attention during this process.

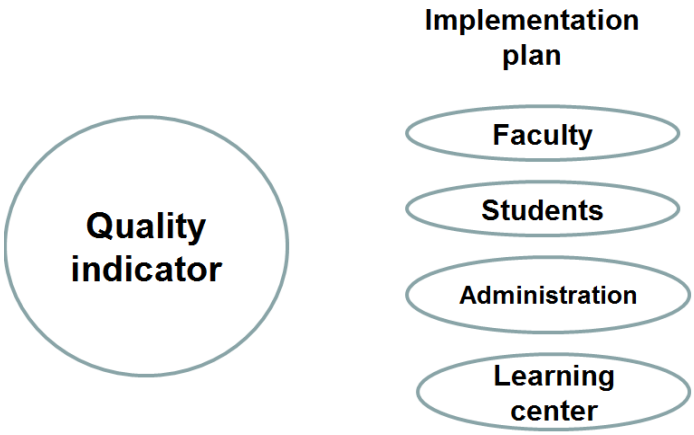
Modification is needed to reflected differences in terminology. There might be indicators with similar names that actually end up being quite different because of contextual differences (Levin, 1997). Even with the same terminology, the actual meaning and the approach to implementation can be different between the U.S. and China. This was also mentioned by Chinese administrators from the ABC University, when the researcher presented the initial findings from this study. Further work is needed in order to understand the differences and to work out a strategy to reflect such differences.

Modification is needed to reflect the differences in actions. Given the same quality indicator, when different stakeholders are asked about the action needed for implementation, the answers can vary. This is because the interpretation of the meaning of indicators, in terms of what is needed, can be influenced by a stakeholder's background, interests, and experiences in online education. Take one student support indicator as an example. The indicator states, "Tutoring is available as a learning resource for students." The answer to what should be done depends on the students age, their readiness for online learning, their personal interests, learning styles, experiences, and life circumstances. The action plan for students can be quite different than those for teachers and administrators. One way to develop action plans is to have separate plans for each stakeholder group, with details that are specific to the group (Schmidt et al., 2009, p. 15).

Figure 11 illustrates such an abstract action plan. The plan should consider the local needs and reflect the opinion differences from each stakeholder group. On the left is the quality

indicator that is agreed upon by Chinese stakeholders. On the right is the implementation for each stakeholder group. There should be a plan for each quality indicator's implementation.

Figure 11. The Implementation Plan for Different Stakeholder Groups



What Would International Quality Standards Look Like?

Reviewing the methods utilized in this study, the researcher found that the processes of selecting quality indicators is not limited to the U.S. The same processes can be used to select European quality standards, and they can be applied to other countries. Similarly, the processes to design the survey, to analyze the results, and to modify the indicators for implantation, are not limited to China. It is reasonable to expect that the methods utilized in this study are country independent and can be used across borders.

This study tells us that it is possible to have a shared internationally applicable standard for online education. This shared quality standard has two parts. One part is applicable to all educational settings. The indicators in this part are tested and agreed upon by stakeholders from all countries. The other part is uniquely applicable to local settings. Quality indicators in this part take into consideration local needs. This means that the additional indictors reflect local needs and stakeholders' unique perspectives, and they respect the history and culture of educational practices. Figure 12 shows that a shared international quality standard includes the

indicators that are agreed to by stakeholders from all countries, and leaves room for a diversified portion of indicators that are specific to local settings. The modification process is to identify the needs that are unique to the local settings, and to work out the details that reflect such needs.

Figure 12. International Quality Standard for Online Education

5.4 The Connection between This Study and Other Studies

The CFA results show that the five-factor model fits reasonably well with the data. The five-factor categorization has been used for the analysis for this study. How does this model compare with other quality models from the literature? Does this model fill any knowledge gap? From four points of view, the following sections discuss the characteristics of this model and how it connects with other models in the field of online education.

The Categorization Empirically Verified

Many studies have explored how to ensure the quality of online education programs. Many publications have identified quality indicators and have proposed standards with categorizations. Few studies, however, have taken steps to examine whether such categorizations make sense.

Quality on the Line was one study that did ask the respondents to rate the importance and the presence of the quality indicators. The result was a model that had quality indicators divided into seven factors. But researchers from *Quality on the Line* made no effort to apply statistical

test to ascertain the degree of importance of a benchmark. Instead, the study's interviews guided the analysis (Phipps & Merisotis, 2000, p. 13). Similar to *Quality on the Line*, this study also asked the respondents to rate the importance and the presence of these quality indicators. This study took the step beyond the presentation of the ratings by using CFA to build a five-factor model. The result is a model that originated from the U.S. literature and was confirmed by Chinese faculty responses.

Table 16: The Rating Comparison of Perceived Importance

	This Study				*Quality on the*
Factor	<2.5 Less Important	2.5 - 3 Slightly Important	3 - 3.5 Moderately Important	3.5 – 4.0 Very Important	Mean score On a scale of 5.0
Institutional support	4%	13%	27%	56%	4.40
Faculty support	6%	18%	29%	46%	4.38
Student support	5%	23%	13%	59%	4.60
Teaching and learning	5%	17%	25%	54%	4.30
Assessment	5%	17%	27%	52%	4.36

Shown in Table 16, the results from this study were also compared with the findings from *Quality on the Line* (Phipps & Merisotis, 2000). The comparison results indicated that there is a strong similarity on the rating of the importance of these quality indicators between the Chinese and American participants. Both studies show high ratings, which indicate approval from participants. The results confirmed that what is perceived as important by U.S. scholars and stakeholders is also perceived as important by Chinese online faculty.

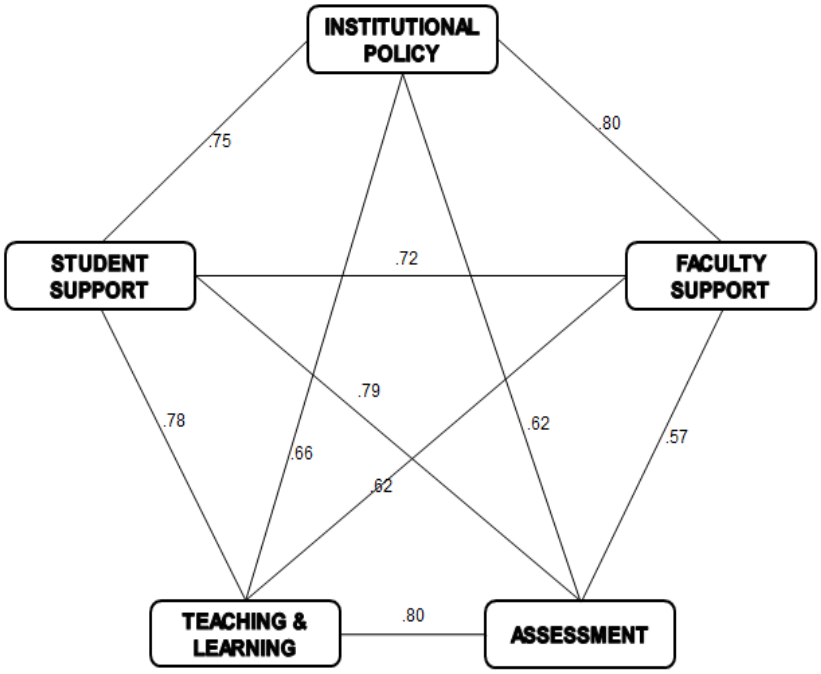
Inter-Relationships among Factors

Many scholars have proposed online education quality indicators; many publications have described quality indicators and grouped them into factors. But very few studies have

mentioned the inter-relationships between these factors. Michael Moore is one of the few who did suggest the inter-relationships between these quality factors (Moore & Kearsley, 2011).

This study demonstrated the existence of such an inter-relationship. Figure 13 shows that statistically there is an inter-relationship between the quality factors. The correlations between these factors ranged from .57 to .80, which implies that these quality factors were related to each other. This finding confirms Michael Moore's suggestion that there is interdependence of subsystems in a distance education system. It also explains why some quality indicators look as if they belong to more than one factor. Future studies could explore more what these relationships mean and how one factor might affect other factors.

