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A COMPARATIVE STUDY OF THE DISTANCE EDUCATION HISTORY IN CHINA AND THE UNITED STATES: A SOCIO-HISTORICAL PERSPECTIVE

A Dissertation in

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ABSTRACT

The purpose of this study is to contribute to the understanding of international distance education development through comparison of the distance education historical developments in China and the United States (U.S.).

This study, utilizing a document analysis method, studied historical documents, explored the historical development of distance education in China and the U. S., compared the commonalities and the differences in the development of distance education between the two countries, and identified the major social agents who have produced and/or contributed to the commonalities and the differences that were found in those histories.

The major events in both countries' distance education historical developments were teased out of historical documents and the themes of each country's distance education development were captured. These themes and the corresponding major historical events were presented in a chronological order for the purpose of balanced comparison. Five major commonalities and three fundamental differences were found through the comparison. Reflecting on these commonalities and differences, from the socio-historical approach, this study identified three key social agents who have played unique major roles in shaping each country's distance education history.

This study suggests that understanding the different roles the three key social agents have played in both countries' century-long distance education histories is critical to understanding the present and the future of the two countries' distance education developments. This study further suggests that this socio-historical approach to exploring a country's distance education development can contribute to our understanding of other countries' distance education developments and international distance education development as a whole.

TABLE OF CONTENTS

List of Figures

List of Tables

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Chapter 1

Introduction

Distance education is both local and global and both levels interact with each other dynamically. Realizing the potential of distance education development depends on an understanding of this dynamic and applying it to future planning in the field. Further, "Any attempt at planning–a systematic attempt to shape the future–must involve a knowledge and shaping of the trends and events which emanate from the past" (Thompson, 1996, p. 6). In the contemporary interdependent global context, planning depends on knowing not just one country's past, but also that of countries to which we are connected. One area of research that will contribute to the understanding of the local and global distance education dynamics is comparative and international distance education.

Taking a socio-historical approach, this study compared distance education development in the United States and China and identified the three major social agents (individuals, Type I social groups and Type II social groups) driving the trends in distance education development in both countries. The contribution of this study to the understanding of international distance education dynamics is the comparative and socio-historical approach it took to study the two countries' distance education development.

Discourse about International Distance Education Dynamics

Starting from the late 1990s when more and more international distance education collaborations had been initiated, the differences between Western and Eastern cultures and their impact on each country's indigenous distance education development started to emerge in the

discourse of international distance education development. Three major approaches have been observed in the discourse. They are the convergence perspective, the Westernization approach and the cultural lens. Each of these reflects a different understanding of how socio-historical factors influence the development of a distance education system.

Convergence Perspective

Many scholars argue that the world's development is involved in a global convergence process. This process forces nations to establish interconnectedness and interdependence, and to ignore or to minimize the existence of the "otherness" (Robertson, 1992). This course of action presses nations into one homogeneous economy in which items manufactured in one place can meet the needs of people living on the other side of the globe. If this is true, each country's distance education system will be involved in a global convergence process. Ultimately, one homogeneous global distance education system will be formed, which will benefit every member of the "world village" (Fukuyama, 1992; Wolf, 2004). Moore and Kearsley (2005) describe this blueprint of the World Trade Organization's General Agreement on Trade in Services (GATS,)[1] noting, "In this view, students will benefit from the emergence of a commercial global marketplace where they can shop for courses…." (p. 300).

Westernization Approach

Other theorists insist that global development is a process of Westernization (Cunningham *et al.*, 1998; Dowlah, 2004; Hungtington, 1996). The most influential theory that

[1] The General Agreement on Trade in Services (GATS), signed in Marrakesh in 1995, is a treaty of the World Trade Organization (WTO) for the purpose of promoting international trade in services. The WTO GATS framework is in favor of the establishment of global free-market, trade liberalization and deregulatory government policies, including the privatization of state businesses.

supports this perspective is the dependency theory (Sklair, 2002). According to Sklair, the poor condition of the periphery countries is not due to their isolation from the world system but because of their passive role in the world system. As long as the distinction between the core and the periphery countries exists, the establishment of global interconnectedness and the increase of interdependence will work to meet the needs of special interest groups who are at the core position of the world system. As such, global development will repeat the process of imperialism or is an extension of colonialism, but with a humanistic appearance. This approach suggests that there will be one global distance education system, but the only beneficiaries of this system will be a small number of countries from the Western culture. Issues like "hidden curriculum" are still matters of concern in most developing and under-developed countries (Cunningham *et al.*, 1998; Dorsher, 1999; Pincas, 2001; Rogers & Steinfatt, 1999; Bates, 2001).

Cultural Lens

The third group of scholars approaches the question with a strong cultural lens. They argue that each country's development is influenced by two dominant cultures–"national culture" and "global cultural dynamics" (Anderson-Levitt, 2004; LeTendre *et al.*, 2001). National cultures do not change much and are homogenous across the nation. They maintain the central features of a country's social life, such as education. In contrast with national cultures is the theory of global cultural dynamics. Global cultural dynamics presents that "local, regional, and national cultures are produced through a continual process of cultural change, which, both over time and across place, is often deliberately initiated by members of the culture to further their own political ends" (LeTendre *et al.*, 2001, p. 4). This culture lens helps to explain "where educational change comes from that accounts for both local idiosyncratic histories as well as broad global trends" (LeTendre *et al.*, 2001, p. 4). Proponents of the culture perspective believe that there will never be a

harmonious global distance education system because every country's distance education system is influenced by its homogenous "national culture" which is impossible to be changed; meanwhile, members of different cultures will continue to make efforts to further their economic and political ends through the extension of their countries' distance education development. The discussion by Gunawardena *et al.* (2003) of the impact of the various cultures on distance teaching and learning activities witnesses the significance of the "national culture" and "global cultural dynamics" in a distance education context.

Understanding these three perspectives is important for practitioners to weave local and international distance education and training needs together to develop high quality distance education initiatives, and is also important for researchers to conduct studies that not only benefit local community but also serve the international community. However, whichever perspective one takes, justification is needed. There is an immediate need to study different countries' distance education development from a historical and comparative perspective to understand what social agents, under the impact of both national character and international cultural influences, have shaped each country's distance education development. Through a comparison of the distance education historical development in two countries, this study was designed to meet this need.

Purpose of the Study

The purpose of this study is the systematic analysis, from a socio-historical perspective, of the development of distance education in China and the United States to understand what social agents have shaped distance education development in these two countries and in what way. This sheds light on the understanding of international distance education dynamics and aids

the planning of future programs. These two countries are geographically and culturally situated at two poles of the world. They represent different culture systems, different social norms, and different economic and political systems. Because of these fundamental differences, both the commonalities and differences in the development of distance education in these two countries are more transparently observable.

The scope reaches beyond a specific historical event or distance education time period because the emphasis of this study is on the broad trend of distance education development. Therefore, the time period under investigation was not predetermined; rather, it was automatically formed by the data collected. Revisiting both countries' century-long distance education histories, I captured the patterns embedded in each country's distance education history, examined the commonalities and differences, and identified the key social agents and the different influences they had in each country's distance education historical development as a way to contribute to the discourse on international distance education planning and development.

Conceptual Framework

"In studying foreign systems of Education we should not forget that the things outside the schools matter even more than the things inside the schools, and govern and interpret the things inside" (Sadler, as cited in Bereday, 1964b, p. 310). This is to say that each country's education is itself a complex system; and this education system is nested within a larger social system. What happens in the larger social system strongly influences the activities inside the education system because "… each nation has the education systems that it desires or that it deserves" (Kandel, 1933, p. xxiv). This point of view is applicable to studies of different distance education systems and, in fact, serves as the basis of this research. In this study, this point of view is implemented through the development of a socio-historical approach, which is the combination of

two widely-recognized dimensions: a systematic dimension (social) and a chronological dimension (historical). A systematic dimension looks at a country's distance education development from a social perspective and a chronological dimension emphasizes the connection between the past, the present and the future.

Systematic Dimension–Social View

Distance education not only has subsystems but also nests within a broader system–the education system, which is also within a larger social system and then a global system (Moore & Kearsley, 2005; Saba, 2003). Each system influences and is influenced by its context which comprises different sets of systems and subsystems. Therefore, the development of a distance education system is not only the result of the interactions between its subsystems, but is also governed and interpreted by the interactions between the distance education system and the system or systems it nests within.

Chronological Dimension–Historical Orientation

The systems view presented above is one way of interpreting how a distance education system develops. Another interpretation looks at the actual history of a country's distance education development through a timeline. This approach has its root in Sadler's belief that "a national system of Education is a living thing, the outcome of forgotten struggles and difficulties, and 'of battles long ago'" (As cited in Bereday, 1964b, p. 310). Kandel designated a special section in his *Comparative Education* (1933) to discussing the impact of the history on the social life of a nation, and said that "the most obvious cause of national [education] difference is to be found in a nation's history and traditions" (p. 15). Moore and Kearsley emphasize that "you can

only understand the methods and issues in distance education today if you know their historical background" (2006, p. 25). Pittman (2003) warns that the loss of resources for, and less attention to, the study of distance education's past will continue to make many people believe that distance education was invented only recently, which is in no way helpful to the future development of the field, since such historical blindness results in the loss of important information about both successful and unsuccessful theories and practices.

Socio-Historical Approach

The above discussions indicate that a systems view and historical orientation are not contradictory but rather complementary to each other. If the systems view is to examine the latitude of a country's distance education system (systematic dimension), the historical approach is to explore its longitude (chronological dimension). The combination of the two dimensions represents the approach of this study–the socio-historical approach (See Figure 1-1). It should be noted that the systematic dimension is illustrated here as a "flat" latitude only to provide a simplified conceptual framework and its "flat" appearance is also constrained by the available two-dimensional paper. In reality, the systematic dimension is far from a "flat" latitude; rather, it has rich content and can be approached from various dimensions.

This approach is based on two assumptions. First, it is postulated that history matters to the present and to the future. To study a country's distance education development, it is a necessity to understand its history. This involves collecting historical events related to the phenomenon, grouping them into different categories based on their relationships (the social dimension), and arranging them along the horizontal axis (the chronological dimension). To understand a later development (e.g., DE II), it is necessary to examine its previous state during a previous time period (e.g., DE I). As "time" is an infinite continuous factor, the different time

periods as indicated in Figure 1-1 are not inherently discrete. Rather, they are created based on other time-related factors to meet the researcher's needs. In this study, different time periods were characterized by trends.

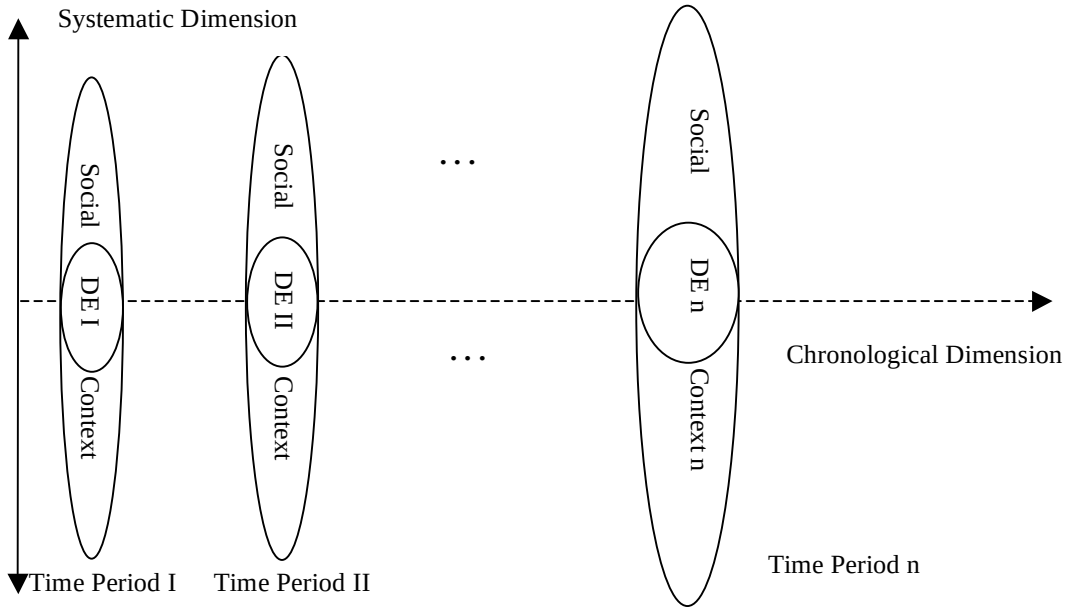


Figure 1-1: A Socio-Historical Approach to Research on Distance Education

Second, it is also postulated that the development of a distance education system is influenced by its subsystems and by its social context. Figure 1-2 is a close-up view of distance education development at a specific historical time period (e.g., DE n and its social context). The typical subsystems of a distance education system include teaching, learning, program/course design, management, policy, organization and technology (Moore and Kearsley, 2005). To understand the whole distance education system, it is necessary to observe how these subsystems function and interact, and understanding the social context this distance education system fits in is also important. In this study, the social context is a very broad category that encompasses all other systems and includes factors that are not part of a distance education system but have an impact on the system's development. As such, history is considered as a special component of

the social context. It comprises previous generations of distance education and all other systems and social contexts that contributed to the development of all the previous generations of distance education. In addition to history, there are other components of the social context that need to be addressed, such as politics, economics, cultures, etc. These factors nest in the three broad macro-systems–the educational system, the social system, and the global system (Moore and Kearsley, 2005; Saba, 2003).

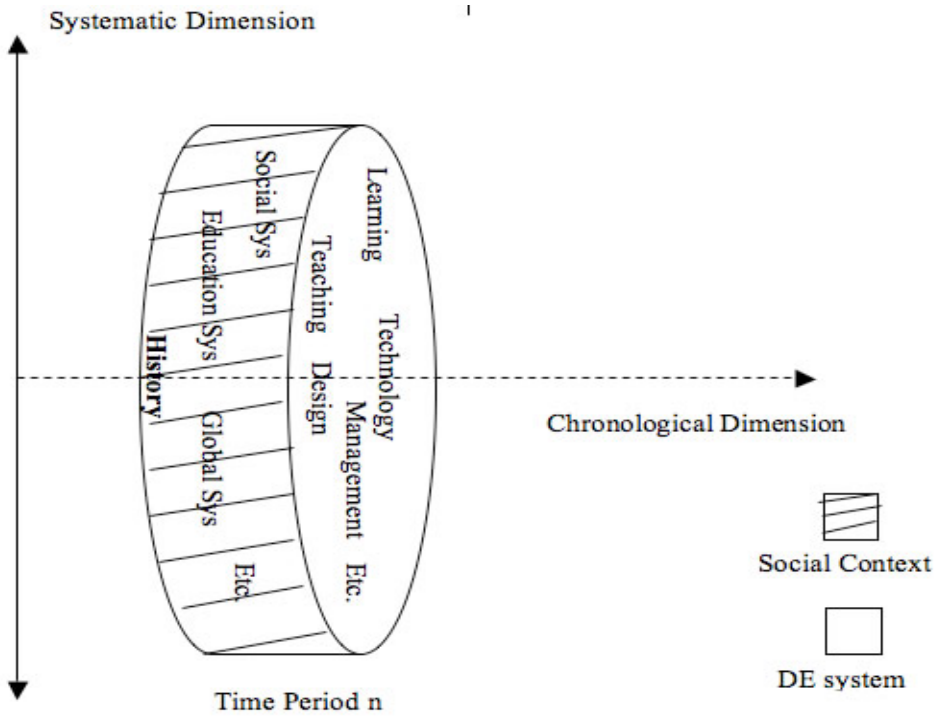


Figure 1-2: A Close-Up View of Factors Affecting Distance Education Development

It should be noted that, in this study, the aforementioned two aspects of the socio-historical framework are tightly intertwined and should not be separated from one another. To better contribute to the global discourse on the trend of international distance education development so as to contribute to both local and international distance education development, this socio-historical approach must be given serious consideration.

Definition of Terms

Distance Education

In this study Moore and Kearsley's definition is used: "distance education is planned learning that normally occurs in a different place from teaching, requiring special course design and instruction techniques, communication through various technologies, and special organizational and administrative arrangements" (2005, p. 2). Focusing on planned learning, distance education requires certain organizational structures and teaching and learning systems; addressing the learning at a different place, distance education distinguishes itself from traditional classroom-based learning.