Figure 13. Correlations for Five Factors



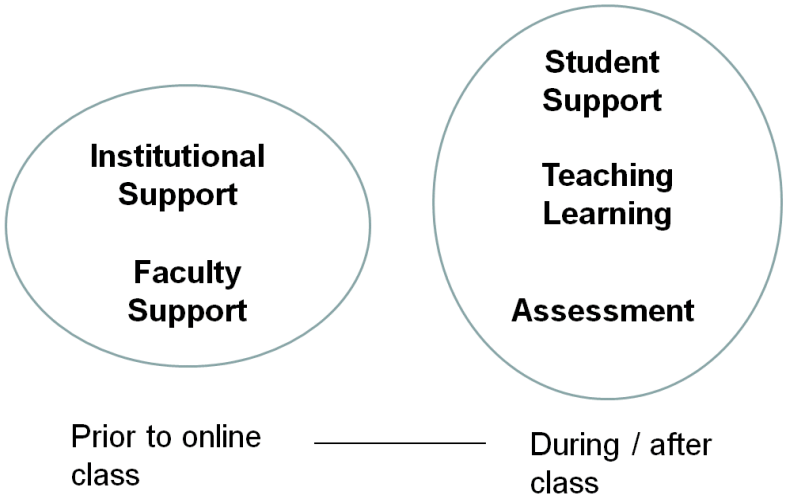
Further Factor Reduction

The post-hoc analysis showed that the five factors can be further grouped into two broad categories. This suggests that when faculty rated the importance of the indicators, their answers

followed this two-cluster pattern. These two clusters can be viewed as what is happening before and after the online classes (Appendix 9). The institutional support and faculty support factors can be grouped into one cluster, which mainly happens before the online classes. The student support factor, the teaching and learning factor, and the evaluation and assessment factor can be grouped into another cluster, which happens during and after the online classes.

By dividing the quality factors into these two groups based on their timeline, online education can be interpreted as follows: quality assurance is perceived by the Chinese faculty as a process, which happens in two stages. One stage happens prior to the online classes; the other happens during and after the online classes. For example, institutional support can influence the environment for online teaching and learning; and faculty support can affect the faculty's motivation to get involved in online teaching. Both factors are related to what happens prior to the online classes. The other three factors happen during the online classes or after the classes (Figure 14). This two stage process reflects the reality of quality teaching and learning.

Figure 14. Five Factors Further Divided into Two Groups



This finding provides validity for the survey responses. When the respondents rated the importance of these quality indicators, they were answering the survey questions based on their

thinking as a teacher. If they were answering the questions arbitrarily, it would be difficult to find such a cluster relationship among factors that also reflects the reality. The fact that these five factors can be grouped into two clusters that reflect the reality provides evidence that the survey results are valid. In addition, this finding provides a different perspective from which one might view and implement quality assurance from a staged approach.

In summary, this study took a modeling approach to explore quality standards applicability cross borders, by testing U.S. quality indicators in China. The modeling approach uniquely confirmed the quality indicators' categorization of the data. It fills the knowledge gap by exploring the legitimacy of such categorization. The approach also provides an example to decide what quality indicators should be included, based on the stakeholders' opinions. The modeling results also demonstrated the inter-relationships between quality factors and the need to explore further such relationships. This finding points to the future research direction which requires more attention to the details of such relationships. Lastly, the five factors could be further grouped into two clusters, which suggest a new approach to study the quality of online education, in which quality assurance is considered as a two-stage process.

5.5 Implications

The findings from this study could potentially help Chinese institutions improve the quality of online education. The following sections discuss the implications for the practices of quality assurance for online education in China.

Implications for Institution Policy

Online education not being widely accepted in China is a major concern for many respondents. There are two reasons that might contribute to the acceptance issue. One is the institutional policy that did not encourage faculty to participate and excel in online teaching.

Currently, faculty at ABC University are provided with financial compensation to teach online courses at ABC University. But their online teaching experiences are not considered as their normal workload, but as overload. The online teaching experience and the performance of online teaching are not associated with faculty promotions. Under the current policy, the contribution faculty members make to online teaching are not related to their professional improvement.

The results from this study show that this policy negatively affects faculty motivation to teach online courses and to excel in online teaching. Should the online teaching experience be considered as part of faculty evaluation? The main academic values about faculty work lie in the promotion decision where faculty seek clues about the value of their work (Fairweather, 2002). In order for faculty to engage in best practices for online teaching and to improve continuously their knowledge, the best avenue for the ABC University is to include online teaching experiences in the consideration of faculty promotion. The respondents suggested changing the institutional policy to include online teaching in faculty evaluation and promotion considerations. Of course, additional studies are needed to understand fully what motivates ABC University's faculty to participate and to excel in online teaching.

The other reason for the low acceptance is the perceived lower academic status of online learning. This is partly due to the separation between online education programs and the face-to-face academic programs. Unlike the common practice in the U.S., where most institutions include online courses as the regular course offerings, online courses at ABC University have not been available to on-campus students. This separation has created a barrier for faculty to understand fully online teaching and learning. ABC University should consider integrating online courses into its regular on-campus course offerings. By doing so, faculty and students

who have not been involved in online teaching and learning could have a better understanding and appreciation for online learning. The addendum discusses a recent change at ABC University that has reflected a policy change.

Implications for Faculty Support

Teacher quality is the single most important variable influencing student achievement (OECD, 2005). This study confirmed such a belief. The results show that teacher quality is also one major concern that needs improvement. Professional development has been mentioned as a critical component to improve teacher quality. This is especially true for faculty who are new to online education, in order to learn and practice online pedagogy (Moore & Kearsley, 2011).

What kind of professional development will online faculty need? These were mentioned by the respondents: "best practices of online teaching," "online pedagogy," "educational technology," and "standards from other countries." In essence, online faculty need to have the knowledge of the field, know how to teach online courses using proper pedagogy, and effectively utilize educational technology. This suggestion aligns with other scholars' opinion that online instructors need to have Technological Pedagogical Content Knowledge (TPACK), in order to be effective in online teaching (Mishra & Koehler, 2006).

However, the integration of TPACK in a multi-faceted and ill-structured online environment is a complex process. There is no single framework can tell the complete story and provide all the answers (Mishra & Koehler, 2006). Faculty have to develop continuously their skills, learn about and practice theoretical frameworks, and eventually develop their own style of online teaching. Participating in professional development is one way to gain such knowledge and skills and online faculty at ABC University welcome professional development opportunities.

Implications for Student Support

Students lacking motivation has been mentioned by many respondents as one major obstacle to improving quality. How should one motivate online students? This is probably one of the most challenging tasks facing Chinese online education. With the large number of online courses offered, this issue becomes even more critical. Online students have special needs in comparison to on-campus college students. These special needs have to be identified and understood. According to Workman and Stenard, the first need of online students is the consistency and clarity of online programs, policies, and procedures. For online students to be successful in their online learning, they need to have a good understanding of the school and the program. The second need is self-esteem, which online students can build from nurturing interactions with faculty. The third need is to connect with the institution and to be socially integrated with peer students, staff, and faculty members. The fourth need is the availability of and the access to institutional support services (Workman & Stenard, 1996).

The results from this study suggest that there has not been a good method to address the student motivation issue. Current student data collection at ABC University did not include adult students' emotional and spiritual dimensions, as well as their work-related dimensions (Cleveland-Innes & Campbell, 2012; Dirkx, 2011). Student support service has not taken into consideration each student's unique learning style, their ability to learn, and their available time to spend in online learning. It is clear that more research work is needed to understand Chinese adult students' special needs in order better to support them. What ABC University needs to do is to develop a framework, based on theory, to guide student data collection and student support programs. The data collected, analyzed, and used has to be based on the understanding of student characteristics, skills, and their internal and external motivation factors. In practice, a

student support profile database can be useful. This student support profile includes information about each student's needs and learning style. When needed, students, instructors, local learning center staff, and management can access a student's profile online. By checking the profile, the instructor can know more about students' leaning progress, and their struggle from the previous classes, and can be able to provide appropriate help the students may need.

Implications for Teaching and Learning

One key issue in online teaching and learning, agreed upon by both Chinese and American scholars, is the lack of interaction. The respondents from this study suggested that better interaction is needed in the online format of teaching and learning. The nature and the extent of the interaction needed in online learning is based on elements such as organization, teaching philosophy, the nature of the subject matter, the students, and the technology used (Moore, 2012). There is not one fixed solution to provide good interaction. There are several things ABC University can consider. The first and the foremost is a clear understanding of what interaction is needed in ABC University's online program. For example, there are different ways for faculty to interact with students, including email, discussion forums, virtual office hours, video conferencing, web chats, and telephone calls. There should be data to support what format is required and how much is being used.

The second is the results of interaction. As faculty in the study pointed out, having interaction does not mean the interaction is effective. For example, when a student posts on the discussion forum, interaction happens. But it is not good interaction if the student does not read others' posts and provide comments. Another example is the required virtual office hours. Online faculty at ABC University are required to be in the online virtual office each week for certain time slots. The plan is that students can potentially interact with the faculty. But having

the faculty available does not mean students will come to the virtual office and use the time to ask questions. Even though faculty spend time in the virtual office, if no students come to the virtual office to ask questions, it is not good interaction.

The third aspect of improving interaction is about the role technology plays. Because of the many kinds of technologies available, it is a challenge for faculty members to be aware of the availability of technology, to know how to use it properly, and to use the technology to work with online teaching. The issue lies in how to match the technical knowhow and the pedagogy, in order to use technology properly in the online environment. More exploration is needed for ABC University to understand what interaction is needed and to match the interaction needs with the right technology.

Implications for Assessment

By definition, assessment is the systematic collection, review, and use of information about educational programs (Clark & Rust, 2006). Every stakeholder has valid reasons, from their own perspective, to be in favor of certain ways to conduct assessment (Stark & Lattuca, 1996). Because there are many aspects involved, the focus of assessment should be on what is the most important. The purpose of assessment is to improve student learning results (Palomba & Banta, 1999). This opinion was reflected in Chinese respondents' responses. How do faculty know students are learning? This is probably the most important question. It was repeatedly mentioned by the respondents. Sadly, as mentioned by many respondents, there is not a clear answer.

In order to gauge how students are learning, the assessment at ABC University has to be carefully designed and implemented. More importantly, after the implementation of an assessment plan, the institution needs to continuously examine, share, and act on assessment

findings. The ultimate value of assessment is to use the results to guide action (Shulman, 2007). There need to be multiple ways to assess student learning, including a final exam. There should be regular reexamination of the assessment processes to make assessment a routine activity of teaching and learning (Palomba & Banta, 1999). There also needs to be participation and involvement from people on and off campus, including students, parents, the public, faculty, institution, and government representatives (Duderstadt, 2000).

One possible assessment tool for the ABC University to consider is a student learning portfolio that students and teachers can use to document and review the learning progress. The portfolio lists learning goals and records what the student has accomplished; the portfolio should also clearly show how the student gets to where the student is heading. In the process of creating the portfolio, the students will take the leading role. Periodically, the teacher and students will work together to evaluate their learning progress in terms of knowledge, skills, attitudes, and behavior changes (Shavelson, 2007). Adjustments will be made to the goals when needed.

Section Summary

This section discussed the implications for quality assurance in China. The suggestions are based on the comments and responses from the respondents. These suggestions provide a glimpse of what Chinese faculty perceived to be the action needed for quality assurance. These suggestions also fill a gap within the Chinese literature, which lacks details of quality assurance.

5.6 Limitations

This study has several limitations that must be borne in mind. The first limitation is about the selection of quality indicators included in the study. Ideally, the selected quality indicators should holistically represent the quality standards from the international community. In this study, the selected U.S. indicators, 31 of them, only covered a portion of them. There are

standards from other countries and regions that can be useful, too. For example, the European Union has its own quality standards for online education. It would have been very useful to include those quality standards. To overcome this limitation, more indicators, from different international resources, can be included in future studies.

The second limitation lies in the cross-cultural data collection process. Even though efforts were made to ensure the clarity of the survey content, without a doubt the participants could interpret the meaning of the questions differently, based on their knowledge of online education; or they may have had different levels of ability to express themselves clearly and accurately. The misunderstandings could also have happened when the responses were interpreted, coded and translated from Chinese to English.

The third limitation lies in the scope of this study. The study was based on a single institution. The sample included the online faculty and teaching assistants from one institution in China. The study results can only represent ABC University's online faculty's opinions. But China is a big country, and there are different types of institutions, with variations of institutional focus, history of teaching, and reputation for quality. Future research could include more institutions to repeat this study.

The fourth limitation lies in the participant population. The online faculty is the only group that participated in the study. But there are other stakeholders whose opinions are also important to the quality of online education. These stakeholders include staff, administrators, students, family members, government agencies, and employers. To manage the scope of this study, only the faculty group was included in the study. For future study, it will be valuable to consider other stakeholders' opinions.

Lastly, the study only utilized the survey method to capture faculty perceptions. When participants answered the questions in the survey, their answers were based on the moment they reflected on their thinking and remembered experiences, which could be different than the actual situation. There are other research methods, such as the interview, that can be used to answer some of the why questions.

5.7 Future Study

This study explored Chinese faculty perception of the issue of quality standards. In addition to the meaningful findings that could be useful to Chinese quality assurance for online education, this study also serves as a conduit that leads to possibly future studies. One possibility for future study is to select more institutions from different regions in China. For example, one institution can be identified from the national research universities and one from the regional colleges, with a combination of program size and discipline focus. Another possibility is to replicate the study in other countries. By doing so, the researcher could further test the hypothesis that quality standards can be transported cross-culturally. Future study could also include quality standards for specific disciplines. In this study, the Chinese faculty recognized the need to have discipline-specific standards. Similar studies can be used to study quality standards for specific disciplines.

5.8 Conclusion

Online education has the potential to help address the higher education access problem. It has proven its value as an important component of higher education. Despite its many benefits, the quality of online education has worried stakeholders. It is commonly agreed that in order to improve the quality of online education, it is necessary to develop quality standards that are suitable to the educational environment.

This study explored the extent to which the U.S. quality indicators for online education are perceived by Chinese faculty. The findings from qualitative and quantitative results confirmed that the U.S. quality standards are perceived as relevant by Chinese faculty. The respondents rated highly the importance of quality indicators, and agreed that these benchmarks reflect their criteria of quality. The confirmed relevance of the U.S. standards provides the rationale for China to borrow and learn from these U.S. based quality standards. The results also indicate that theoretically, borrowing and learning from international quality standards can be beneficial to Chinese online education. The findings correspond with other Chinese scholars' points of view and align with the goals set by the Chinese Ministry of Education. By adopting quality standards from the international community, the process of developing Chinese quality standards can be more efficient and more likely to succeed. Doing so also helps Chinese institutions make better connections to the international higher education community.

The findings from this study provide a better understanding of the online education quality issue in China. Much Chinese literature has mentioned concerns for the quality of online education. However, there have not been many studies that have provided specific suggestions to guide Chinese quality assurance practices. The results from this study include the specific information about the quality issue in China, including resource allocation, faculty qualification, online pedagogy, student motivation, and evaluation methods. With this understanding, quality assurance issues in Chinese online education can be better addressed.

Could there be shared international standards? There has been a great deal of controversy about this issue. Pro-common standard scholars have suggested that common educational standards are necessary to ensure quality, and that the basic principles of teaching and learning should apply regardless of the settings (Herrington, Jung, & Latchem, 2012). The results from

this study reflect such an opinion. The strong sense of relevance perceived by the Chinese faculty suggests that it is possible to have such common quality standards. The findings from this study advance the argument for a set of common quality standards that can be applied across borders. There is a set of standards that could conceivably be used across borders. There is application for the standards developed by one country to be applied cross-culturally.

On the other hand, this study confirmed that educational quality is subjective. The differences between educational settings make it difficult to have common standards. This argument was reflected by Chinese respondents in this study. The respondents strongly argued that there are differences that exist between educational settings, and quality standards should reflect such differences. Special attention is needed when quality standards are developed and applied across borders.

In addition, the findings from this study show that the U.S. quality standards for online education are not perfect. The indicators focus on inputs, not on the outcomes that were suggested by the Chinese faculty to measure, which include students are motivated to learn, and faculty are motivated to improve teaching, etc. In order to do so, additional indicators need to be identified and implemented. In order for these U.S.-based quality indicators to be adopted successfully in China, these indicators need to be modified. The researcher proposed a modification process to take into the consideration the uniqueness of local educational settings by adding additional indicators that reflect the needs of local settings. The additional indicators should include indicators to measure outcomes, and should consider including indicators that are unique to local settings.

The study concludes that shared international quality standards for online education can have two parts. One part is applicable to every educational setting and the indicators in this part

are agreed upon by stakeholders from different countries. The other part is unique to each local setting. Quality indicators in this part take into consideration the locality of the educational environment and reflect different stakeholders' opinions.

APPENDICES

Appendix 1

Expert Review of the Selected Quality Indicators

Purpose

You are invited to provide expert opinion on each of these 48 quality indicator's legitimacy in relation to online program quality. The definition of these 7 categories are:

You are asked to do three things:

1. Indicate whether you think each item should be included in this quality indicator pool.
2. If you think it should be included, please assign a category to this item.
3. Indicate whether you want to provide more comments on this item.

Forty-eight U.S. Online Education Quality Indicators

Institutional support category addresses institutional mission statement, infrastructure development, resource allocation, and incentives for faculty to get involved in online education.

1. Online learning is incorporated into the institution's governance and academic oversight.
2. The institution has defined the strategic value of online learning to its stakeholders.
3. The institution provides sufficient resources to support online course offerings.
4. There is institutional policy regarding the use of copy right materials.
5. The institution has clear, specific, published policies related to academic integrity.
6. Faculty are provided financial incentives to develop and teach online courses.

Technology and technology support category addresses policies and processes regarding technology and technical support, technical standards, technical skills for teaching and learning, and training.

7. The institution has clear, specific, and published policies related to the use and safeguarding of student information.
8. Prerequisite technical skills are identified and clearly stated before faculty teach online courses and students enroll in an online program.
9. There is a documented technology plan that guides the technology investment choice and implementation.
10. Technical assistance and training are provided for faculty and students.

11. Learning outcomes, not the availability of existing technology, determine what technology is used.

12. The technology delivery systems are highly reliable. A centralized system provides support for building and maintaining the online education infrastructure.