Distance Education System

According to Moore and Kearsley (2005), "A distance education system consists of all the component processes that operate when teaching and learning at a distance occurs" (p. 9). They have identified seven subsystems including policy, organization, management, teaching, learning, program/course design and technology.

Social Agents

In this study, the term social agent refers to a human entity that has direct involvement in shaping each country's distance education development. These agents may be individuals or groups that have come together around a common goal. Example groups include government agencies and professional organizations. Close to the end of this study, social groups were further defined and categorized based on their different characteristics collected through the

exploration of each country's distance education history: Type I social group and Type II social group. A Type I social group refers to social organizations that have organizational bylaws; have a stated mission, vision and goals; have board(s) and/or committee(s); have staffs and offices; have publications; and organize social events including conferences, meetings, seminars, etc. A Type II social group refers to the government of a country and its branch offices and agencies in different political districts. A Type II social group has a complicated organizational structure, runs a huge civil service system, and has a steady and giant budget source–a national tax system–that empowers it with the capability to finance any project that meets their interests.

Research Questions

To guide this study, a research question was proposed: What major social agents that have contributed to each country's distance education history can we identify from the comparison of China and the U.S. distance education historical developments, and in what way have they driven the trends in distance education development in both countries?

To better structure this study, the following sub-questions were asked:

- What were the major events in China's distance education history?
- What were the major events in the U.S. distance education history?
- What were the commonalities and the differences between the two countries' distance education historical developments?
- Who were the key social agents that had shaped each country's distance education development at different levels and through different forms, and how?

- What does the identification of the key social agents and their influences in each country's distance education history suggest about future needs in the planning of the field's development in a globalizing world?

This study is not to exhaustively include all the historical events in the two countries' distance education histories but rather to capture the major developmental themes in the two countries' century-long distance education histories. As such, this study teased out the major commonalities and the major differences of the two countries' distance education historical developments, and identified the major social agents who had consistently played the core roles in the shaping of the two countries' distance education histories.

Significance of the Study

The value of this study lies in its effort to explore the distance education phenomenon from a socio-historical approach. This approach is reflected through the aforementioned conceptual framework that guides this study. This framework is developed based on a review of seminal works in the fields of both comparative education and distance education. It is my hope that with the guidance of this conceptual framework, the major social agents shaping the two countries' distance education histories can be identified. If so, this framework can be valuable to other researchers who are interested in conducting cross-border comparative studies in the field of distance education.

This study reflects the functional benefits of comparative education in its value to policy makers and practitioners at the international level (e.g., NGOs), national level (e.g., educational minister) and community level (e.g., local school administrators). Grounded on the theoretical foundations of the field, this study provides policy makers and practitioners at different levels

concrete examples of how distance education is bonded to a nation's aspirations, traditions, characteristics and cultures. Through the comparison of the historical development of distance education in the two countries, policy makers and practitioners should get a better understanding of the characteristics of the social agents who shape a country's development of this resource. This knowledge is a necessity, especially when policy makers and practitioners think of expanding their distance education systems globally and wish to understand the impact of international distance education development on their local efforts.

By introducing the socio-historical framework, this study is also my effort to push the field of comparative studies to a higher level in the area of international distance education development. According to Bereday's (1964a) research method typology, to develop high-quality comparative studies, researchers should go through four stages: description, interpretation, juxtaposition and comparison. A review of the literature on comparative distance education, however, indicates that most of the comparative studies remain at the first two stages, with a few reaching the stage of juxtaposition (Ding, 1996). This study is designed to challenge the fourth level–comparison–through the exploration of different social agents and their influence on a country's distance education development and the triangulation of relationships between social agents and the two countries' distance education histories.

Chapter 2

Literature Review

To conduct a comparative study on the history of distance education development in two countries, two fundamental questions must first be answered: "What should the researcher compare?" and "How should the researcher compare them?" These two questions guided the choice of the literature reviewed.

In this chapter, I reviewed the studies that explored the distance education history in China and the U. S. to get a preliminary picture of the two countries' distance education histories, which is useful when it comes to grouping different historical events chronologically and systematically. I reviewed the literature that provided a comparative perspective in the study of distance education. This review tells me what type of comparison has been done in the field of distance education and how the comparisons were made, which helps me to formulate my own comparison strategy in order to contribute to this type of literature. I also reviewed the several major comparative research methods applied in the comparative study of distance education. This approach increases the credibility of, and addresses the contribution of, the comparative research method used in this study, based on the socio-historical conceptual framework developed in the previous chapter.

In this chapter, I have not reviewed the primary social and historical written artifacts (literature) that discuss each country's distance education development. Since this is a socio-historical study, these primary social and historical written artifacts (literature) are, in effect, the "data" to be collected and analyzed. For this reason, much of this kind of material that would normally be included in the review of relevant literatures were reviewed and analyzed in the "data" chapters (Thompson, 1996)–in this study, Chapters 4 and 5.

Studies of Distance Education Historical Development in China

Studies of China's distance education historical development focus, in large part, on China's national TV and radio distance education system. Zhao's (1988) descriptive study of China's radio and TV education system is one of the few earlier studies of its type. In his study, Zhao reviewed the system's origins and described its development including the organizational structure, program developments, student population and financial cost analysis. Through a series of studies, Ding (1994a, 1994b, 1999) provided a comprehensive view of China's distance education system, analyzed the various challenges confronting the system, and argued that these challenges could be solved through deepening educational reform nationwide. Ding in 1998 analyzed the previous ten years of data collected by the government and summarized the overall achievements of China's radio and TV education system. Other examples include Ma and Hawkridge's (1995) study of policy changes in China's radio and TV education system between 1978 and 1993 and Li's (2003) investigation of the use of ICT in China's distance education development in an UNESCO-sponsored project. One commonality seen in these studies is that they all included some aspects of socio-cultural contexts as important factors to explain China's distance education development.

A few scholars explored the influence of socio-cultural contexts to China's distance education development from a comparative perspective. Ding (1996) compared the higher distance education systems in Australia and China and attributed the differences found between the two systems to their unique socio-cultural contexts. He presented three sets of critical issues "Grounded in the interrelationships between endogenous and exogenous features of distance higher education systems" (p. iv) and concluded that "the mainstream approaches [the distance teaching and learning models represented by the UKOU and other large scale distance teaching universities] could not and should not be expected to be applied to all parts of the world" (p. 86).

McCormick (1992), from a British perspective, studied the development of China's distance education systems in the post-Mao period (1976-1991) and assessed their roles in higher education as a whole. His contribution is the consideration of the theory, policy and practice in China as contexts within which the major distance education systems had developed. Wei (1997) conducted a comparative study of China's radio and TV education system with the UKOU system and indicated that, depending on each country's socio-economic and cultural situations, even Open University functions differently in different countries. Some use Open University to mainly extend education to non-traditional audiences while others consider it an indispensable component of the mainstream education system to help to improve national human development.

Studies of Distance Education Historical Development in the U.S.

In the U. S., much historical research has been conducted on the development of correspondence education. This includes the studies done by Bittner and Mallory (1933), MacKenzie *et al*. (1968), Pittman (1990; 1998; 2003), Feasley *et al*. (1989) , Watkins and Wright (1991), Wedemeyer (1963; 1966; 1991), Wedemeyer and Najem (1969), and Dressel and Thompson (1973). These authors explored the history of the U. S. correspondence education with emphasis on its extraordinary capability to reduce illiteracy, improve the field of adult education, and contribute to social development. Many other studies explored the historical developments of radio and TV technologies for educational use, such as Frost (1937), Atkinson (1941), Levenson (1945), Kurtz (1959), Smythe & Mastroianni (1975), Stewart (1999). These studies are not only valuable works documenting the U. S. distance education history but also works that have unprecedented influence in the field of international distance education development. For example, a series of studies by Wedemeyer and his colleagues on the

Articulated Instructional Media Project (AIM) are of significant contribution not only to the U. S. distance education history but also to the distance education development worldwide. As Moore and Kearsley state in their book *Distance Education: A Systems View* (2005), "This [AIM] was the first test of the idea of distance education as a total system" (p. 33). The emergence of "mega-universities" (Daniel, 1996) around the world can be attributed, to some extent, to the influence of this series of studies on AIM.

There are a few scholarly works and publications that explore the U.S. distance education historical development from a holistic approach. Moore is one of the very few scholars in the U.S. distance education field to provide researchers and practitioners with a systematic view of the U.S. distance education system and its history. Examples of his contributions include *Contemporary Issues in American Distance Education* (1990), *From Chautauqua to the Virtual University: A Century of Distance Education* (2003), and *Distance Education: A Systems View* (1996; 2005). Other invaluable literature comes from the U.S. Department of Education through the National Center for Education Statistics (NCES). Examples are the series of reports published by NCES including: *Distance Education in Higher Education Institutions: Incidence, Audiences, and Plans to Expand* (1997), *Teachers' Tools for the 21st Century: A Report on Teachers' Use of Technology* (2000), *Distance Education at Postsecondary Education Institutions: 1997-98* (1999), *and Distance Education at Degree-Granting Postsecondary Institutions: 2000-2001* (2003).

While most of the aforementioned literature focused on distance education development within the U.S. territory, Moore's scope is much broader and has provided international scholars and practitioners with insightful thoughts on the promotion of their own distance education system. Moore's Transactional Distance Theory intends to "allow the generation of an almost infinite number of hypotheses" (2007, p. 101) for research into distance education program design and development in different socio-cultural contexts.

Intra-National and International Comparative Studies of Distance Education

A large portion of the literature providing a comparative perspective focuses on the distance education development in one country and the comparative aspect focuses on the effectiveness of distance education compared with traditional education. Examples include Chu and Schramm's (1967) comparison of educational television instruction and traditional classroom instruction, Carey's (2001) study of on-line instruction and face-to-face instruction, Johnson *et al*.'s (2000) exploration of learner satisfaction and learning outcomes in both on-line and face-to-face environments, and Schumm *et al*.'s (2006) comparison of the effects of the two types of learning environments on improving the U. S. Army officers' critical thinking skills.

The second group of studies compared distance education systems, not with conventional education systems in the same country but with distance education systems in different countries. Zhang *et al*. (2000) conducted a survey study of open universities representing twelve Asian countries/regions. They compared different open universities' student populations, institutional leadership styles, teaching and delivery models, distance learning assessment methods and institutional outcomes. Ding (1996), responding to Holmberg's (1995) call for more research on the interconnections between the endogenous and exogenous factors of distance education systems, compared higher distance education systems in Australia and China from a socio-cultural perspective and concluded that both national characters and international influences coexist and interact with each other in the development of distance higher education worldwide. Wei (1997) explored the social functions of open universities between the north and the south by comparing China's CCRTVU with the UKOU and indicated that even the same distance teaching and learning model can be different in different socio-cultural settings. Perraton (2000) compared distance education institutions in developing countries and concluded that while many countries implemented distance learning systems, the social value of these systems varied in different

socio-cultural contexts, which in turn affected these systems' developments. Other studies include Zhang and Shin's (2002) study of distance education systems in China, India and Hong Kong, Wilson's (1991) investigation of open universities in Thailand and Indonesia, and Jones' (1988) exploration of distance education development in Sweden and Denmark.

The third large body of literature appears as a collection of case studies taking the form of edited books or reports. Strictly speaking, this literature cannot be labeled as a comparative study because no comparative research method was applied. Nevertheless, this group of publications does contribute a great deal of important information by providing audiences with valuable resources to use in accessing and exploring distance learning systems in different countries; otherwise, they would have no access to such information. In most instances, this literature is sponsored and publicized by international institutions such as UNESCO, World Bank, and COL. Therefore, data from these studies are mostly authoritative resources that can be referenced by researchers in the field. In addition, case study is the preliminary stage of conducting a comparative study, according to Bereday (1964a). Hence, the value of this type of literature cannot be ignored when reviewing comparative studies in the field. Examples are Cahill's *Distance Education in Asia and the Pacific* sponsored by UNESCO in 1985, Harry's *Higher Education Through Open and Distance Learning* sponsored by the Commonwealth of Learning in 1999, and Farrell and Wachholz's *Meta-Survey on the Use of Technologies in Education in Asia and the Pacific 2003-2004* sponsored by UNESCO in 2003.

Research Methods Used in Comparative Distance Education Studies

Researchers have applied different strategies while conducting comparative studies in the field of distance education. Two major strategies are reviewed including case study and meta-analysis.

The first type of research design used in the field of comparative distance education studies can be called case study or area study and they explore the distance education phenomenon within a single country. This type of study, according to Merriam (1988), is concrete and context-specific. Rhonda M. Epper's (1996) doctoral dissertation is such an example. In her study, Epper wanted to improve the understanding of forces for coordination and competition in state systems of higher education by examining state policies and structures for distance education. To achieve this goal, she selected three states (Minnesota, Maine, and Colorado) and each had its unique story in the development of statewide distance education programs. Grounded in existing statewide coordination and governance models, higher education and business competitive models and distance education public policy models, she provided a comprehensive review of the three states' distance education initiatives with reference to each state's political, economic and higher education contexts. McCormick's (1992) dissertation on China's distance education development in the post-Mao period (1976-1991) is another case study example. In his research, McCormick first studied China's traditional education theory, conventional education policy and practice and adult education policy and practice, which set up a socio-cultural conceptual framework for his later thorough examination China's distance education development between 1976 and 1991. Other examples include Chu and Schramm (1967), Carey (2001), Schumm *et al*. (2006).

The second type of research method can be labeled with a prefix "meta-". Compared to case study or area study, these meta-research studies aggregate and synthesize research findings

from different studies. Examples of such meta-research include Allen *et al.* (2002) and Berge and Mrozowski (2001). Allen *et al* analyzed about 450 studies that compared students' satisfaction with a distance course to a conventional face-to-face course and concluded that student satisfaction level did not decrease in the distance education setting when compared to a conventional education setting. Berge and Mrozowski examined 1,419 research studies in distance education conducted between 1990 and 1999. They discovered that the distance education research field has more descriptive studies than explorative research, and some sub-research areas, including equity and accessibility, need more attention. Other examples include Phipps and Merisotis' (1999) review of studies on the effectiveness of distance education in higher education and Kinash *et al.*'s (2004) analysis of studies on on-line learning and disability.

Review of literature indicates that two strategies have been applied in most meta-analysis studies. One is to develop a research protocol or use an approved research protocol to conduct analysis. To assist the state in better digesting the data reported annually in the United States Office of Education's "Higher Education General Information Survey," Hoffman (1969) developed a research protocol, which can be used to describe and compare different higher education institutions. Using Pennsylvania's 1968-69 Higher Education General Information Survey as a framework and reviewing documents generated by governments, Hoffman identified the major areas of data acquisition and developed a detailed point-by-point outline of the data. He then used the protocol to describe and compare different higher education institutions based on two other data sets.

Another way of conducting meta-analysis is to develop a theoretical framework. Ding (1996), for example, in his dissertation, proposed a conceptual framework called the "Systems Analysis, Typology and Shaping Mechanism (SATS)." Using this framework, he compared distance higher education systems in Australia and China. The framework is comprised of three propositions, including a systems analytical framework, a systems typology, and a systems

shaping mechanism. The systems analytical framework was developed based on systems theory and organization theory. The systems typology is based on three dimensions (industrialization, organization and administration, and distance teaching and learning). The systems-shaping mechanism was based on the assumption that, according to Ding (1996), "distance higher education systems, their existing status and development trend, can be studied by investigating the systems' endogenous and exogenous links and their inter-relationships grounded in their own national contexts and form a worldwide perspective" (p. 40). The first two were used to "provide an educational morphology, i.e. a global description and classification of the various forms of education". The third framework was applied to "determine the relations and interactions between the different aspects or factors in education, and between education and society" as well as to "distinguish the fundamental conditions of educational change and persistence and relate these to more ultimate philosophical laws" (Ding, 1996, p. 39).