Course design and development category addresses policies and procedures that are related to course structure, design, and content development processes.

13. There are guidelines regarding online course design and course material development.

14. Instructional materials, course syllabi, and learning outcomes are reviewed periodically to ensure that they meet program requirements.

15. The course is organized into units and lessons. Each unit has an overview that describes the objectives, activities, and resources that frame the unit.

16. Online courses are designed to require students to engage themselves in analysis, synthesis, and evaluation as part of their courses and program requirements.

17. Each lesson includes a lesson overview, content and activities, assignments, and assessments to provide multiple learning opportunities.

18. Expectations for student assignments, grade policy, and faculty responses are clearly provided in the course syllabi.

19. The online course design provides opportunities for appropriate instructor-student, student-student, and student-content interaction.

20. The course adequately addresses the needs of students with disabilities via alternative instructional strategies and/or referral to special institutional resources.

Teaching and learning category addresses online student preparedness, course learning objectives, faculty teaching practice, and teacher-student interactivity.

21. Netiquette expectations regarding lesson activities and email communications are clearly stated.

22. During online teaching, faculty has the flexibility to provide students with supplemental information and content.

23. Information literacy and communication skills are incorporated and taught as an integral part of the curriculum.

24. There are instructions and suggestions on how to study and how to use the instructional materials.

25. There is instruction that provides students with multiple learning paths to master the content.

26. Student-centered instruction is considered during the course development process.

27. Students are instructed in the proper methods of effective research, including assessment of the validity of resources.

28. Feedback on student assignments and answers to student questions are constructive and are provided in a timely manner.

29. Students are encouraged to collaborate in a variety of ways, including web conferencing and instant messaging.

30. Student-to-student communication is promoted as part of lesson activities. Communication such as threaded discussion forums and online chat are regularly used.

31. Online course offerings are coherent and comparable in academic rigor to traditional instructional formats.

Faculty support category address issues related to providing support to faculty members when they develop and teach online courses, both technically and pedagogically.

32. Faculty are assisted in the transition from classroom teaching to online teaching.

33. Faculty receive training and materials related to fair use, plagiarism, and other relevant legal and ethical concepts.

34. Faculty are trained with respect to the best practices of online teaching and learning.

35. There is an active peer-mentoring program for online faculty.

36. Faculty are trained with respect to learner needs, instructional approaches, and the use of educational technology.

Student support category helps online students to prepare themselves for online learning, engage faculty, interact with other students, and use resources such as the library.

37. Tutoring is available as a learning resource for students.

38. Students have access to effective academic, personal, and career counseling services.

39. There is a structured system to address student complaints.

40. Prior to enrollment, students are advised of the commitment, self-directed learning, and time needed to succeed in online learning.

41. The institution provides orientation when students start the online program.

42. The institution regularly evaluates the effectiveness of the student support services for improvement purposes.

Assessment category relates to policies and procedures that address how the institution evaluates online learning, including assessment of courses, student learning.

43. There are clear standards and expectations for faculty to engage in online teaching.
44. Each course is evaluated at the end of each semester. The findings are used as a basis for improvement.
45. The teaching/learning process is assessed through evaluation processes that use several methods and applies specific standards.
46. The results of student evaluations are available to the instructor of the course.
47. Ongoing assessments are conducted to verify each student's readiness for the next lesson.
48. Student opinions are systematically sought as one basis for evaluating and improving teaching purposes.

Appendix 2

Reverse Translation Results (Chinese to English)

网络教学被纳入学校的学术和行政管理结构。

The web-based instruction was incorporated into the university's academic and administrative management.

教师们明确了解网络教育的价值。

The teachers have clearly understood the value of web-based teaching.

学校为网络课程提供了足够的资源。

The school has provided sufficient resources for the web-based course.

学校制定了关于学术诚信的规定, 包括版权资料的使用， 学生身份的验证。

The school formulated regulations for academic integrity, including using copyrighted material, and verifying the student's identity.

学校有一整套关于选择和实施网络教育技术的方案。

The school has designed a complete scheme about web-based technology selection and implementation.

学校颁布了关于保护和使用学生个人信息的规定。

The school declared regulations to protect individual student's information.

学校明确规定了教职人员开设网络课程之前就应具备的技术和技能。

The school clearly formulated teacher's technical skills before they start web-based teaching.

学校协助教师从传统课堂授课过渡到网络授课。

The school helps teacher transition from traditional teaching methods to web-based teaching.

教师参加过关于如何合法使用素材、避免抄袭，以及其他有关道德法律的培训。

Teachers have joined training which taught them how to legally use information, avoid plagiarism, and other moral training.

教师们受过优质网络教学的培训。

The teachers have been trained by the high quality web-based online courses.

网络教师之间有一个以老带新的机制。

That experienced teachers train the new teacher is the rule in the web-based teaching.

教师们了解网络学习者的需求。

Teachers understand the needs of online learners.

学校有专门机构处理网络学生的投诉。

There is a special agency in school to deal with the student complains.

网络学生入学时，学校提供入学教育和指导。

The school will provide an orientation program as a new learner enters to the program.

网络学生能够得到有关如何有效学习、个人心理，以及职业规划方面的咨询服务。

The web-based student will have the information and service needed in order to know how to study effectively, including individual psychological consulting and career planning services.

学校定期对学生支持服务机制进行评估，以期完善和提高服务质量。

网络课程的设计和开发有规可循。

There are rules to design and develop the online courses.

学校定期检查课程大纲，教材，和教学效果。

The school will regularly inspect syllabi, teaching materials, and teacher's performance.

作为课程的一部分，网络课程要求学生对其学习进行自我分析、总结和评估。

As a part of the curriculum, online courses require the student to self-analyze, summarize and evaluate his/her learning.

网络课程的每个单元都有一个概述性描述来阐述学习目标和教学活动。

Each unit of the online course has a general situation to describe the learning objectives and teaching activities.

网络课程教学大纲中明确规定了教师对学生作业，成绩， 和答疑的要求。

The online course clearly formulated the requirement to the teacher about students' homework, grades and questions.

网络课程提供了师生之间、学生之间，以及学生和教学内容之间的互动。

The online course provides a good interactive platform for teacher and student, student and student, and student and teaching materials.

课程大纲明确规定了网络课程的行为规范，包括教学活动、讨论和电子邮件交流等。

The school syllabi clearly formulated the online course's behavioral norm, teaching actives, discussion, Email, and so on.

有关信息技术的基本常识和交流技巧成为网络课程教学的一个组成部分。

The basics of integration of Information Technology and the skill of interchange already have become a part of the online course.

网络学生得到学习方法上的指导，包括评估资料的有效性和资料使用的版权性。

教师对学生的作业提供及时的有建设性的反馈。

The teacher will give positive feedback right away for the student's homework.

作为网络课程教学资源的一部分，教师为学生提供课后辅导。

As a part of the online course, the teacher will provide teacher's guidance after class for the students.

在网络课程结束时，所有学生将对课程进行评估。

As the end of the online course, all students will evaluate the curriculum.学生对课程评估的结果要提供给教师以便改进教学。

The results of the evaluation of the curriculum will be provided to the teacher in order to improve his/her teaching.

教师进行实时评估以了解学生的学习状况。

The teacher evaluates in real time so they know the situation of students' study.

为了完善教学，教师系统性地搜集学生的反馈意见。

To improve and perfect teaching, the teacher will systematically gather feedback from students.

Appendix 3

Cognitive Interviewing Protocol

Cognitive interviewing explores how piloting survey participants understand, process, and respond to what is presented in the questionnaire. The think-aloud method asks respondents to verbalize all thoughts about survey questions. This gives the researcher an opportunity to understand potential misunderstandings or difficulties in answering the questions. This process focuses on these questions: Do respondents have problems with instructions or explanations? Is the meaning of each question clear? Are some questions too sensitive, or do they produce biased answers?

The outcomes of the cognitive interviews are to identify item-specific recommendations for wording changes, clarification of questions, problems with item sequence, problems with survey length, and limits on what a respondent can and will answer.

Appendix 4

English Version Survey

Study Title: Exploring Chinese Faculty's Perception of Online Program Quality Indicators

Purpose of the study: In order to study the quality standard for online education, you are invited to participate in this survey to provide faculty opinions on what matters to the quality of online education. The survey has 15 questions that may take 25-30 minutes to complete.

Participation: Participation in this study is entirely voluntary. Your opinion in this study will help us to better understand the perceived quality indicators by Chinese faculty.

What will be done: You will complete an online survey, which will take approximately 25-30 minutes to complete. Data analysis will follow standard quantitative analysis.

Risks or discomforts: There are no anticipated risks or discomforts associated with participation in this study. If you feel uncomfortable answering any question, you may skip that question or quit the survey at any time by leaving the survey website.

Confidentiality: Your Confidentiality will be protected to the maximum extent allowable by law. Online surveys will be completed anonymously and no identifying information will be collected. And the questions do not ask for any sensitive information. Your answers to the survey questions will have no connection to your identity.

How the findings will be used: the findings will be used to find important aspects in order to have good quality online education program. Recommendations for ensuring online education quality will be proposed.

Contact information: If you have questions or concerns regarding your rights as a participant, or are dissatisfied with any aspect of this study, you may contact Dave Dai (daix@msu.edu), John Dirkx (dirkx@msu.edu) or MSU IRB irb@msu.edu.

Consent: By beginning this survey, you acknowledge that you have read this information and agree to participate in this study, with the knowledge that you are free to withdraw your participation at any time without consequence.

Please select:

Yes, I want to take the survey

No, exit the survey

Q1. What are the top three objectives for online education programs?

Q2. What are the top three characteristics of high quality online programs?

Q3. Do you have any concern for the quality of current online education? Why?

Q4. Do you have any suggestions to improve the quality of online education?

Q5. Please rank the following factors by their importance to online education quality:

Technology selection, implementation, and support
Course design and development
Evaluation methods and processes
Support to faculty
Support to students
Online teaching and learning strategies
Institutional commitment and support

Q6. Comparing with your face-to-face teaching experience, are you satisfied with your online teaching experience? Why?

Q7. If you have a choice, will you teach an online course in the future? Why?

Q8. How often do you use following methods to assess student learning?

Quiz
Essay
Exam
Project
Presentation
Discussion forum
Email students
Lab work
Talk to students via phone
Send text message
Virtual office time

Q9. Based on your perception, please rate the following quality indicator statements on: 1) The importance of these indicators, where: 1 = Not important, 2 = Slightly important, 3 = Moderately important, 4 = Important, and 5 = Not sure. 2) The presence of these indicators at your institution, where: 1 = Not present, 2 = Partly present, 3 = Present, and 4 = Not Sure.

1. Online learning is incorporated into the institution's governance and academic structure.
2. Faculty clearly understand the value of online education.
3. The institution provides sufficient resources to support online course offerings.
4. The institution has clear, specific, published policies related to academic integrity.
5. There is a documented technology plan that guides the technology investment choice and implementation.
6. The institution has clear, specific, and published policies about using and safeguarding of student information.
7. Prerequisite technical skills are identified and clearly stated before faculty teach online courses.
8. Faculty are assisted in the transition from classroom (face-to-face) teaching to online teaching.
9. Faculty receive training and materials related to fair use, plagiarism, and other relevant legal and ethical concepts.
10. Faculty are trained with respect to the best practices of online teaching and learning.
11. There is an active peer-mentoring program for online faculty.
12. Faculty are trained with respect to online learner needs.
13. There is an institutional structured system to address student complaints.
14. The institution provides orientation when students start the online program.
15. Students have access to effective academic, personal, and career counseling services.
16. The institution regularly evaluates the effectiveness of the student support services for improvement purposes.
17. All students are encouraged to evaluate the course at the end of the class.
18. The results of student evaluations are available to the instructor of the course for improvement purposes.
19. Ongoing assessments are conducted to verify each student's readiness for the next lesson.
20. Student opinions are systematically sought as one basis for evaluating and improving teaching purposes.
21. Guidelines are used to design and develop online courses.
22. Instructional materials, course syllabus, and outcomes are reviewed periodically.
23. Online courses are designed to require students to engage themselves in analysis, synthesis, and evaluation as part of their courses and program requirements.
24. Each learning segment has an overview that describes the objectives and activities.
25. Expectations for student assignments, grade policy, and faculty responses are clearly provided in the online course syllabus.
26. Online course design provides opportunities for appropriate instructor-student, student-student, and student-content interaction.
27. Netiquette expectations regarding lesson activities, discussions, and email communications are clearly stated in the course syllabus.
28. Information literacy and communication skills are taught as an integral part of the online curriculum.
29. Students are instructed in the proper methods of research, including assessment of resource validity and use of copyright material.
30. Feedback on student assignments is provided in a timely constructive manner.
31. Tutoring is available as a learning resource available to students.

Q10. The questions you just completed are based on benchmarks from U.S. online education framework. Do these benchmarks reflect your criteria of quality for online education? Why?

Q11. Should these benchmarks be adopted by Chinese online education programs? Why?

Q12. Please provide proper response that best describes you.

What is your gender?
What is your age?
How many years have you taught at higher education institution(s)?
What is your current academic rank?
How many years have you taught online course(s)?
Do you also teach the face-to-face version of the same course?
Do you teach an introductory course or a major required course?
On average, how many students do you have in your online class?
How many different online courses have you taught so far?
How many times you have taught your current online course?
What is your academic discipline?

Appendix 5

Chinese Version Survey

研究题目：《探索中国高校教师对网络教育质量标准的看法》

研究目的：为了研究网络教育的质量标准，我们诚挚邀请您参与此项问卷调来了解中国教师如何看待网络教育质量标准。调查包括 15 个问题，可能需要 25-30 分钟完成。

参与方式：参与这项研究是完全自愿的。您的真实和完整的回答将有助于我们更好地理解中国教师如何看待网络教育质量标准。

问卷调查过程：您可能需要 25-30 分钟完成这项问卷。数据分析将遵循标准的定量分析。

风险或不适：这项在线问卷调查没有任何预期的风险。如果你觉得不愿回答一个问题，你可以跳过这个问题，或者在任何时候退出问卷调查。

保密性：您的隐私将按法律规定得到最大程度的保护。这项在线问卷调查将以匿名方式完成。在问卷调查数据的收集和分析的过程中，您的隐私会得到保护。问卷也不会问任何敏感信息。

研究成果：调查结果将被用来帮助于更好地理解中国教师如何看网络教育质量标准。研究报告会包括确保网络教育质量的建议。

联系方式：如果您有问题或疑虑，或者对本研究有任何不满意，您可以联系戴晓 (daix@msu.edu),John Dirkx (dirkx@msu.edu) 或 MSU IRB 办公室 irb@msu.edu。

同意参与：阅读此信息后，如果您同意参与这项问卷调查，请开始问卷调查。您可以在任何时候退出问卷调查。

戴晓 先生, John Dirkx 博士
美国密歇根州立大学　高等教育管理系

请选择：

同意参与问卷调查

不同意参与问卷调查

问题 1. 您认为网络教育办学的宗旨是什么?

问题 2. 您认为高质量的网络教育办学有哪三个特征?

问题 3. 您对目前网络教育办学质量有无担忧? 为什么?

问题 4.您对提高网络教育办学质量有何建议?

问题 5.根剧对网络教育办学质量的重要性, 请对下列各方面排序:

技术的选择，实施和支持
课程的设计与开发
教学效果的评估
学校对教师的支持
学校为学生提供的支持和服务
教学策略和技巧
学校对网络学习环境的重视度

问题 6.与传统课堂教学相比, 您对网络课程的教学效果满不满意? 为什么?

问题 7.如果您可以自由选择，您是否愿意继续教授网络课程？为什么?

问题 8.在您教授的网络课中, 您多久使用以下方法？

小测验
命题作文
考试
与课程相关的小题目
课堂展示、陈述
讨论
实验室（包括虚拟实验室）
电话与学生交流
电子邮件
发短信给学生
虚拟办公室

问题 9.请评估以下质量指标： 1）评估这些指标的重要性，其中, 1 = 不重要，2 = 一般重要，3 = 比较重要，4 = 重要，5 = 不确定。2）评估这些指标在你的大学的存在。其中, 1 = 不存在，2 = 部分存在，3 = 存在，4 = 不确定：

1. 网络教学被纳入学校的学术和行政管理机构。
2. 教师们明确了解网络教育的价值。
3. 学校为网络课程的开设提供了足够的资源。

4. 学校制定了关于学术诚信的规定, 包括版权资料的使用和网络学生身份的验证等。
5. 学校有一整套关于选择和实施网络教育技术的方案。
6. 学校颁布了关于保护和使用学生个人信息的规定。
7. 学校明确规定了教职人员开设网络课程之前就应具备的技术和技能。
8. 学校协助教师从传统课堂授课过渡到网络授课。
9. 教师参加过关于如何合法使用素材、避免抄袭，以及其他有关道德、法律的培训。
10. 教师们受过优质网络教学策略的培训。
11. 网络教师之间有一个以老带新的机制。
12. 教师们了解网络学习者的需求。
13. 学校有专门机构处理网络学生的投诉。
14. 网络学生入学时，学校提供入学教育和指导。
15. 网络学生能够得到有关如何有效学习、学习心理，以及职业规划方面的咨询服务。
16. 学校定期对网络学生服务机构进行评估，以期完善和提高服务质量。
17. 在网络课程结束时，所有学生对课程进行评价。
18. 学生对课程评价的结果要反馈给教师以便改进教学。
19. 教师在教学中采用实时评估来了解学生的学习状况。
20. 为了完善教学，教师系统性地搜集学生的反馈意见。
21. 网络课程的设计和开发有规可循。
22. 学校定期检查课程大纲、教材、和教学效果。
23. 作为课程的一部分，网络课程要求学生对其学习进行自我分析、总结和评价。
24. 网络课程的每个单元都有一个概述性描述来阐述学习目标和教学活动。
25. 课程教学大纲中明确规定了教师对学生作业，成绩， 和答疑的要求。
26. 网络课程提供了师生之间、学生之间，以及学生和教学内容之间的互动。
27. 课程大纲明确规定了网络课程的行为规范，包括教学活动和网上讨论等。
28. 有关信息技术的基本常识和网上交流技巧成为网络课程教学的一个组成部分。
29. 网络学生得到学习方法上的指导，包括资料的可靠性和资料使用的合法性。
30. 教师对学生的作业提供及时的和有建设性的反馈。
31. 作为网络教学的一部分，辅导教师为学生提供课后辅导。

问题 10: 考虑到上述指标是基于美国教育认证机构制定的网络教育质量标准，这些指标是否反映了您对网络教育质量标准的看法? 为什么?