In conclusion, two research gaps are identified by the literature review. First, there are many more works studying a single country's distance education than studying two or more countries' distance education. Though many of the single-country area studies are of high quality and have made great contributions to the development of targeted country's distance education, we should not forget the interconnectedness between the developments of distance education in different countries. Failure to consider the influence of the interconnectedness yields unbalanced perspectives on many of those studies. Especially in the era of globalization and lifelong learning, more cross-national comparative studies in the distance education field should be encouraged.

Second, there is a need to improve the quality of cross-national studies that are under way. According to Bereday (1964a), high-quality comparative studies should go through four steps: description, interpretation, juxtaposition, and comparison. The review of comparative studies on distance education, however, indicates that most comparative studies focus on the first

or second stage. Not many studies have developed strong research methodologies in terms of setting up replicable and valid research protocol to conduct the comparison, which might be the reason that very few studies have reached the stage of juxtaposition and real comparison. In this study, I argue that a socio-historical approach must be taken if one wants to reach the third or the fourth stage on this research topic.

It is widely recognized in the field of comparative education that education developments in different countries are influenced by differences of tradition and culture particular to each. The reason is that "Educational systems inevitably tend to reflect the aims, aspirations, traditions, and characteristics of the nations which they serve" (Kandel, 1933, p. xviii). Obviously, this is also true in the study of adult and distance education developments in different countries and, in fact, many adult and distance education scholars have already acted on pushing the boundaries of adult and distance education research to address distance education's socio-historical nature (Holmberg, 1995).

Campion and Guiton (1991), in their study of Australian external studies, proposed to "Challenge the theoretical underpinning of policies which ignore, and hence deliberately or inadvertently, hide the fundamental importance of the economic, technological, demographic, cultural, political and social contexts within which a system of higher education operates" (p. 12). Bunker (1998), through the analysis of ICDE world conference proceedings published between 1938 and 1995, from a socio-historical approach, explored the historical development of the International Council for Distance Education (ICDE) to shed light on patterns and trends in international distance education development.

Chapter 3

Methodology

This chapter describes the research methodology employed in this study, and the research design is discussed. Data collection strategies, data processing procedures, code book development, document analysis, the researcher's responsibilities, and limitations of the study also are covered in this chapter.

Research Design

Research questions determine research methods. This study's research question is: What major social agents that have contributed to each country's distance education history can we identify from the comparison of China and the U.S. distance education historical developments, and in what way have they driven the trends in distance education development in both countries? The history of the field in both countries was revisited, the major patterns of different historical time periods were captured, the similarities and differences that existed in the history of distance education in the two countries were compared, and social agents contributing to each country's distance education historical development were identified. The whole research process was an inductive process and I assumed a learning role throughout the research to explore the range of plausible socio-historical explanations of the similarities and differences shared by the two countries in their distance education histories.

This study identified which key social agents contributed to each country's distance education history through a comparison of the similarities and differences captured in their distance education historical developments. To achieve this purpose, a tentative proposition was

developed: the similarities and differences in China and the U.S. distance education historical developments are the result of the fact that different social agents, under the influence from national character and international culture, have played different roles in shaping the two countries' distance education histories. The identification of these social agents and the understanding of how they have shaped each country's distance education historical development is of great value for understanding international distance education dynamics. The final product of this research consisted of a review of the two countries' distance education historical developments, a comparison of their similarities and differences and an identification of the key social agents who had contributed to each country's distance education historical development. Understanding the social agents who have played key role in each country's distance education development provides insights useful to the field as its members address present-day issues and plan for the field's future development.

The two countries' distance education historical developments are reflected in Bruce Berg (1998) and James Dabbs' (1982) sense of quality. "Quality refers to the what, how, when, and where of a thing–its essence and ambience" (Berg, 1998, p. 3). As this study is a systematic analysis of social agents through the examination of their socio-historical activities related to each country's distance education development, a fifth variable was added–why. To really grasp the essence and ambience of a socio-historical activity, knowing why it evolves or changes in a certain way helps to connect social agents involved in this activity to the culture and the society they live in. Accordingly, the syntheses of the social agents who had contributed to the two countries' distance education historical developments were guided by the following questions:

1. What patterns of each country's distance education historical development might I capture through the exploration of each country's distance education history?
    a. To be able to capture the patterns, I examined major historical events in each country's distance education history as documented in primary social and historical

written artifacts (literature). These historical events were then organized chronologically and categorized by development trends.

2. Through the comparison of the two countries' distance education histories, I tried to answer the following questions:
   a. Were there any common characteristics that China and the U.S. have shared with each other in their distance education histories? If so, what were they?
   b. Were there any characteristics that are unique to China's distance education history but not the U.S. and vice versa? If so, what were they?
3. Who were the social agents that had consistently contributed to the formation of these similarities and differences?
4. How did these social agents affect the two countries' distance education historical developments?
5. How might differences in social agents' roles help to explain the differences in the two countries' distance education historical developments?
6. What did I learn from comparing the two countries' distance education histories?

To summarize, this study took an inductive approach to explore history of distance education in China and the U.S., captured their development patterns, compared the similarities and differences, identified social agents contributing to each country's distance education history and explored their impact on each country's distance education history. I assumed a learning role throughout the study.

Document Analysis

This study applied document analysis strategy. The historical events that occurred in the two countries' distance education histories were collected and categorized in a way to see "what

can we say of the whole (organization, culture, etc.), based on selective studies of the parts" (Noblit and Hare, 1988, p. 62)? In this case, "the whole" was the country's distance education history and "the parts" were the past events archived in text.

Krippendorff defined document analysis as "a research technique for making replicative and valid inferences from data to their context" (1980, p. 21). Compared to research methods that require researchers' direct intrusion into the social lives of subjects, document analysis is considered an unobtrusive measure because documents do not react to the presence of researchers (Berg, 1998).

Documents surveyed in this study were written and recorded materials produced for the purpose of archiving historical events, for assessment by others, and for distribution to others. Based on Webb *et al.*'s work, Berg developed a three-category scheme to manage this type of historical materials (1998, pp. 179-187):

- *Commercial media accounts* refer to the type of materials developed for public assumption. These include newspapers, books, journals, magazines, videotapes, and maps.
- *Actuarial records* are produced for special reader population but are accessible by others. Actuarial records could be birth and death records, records of marriages and divorces, demographic or residential types of records, and statistical records created by certain record-keeping agencies.
- *Official documentary records* are created by schools, organizations and governments for special limited audiences, even if the public eventually finds a way to access some of them. Examples are internally-generated government agency reports, school records, sales records and organizational in-house newsletters.

Like other unobtrusive research measures such as archaeologist's studies of stone and criminologist's studies of forensic evidence, academic scholars' analyses of documents are able

to “provide access to aspects of social settings and their inhabitants that are simply unreachable through any other means” (Berg, 1998, p. 177).

As noted earlier in the literature review, document analysis is a common form of inquiry in the field of adult and distance education. Ellen L. Bunker (1998) used ICDE World Conference proceedings to study the historical development of the International Council for Distance Education (ICDE) to find patterns and trends in international distance education development. Allen *et al*. (2002), to study student satisfaction in different educational settings, collected their data (manuscripts) based on a key word search of ERIC, SocioInfo, Psychlit, ComIndex, *Distance Education* and *The American Journal of Distance Education*. Berge and Mrozowski (2001), to find the gap in past distance education research, collected their data (manuscripts) by searching four major academic journals in the field of distance education including *The American Journal of Distance Education, Distance Education, The Journal of Distance Education,* and *Open Learning*. In his doctoral dissertation, Hoffman (1969) studied the annual reports of the United States Office of Education’s *Higher Education General Information Survey*. Thompson (1996), to examine the effect of early professional literature on subsequent exclusionary practices, conducted a socio-historical and critical linguistic analysis of the adult education literature (books, journal articles, materials published by professional organizations) written between 1926 and 1962.

In this study, documents were considered media that stored the historical events of the two countries’ distance education developments. Doing document analysis is “the symbolic reconstruction of past events to which available texts may lead” (Krippendorff, 1980, p. 24). In this study, conducting document analysis was to collect those historical/past events, to capture the patterns of each country’s distance education historical development through a categorization of these events, and to identify the social agents who had affected the formation of the

characteristics of each country's distance education development. Document analysis research strategy enabled me to overcome the restrictions in time and space.

Document analysis used in this study followed a three-step procedure: coding, categorizing and triangulation. The first step was the coding process in which data were reduced to smaller meaningful, relevant, manageable units; the second step was the categorization process in which the coded units were reconstructed in a way to reproduce the past history and to reconstruct their corresponding socio-historical contexts so as to capture the themes of different historical time periods; the third step was the triangulation process in which all findings were triangulated to increase the possibility of reproducing the "real" past events, capturing their development patterns, identifying their similarities and differences, and discovering the social agents contributing to the formation of the history (See Figure 3-1**,** adapted from Krippendorff's "The Framework for Document Analysis" (1980, p. 28)).

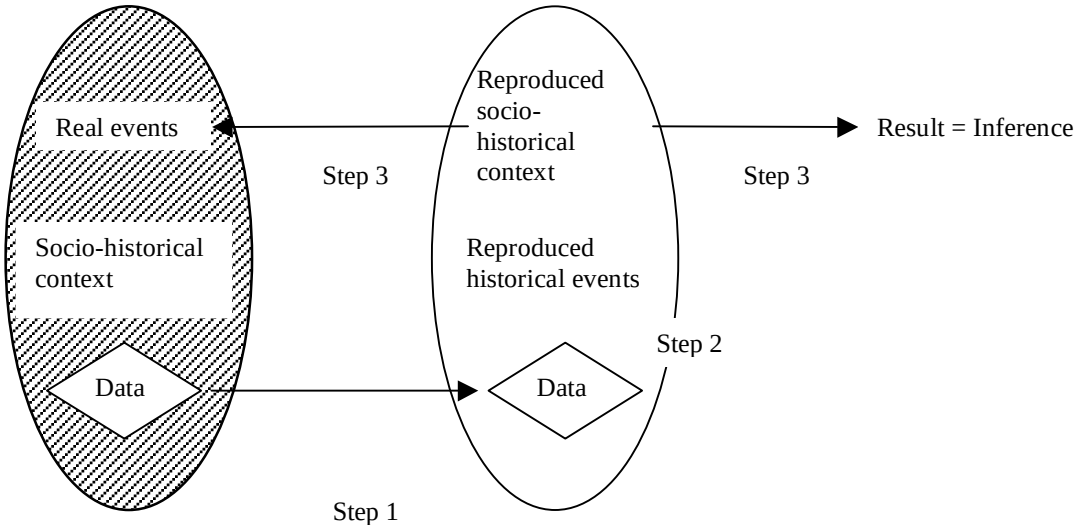


Figure 3-1: Document Analysis Three-Step Procedure

The Researcher's Responsibilities

As in much qualitative research, I, the researcher, was an integral part of the research process. I faced two challenges in this study. The first challenge was to make "critical judgments regarding statements of authorities" (Thompson, 1996, p. 10). In this study, materials recording historical events were collected from various sources. The extent to which these data are authoritative and can represent the distance education history determines the extent to which the reproduced distance education historical events and their social contexts are close to the real history. My role was to make appropriate judgments about the authorities of the data sources. The second challenge was the "imaginative reconstruction of the past" (Rockhill, Carlson and Davenport, as cited in Thomspon, 1996, p. 10). To reconstruct the past, I needed not only authoritative information to discover past events but also imagination through which to make association among different past events. My role was to logically but also creatively make connections between different historical events to produce a plausible reconstruction of the past and to conduct analytic inference.

Data Collection, Coding and Analysis

How and Where to Collect Data?

Data in this study are the historical events that occurred in the two countries' distance education histories as recorded in written documents. To collect these data, I accessed data sources including various historical documents mentioned above through the following four channels:

The majority of data sources were accessed through libraries and archives. Taking advantage of Penn State University's multiple databases and its partnership with national and international libraries, I accessed major databases in the U.S. and China. These databases include the Library of Congress, NetLibrary Inc., Dissertation Abstracts database, ProQuest database, ERIC database, EBSCOhost database, Lawrence Erlbaum Associates online, Ingenta Select, SilverPlatter, MetaPress database, China Journals Full-text database, China Year Book database, China dissertation database and China journal network. Through these databases, I was able to access the major publications in both countries, including journals, books, news, conference proceedings, and theses.

The second major channel to access data sources was each government's distance education units. Since the governments of both countries have been e-governments for many years, many policies and regulations related to distance education and major national surveys conducted in the field of distance education were retrieved from the e-governments' corresponding units. These distance education units include the U.S. Department of Education, the U.S. National Center for Education Statistics (NCES), the U.S. Institute of Education Sciences, the Ministry of Education of PRC (MOE) and the China Education and Research Network (CERNET). For earlier data sources not available online, physical trips were made to access them.

The third channel of accessing data sources was several international organizations involved in distance education development in both countries. Examples include the World Bank, UNESCO and Commonwealth of Learning, etc.

For those data that were not accessible via the aforementioned sources, alternative ways were considered. These alternative ways include my committee members' community networks, including Distance Education Online Symposium listserv (DEOS-L), the Commission of Professors of Adult Education listserv (CPAE-L), American Association for Collegiate

Independent Study listserv (AACIS-L) and American Education Research Association (AERA) listservs.

How to Choose Relevant Historical Documents

Based on Berg's "three-category scheme" (1998, p. 179), the "Data Source Inclusion and Exclusion Criteria" or DI/EC code book (See Appendix A) was designed to secure good historical documents. This code book was used to make the judgment about whether a historical document should be included in this study. If a document is considered as "others" under the generic criteria, that document is treated as an irrelevant data source and removed.

The four specific criteria were used to minimize the chance of getting skewed data (skewed data means inaccurately recorded historical events and interpretations). It is my assumption that all the agencies managing those distribution channels are capable of filtering poor quality historical documents. Nevertheless, the researcher is aware of the possibility of collecting historical documents that may contain biased data. Triangulation among data sources helps to minimize such possibility.

The Primary and Secondary Sources to This Study

In this study, the collected documents contain both primary and secondary sources. Primary sources are documents that were produced as part of the distance education historical events under investigation. These documents were written by participants or witnesses of the historical events in investigation. These documents came into existence during the time period to which they refer. Secondary are documents that were produced by historians with a second-hand

experience of the historical events under investigation. Their purpose is to draw on or interpret the historical events. These documents always came into existence after the time period to which they refer. In reality, however, "It is not always possible to separate sources into primary and secondary categories [as] a particular source may be classified primary and secondary depending upon the research problem" (Merriam & Simpson, 2000, p. 79). For example, Bittner and Mallory's *University Teaching by Mail* published in 1933 was treated as the secondary source when I studied the U.S. correspondence education development in the 1920s. But when I was exploring Carnegie Corporation Foundation's contribution to the U.S. distance education development, this publication became the primary source because it was funded by the Foundation and existed during the time period under investigation.

Having said this, the value of both the primary and secondary sources is not intrinsic to the documents, and is subject to the purpose for which I approach them. In my chapters on the histories of the two countries' distance education, my major purpose is to collect historical events/evidence to reproduce each country's distance education history. To serve this purpose, secondary sources are as valuable as primary sources because they "not only present interpretations but also offer primary evidence, although these are colored by a particular analytical framework" (Deflem, 1996, p 11). While collecting historical events/evidences, I took great caution to separate evidence and interpretations. The strategy of triangulation among data sources was used in the situations where evidence and interpretations were mixed.

In my interpretation and explanation chapters, focus was given to primary sources because they provided the first account of the historical events under investigation. "Social phenomena derive their meaning from how they are defined by participants" (Silverman, 2001, p. 17) and the meanings are recorded in various documents produced by these participants–primary sources. Teasing out the meanings of the historical events under investigation is the core of my interpretation and discussion chapters and the original meanings of the historical events under

investigation must be derived from the primary sources. This is not to say, though, that I did not use secondary sources in my interpretation and discussion chapters. In those chapters, I used secondary sources mainly for triangulation to filter biased evidence, to separate evidence from interpretations and to make connections among different socio-historical events because "it is not wise to assume that because primary sources are closer to the reality one wants to grasp, they are also readily reflective of that reality. … a primary document can be utterly incomprehensible and remain totally without meaning were it not for the information provided in the secondary literature that contextualizes the item" (Deflem, 1996, p 11).

Coding and Analyzing Historical Events

Based on Berg's discussion about conducting effective historical research (1998, pp. 198-211), a second codebook was designed to code various historical events–"Data Analysis Code Book" or DACB (See Appendix B). The purpose of this codebook is to code and categorize historical events based on their relationships as well as the timelines. It helps to connect different categories in a way to capture the patterns of each country's distance education history. These patterns of the two counties' distance education development are then analyzed to find out the commonalities and differences existed in the two countries' distance education histories.

Limitations of the Study

The main limitation of this study was the limited access to historical documents. Concentrating on historical documents accessible through libraries, educational associations and governments' agencies represented my bias in favor of the most popular and publicly accessible

publications. Research published in less popular publications and documents/reports circulated within a small group of readers were difficult to identify.

The second limitation of this study was my research skill. According to Merriam (1988), the qualitative researcher is not just a human researcher but more importantly, the major instrument of the study. The way I designed this study, the search strategy I selected, the way I coded the data, my decision to omit some documents identified through the searching process, and the ways in which I presented and interpreted the data, all were influenced by my biases and preferences.

Due to these limitations, I was at risk of overestimating, underestimating or missing factors affecting the two countries' distance education historical developments.

To minimize the limitations, I planned and implemented two strategies: Firstly, I conducted as much extensive and intensive analysis of documents as was possible. The major criterion used to judge whether I had collected enough data or not was to see whether fresh data could help me to develop a new category or new understanding. Secondly, I conducted "peer debriefing" recommended by Lincoln & Guba (1985). This strategy was used at the very last stage of this study and feedback from my adviser and two peer reviewers was obtained.

Chapter 4

A History of Distance Education in China

Introduction

China has a long history of imperial dynasties during which all educational activities were organized around a civil service examination system called Ke Ju, which included relatively rigid curriculum and instruction. The 1911 Revolution (Xinhai Revolution) led by Sun Yat Sen caused the collapse of the last imperial dynasty, and the country went into a new era dominated by thirty-eight years of warfare between regional warlords and later between nationalists and communists. The unstable political entities loosened the government's centralized control of the national educational system, which gave educational activists free space to experiment with various ideas. China's earliest distance education exploration occurred during this time period, but this exploration was not extensive due to the political chaos and the widespread presence of warlords.

After the Communist Party took power in 1949, China was finally stabilized and had a chance to develop itself according to a self-chosen socialist vision. During the 1950s, with the government's guidance and support, distance education began to grow. After a half century of development, distance education has become an important strategic component of the Chinese education system.

In this chapter the development of distance education in China over the past 100 years is revisited, beginning with Yuanji Zhang's Commercial Press Correspondence School in the early 1900s and continuing to a discussion of modern distance education development in the twenty-first century.

Early Distance Education Exploration (Before 1949)

The first half of the 1900s in China was dominated by warfare, and all social resources were exploited by the government to support battles between different political camps and warlords. In such a volatile situation, the theoretical importance of education was espoused only in written documents, but there was no significant social implementation by the government. Correspondence education, the first form of distance education, was established more through individual endeavors rather than systematically by the government.

Yuanji Zhang and the Commercial Press Correspondence School

China's early correspondence education is traced back to Yuanji Zhang and his Commercial Press Correspondence School (CPCS) in the early 1900s. Born into a wealthy family, Zhang was well educated and became a social activist. After the failure of The Wuxu Reform (100-day Reform) and the loss of his position in the Qing government because he was a proponent of reform, Zhang turned his interest to education and joined the then largest publishing company–Commercial Press (CP)–to publish textbooks, as recalled by his son Shunian Zhang in his *In Memory of Father Yuanji Zhang* (1997a). Zhang believed that education benefits both individuals and society, and that he, as an educated individual, had the responsibility to help to promote its availability.

After joining the Commercial Press in 1902, he soon put his ideas into practice by taking advantage of CP's human resources and its publication distribution system. Under his leadership, CP established a boat-based "mobile library" and provided moving library service to areas close to Shanghai, including Jiangsu and Zhejiang provinces (Zhang, 1997b). Together with educational activists including Fu Yan, Zengyou Xia and Xiaoxu Zheng, he established a normal

education teaching unit (Shifan Jiangxi Suo) to help elementary school teachers with their mandatory proficiency test in the 1910s. Correspondence study guides were developed for teachers in remote areas, and CP branch offices were asked to provide learning support to the correspondence students. Between 1910 and 1918, these correspondence courses attracted about nine thousand students from across the country (Jiang, 1954, p. 395).

Based on these experiences, Zhang and his colleagues established the Commercial Press Correspondence School (CPCS) in 1915 (Commercial Press, 2004). Since Shanghai was the gate between China and the world, and many foreign companies opened their branches at Shanghai, there was a high demand for English speaking employees. To meet this market need, CPCS designed their first correspondence program in English. The program included sets of both required and elective courses. The required courses had four levels, ranging from the beginner to the advanced level. In order to pass the advanced level English courses the students were expected to read English newspapers. English correspondence teachers included the staff at the English unit of the Commercial Press Translation Institute (CPTI,) and many well known scholars having expertise in English, including Yueran Zhou and Dun Mao, were recruited to teach these correspondence courses. Later, the CPCS was expanded to offer Math, Business, Chinese Language, Literature and Library Science. Elementary and middle school teachers were the target population, but there were many other people who used the correspondence programs for convenience. Because of its good reputation and high social demand, the CPCS reorganized itself in 1938 and established a secondary correspondence education department and a tertiary correspondence education department. They together offered over sixty correspondence programs. To survive the warfare in the 1940s, CP was forced to move from place to place, during which many good scholars left and literally tons of teaching resources were destroyed. The School was finally closed in 1946.

The Government's Efforts

As was mentioned earlier, the first half of twentieth century in China was dominated by warfare. Following the Northern Expedition in 1927 the Nationalist Party finally brought the country together and started to build a national education system. The Ministry of Education was established particularly for this mission. Several years later, however, the Sino-Japanese war broke out. The whole country was fully involved in the war, and national education development went into stagnancy again.

Under such conditions, many educational activists were looking for ways to save the national education system, and academic debates were organized around specific ideas (Xiong, 1997, p 408). Promoting correspondence-based education was included in these debates. The debate on correspondence education was initiated and organized mainly by Jueming Huang, the editor of *Education Magazine*. In 1938, Huang published an article entitled "Adjusting School Education Policy to Solve Education Crisis During the War and Post-War Period", in which he pointed out the difficulties brought about by the war, including the lack of educational expenditure and the loss of teaching facilities, faculty and students. He continued by proposing that correspondence education could be an effective way of relieving the education crisis the whole nation was facing, since correspondence education required no classroom and no physical presence of instructors and students. His article triggered an extensive discussion of correspondence education's potentialities, which led to the publication of a special issue of *Education Magazine* in April 1938. Huang summarized the debate in another article entitled "Rethinking of Adjusting School Education During the War and Post-War Period", in which he re-assessed the idea of correspondence-based education and strongly suggested that the government should consider officially encouraging correspondence education and independent study.

Influenced by these debates, the government finally made a move (Xiong, 1997). They passed *The Promoting Overseas Chinese Education Plan* in 1940, in which the term "correspondence education" was first used by the government. The legislation required the establishment of a national correspondence school, focusing on the training of middle and elementary teachers who worked at overseas Chinese education schools. According to the *Plan*, the correspondence school would start to recruit students in the fall of 1940 and the projected overall enrollment in the three and half-year plan was fourteen thousand (p 408). In 1943, the government issued another policy *About the Establishment of Nationalist Continuing and Correspondence Education Departments with Affiliation to Normal Education Institutions*, in which the government encouraged national normal colleges to establish correspondence education departments. From then until 1949, the government continued to encourage the development of correspondence education at normal universities, and correspondence education was promoted in various government documents as an acceptable way for school teachers to continue their professional development.

Though correspondence education had been written into education legislation and policies in the 1940s, the hardship of the Sino-Japanese war, and later the civil war, made it difficult for local governments to truly and fully implement it. All governmental activities were centered on war preparation, and education was especially focused on the training of soldiers. Adding to that were the economic difficulties. Except for a few people, notably Jiang, Song, Kong and Cheng, the four big families controlling the entire country's economy, most people were fighting starvation and illness. This left no time or resource for continuing education, and the development of correspondence education stagnated.

Other Early Correspondence Education Explorations

A number of art institutions in Shanghai were involved in early correspondence education in the first half of twentieth century, as recorded in Shanghai's local development history (Shanghai Government Local Records Office, 2001). The art schools' major teaching activities were conducted in a traditional way, but they also offered correspondence art courses to geography-bound art students. One such art school was the Chinese & Western Art Correspondence Xue Tang founded in 1910 by Xiang Zhou, an important figure who contributed to Chinese modern art education's evolution from apprenticeship-based teaching to institute-based art education (Shanghai Government Local Records Office, 2000). Another such art school was the Shanghai Fine Art Institute established in 1912 by Shiguang Wu and Haisu Liu, who first introduced the human model into Chinese art. Wu and Liu posted an advertisement in a local newspaper on January 28, 1913 advertising that "To make it convenient to art learners, we adapted correspondence education to our institute and established a correspondence education unit to offer Western art at a distance." The same year, on August 7th, they posted another advertisement, emphasizing that their correspondence art education could help those job-bound learners to learn art without leaving their jobs. Correspondence students were expected to finish their program in one year. As recorded in *Shanghai Art Records: Appendix II: Art Events Records* (Shanghai Government Local Records Office, 2001), there were over fifteen such art schools in the first half of twentieth century in Shanghai.

The Development of Correspondence Education and the Emergence of Radio TV Institutions, 1949 to 1976

After three decades of civil war, the Communist Party ultimately took over the country and established the People's Republic of China in 1949. As social resources had been seriously

drained in the war time, the newly established government undertook full responsibility for organizing post-war social restoration, including the restructuring of the education system. With assistance from the former Soviet Union, a series of reforms were carried out to restore and restructure the educational system to ensure its service to social economic development needs (Hayhoe, 1996, pp. 75-99). The reforms included the establishment of polytechnic and comprehensive universities to promote science and engineering education, the integration of Marxist ideology into the curriculum, and the extension of higher education availability in both coastal cities and the hinterland to assure balanced education development. In addition to the traditional student population, other populations including minor government officials, teachers, workers, and peasants were included in the government's national education planning. It was under these conditions that correspondence education recurred in the early 1950s, and radio and TV education started to appear in the late 1950s and the early 1960s, respectively (Hayhoe, 1996).

Restoration of Correspondence Education

Renmin University of China (RUC) was the first institution offering correspondence-based education after 1949. In December 1949, two months after the founding of the new People's Republic of China, the Ministry of Education (MOE), in a government document entitled *The Decision on Renmin University of China's Implementation Plan*, urged RUC to establish an evening college. This was opened for enrollment in 1950 (*China Education Yearbook* Editorial Dept., 1984, p. 605). In 1953, based on the evening college experience, RUC was approved to establish the first Correspondence Education Department (Hanshou Bu). The first semester started on February 7, 1953 and three correspondence learning centers, including Beijing, Tianjing and Taiyuan, were established to provide student services (RUC News Office,

2008). Twenty-five hundred students took RUC's education through correspondence in that year (*China Education Yearbook* Editorial Dept., 1984, p. 605). The Correspondence Education Department was renamed the Correspondence Education School (Hanshou Xueyuan) in 1959, the School of Adult Higher Education (Chengren Gaodeng Jiaoyu Xueyuan) in 1984, and today is known as the School of Continuing Education (Jixu Jiaoyu Xueyuan) (RUC School of Continuing Education, n.d.).

Beijing University of Posts and Telecommunications (BUPT), the former Beijing Institute of Posts and Telecommunications, was another institution MOE approved to carry out correspondence education in the 1950s. BUPT established its correspondence education department in 1958. Compared to RUC's moderate start with three correspondence learning centers, BUPT developed its correspondence education on a much larger scale, with students from fourteen provinces. One year later, as the leading institution in the area of post and telecommunications, BUPT was asked by the Ministry of Posts and Telecommunications to lead a national correspondence education network designed specifically for the delivery of postsecondary education via posts and telecommunications. The first preparation conference was convened in June with most Post and Telecommunications Institutions from across the country in attendance. Three months later branch correspondence education departments were set up at five major posts and telecommunications education institutions including Nanjing, Wuhan, Changchun, Xi'an, Chongqong, and smaller branch correspondence education centers were set up at most local post and telecommunications schools nationwide (BUPT Network College, 2006).

Inspired by the experiments at the RUC and BUPT, MOE integrated the development of correspondence education into national higher education reform to promote education for the adult population. Educational policies were issued to encourage the development of correspondence education at conventional higher education institutions. These policies and regulations covered almost every aspect of correspondence education, including the official

recognition of correspondence education as an integral component of the Chinese education system, guidance on the planning and development of correspondence programs, regulations on student admission and correspondence education study, and policies on benefits gained upon correspondence education graduation (*China Education Yearbook* Editorial Dept., 1984, pp. 605-613). From the establishment of the first correspondence education department at RUC in 1953 to the year before the eruption of the Cultural Revolution in 1966, one hundred and twenty-three conventional higher education institutions had developed their distance learning "wing" and the national correspondence education enrollment had reached one hundred and thirty-two thousand.

The Early Experiments of Radio and TV Based Distance Education

In addition to postal service-based correspondence education, universities also employed radio and TV technology to deliver education. Shanghai Radio Station broadcasted the first education program in 1953, and by the 1960s over sixteen radio stations were delivering educational programs (Bruckner, 1970, p. 210). Most of these radio educational programs were sponsored jointly by radio stations and educational institutions. The first distance learning institution delivering radio and correspondence-based education was Tianjin Radio and Correspondence University (TRCU) (currently Tianjing RTV University) (Tianjin RTVU, n.d.). The TRCU was established in 1958 with five departments, including electrical engineering, mechanical engineering, chemistry, agriculture and Chinese. Their distance education courses were delivered via Tianjin Renmin Radio Station as well as through correspondence. By the beginning of the Cultural Revolution in 1966, they had an enrollment of over thirty-five thousand students. It was closed during the Cultural Revolution and reopened with its current name Tianjin Radio and TV University (TJRTVU) (Xie & Li, 1990, p. 20).

The first distance learning institution utilizing television technology to deliver education at a distance was the Beijing Television College (BTC) established in 1960 with the then Beijing vice mayor Han Wu as the first president (Abe, 1961; Beijing Radio and Television University, n.d.). Their teaching activities were organized around a combination of three methods: television, correspondence and face-to-face instruction. The College started with five majors including math, physics, chemistry, Chinese and English. Their target student population was adults who could only study on a part-time basis or in their spare time. In its six years of operation before the Cultural Revolution, about six thousand students graduated and another thirty-six thousand finished their study of single courses. Following Beijing Television College's experiment, similar television colleges emerged in several metropolitan cities including Shanghai, Shenyang, Ha'erbing and Guangzhou in the 1960s (*China Education Yearbook* Editorial Dept., 1984, p. 613).

Because national radio and television networks were still in early development in the 1950s and 60s, these innovative radio and television universities could only deliver limited radio and TV educational programs. Correspondence and face-to-face instruction were still their major methods, and radio and television-based instruction was used only as a supplement, providing options for those adult learners residing in big cities that had radio and television networks (Bruckner, 1970, p. 210). Before these universities were able to take further advantage of radio and television technologies, the ten-year Cultural Revolution began, and national education reforms stalled. Radio and TV based distance education did not achieve much more development until the 1970s.

Distance Education's Winter

While progress had been seen in the early development of both correspondence education and radio & TV education in China in the 1950s and 60s, a political movement, namely the Cultural Revolution, then swept across the country. The Cultural Revolution began in 1966 and ended in 1976. During this period, people's focus was redirected from the construction of a socialist country to political battles against any suspicious social activities viewed as harmful to the proletariat dictatorship. The newly-established national education system was seriously attacked for not benefiting the majority of proletariats. All educational institutions were reorganized to reflect "real" proletariat viewpoints, and most faculty members were accused of being secret agents of capitalism. Their mission was said to be the devastation of socialist construction by the spiritual destruction of communism, the successor to socialism. Consequently, much of the national education system was destroyed.