问题 11: 您认为中国高校的网络教育质量标准应不应该包括这些指标？为什么?

问题 12: 请选择最符合您情况的选项。

性别?
您的年龄？
高校任教年数？
学术职务？
您教了多少年的网络课程？
您也教相同的面对面课程吗？

您教的是公共课还是专业必修课？
您的网络课平均有多少学生？
您迄今为止上过多少门不同的网络课？
目前所上的这门网络课，您上过多少次了？
您的学科领域？

Appendix 6

Seven Factors Categorization Based on U.S. Literature

Figure 15. Seven Factors CFA Results

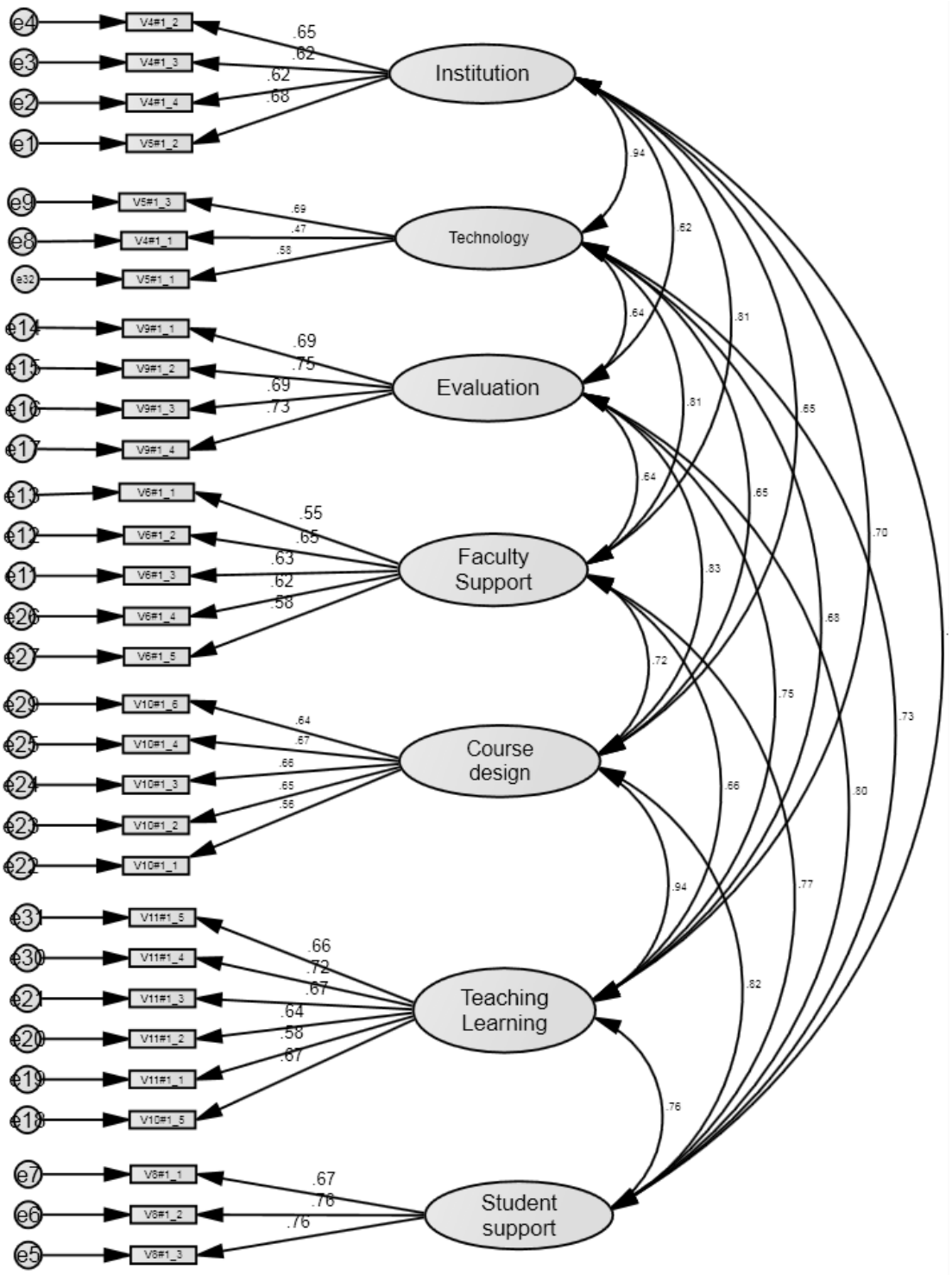


Table 17. CFA Results for Seven-Factors

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	111	807.242	384	.000	2.102
Saturated model	495	.000	0		
Independence model	30	4019.622	465	.000	8.644

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.799	.757	.884	.856	.881
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.826	.660	.727
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	423.242	345.487	508.749
Saturated model	.000	.000	.000
Independence model	3554.622	3355.766	3760.813

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.638	1.383	1.129	1.663
Saturated model	.000	.000	.000	.000
Independence model	13.136	11.616	10.967	12.290

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.060	.054	.066	.003
Independence model	.158	.154	.163	.000