Along with the destruction of the education system, the ten-year Cultural Revolution brought a halt to the aforementioned distance education development (*China Education Yearbook* Editorial Dept., 1984, p. 605). All types of distance education institutions were closed, including the distance learning "wings" of conventional institutions like RUC and BUPT, and radio and TV institutions like TRCU and BTC. China's distance education went into its dormant "winter" period.

The Revival of Distance Education (1977 to 1985)

The Ten-Year Cultural Revolution finally ended after the fall of the "Gang of Four" in 1976. What this political turmoil left for the Chinese people was a chaotic society in general and a mostly destroyed education system in particular. Manpower shortages were accompanied by an

abundance of unqualified workers and staff at various levels. This meant that those people who missed or lost educational opportunity during the Cultural Revolution needed to receive training within a short period of time in order to help with social and economic recovery. Such needs could only be fulfilled, according to Xiaoping Deng, who was in charge of science and education in the late 1970s, through unconventional methods. Deng (1977, p. 46) coined the term "walking on two legs" as a simile to describe his blue print of China's future multi-level, multi-standard and multi-platform education system: one leg is the reconstruction of the traditional education system and the other leg is the promotion of various part-time and leisure-time continuing education opportunities. In particular, the use of correspondence and radio and TV technology in part-time and leisure-time education and training activities was clearly addressed by Deng in his speech at the National Education Work Conference convened on April 22, 1978 (Deng, 1978, p. 109). The spring season of Chinese distance education had arrived.

Correspondence Education Revival

With the government's encouragement, seventy-two higher education institutions had restored their correspondence programs by 1979 (*China Education Yearbook* Editorial Dept., 1984, p. 606). To further promote correspondence education across the country, the MOE coordinated a national forum in April 1980. Attendees included officers from the seventeen ministries as well as the persons responsible for the correspondence education development at forty higher education institutions. The product of the forum was an official document entitled *The Promotion of Correspondence Education and Evening College at Higher Education Institutions*, which was later approved by the State Council and established the position of the government on correspondence education development. It reemphasized the important position of correspondence education in the national education system, urged the integration of a

correspondence education admission plan into the national higher education admission plan, encouraged institutions to optimize the flexibility of their correspondence programs while maintaining academic quality, and set the guidance for staffing, budget, social recognition of correspondence graduates and institutional management of correspondence programs (Ministry of Education, 1980). Two follow-up national work conferences were convened by the MOE in 1981 to discuss and develop guidelines for the development of correspondence education materials, during which twenty-six correspondence education programs' curriculums were approved. Besides helping to coordinate the development of correspondence materials, the MOE also simplified the correspondence education approval process to encourage more higher education institutions to participate in the development of correspondence education (Ministry of Education, 1981).

The government's activities promoting correspondence education led to the rapid growth of correspondence education (*China Education Yearbook* Editorial Dept., 1984, 1987). The number of higher education institutions offering correspondence education increased from seventy-two in 1979 to three hundred and thirty-one in 1985. About 33% of higher education institutions offered correspondence education programs. This number approximately matches the number of higher education institutions that remained at the end of the Cultural Revolution in 1976 (three hundred ninety-two). Correspondence majors grew from one hundred and two to two hundred and eighty-six. This represents 35% of the majors offered in higher education institutions. The most popular correspondence education major was normal education. In 1985, 41% of correspondence education enrollments were in normal education. For five years the average growth rate of correspondence student enrollment was 25% annually. In 1985, the overall correspondence student enrollment equaled one third of the overall higher education enrollment, which was exactly the goal MOE set up in the *About the Promotion of Correspondence Education and Evening College at Higher Education Institution* five years ago.

Originally, correspondence students received a certificate for finishing a single course and a diploma for finishing all the course requirements of the major. In 1983, MOE began a planned promotion of correspondence degree education, and piloted it in four higher education institutions including Tongji University, Huadong Normal University, Northeast Normal University and Ha'er Bing Technology University (Ministry of Education, 1983), which further hastened and enhanced the position of correspondence education in the national education system.

The Booming of Radio and TV Education and the Birth of the RTVU System

In addition to the revival of correspondence education, radio and TV education also achieved great development during this time period. Unlike its pre-Cultural Revolution development, when radio and TV education initiatives were mainly individual endeavors by a few departments or institutions and its use was limited to the population residing in several big cities that had radio and TV networks, this time the development of radio and TV education was carried out at the national level with the government's direct involvement. One fundamental event in China's distance education history is the founding of the Radio and TV University (RTVU) system in the late 1970s.

The idea of establishing national radio and TV networks to promote continuing education was initiated by Xiaoping Deng in 1977. After his appointment to lead the development of national science and education, Deng proposed the aforementioned idea of "walking on two legs" (1977, p. 46). To reconstitute the formal higher education system (one leg), he urged MOE to restore the National Higher Education Entrance Examination; and to promote continuing education (the second leg), he looked into the potential educational use of radio and TV technology. The visit of former British Prime Minister Edward Heath in October 1977 and his

introduction of the British Open University helped Deng to make the decision to establish a national radio and TV distance education institution (CCRTVU, n.d.).

The RTVU system was officially put into operation in February 1979 with a comprehensively centralized management system (*China Education Yearbook* Editorial Dept., 1984, pp. 614-622). The administrative members were from twelve different government agencies with MOE and CBB as the joint executive agency. The Central RTV University was under the direct joint administrative leadership of MOE and CBB and the twenty-eight regional Radio and TV Universities were under the administrative responsibility of their regional governments. The system received financial support from the government at different levels and also from various international financial projects (CCRTVU, n.d.).

The RTVU system was established as a multi-media distance education system allowing flexible student portfolios. It targeted adult learners including workers, rural government officials, scientific technologists, secondary school teachers and soldiers in civil service. Prospective adult learners had the option of pursuing full-time, part-time and leisure-time study, had the freedom of studying a complete program in a specific field or a single course of one's personal interest, and had the option of taking a series of courses leading to a diploma or a single course for a certificate. Regardless of student status, adult learners studying RTVU courses enjoyed many benefits for in-service training and education. Full-time RTVU students received full-pay study leave and part-time RTVU students were allowed to allocate four to eight work hours per week to study. Beginning in 1982, the RTVU system also accepted high school graduates who had a signed contract with an employer, with the agreement that the student would work for this specific employer after finishing his/her studies at one of the radio and TV universities. All RTVU graduates received pay equivalent to that accorded a graduate from a conventional 2-3 year vocational college.

In addition to the establishment of the RTVU system, the government also began experimentation with open access to education for the general public. While all conventional higher education institutions required students to take the National Higher Education Entrance Examination, for various reasons the exam was waived for adult learners in the RTVU system. These students were called self-study learners, which literally means that these students studied entirely on their own and attended no distance institution-organized teaching-learning activities. They had the right to attend course final exams with an exam fee of five Jiao (ca. US$ .06) per exam at a local distance learning center. To be eligible to apply for a diploma, a self-study learner had to have sufficient evidences/records showing that he/she had studied all the required courses, finished all the required learning activities, and passed all the required course exams.

In its first five years of operation, the RTVU system achieved rapid development (*China Education Yearbook* Editorial Dept., 1986). The RTVU system expanded from its original structure of one Central RTV University and twenty-eight regional RTV Universities to one Central RTV University and thirty-five regional RTV Universities. The enrollment, not including the self-study students, increased from ninety-eight thousand in 1979 to six hundred thousand in 1984, enjoying a growth rate of 38%. This growth rate was very much higher than the 9% growth rate of conventional higher education enrollment and the 21% growth rate of correspondence student enrollment during the same time period. The RTVU system had its first group of over ninety thousand graduates in 1982 and over one hundred and fifty thousand adult learners had received single course certificates in Math, Physics, Chemistry and English. By 1985, one out of two students finishing adult higher education studies came from the RTVU system and one out of four students finishing higher education studies came from the RTVU system. In these five years, the RTVU system expanded from delivering programs focused only in science and engineering to programs in social science and economics. Close to seven hundred branch schools

were established at varied locations, including businesses, institutions, government offices, military facilities and organizations.

The Strategic Adjustment Stage (1986 to 1992)

China's higher education had rapid expansion after 1976. The number of higher education institutions jumped from 392 in 1976 to 1016 in 1985 and student enrollment tripled. A full range of adult education institutions started to grow, including correspondence education departments nested within the normal education system, a national radio and TV system, evening colleges, farmer colleges, and adult institutions associated with various businesses and colleges of adult education in major national universities. As the speed of development became faster than what the government envisioned, a new round of educational reforms was soon underway to balance the rapid institutional expansion and the provision of quality education. *SEC's Decision on the Reform and Development of Adult Education* issued by the State Education Commission (SEC) in 1987 initiated the reforms on the national adult education system. The major reforms included the decentralization of the adult education system, the promotion of primary and secondary teacher education to promote the acceptance of the nine-year compulsory education mandate, the introduction of the National Adult Higher Education Entrance Examination to provide degree education to adults, and the promotion of continuing education (The Central Committee of CPC, 1985; State Education Commission, 1987c). In this situation, distance education went into a development stage of strategic adjustment.

Correspondence Education

To align with the national education reform, two policies focusing on the promotion and regulation of correspondence education at regular higher education institutions had been promulgated in the late 1980s. One was *The Temporary Regulation on Regular Higher Education Institutions' Correspondence Education* (State Education Commission, 1987a) and the other one was *About the Decentralization of Approval Authority of Regular Higher Education Institutions' Correspondence Education and Evening Colleges Education* (State Education Commission, 1988a). These two policies emphasized the provision of quality correspondence education and provided various guidelines with regard to the development of correspondence programs, the design of curriculums, the training of correspondence teachers, the management of student affairs, the operation of correspondence centers, the management of budget, and the function of the overall correspondence education management system. These policies emphasized the development and popularization of correspondence education as a part of continuing education, the promotion of correspondence-based teacher education targeting primary and secondary school teachers, the strengthening of research on correspondence education, and the transition of correspondence education approval authority from SEC to regional governments and education commissions.

The result of these reforms was inspiring. This was evidenced by the rate at which SEC approved regular higher education institutions to offer correspondence education. In 1989, seventy-three new regular higher education institutions were listed on their approval list and four years later, the number almost doubled and one hundred and thirty three new institutions made their way to the SEC's list (State Education Commission, 1990, 1993). In 1993, SEC announced its twelfth group of regular higher education institutions being approved to offer correspondence-based degree education leading to a bachelor degree. Ninety-three regular higher education

institutions were on the list (State Education Commission, 1993). As the 1987's *Decision* expanded the target student population from adult learners looking for college education to high school graduates looking for college degree programs and college graduates looking for advanced education, the student population in regular higher education institutions' correspondence education programs started to outweigh the RTVU system's enrollment. By 1992, the correspondence education system nested within the regular higher education system had recruited over fifty-three thousand more students than the RTVU system's one hundred and ten thousand. This made regular higher education institutions' correspondence student population 44% larger than the RTVU system's. Since then, regular higher education institutions' correspondence education has become the largest distance education contributor to China's adult education (*China Education Yearbook* Editorial Dept., 1993).

The RTVU System's Reform

As part of the national education reform, the RTVU system underwent adjustment from a centralized to a decentralized structure. This process started with the decentralization of the approval authority of their educational programs, which was officially approved by SEC in its *Temporary Regulation on the Approval Authority of the RTVU System's Educational Programs* (1987b). This reform was fully carried out with SEC's promulgation of the *Temporary Regulation on Radio and TV University* (1988b). The RTVU system's nature and its roles in socialist construction were both refined in the 1988's *Regulation*. For the first time since its establishment in 1979, the RTVU system was defined as an open higher education system that utilizes radio, TV, print and other multimedia technologies to deliver education at a distance, and a system that operates based on multi-level collaborations. As was clarified in the 1988's *Regulation*, the RTVU system's major task was to provide diploma-based higher education with

vocational/technical training, in-service training, professional training, and continuing education as important supplements. The responsibilities of government at different levels and the relationships between the CRTVU and regional RTV universities also were clarified in the 1988's *Regulation*. More administrative responsibilities were transitioned to regional and local governments and their education commissions, and more academic freedom was granted to regional RTV universities. The collaboration between the RTVU system and regular higher education institutions, adult regular higher education institutions, and other educational institutions was emphasized, as well as the collaboration with the Ministries under the State Council. The overall strategy was two-fold: Academically, the government used the Central RTVU to assure quality distance education nationwide while maximizing regional RTV universities' freedom to develop distance education that meets local development needs. Administratively, the government wanted to integrate the RTVU system into the regional educational system through the transition of management responsibilities to local governments and their education commissions.

This series of strategic adjustments led to two major changes. First, the RTVU system continued to expand. The system grew from one Central RTV University and thirty-five regional RTV Universities in 1985 to one Central RTV University and forty-four regional RTV Universities in 1992, with over seven hundred branch schools established (CCRTVU, 1993). By 1992, the RTVU system had a collection of twelve million print-based instructional materials, over two million cassette tapes and slightly less than two million video tapes. The fields of study being covered by RTVU courses grew to eleven, including engineering, agriculture, forestry, medicine & pharmacy, teacher training, humanities, natural science, finance & economics, political science & law, physical education and art (*China Education Yearbook* Editorial Dept., 1987, p. 810). The collaboration between the RTVU system and the various governments and

organizations had increased, and various forms of non-degree certificate education, in-service training and continuing education programs were offered.

Secondly, responding to the government's call for quality distance education, the RTVU system changed its student population structure. The system stopped accepting self-study based adult learners, and began to accept high school graduates who passed the National Higher Education Entrance Examination, required all prospective students to take either the National Higher Education Entrance Examination or the National Adult Higher Education Entrance Examination, and started to accept students against the quota established by SEC (CCRTVU, 1989; *China Education Yearbook* Editorial Dept., 1987). While the series of admission adjustments improved the quality of the student population the overall size of the student population began to shrink. Admission had dropped sharply from two hundred and seventy-three thousand in 1985 to one hundred and four thousand in 1991 with a 62% decrease. Enrollment had dropped from six hundred and seventy-four thousand in 1985 to three hundred and thirty-one thousand in 1991 with a 51% decrease; and the number of graduates reached a peak in 1986 with two hundred and forty-nine thousand graduates and then dropped to ninety-eight thousand in 1993 (CCRTVU, 1993).

The Promotion of Teacher Education and the Birth of Satellite TV Normal Education Institute

As was mentioned earlier, *The Decision of the Central Committee of the CPC on the Reform of Education* served as the core guidance of the government's series of education reforms during this time period. One major item of this *Decision* was the introduction of the nine-year compulsory education plan. The World Bank's country study report, however, found that 35% of the primary teachers, 70% of the lower secondary teachers, 40% of the upper secondary teachers

and 33% of the vocational/technical secondary teachers in China were unqualified (World Bank, 1985, p. 36-39). Transitioning these teachers from the unqualified to the qualified was a prerequisite for the success of the series of education reforms in general and the introduction of nine-year compulsory education in particular. Hence, SEC convened a national work conference in November 1985 and produced a strategic plan on the expansion of teacher training and education (*China Education Yearbook* Editorial Dept., 1987, p. 36). Correspondence, radio and TV technology-based distance education were considered a cost-effective way to provide training and education to primary and secondary teachers.

To further promote distance teacher training and education, and taking advantage of the first ETV channel launched in July 1986, SEC established the China Satellite TV Normal Education Institute (CSTVNEI) in 1987 (*China Education Yearbook* Editorial Dept., 1987, p.71-74). Nine satellite TV teacher education programs were broadcast via the ETV channel, including Literature and Writing, Algebra and Elementary Function, Arithmetic, Chinese Ancient History, International Ancient Times and Medieval Times, Composition and Critics, General Literature, Modern Han Language, and China Contemporary Literature. The usual daily course schedule was between 7:30 am and 16:50 pm with general education topic programs from 6:00 am to 7:30am and RTVU programs from 16:50 pm to 11:00pm (See Appendix C for an example Class Broadcasting Schedule). Overall, up to 50% of the satellite TV programs were made up of primary and secondary teacher education courses. Teacher students enrolled in ETV's in-service training and education programs were expected to study in their spare time but their employers were required to reduce their teaching workload accordingly. The required average weekly study time was eight hours, and learning activities could be a combination of both group-based and/or individual-based. The total study time was about twelve hundred hours, and students were expected to finish their study in three years.

In 1989, SEC issued *The Guidance on the Management of Satellite TV Teacher Education,* in which the CSTVNEI's role as a national teacher training distance education system was formalized (State Education Commission, 1989). The *Guidance* articulated that the CSTVNEI's three major tasks were: the provision of in-service training and education to primary and secondary teachers to help them to meet SEC's degree requirements; the provision of in-service training and education to principals and headmasters of primary and secondary schools to help them to improve their school management skills; and, the provision of continuing education to primary and secondary teachers to help them to improve their academic proficiencies. Other regulations and requirements with regard to the enrollment of teacher students, the staffing, the management of local TV teacher training, the organization of examinations and the benefits of TV teacher education graduates was also covered in this *Guidance*.

The Construction of a Modern Distance Education System (1993 to present)

Deng Xiaoping's speeches during his visit to Southern China in 1992 serve as an important milestone in China's social development history. His talks not only initiated the country's transition from planning economy to market economy but also raised the whole nation's expectation of the role education would play in the new social economic development in general, and of the role distance education would play in national education development in particular. To implement Mr. Deng's blueprint of China's future social economic development, the Central Committee of CPC and the State Council jointly promulgated *The Guideline for Education Reform and Development in China* in 1993. This *Guideline*, for the first time, included the development of "lifelong education," and that became one of the most frequently used terms in later government documents on national education development. To achieve the lifelong education goal, various activities were carried out, including the transition of the State Education

Commission to the Ministry of Education, the continuation of education decentralization, the consolidation of the regular higher education system, the improvement of the national adult education system, the drafting of a lifelong learning law, the promotion of educational development in Mid-west regions and the proposal of a learning society (Ministry of Education, 1996, 1998, 2002e, 2004b, 2008a; The Central Committee of CPC & The State Council, 1993, 1999).

Of these governmental activities, distance education was given great attention. In *The 21st Century Education Invigorating Plan* MOE released in 1999, the development of modern distance education was listed as a major cross-century government project. The purpose of developing such a modern distance education system was to construct a national open education network balancing education development across the country by connecting various educational institutions nationwide, reaching out to geographically-bound individuals and providing opportunities to the less represented population in Mid-west regions (Ministry of Education, 1998). In the same year, the significance of modern distance education was reiterated in another governmental strategic development plan entitled *The Central Committee of CPC and the State Council's Decision on Furthering Education Reform and Fully Promoting Quality-Oriented Education.* Since then, China's distance education development has gone into its "golden" development stage and has become the government's backbone infrastructure for the construction of a learning society.

The Formation of an Integrated National Distance Education Infrastructure

After a half-century of development, China's distance education has grown from early correspondence-dominated distance education into an integrated distance education system

comprised of three major sub-systems: correspondence education system, satellite radio and TV education system and Internet education system.

Correspondence Education System

During this period, responding to the call for quality-oriented education, SEC's major activity in correspondence education was to regulate the market. In 1992, SEC published a regulation entitled *A Notice on the Approval of Regular Higher Education Institutions to Provide Correspondence Education and Evening College*. This regulation differentiated two categories of correspondence-based education. The first is correspondence-based diploma education that has been in existence for many years and the second category is correspondence-based education leading to a bachelor degree that was piloted in 1983. To offer a correspondence education program in the first category, regular higher education institutions must get approval from regional government and their education commission; to provide a correspondence education program in the second category, they have to get SEC's appraisal. SEC took two years from 1995 to 1997 to reevaluate all the existing correspondence education programs provided by regular higher education institutions (State Education Commission, 1995b). In 1999, Ministry of Education, the successor of the State Education Commission, passed a new regulation (Ministry of Education, 1999b). The new regulation, besides reiterating the previously passed major policies and regulations on correspondence education, emphasized that regular higher education institutions should develop correspondence education programs based on real social need, their own specialty advantage, local community development demand and existing teaching resources.

After more than a half century of development and adjustment, the national correspondence education system based on the regular higher education system has grown into its mature phase. Besides the six hundred and thirty-four regular higher education institutions

offering correspondence-based diploma education and the three hundred and one regular higher education institutions offering correspondence-based degree education that passed the 1995-1997 evaluation, a new group of regular higher education institutions was approved to enter the correspondence education market (State Education Commission, 1997). Ninety-one of them provided correspondence diploma education and forty provided correspondence degree education. Almost all specialties offered by regular higher education institutions could be found in the form of correspondence education. The student population has shown an annual growth rate of 12.8%, which is 3.3 point higher than the 9.5% annual growth rate of the overall adult education from 1992 to 2006. By the year 2006, one out of two adult learners pursuing degree/diploma education has taken some sort of correspondence-based education from regular higher education institutions. Correspondence education continues to be a major form of distance education in China.

The Radio and TV Education System

In *The Guideline for Education Reform and Development in China* passed by the Chinese government in 1993, the importance of radio and TV education to the advancement of the whole nation's education was reconfirmed, and a goal was set to further extend national radio and TV network to cover most cities, counties, townships and especially rural areas (The Central Committee of CPC & The State Council, 1993). As the core of national radio and TV education development, the RTVU system received a detailed guidance in 1995 from the government on how to help Chinese government achieve this goal (State Education Commission, 1995a). The guidance is called *Opinions on the Implementation of 'The Guideline for Education Reform and Development in China' in the RTVU System.* In this document, it is emphasized that the RTVU system should continuously focus on the delivery of quality education to rural areas; should focus

on the popularization of diploma education and professional/technical education; should maximize its potential in the promotion of primary and secondary teacher training; and, should promote non-degree education including in-service training, continuing education, certificate education and lifelong education. Under this guideline, the RTVU system was encouraged to diversify and make its distance education programs more flexible so that middle school graduates could take vocational/technical education from them, high school graduates could take diploma and degree education from them, students with a diploma could take advanced education programs from them to get a degree, teachers could take training from them, and people living in remote areas could take education through them. With this guidance, the government charged the national radio and TV education system to grow in the direction of becoming a nationwide, high quality lifelong learning system. After years of exploration, this goal was clearly stated in MOE's most recently released document entitled *The Outline of the CRTVU's Eleventh Five-year Development Plan* (Ministry of Education, 2008b).

Under the government's supervision, a national radio and TV infrastructure has been formed. There are currently three national satellite education channels in operation: CETV-1, -2, -3. CETV-1 is a comprehensive education channel. Besides assigning 2 hours per day for CRTVU courses, CETV-1 broadcasts general education news and policies, and instructional programs that meet public audience needs. About 85% of local TV stations transmit CETV-1's programs. CETV-2 is the major channel used for broadcasting CRTVU and other institutions' distance education programs. Each week, one hundred and fifteen transmission hours are assigned to broadcasting CRTVU courses. CETV-3 covers mainly Beijing and adjacent areas and it targets the K-12 population. All together, the three national satellite education channels deliver fifty-eight hours education programs each day (CETV, 2008). In 2000, China Education Broadband Satellite network (CEBsat) sponsored by CETV was successfully launched. Relying on fast transmission speed via satellite, CEBsat delivers radio, TV and IP technology-based

education programs nationwide (CETV, 2001). CEBsat soon connected with the national education Internet backbone network CERNET. Relying on this giant radio and TV infrastructure, numerous projects have been carried out, including the launch of the "Training of a Million Primary and Secondary School Headmasters" project in 1994, the "Registered Listener and Viewer" project in 1995, the "Intellectual Cultivation Reform and Open Education Experiment" in 1999, and the "National Modern Distance Education Resources Database" project in 2004, etc. Through these projects, quality education and training programs have been designed and developed by nationally well-known subject experts and learners have been given the flexibility of attending these programs at local learning center(s) and/or at home depending on each program's requirements.

By 2006, the RTVU system had established one Central RTVU, forty-four provincial RTVUs, nine hundred and forty-five branch schools at prefecture levels, one thousand eight hundred and forty-two learning centers and forty-six thousand seven hundred and twenty-four class units (CCRTVU, 2006b). The CRTVU offers seventy-five specialties and the regional RTVUs offer over five hundred specialties (Ministry of Education, 2008a). From 1992 to 2006, the RTVU system's student population has shown an average growth rate of 13.7%, which is about the same as the correspondence education growth rate of 12.8% during the same period. From 1990 to 2005, the RTVU system provided in-service training, certificate education, continuing education, teacher education and other training to almost nineteen million enrollments (CCRTVU, 2006b). By 2006, one out of four adult learners had taken RTVU courses.

Significant progress was also made during this period in the area of research designed to improve the radio and TV system. By the end of 2005, four hundred and fifty research projects on distance education had passed expert appraisal. Over sixteen hundred people were involved in various distance education research projects. The CRTVU's three research projects won the 5th National Higher Education Teaching Award. Most RTVUs had established research

units/centers. Various academic activities were organized on a regular basis. By 2005, the RTVU system had established five academic periodicals and thirty-two other publications, and published over ninety books. The CRTVU, representing China's distance education, became a member of international distance education associations including ICDE and AAOU (Ministry of Education, 2008b).

Internet Based Education System and the CERNET

During this period, the most significant technological innovation that had a fundamental impact on distance education development was the emergence of Internet technology. The Chinese government started to support research on Internet technology in the late 1980s. By the end of June 2008, 19.1% of China's population (253 million) had access to Internet. Of this number, 74.1% have Internet access at home, 39.2% surf the Internet at Internet cafes, 22.7% at work and 13.1% at schools (CNNIC, 2008, p. 10, p. 19). A national Internet backbone network dedicated to education and research, China Education and Research Network (CERNET), was formed in 1994. The CERNET was exclusively designed and constructed for education and research purposes with one backbone infrastructure and ten regional networks. As the national education and research backbone, the CERNET is listed in various government documents including *The 21st Century Education Invigorating Plan* in 1998, and *The Suggestions on the Development of the 11th Five-Year Plan for Economy and Social Development in China* in 2005, as a major technological platform component of the modern distance education project (Ministry of Education, 1998; The Central Committee of CPC, 2005). The core backbone network is maintained by a network center residing at the Tsinghua University and ten regional networks are managed by network centers located at ten research universities (CERNET, 2006). All research and education institutions are responsible for developing their own campus networks and

connecting to the global Internet via the CERNET. After a decade of commitment from governments at various levels and hundreds of education institutions, the CERNET has covered over two hundred cities in thirty-one provinces, more than fifteen hundred universities and research institutions are connected to the global Internet, and twenty million people have used it for education research purposes (An & Wu, 2005).

Taking advantage of the CERNET and encouragement from the government, Internet-based distance education has grown rapidly in the second half of 1990s in China. In 1996, Tsinghua University, one of the core research institutions involved in the construction of CERNET, took the lead in the advocacy of Internet-based distance learning. Early in 1999, MOE officially announced that Tsinghua University, Beijing University of Post and Telecommunications, Zhejiang University and Hunan University were the first group of educational institutions to pioneer Internet-based modern distance education (Tsinghua University News Center, 2005). Later that year, two more education institutions including Peking University and the Central Radio and TV University were added to the list. The very next year, thirty-one higher education institutions made their way to MOE's Internet education list. A national executive committee was nominated and a policy entitled *The Comments on the Support of Several Higher Education Institutions' Establishment of Internet Education Schools to Pilot Modern Distance Education* was promulgated for the purpose of guiding all these higher education institutions involved in the Modern Distance Education project in the direction that the government expects (Ministry of Education, 2000a). Technical standards for modern distance education were released in 2002 (Ministry of Education, 2002b, 2002d). The total number of higher education institutions delivering Internet education had increased to sixty-seven by the end of 2002 (See Appendix D) (Ministry of Education, 2002c). By 2006, the Modern Distance Education project had 2.79 million students an increase of 457.8% from 2003's half million (*China Education Yearbook* Editorial Dept., 2002, 2006). Internet-based programs have been

developed in eleven disciplines including philosophy, economics, law, education, literature, history, science, engineering, agriculture, medicine and administration. Ten years of development indicate that Internet-based distance education has greatly contributed to the construction of a learning society proposed by the government in the 1990s.

Education for All Projects Based on the Integrated Distance Education System

The aforementioned three distance education systems comprise an integrated national distance education system. Based on this system and inspired by the government's full support, various distance education activities have been carried out and education opportunities at different levels have been literally extended to every individual who has access to mail, radio, TV and Internet. The more innovative, the more education and training opportunities technologies open up to individuals. A lifelong learning system is emerging and a learning society is forming without regard to gender, age, ethics, social class, and physical location.

The CRTVU Intellectual Cultivation Reform and Open Education Experiment Project

The first noteworthy project was carried out in 1999–"The CRTVU Intellectual Cultivation Reform and Open Education Experiment" (Ministry of Education, 1999a). As was indicated by the name, the project employed the national RTVU system to deliver tertiary education. This project explored the feasibility of partnership between CRTVU and regular higher education institutions to deliver educational programs, and tested the national RTVU system's capability of doubling student intake by recruiting students two times a year (spring admission and fall admission). Admission is proficiency-based, and admission judgment is made based on the education portfolio students submit. The gate-keeping criteria include the

requirement that a student applying for a degree program have a diploma or equivalent education experience, and a student applying for a diploma education have high school, vocational/technical school or equivalent education experience. All courses carry credits, and students are expected to finish their study in eight years. Thirty-one diploma education programs and eighteen degree education programs have been developed (Ministry of Education, 2007b). From 2001 through 2005, the average admission growth rate was 24.5%. The 2005 enrollment was twenty million, which accounted for two thirds of the overall student population participating in modern distance education in that year, and composed 80% of the overall RTVU system's enrollment. 95% of the students were working adult students, and 25% were from the twelve Western provinces and administrative regions (Ministry of Education, 2008b). The project passed the mid-term evaluation in 2002, the final evaluation in 2007 and was renamed the "The CRTVU Open Education" in 2007 (Ministry of Education, 2001b, 2002a, 2003a, 2004a, 2007b).

Modern Distance Education for Rural Government Officials Project

This project was launched in 2003 for the purpose of improving rural government officials' political consciousness and modern management proficiencies. The target student population includes CPC members living in the countryside and especially rural government officials involved in the construction of the CPC in rural areas. All teaching resources are funneled through CEBsat, CCTV, Central People Radio Station and a special online project management system (see: http://www.dygbjy.gov.cn). Local CPC groups organize their teaching classes based on local needs. Teaching activities include multimedia-based group activities (computer courseware, VCD, Video tape, DVD, CD, audio tape, print materials, etc.), face-to-face-based instruction and field practice. The teaching plan designed for this project covers eleven areas including politics and theories, policies and regulations, marketing economy,

management in countryside, application of advanced technology in countryside, market information, basic science knowledge, hygiene in countryside, population management and birth control, culture and popular physical education and case study. Appendix E is a sample schedule of IP streaming video-based education programs. This project has gone through two rounds of major development. From 2003 to 2004, nineteen Ministries and Commissions of the State Council and one thousand and sixty-two counties and townships scattered throughout the four provinces of Shangdong, Hunan, Guizhou and Anhui, participated in its first round development. From 2005 to 2006, the project was expanded to twelve provinces and over one hundred and eighty thousand grassroots cadre education receiving sites were established. Five of the twelve provinces had built enough grassroots cadre education receiving sites to serve the whole province (National Modern Distance Education Network for Rural Government Officials, 2005; People's Daily, April 11, 2005).

Modern Distance Education to Primary and Secondary Schools Projects

In 2000, the Chinese government approved a "School-School-Connection At Primary and Secondary Schools" project. The goal was to connect about 90% of independent primary and secondary schools to the Internet in five to ten years (Ministry of Education, 2000b). The major charge of this project was to help primary and secondary schools in the Mid-West under-developed areas to connect to Internet. In 2003, the State Council convened a national work conference to discuss the problem. The outcome of this conference was the publication of *About the Decision of Strengthening Education at Countryside* in which a sub-project "Introduction of Modern Distance Education to Primary and Secondary Schools at Countryside" was established and special arrangements were made. By 2005, with the central government's 1.4 billion China Yuan Renminbi (CNY) (ca. U.S.$ 200 million) and local governments' 0.9 billion CNY (ca.