Appendix 7

Five-Factor Categorization for Quality Indicators of Online Education

Figure 16. Five Factors CFA Results

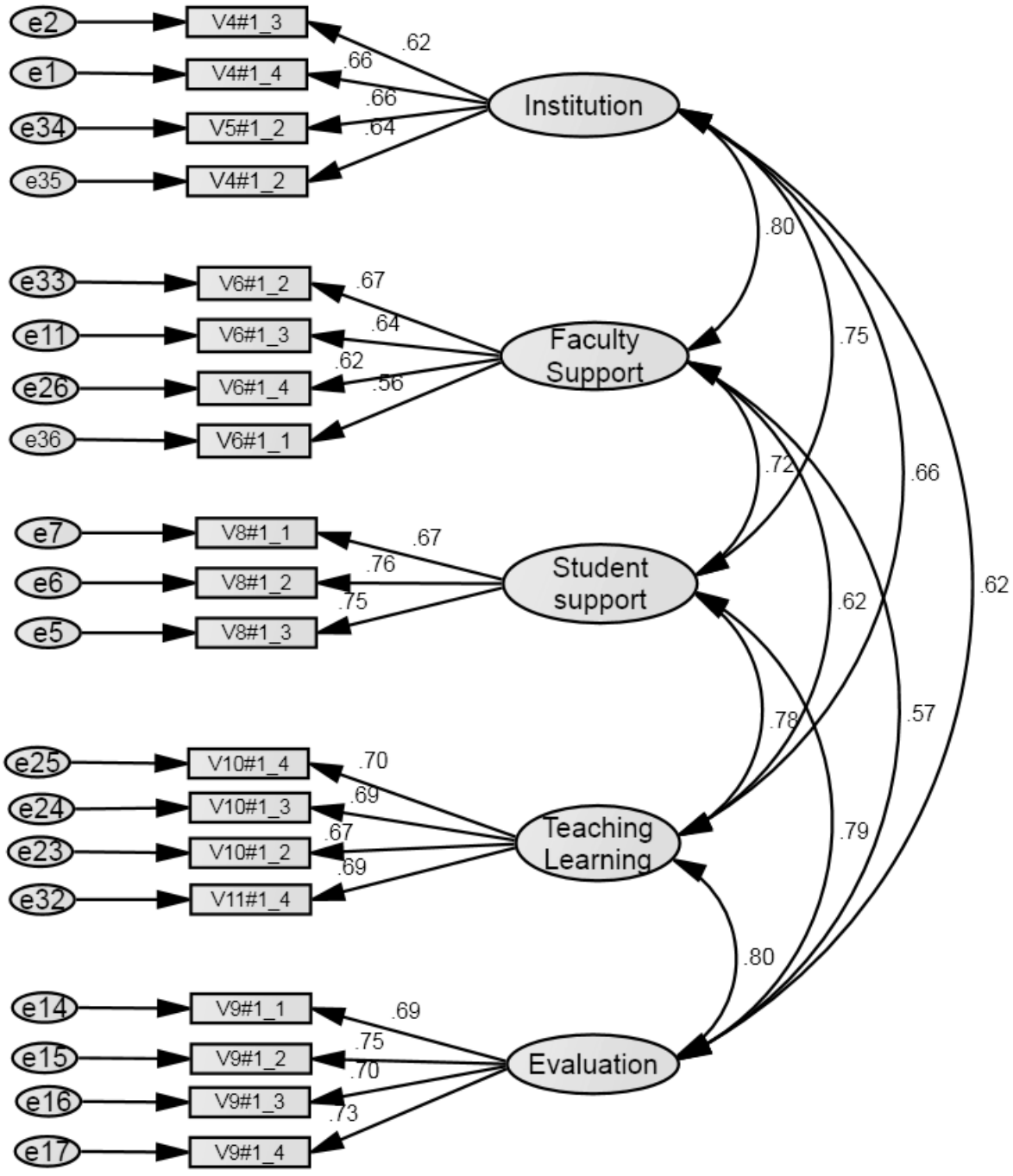


Table 18. Five Factors CFA Results

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	67	250.846	142	.000	1.767
Saturated model	209	.000	0		
Independence model	19	2243.400	190	.000	11.807

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.888	.850	.948	.929	.947
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.747	.664	.708
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	108.846	68.608	156.939
Saturated model	.000	.000	.000
Independence model	2053.400	1904.564	2209.624

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.820	.356	.224	.513
Saturated model	.000	.000	.000	.000
Independence model	7.331	6.710	6.224	7.221

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.050	.040	.060	.484
Independence model	.188	.181	.195	.000

Institutional Mission and Support

1. Faculty clearly understand the value of online education.
2. The institution provides sufficient resources to support online course offerings.
3. The institution has clear, specific, and published policies related to academic integrity.
4. The institution has clear, specific, and published policies related to the use and safeguarding of student information.

Faculty Support

5. Faculty are assisted in the transition from classroom (face-to-face) teaching to online teaching

6. Faculty receive training and materials related to fair use, plagiarism, and other relevant legal and ethical concepts.

7. Faculty are trained with respect to the best practices of online teaching and learning.

8. There is an active peer-mentoring program for online faculty.

Student Support

9. There is an institutional structured system to address student complaints.

10. The institution provides orientation when students start the online program.

11. Students have access to effective academic, personal, and career counseling services.

Teaching and Learning

12. Instructional materials, course syllabi, and learning outcomes are reviewed periodically.

13. Online courses are designed to require students to engage themselves in analysis, synthesis, and evaluation as part of their courses and program requirements.

14. Each learning segment has an overview that describes the objectives and activities.

15. Feedback on student assignments and answers to student questions are constructive and provided in a timely manner.

Assessment

16. All students are encouraged to evaluate the course at the end of the class.

17. The results of student evaluations are available to the instructor of the course for improvement purposes.

18. Ongoing assessments are conducted to verify each student's readiness for the next segment.

19. Student opinions are systematically sought as one basis for evaluating and improving teaching purposes.

Appendix 8

Open-ended Questions Analysis Results

1. What are your beliefs about the objectives of online education?
2. What are the characteristics of online education programs with quality?
3. Are you satisfied with your online teaching experience? Why?
4. Is there any concern for the quality of current online education? Why?
5. If you have a choice, will you teach an online course in the future?
6. What do you suggest to improve the quality of online education in China?
7. Do these benchmarks reflect your criteria of quality for online education?
8. Should China adopt these benchmarks?

1. What are your beliefs about the objectives of online education?

Table 19. The Respondents' Beliefs about Online Education

Inductive Themes	N		Participant Responses
Construct lifelong learning environment	108	24%	To build a lifelong learning environment.
Expand delivery methods	97	22%	Enable anywhere, anytime teaching and learning.
Develop student skills	67	15%	Help students develop skills and be better prepared for work.
Efficiently utilize resources	64	14%	To share and maximize educational resources.
Educational equality	36	8%	Provide educational opportunity and ensure equality.
Dissimilate knowledge	36	8%	To widen channels for knowledge dissimilation.
Pedagogy	20	4%	Understand and explore proper pedagogy for online education.
Other	14	3%	
Improve quality	8	2%	To improve quality of education.
# of responses	450		

2. What are the characteristics of online education programs with quality?

Table 20. The Characteristics of Quality Online Programs

Inductive Themes	N		Participant Responses
Access	155	28%	Provide open access and flexible learning opportunities.
Resources	99	18%	Have adequate resources and utilize resources efficiently.
Quality faculty	63	12%	Have responsible and competent faculty.
Management	42	8%	Have systematic process to evaluate the teaching and learning.
Educational equality	38	7%	Open educational opportunities to variety of students.
Interaction	32	6%	There is interaction between teacher and students.
Student motivation	32	6%	Students have the motivation to participate in online learning.
Clear purpose	32	6%	There are clear purposes defined for online learning.
Technology	29	5%	Have an advance technology platform that faculty know how to use.
Student support	15	3%	Have a supportive environment for students, and provide timely feedback.
Other	8	1%	
# of answers	545		

3. Are you satisfied with your online teaching experience? Why?

Table 21. Faculty's Reason for Satisfaction

Inductive Themes	N		Example responses
Teaching flexibility and self-satisfaction	63	43%	Teachers can teach anywhere, anytime. There is self-satisfaction.
Educate more students	49	34%	Online learning meets a variety of needs of learners.
Information access	24	17%	There is plenty of information available online.
Other or unclear	9	6%	
# of responses	145		

Table 22. Faculty's Reason for Dissatisfaction

Inductive Themes	N		Example Responses
Lack of interaction	50	21%	There is not enough interaction between teacher and students.
Students' motivation	45	19%	Students are not self-motivated. Some students' goal is to get a diploma.
Evaluation and feedback	48	21%	The course evaluation structure and processes are not well developed.
Learning results	41	18%	It is difficult to know and monitor student learning results.
Online teaching pedagogy	35	15%	Teachers need to know and use proper pedagogy for online teaching.
Other or unclear	14	6%	
# of responses	233		

4. Is there any concern about the quality of online education? Why?

Table 23. The Respondents' Reasons for Having Concerns

Inductive Themes	N		Example Responses
Student motivation	86	25%	Some students did not put effort into learning.
Faculty quality	53	16%	Online teacher motivation. Quality needs to improve.
Evaluation	40	12%	It is difficult to know learning results.
Content	37	11%	Course materials are not updated regularly.
Management	29	9%	There is not enough monitoring and managing process.
Interaction	31	9%	There should be more timely communication and interaction between students and teachers.
Quality focus	26	8%	Suspicion exists about the quality of online education.
Policy issue	14	4%	The online environment needs to be regulated.
Acceptance	15	4%	Online education has not being widely accepted.
Other	8	2%	
# of responses	339		

5. If you have a choice, will you teach an online course in the future?

Figure 17. The Respondents' Willingness to Teach Online Courses

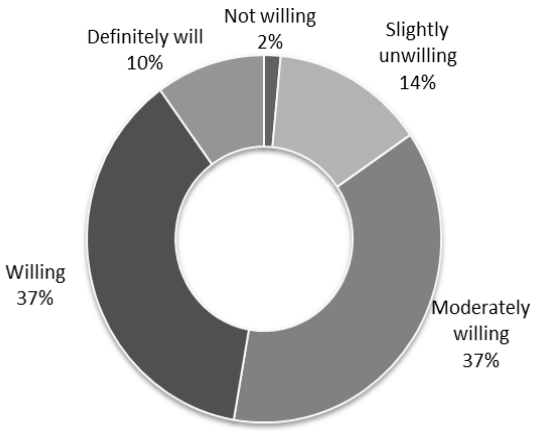


Table 24. Reasons for Not Willing to Teach Online Courses

Inductive Themes	N		Example Responses
Evaluation process	22	36%	Online teaching is not included in the teacher evaluation structure.
The results of online teaching	18	30%	The results of online teaching are not as good as face-to-face teaching.
Online teaching objectives	10	16%	Online teaching objectives are not being emphasized.
Student motivation	8	13%	Students are not willing to put in the effort to learn.
The focus of online learning	2	3%	The management of online teaching focuses on monetary incentives.
Other	1	2%	
# of responses	61		

Table 25. Reasons for Willing to Teach Online Courses

Inductive Themes for Willing to Teach	N		Example Responses
Self-satisfaction; flexibility	143	43%	Self-satisfaction, improve teaching efficiency, teach with flexibility.
Online education is the future	44	13%	Online education is the future and I want to get involved.
Alternative	41	12%	Online education is a good alternative to face-to-face teaching.
Results	39	12%	Online education has good results.
Professional development	31	9%	Teaching online also helps me in terms of expanding professional knowledge and developing online course designing skills.
Provide for students	17	5%	Provide student flexible ways for education.
Incentives	14	4%	The institution provides incentives to teach online courses.
Share resources	5	1%	
# of responses	334		