U.S.$ 130 million) funding, this project was carried out in eighteen provinces in the Mid-Western areas. Over twenty thousand multimedia centers were set up, fifty thousand education satellite receiving centers were established and seven thousand computer classrooms were built. This project benefited 27% of the primary and secondary school student population in the West and 21% in the Middle areas. National Central Educational Technology is the major teaching resource center of this project. They have developed over three thousand-hours of multimedia course wares covering nine disciplines, and video-based teaching resources covering eighteen disciplines. Over one hundred thousand schools can download free teaching resources via education satellite. Starting in 2005, the Chinese government decided to continue to invest 10 billion CNY (ca. U.S.$ 1.46 billion) on this project in next five years to further promote this project nationwide (*China Education Yearbook* Editorial Dept., 2005, 2006).

Modern Distance Teacher Education Projects

Teacher education has been a major component of China's distance education for a long time. Especially since the implementation of the nine-year compulsory education requirement at the end of the 1980s, the popularization of primary and secondary teacher education through distance education has received special attention and support from the Chinese government. The construction of the modern distance education system has greatly promoted teacher education. In 1999, MOE launched a "Training of Future Female Teacher" project to help female teachers improve their information technology proficiency. Besides financial support from the government, this project received 10 million CNY (ca. U.S.$ 1.46 million) funding from the HongKong Zhou Kaixuna Foundation (*China Education Yearbook* Editorial Dept., 2000). Another project, the "Primary and Secondary Teacher Continuing Education," was launched in the same year. This project had six sub-projects including new teacher orientation, in-service

teacher training, core teacher training, advanced degree education, computer technology education, and a training the trainer project. The goal was to provide training and continuing education to the then over ten million primary and secondary teacher in three years. As was planned, by the end of 2002, most primary and secondary teachers should have had no less than 190 study hours training and those teachers working in underdeveloped areas should have received at minimum one organized training (Ministry of Education, 2000c). Information technology training was a major component of this project, and the use of information technology to deliver training and continuing education remained important. The successor of this project was the "National Teacher Education Networking Consortium" project launched in 2003 with twelve institution and organization memberships (Ministry of Education, 2003b). The goal of the consortium was to take advantage of those normal education institutions involved in modern distance education development to create a three-layer national teacher education networking consortium: national teacher education networking consortium, regional teacher education networking consortium and local teacher education networking consortium. By 2005, the teacher student population of the consortium's eight normal education institution members had shown a 28% growth and the CRTVU Normal Education School became the leading provider of teacher education (Ministry of Education, 2005).

One Village One College Student Project

This project was launched in 2004 to improve the education level of people residing in rural areas. The basis of this project is that most college students coming from rural areas do not return to their hometowns because of comparatively poor living conditions and fewer career development opportunities. This project was a tentative solution to alleviate this problem. Students accepted to this project did not leave their residence areas. They took advantage of the

national modern distance education system to study at a distance. After receiving the required amount of course credits, they were awarded a diploma by MOE. The diploma awarded is equivalent to the diploma other students received through traditional education. By remaining in their rural residence, most students who graduated from this project had less opportunity to later leave because they had no chance of comparing rural education with urban education and rural education offices had more control over these students' job assignments on graduation. The CRTVU was the major education institution responsible for the operation of this project. Twenty-four regional RTVUs and sixty-four branch schools participated in this project as the education providers. Though named One Village One College Student, a local RTVU unit can definitely recruit more than one student as long as it can assure quality education. In 2004, 20 million China Yuan Renminbi (CNY) (ca. U.S.$2.93 million) were invested and one hundred villages were involved with the goal of having over two hundred thousand students benefiting from this project within five years (Wu, 2004). Five thousand students were enrolled in ten programs majoring in Crop & Livestock Management in the same year (*China Education Yearbook* Editorial Dept., 2005). By 2007, the CRTVU had developed eleven programs in nine disciplines, and about one hundred thousand students had benefited from this project (CCRTVU, 2007).

Modern Distance Farmer Education Projects

For years the Chinese government has recognized distance education's potential for helping to expand agriculture education in rural areas, and has carried out a series of projects to promote distance education for farmers. A radio and TV based agriculture school called the Central Agricultural Broadcasting and Television School (CABTS), for example, was established in 1980 to provide agricultural certificate education, secondary and post-secondary diploma

agriculture education. Many times, they also offered higher education collaboratively with higher education institutions to rural farmers. CABTS's establishment was attributed to the collaborative efforts of twenty-two Ministries and Commissions of the State Council and formed a multi-level distance education system for the purpose of delivering farmer education and training on modern technology, popularizing basic science knowledge and distributing agriculture-relevant policies, regulations and other information. To further strengthen farmer education, the Chinese government launched the "Green Certificate Project" in the early 1990s. CABTS served as the lead institution for this project. It delivers, on average, over seven hundred hours of agriculture programs through two CCTV channels every year (CABTS, 2008). In addition to CABTS' secondary and post-secondary education to the rural population is the RTVU system's provision of tertiary agriculture education. Liaoyuan School was established for this purpose within CRTVU in 1990 (CRTVU, n.d.). It works collaboratively with regular agriculture institutions to develop programs that are delivered through CETV-1 and CETV-2. After fifteen years of operation, Liaoyuan School has produced over twenty-five hundred TV programs and over six thousand hours of programs have been delivered via the CETV-1 and CETV-2 (*China Education Yearbook* Editorial Dept., 2006).

The Introduction of Modern Distance Education to Military Projects

Starting from 1999, MOE has started to cooperate with the General Staff Department of People's Liberation Army to deliver diploma and degree education to military officers and soldiers via the RTVU system. The Bayi School (see: http://www.81xy.com), established in 2000, is the product of their cooperation. Their targeting student population includes mainly on-duty military officers and soldiers but staffs working at military bases and soldier families with approval can also apply. By 2006, Bayi School had developed degree education in two

disciplines, diploma education in four disciplines and vocational/technical education in four disciplines. Their courses are broadcasted through CEBsat on a 24-hour rolling basis and military training and programs are delivered through TV channel four to five hours per day. The first group of four hundred and twenty three soldiers graduated in 2003. By 2006, over ten thousand military students received a professional certificate, a diploma or a degree through Bayi School (Bayi School, 2006). Another distance military school called the School of CRTVU-General Staff Department of PLA (see: http://www.zcxy.com.cn/) was divided from the Bayi School in 2001 to exclusively deliver education to military officers and soldiers (The School of CRTVU-General Staff Department of PLA, 2007). The School has thirty learning regions across the country with a total of one hundred and eight nine learning centers set up. By 2007, over five thousand military officers and soldiers graduated from the school and fifteen thousand enrolled.

Chapter 5

A History of Distance Education in the United States

Introduction

In the United States, the earliest documented endeavor to teach a course without the requirement of the student's presence is traced back to an advertisement that appeared in the Boston Gazette, a newspaper in Boston, on March 20th, 1728. In this ad, Caleb Phillips, a teacher of a new method of short hand, advertised that: Any "persons in the Country desirous to Learn this Art, may by having the several Lessons sent Weekly to them, be as perfectly instructed as those that live in Boston."

The idea of providing education opportunities to distance learners through the use of communication technologies, however, did not gain much public attention until the 1870s. Since then, whether booming or fading, distance education has been continually supported by the U.S. educators advocating education democratization.

In this chapter, progressing from the establishment of the Chautauqua Society to the popularization of the Wisconsin Idea, and finally to the current virtual learning movement, I trace the historical development of distance education's historical development in the U.S.

Early Correspondence Education(1870s to 1900s)

Following the Reconstruction Era, the United States achieved great social and economic growth. This period featured the rapid development of heavy industries. The development of nationwide railroad networks connected geographically isolated areas, which inspired the

development of the coal mining, steel, manufacturing and agricultural industries. Numerous industrial towns and cities were created in the Northeastern states, and thousands of farms were created in the Midwestern Plains states (Bureau of The Census, 1975). The emerging working class and farmers generated a great demand for training and education.

In the meantime, there had been a debate over what should be taught in adult education. Influenced by the Civil War and Reconstruction Era, many educators considered liberal education to be the core content of adult education. They believed that liberal education and culture study could train the minds of the U.S. civilian, enrich and elevate their spirit, and help to solve the issues that could not be solved by wars. Others argued that, considering the growing working class and farm population, more useful knowledge, such as manufacturing and farming skills, should be the focus of adult education. Taking advantage of printing technology and the rural free delivery service, educators on both sides took actions to further their beliefs, which triggered the education democratization movement. Several social organizations were established during this time period and they had significant impact on the history of distance education in the U.S.

The Chautauqua Institution

The Chautauqua Institution was founded in 1874 by John H. Vincent and Lewis Miller next to the Chautauqua Lake in southwestern New York State as an educational experiment in out-of-school, vacation learning (Chautauqua Institution, n.d.). The Institution dedicated itself to education, religion, science and the arts under the vision of creating "a place, an idea, and a force" (Bendiksen, 1983, p. 2). The Chautauqua ideal was, as Vincent wrote in his book *The Chautauqua Movement* (1886), that "Education, once the peculiar privilege of the few, must in our best earthly estate become the valued possession of the many" (p. 2). This mission, presented at an address entitled "The Democracy of Learning" at the second annual commencement

exercises of the Chautauqua Literary and Scientific Circle (CLSC) noted that "Democracy in religion and democracy in politics had prepared the way for democracy in learning, and this would prepare the way for democracy in industry, when labor would own capital instead of being owned by capital … ." The commencement exercises of the CLSC were recorded, in their entirety, in the *New York Times* published on Aug 19, 1883.

The Chautauqua Institution grew very fast. At its Assembly in 1878, Miller and Vincent expanded their adult education programs and established the CLSC. In 1888, the Chautauqua College of Liberal Arts (CCLA) was established with Dr. W. R. Harper as the first principal (Vincent, 1888). With a primary focus on liberal arts, the CLSC required four years of study: reading a prescribed set of books on history, culture, science, and literature; completing study guides; and meeting in small circles for discussion (Bendiksen, 1983). In 1883, the Chautauqua Institution was accredited by the state of New York to grant diploma and degrees. With a low membership fee (50 cents per year), the Circle had attracted many adults to their different programs, and reached its peak by the end of 1890s. Of the 250,000 enrolled students, 50,000 adults had received diplomas.

To meet the high demand of continuing education from the rural population, the CLSC also introduced learning by correspondence programs. These correspondence programs and their efforts to introduce and explore the correspondence education concept proved to have far-reaching influence. The CLSC correspondence program experiences were well utilized by Chautauquans. One noteworthy example is Dr. William. R. Harper, who created a correspondence education division as part of the establishment of the University of Chicago in 1890. This division was the first of its kind during that period of U.S. distance education history.

The Society to Encourage Studies at Home

During the same period, the "Society to Encourage Studies at Home" (1873–1897) was founded. The Society, inspired by the British society of the same name, was established in 1873 by socially minded scholar Anna Eliot Ticknor, who is known as the "mother of American correspondence study." The purpose of this Society was to remove the gender, economic disparity and geographical location barriers that were preventing women from education and life improvement (Society to Encourage Studies at Home, 1897, p. 211). The Society functioned independently and had no affiliation with any colleges and universities. For this reason, distance education scholars call it "The Silent University" (Bergmann, 2001).

The Society's target population was women residing in rural areas at a distance from big cities where most educational institutions were located. After years of efforts, the Society developed into a wide network of women teaching women by mail. By 1878, five years after the Society was put into operation, thirty-four states were already represented, and the number continued to grow in the following years (Society to Encourage Studies at Home, 1878). During its twenty-four years of operation, it delivered college level correspondence courses to seven thousand eighty-six students, and had over two hundred correspondence teachers (Society to Encourage Studies at Home, 1897, pp. 209-211).

The Society provided college equivalent education and all the courses were open only to women. A wide range of liberal arts and science courses were delivered, of which history (especially U.S. history), literature, and arts were among the most popular courses. One unique feature of the Society was the establishment of women's study clubs nationwide. By 1896, twenty-five study clubs were set up, with an average of fourteen persons in each club, including one in Canada (Society to Encourage Studies at Home, 1897, pp. 210-211). A lending library

was founded within the Society to serve as the focal point for distributing books, engravings, photographs, maps and other instructional materials to their correspondence students.

The Society was discontinued after Ticknor's death in 1897. The many factors contributing to the close of the Society were discussed at the Twenty-Fourth Annual Meeting, the last meeting of the Society (Society to Encourage Studies at Home, 1897). The sudden death of Ticknor is cited as the major factor, since the Society was not able to find another person who was capable of taking over the leadership from her.

Correspondence Education at the College Level and the University Extension Movement

Several pieces of legislation passed during this time period to promote college education also encouraged the exploration of correspondence education at the college level. In 1862, the Morrill Land Grant College Act was enacted to encourage the creation of land-grant colleges. This landmark legislation represents the first national effort for the promotion of liberal and practical education to working and middle-class citizens. "The leading object shall be, without excluding other scientific and classical studies and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts… , in order to promote the liberal and practical education of the industrial classes on the several pursuits and professions in life" (First Morrill Act, 1862, sec 4). Later, in 1890, a second Morrill Act was passed to require equal admissions to persons of color. In 1887, the Hatch Act was passed to encourage the establishment of agricultural experiment stations. Various categories of agricultural and veterinary research were developed under the direction of land-grant universities to support the national agriculture industry as well as to promote sound and prosperous rural life.

Following this legislation, and witnessing the high demand for training and education from the fast growing industrial and agricultural classes, education activists at colleges started to

think about the feasibility of extending college education to those who could not access residential college education. Inspired by the success of university extension established in England, U.S. education activists started the U.S. university extension movement in the 1880s. A special organization dedicated to this movement, the American Society for the Extension of University Teaching, was established in Philadelphia in 1890. This organization's major effort was to facilitate the university extension activities of its member universities and was responsible for much of the pioneer work in that area. By 1903, the Society had established seventy-nine extension centers and ninety-eight courses were delivered to over twenty four thousand people (Vincent, 1904, p. 857).

The University of Chicago took the leadership in this university extension movement. In 1890, with the endowment of John D. Rockefeller, the University of Chicago was structured around five divisions: The Colleges, The Academies, The Graduate Schools, The Divinity School, and The University Extension Division (Goodspeed, 1916, p. 133). Dr. William Rainey Harper, "the father of American correspondence study," the first president of the University of Chicago and also a Chautauquan, played an important role in the establishment of the Extension Division at the University of Chicago. Professor Edmund J. James, the first president of the American Society for the Extension of University Teaching, was appointed the director of the Extension Division. This was the first time in U.S. university history that a university extension unit appeared among the formal divisions of a university plan. The University of Chicago became the first university in the U.S. offering degree programs at a distance (Pittman, 1990, pp. 67-74; Rumble & Harry, 1982, p. 19). By 1903, the University of Chicago had built one hundred and forty six correspondence learning centers and offered two hundred and eight courses to over forty three thousand people at a distance (Vincent, 1904, p. 857). Earlier exemplary university extension activities included the growth of Mechanics' Institutes, Teachers' Institutes and Farmers' Institutes across the country. Herbert B. Adams, a professor of History at Johns

Hopkins University and also one of the early advocators of the U.S. university extension, reviewed the major university extension activities in his work *University Extension and its Leaders* (Adams, July, 1891).

The U.S. university extension movement did not go smoothly, however. Reber, reflecting on the U.S. university extension movement, indicated that twenty-eight attempts to introduce university extension were made at the end of the nineteenth century "a few of them with, but the greater number without, financial support" (1916, p. 185). The depression of the university extension movement at the end of the century, according to Reber, was due to the fact that most extension proponents were "visionary theorists, rather than experienced and practical educators" (p. 185). During the same time period, there were debates over the quality of university extension programs as well as the problem of insufficient administrative and financial support, all of which led to low student retention. Professor Adams listed five reasons for the failure of the U.S. university extension movement: "First, lack of suitable extension lecturers; second, lack of financial support; third, inability of university men to carry the extra burden of travel and teaching; fourth, the greater claims of academic service on college campuses, where enrollments were just then rapidly increasing; fifth, the development of less expensive ways of popular education" (Vincent, 1904, p. 859). The consequence of the depression of the university extension movement was the closure of many correspondence education departments (divisions). Many universities abandoned their university extension work entirely or continued it in a feeble fashion in the late 1890s.