6. What do you suggest to improve the quality of online education in China?

Table 26. Suggestions to Improve Quality in China

Inductive Themes		Example Responses
Faculty qualification	22%	Improve faculty qualification; provide training and professional development.
Evaluation processes	20%	Reform evaluation process, including multiple ways to gauge student learning; not only rely on final exam.
Management	15%	Build management structure and reinforce management.
Pedagogy	12%	Various suggestions for pedagogy and course material development.
Resources	11%	There should be more resources available to support online learning.
Orientation	11%	Improve orientation process; strengthen the requirement for graduation.
Policy and acceptance	10%	Need more support from government; more acceptance from society.
Learning platform	9%	Provide open platform, ensure bandwidth, and improve video conferencing ability.
Interaction	9%	Encourage better communication and interaction.
Other	2%	

7. Do these benchmarks reflect your criteria of quality for online education?

Figure 18. The Reflection of Quality Criteria

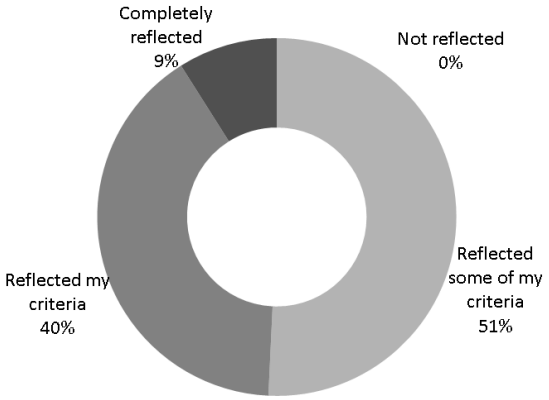


Table 27. Reasons for the Reflection of Quality Criteria

Inductive Themes	N		Example Responses
Generality versus specifics	83	25%	This set is not discipline specific.
Coverage	60	18%	This set of benchmarks has a wide coverage of online education quality.
China needs to learn	56	17%	China is at the beginning stage of online education. China needs to learn from more matured practices.
Difference settings	50	15%	The U.S. is different from China. The educational standard for online education should consider such differences.
Practical use	40	12%	This set of benchmarks is useful and practical.
Commonality	27	8%	Quality of online education has common principles. It does matter which country it is in.
Other	19	6%	
# of responses	335		

8. Should China adopt these benchmarks?

Figure 19. China's Adoption of the U.S. Quality Indicators

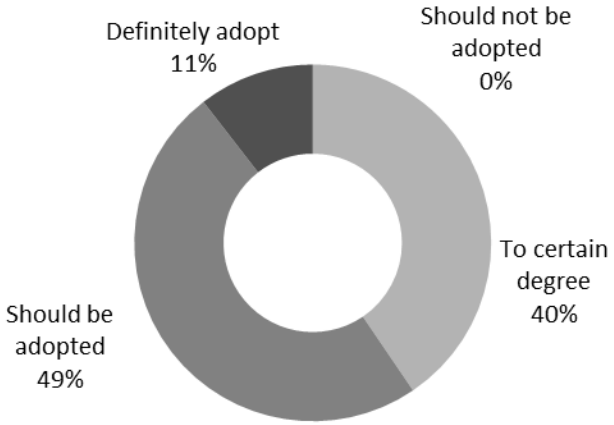


Table 28. China's Adoption of the U.S. Quality Indicators

Inductive Themes	N		Example responses
China needs standards	119	34%	China cannot reply on other countries' standards; it should develop its own.
China can learn from the U.S.	66	19%	China can learn from US in quality standards.
Useful or partially useful	65	19%	This set is very useful or partially useful.
Country difference	29	8%	There are differences between the U.S. and China.
Quality standards commonality	19	6%	China should adopt these U.S. benchmarks.
Other	20	6%	
Internationalization	17	5%	China needs to connect with international standards.
Benchmarks need more work	10	3%	This set of benchmarks needs more work.
# of responses	345		

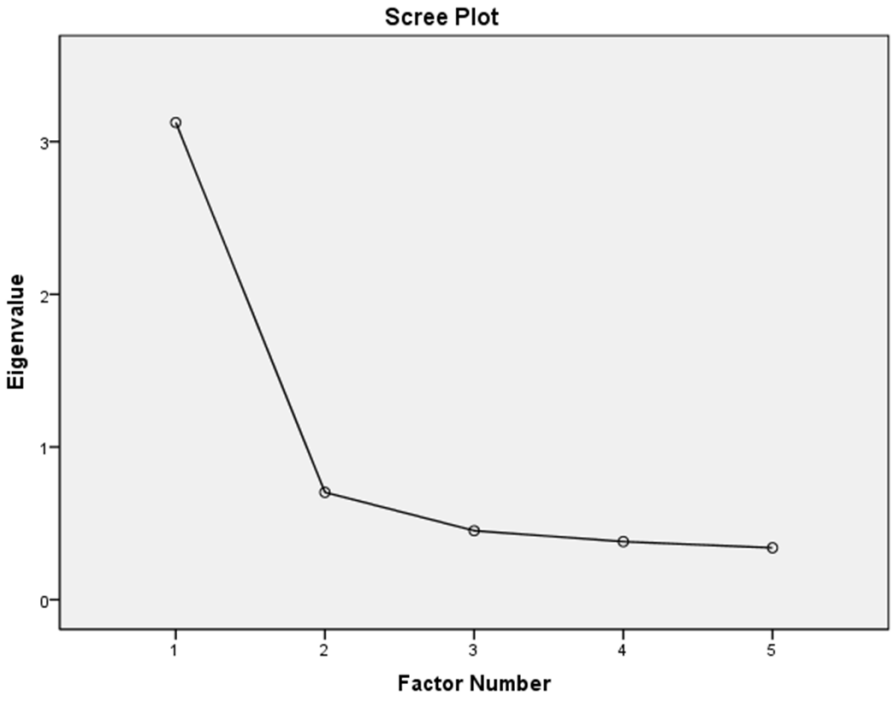
Appendix 9

Factor Analysis to Further Reduce Factors

Table 29. Further Factor Reduction Results

	Factor	
	1	2
Institutional support	.328	**.684**
Faculty support	.285	**.665**
Student support	**.600**	.535
Teaching and learning	**.669**	.375
Assessment	**.789**	.291

Figure 20. Factor Analysis Scree Plot



Appendix 10

Addendum

After the data analysis, the researcher went to the ABC University in the summer of 2014 to present the initial findings to a group of administrators and researchers from the Online College. The feedback from the group was welcoming and positive. The findings were perceived as important information for the Online College to continue the practices of quality assurance.

The administrators requested a summary of the findings and the draft report of the study. One important comment from the group was the cultural difference that needs careful consideration. The point is that the understanding and interpretation of the key terminology of online teaching and learning can be different between Chinese faculty and what U.S. scholars perceive. Even though the terminology translation is the same, the meaning or the degree of the practice can vary. The researcher provided two points view as responses. One is that this study did make the effort to avoid misunderstandings and misinterpretations of the quality indicators. That is why three Chinese visiting scholars participated in the pilot test, through which the proper terms were verified to ensure the clarity to the survey participants. The second point is that this comment points to additional research possibilities that can be more geared toward cultural differences between China and the U.S. Specifically, a study can be conducted to see whether there are significant differences between Chinese faculty and U.S. faculty when they are presented with the same terminology from online education.

The researcher also learned that there are three suggestions made in the implications section that were confirmed to be valid. The Online College has realized similar issues and has started several initiatives over the past year. The first is about how to assess student

learning. The Online College has implemented an assessment structure that uses multiple ways to assess student learning. This structure takes attendance, in-class performance, and exam results to form a 20%+20%+60% structure. This structure shifts weight away from the final exam results and provides a base for a continuing evaluation process on a weekly basis.

The second initiative is to include online teaching as part of faculty's workload and promotion evaluation. This initiative is at the beginning stage, due to the organization changes that require more time and debate. But the institution has realized the importance of including online teaching as part of evaluating faculty professional performance. As discussed in Chapter Five, the inclusion of online teaching will be a major motivation for faulty to participate in online teaching and to improve their teaching performance.

The ABC University has also started another initiative, to offer online classes to on-campus students. All online classes offered to on-campus students were filled. The initial results have been positive. The Online College is planning to offer more programs and courses to on-campus students. This initiative helps address the issue of the low academic status for online education in China. Online education in China has not been widely accepted partly because of its perceived inferior quality in comparison to on-campus courses. By offering the online courses to on-campus students, online classes can eventually improve their perceived academic status. On- campus students taking online classes have been a regular practice in the U.S., but new in China.

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