Proprietary Correspondence Education and the International Correspondence School (ICS)

There was an early ascendancy of proprietary correspondence schools in distance education during the 1890s. This was due to the high demand for vocational education while

fewer sources were available from the public education sectors. This demand came from working adults in their twenties, who were impelled by the vision of job improvement and the possibility of leaving the blue-collar working class. Deterred from taking full-time formal education by the opportunity costs, these working adults were looking for part-time, low cost, time flexible, vocational education programs. Correspondence education offered at land-grant universities revolved heavily around agricultural extension programs that created opportunities for the success of private correspondence vocational schools.

The International Correspondence School (ICS) at Scranton Pennsylvania represented the proprietary correspondence schools during this period. In 1891, the *Mining Herald*, a daily newspaper published in the coal-mining district of Eastern Pennsylvania, developed a continuation of an instructional activity for preventing mine accidents in a question column. Based on the success and high participation enjoyed by this column, Thomas J. Foster, the editor of this newspaper, established the Colliery Engineer School of Mines to offer courses in mine safety though correspondence education. This school later became the well-known International Correspondence School.

ICS started with a provision of courses on mine safety issues and soon expanded to include courses for railroad and iron workers. Appendix F is a picture of ICS, a four-story medieval castle. After ten years of development, about two hundred and fifty thousand students had studied at ICS (International Correspondence School, 1900). One reason for ICS's success was its close ties to corporate management. The School contracted with many corporations to help them improve their workers' skills by discounting training expenses. Most corporations recognized correspondence schools like ICS by referring their employees to their correspondence courses, by deducting tuition fees through payrolls, and by using enrollment in these correspondence schools as a basis for promotion. The confidence the ICS gave to corporations is as its president promised:

> "Our greatest service to industry is in bringing a man through the ranks where he is employed. Our first aim is to assist men with initiative to qualify for advancement and usually this can be accomplished most effectively with the confidence of the employer and by cooperating with him in solving his training problems. Our close relations with employers would not be cordial if we promised other positions to students. The student grows up in the industry as a rule and is not transplanted to some other industry" (The Society for the Promotion of Engineering Education, 1931, p.141).

Between the 1890s and the 1930s, there were over two hundred proprietary correspondence schools like ICS that offered correspondence instructions and covered a wide range of topics on vocational subjects, including the Home Correspondence School of Springfield in Massachusetts and the American Farmers' School in Minneapolis. The proliferation of these correspondence schools had persuaded U.S. citizens that any occupation could be learned by correspondence.

University Extension Movement Revival (1900s to 1920s)

From the 1890s through the 1920s, the U.S. went through its Progressive Era. The government, recognizing the real need to expand land-grant universities' research-based knowledge and services to the public, made a great effort to satisfy this need through legislation. In 1914, for example, the Smith-Lever Act was enacted to fund nationwide cooperative extension service systems to extend land-grant universities' education and services to rural populations. Another example is the Smith-Hughes Act, passed in 1917, through which the government extended financial aid to the states in support of vocational education. These legislative acts triggered the revival of the university extension movement.

This time, the University of Wisconsin assumed the leadership of the movement. In 1904, Dr. Charles Van Hise, the president of the University of Wisconsin, declared in a speech, "I shall never be content until the beneficent influence of the University reaches every home in the state" (University of Wisconsin-Madison, 2006.) This explicitly stated a new mission for

universities in the U.S. –public service. An extension division was established to strengthen the university's public service. Later, Professor W. H. Lighty was appointed to establish a correspondence teaching system, which was very successful and set a good example for other states to follow. Several years later, Charles McCarthy coined the term "Wisconsin Idea" to describe this institutional move. Dr. Reed, the Dean of the Extension Division of University of Nebraska, gave very high credit to Dr. Van Hise and his public service effort by saying at the first International Council of Correspondence Education (ICCE) conference that Dr. Van Hise "brought with him from Johns Hopkins some young scholars who helped to change the educational currents of America" (ICCE, 1938, p.80). Many state universities visited Wisconsin before implementing their extension strategies. Dr. Reed recalled that "When in 1908 Nebraska was entering upon correspondence education, it was to Wisconsin that the committee journeyed to find ways for organization" (ICCE, 1938, p.80). Based on these efforts, the focus of most universities' extension programs was shifted from the provision of knowledge to the promotion of job improvement; from the diffusion of culture in academic subjects like history, literature, economics, and the natural sciences to vocational subjects. All extension activities were organized around the mission of public service. By the 1930s, thirty-nine universities had their correspondence programs operating out of their extension divisions (Bittner & Mallory, 1933).

This time the university extension movement had been carried out in a more organized manner. This progress was mainly attributed to the influence of social organizations. One such organization is the National University Extension Association (NUEA) established in 1915 (Penn State Special Collections, n.d.). The mission of the association is to develop and advance ideals, methods, and standards in continuing education and university extension. Its activities included a national annual conference and a number of publications. Another association is the National Home Study Council (NHSC) founded under the cooperative leadership of the National Better Business Bureau and the Carnegie Corporation of New York in 1926 (Distance Education and

Training Council, 2001). Dr. John Noffsinger served as the first executive director of NHSC. Unlike NUEA, whose members are mainly public educational institutions and whose mission is to assist its member institutions in organizing extension activities, the NHSC is an organization mainly comprised of proprietary schools and is an accrediting agency for promoting correspondence education at the proprietary sector. The third noteworthy organization is the Carnegie Corporation Foundation. The Foundation contributed to the revival of the university extension movement by funding scholarly research and activities. Alfred Lawrence Hall-Quest's *The University Afield*, a study of university extension activities in the 1920s, received financial aid from the Foundation. Exploring the status of university extension programs during that time period, the research outlined the issues that had been challenging correspondence study administrators in the 1920s. Many of the issues addressed in the research remain valid even in today's practice. Another study funded by the Foundation was conducted by Dr. John Noffsinger in 1926 with the title *Correspondence Schools, Lyceums, Chautauquas*. Hall-Quest's study had focused on university extension activities. Noffsinger's research, however, mainly focused on proprietary, profit-oriented correspondence schools. Yet another example worth noting is Walton S. Bittner and Hervey F. Mallory's *University Teaching by Mail*, published in 1933. In addition to supporting research, the Carnegie Foundation also organized activities to provide opportunities for people to connect. In 1924, the Carnegie Foundation convened the first adult education conference of its kind, which resulted in the establishment of the American Association for Adult Education and the *Journal of Adult Education* in 1926.

The university extension programs from the 1900s to the 1930s no longer had a clear connection to what had been known in the 1890s as merely the extension of university teaching. Neither its mission nor its participants were the same as those in the 1890s. The newly established extension programs were managed by professional extension directors under a more realistic goal, and the aforementioned associations had made the collective force of the extension

movement much stronger than before. Though issues like whether colleges should award credit for subjects and programs below the "college grade" delivered through correspondence education still existed, they were not as vital as before. Both the public and education institutions had recognized the necessity of extension programs in general, and correspondence education programs in particular, to fill in the gap between academic standards/colleges and the social needs of vocationally useful skills and knowledge. Gradually, many extension divisions created a more plausible instructional role in university extension programs: teaching faculty. This proved to be appealing to extension directors as it nicely skirted the issue of other academic responsibilities.

Distance Education from the 1930s through the 1980s

The Great Depression and World War II were the two major social events that influenced U. S. distance education in the 1930s and 40s and thereafter. The U.S. economy slowed down and reached its lowest point in the 1930s, which caused high unemployment and created financial hardships for potential students. This, on one side, forced individuals to learn new skills to increase reemployment opportunity, but on the other side, urged educational institutions to provide affordable and just in time education and training programs. Following the Great Depression was WWII. Following WWII was the need for several million veterans to learn new skills in order to be reemployed. This need was the inspiration for the enactment of the Servicemen's Readjustment Act of 1944 (G. I. Bill.) Another direct consequence of WWII was the birth of the "baby-boomer" generation, which increased the social demand for training and education opportunities from the 1950s through 1980s. All of these social events and influences, in combination with the emergence of various communication technologies, offered distance educators unprecedented chances to promote distance education at different levels across the nation.

Evolution of Communication Technologies

This historical period was a time of experimentation and innovation of various communication technologies for educational use. This significant development was attributed to WWII when the federal government was willing to spend large sums of money on the research and development of communication technologies for war needs. The later advent of the Cold War between the U.S. and the former Soviet Union and its respective allies, when the rivalry in communication technology development lasted for almost half century, further contributed to growth of these technologies. The potential for the use of communication technologies in education was soon discovered by distance education pioneers, and various efforts were made to use innovative communication technologies to deliver quality distance education.

The Development of Educational Radio

Radio-based broadcasting technology has been in use in the U.S. since 1910s. When the United States entered WWI in 1917, the federal government had strict control over the use of radio to prevent enemy spies from taking advantage of it, and only a couple universities were able to procure a license to research radio's potential for educational use. The first educational radio license was issued to the Latter Day Saints University at Salt Lake City, Utah in 1921. Other early university-owned radio stations included *Station WHA* at the University of Wisconsin, *Station WOI* at the Iowa State University, *Station WLB* at the University of Minnesota, *Station KOAC* at Oregon Agricultural College, and *Station WRM* at the University of Illinois (National Public Broadcasting Archives, 1990).

Educational radio station's peak development was from the 1920s through the beginning of the 1930s. Early in the 1920s, the Radio Division of the U.S. Department of Commerce started

to provide educational radio licenses to radio stations dedicated to the extension of educational opportunity to the public. By 1925, one hundred and seventy one educational radio stations had been granted licenses and assigned call letters (Federal Communications Commission, 1975, p. 2). Many of these educational institutions, including the University of Iowa, California State University, Florida State University, Indiana State University, Nebraska State University, and Massachusetts Division of University Extension, combined educational radio programming with correspondence instruction. During this period, many schools of the air were also established to broadcast K-12 educational programs to public school audiences (Saettler, 1990, pp.197-201). Examples included the Ohio School of the Air founded in 1929, the RCA Educational Hour established in 1928 with sponsorship from the National Broadcasting Company (NBC) and the American School of the Air in 1930 sponsored by CBS.

The development of the educational use of radio started to slow down at the end of 1930s. Though some two hundred and two educational radio licenses were issued to one hundred and sixty eight educational institutions during a sixteen-year period from 1921 through 1936, there were only thirty eight remaining by 1937 (Frost, 1937, p. 3). The failure of educational radio stations, according to Dr. Frost (1937), was attributed to poor station management, obsolete equipment, poor quality programming, high cost with low return, etc. The Federal Communications Commission thought it was because of the then growing competition from commercial radio stations, financial problems and frequency reassignments (1975). After WW II, the development of educational radio progressed very slowly and but never gained the significance it enjoyed in the 1920s. By 1979, there were only seventy-eight educational radio stations in operation (Corporation for Public Broadcasting, 1981). Of these stations, ten focused on the K-12 level, fifty-three on post-secondary levels and fifteen broadcast educational radio programs at both levels.

Government's macro-level administration, with no doubt, affected educational radio stations' growth. The federal government started to regulate the use of radio technology with the passage of the Radio Acts in 1912 and in 1927. The potential of radio for educational purposes was first proposed by the Federal Radio Commission (FRC) established by the Radio Act of 1927, and later reemphasized by the Federal Communications Commission (FCC) created by the Communications Act in 1934. An FCC report to the Congress noted "that broadcasting has a much more important part in the educational program of the country than has yet been found for it. We expect actively to assist in the determination of the rightful place of broadcasting in education and to see that it is used in that place" (as cited in Frost, 1937, p. vi). The FCC, however, did not recommend for the Congress to "allocate fixed percentages of radio broadcasting facilities to particular types or kinds of non-profit radio programs or to persons identified with particular types or kinds of non-profit activities" as they believed that "the interests of the non-profit organizations would be better served by giving educators access to costly and efficient equipment and access to an established audience" (Federal Communications Commission, 1975, p. 4). A special committee, the Federal Radio Education Committee (FREC), was created in 1935 to implement this FCC policy. Beginning in 1936, seeing not much success in building mutual cooperation between commercial broadcasters and educational organizations, the FREC asked for the reservation of special educational radio frequencies to protect non-profit educational agencies' use of radio. In 1967, the Public Broadcasting Act amended the Communications Act of 1937. In addition to the reiteration of the value of educational radio, it was the first time that educational organizations became eligible applicants for matching facilities grants from the government. The development of educational radio became one of the missions of the newly established Corporation for Public Broadcasting (CPB). CPB helped to establish National Public Radio (NPR), whose major role was to manage a national radio interconnection system and help to distribute educational programs to public radio stations throughout the

country. Regardless of the efforts made by the government at the macro-level, educational organizations' position in the competition with commercial broadcasters has never had fundamental changes as their development relies heavily on the availability of the funding from the government and other sources. FCC's study of fiscal year 1973, for example, revealed that "about 70% of educational radio's budget came from Federal, State and local government sources, and the remainder from public broadcasting sources, (i.e. CPB, NPR, and regional network funds), subscribers, business and industry, …" (1975, p. 17). The conflict between the Nixon administration and public broadcasting at the beginning of 1970s ultimately undermined government's support for public broadcasting (National Association of Educational Broadcasters, 1979). The development of educational radio started to decline thereafter.

The Development of Educational Television

Educational television came onto the scene in the 1930s. *Station W9XK* operated by the Electrical Engineering Department of the University of Iowa was one of the early broadcasting television stations granted an experimental license for educational TV programming (Iowa Digital Library, n.d.). *Station W9XK* had its debut in January 1933, one year after receiving the license. They telecast still images and used the University's radio station, WSUI, to provide simultaneous audio. The first series of TV programs they broadcast were lectures in elementary art from the Plastic and Graphics Arts Department. People with television receiving sets within 600 miles from Iowa City were able to watch these programs. These early educational TV programs shared the same curriculum with residence courses and were broadcasted two times per week. In the 1930s and 40s, the approach of most educational institutions to instructional TV was more experimental than practical.

The development of educational television was brought to a standstill during the war years, and was especially hard hit after the FCC froze television channel allocations in 1948. It was because of the flood of veterans into continuing education, and the social demand to absorb the postwar "baby boomers." that educational television was able to revive in the 1950s as an alternative way to relieve the shortage of teachers and limited teaching utilities. *Station WOI-TV* was one of the early FCC-licensed TV stations owned by an educational institution in the early 1950s (Special Collections Department, n.d.). Iowa State University broadcast college-level courses through this station. The inception of the station and its effective use of television for educational purposes encouraged similar initiatives across the country. The Pennsylvania State University built an educational television system that broadcast one-way video and two-way audio courses to over twenty classrooms during this period (Penn State World Campus, n.d.-b). Other pioneers included *Station WHA-TV* owned by the University of Wisconsin serving the Madison area, *Station KUHT-TV* owned by the University of Houston System serving the Houston, TX area and *Station WKAR-TV* owned by Michigan State University serving the Lansing, Michigan area (Joint Council on Educational Television, 1959). By 1959, all states had expressed strong interests in educational television, with many of them either at the stage of planning or in the process of constructing television facilities. Twenty-four states and Puerto Rico had a total of forty educational television stations on the air (Joint Council on Educational Television, 1959, p.3). The development of educational television reached its height in the 1960s and the development of several cross-state educational television networks were underway. The Eastern Educational Network was such a collaborative effort, and networked stations at seven Northeastern states. It was incorporated at the end of 1960 and became a large regional instructional television programs distribution network (National Public Broadcasting Archives, 1993b). The Midwest Program on Airborne Television Instruction (MPATI) was another cross-state effort that used airplanes to transmit instructional television programs to schools and

universities at the Midwestern U.S. MPATI was put in operation in 1960 and broadcasted educational programs mainly covering primary and secondary education (National Public Broadcasting Archives, 1993a). By the end of 1970s, there were about one hundred and fifty educational TV stations broadcasting instructional TV programs ranging from K-12 through post secondary education throughout the country (Corporation for Public Broadcasting, 1981, p. 37).

Like educational radio, educational television had struggled in the competition with commercial broadcasters for years and had learned from bitter experience that the government's interference was a must if educational television were to survive. To lobby the government to provide special support to educational television, a Joint Committee on Educational Television (JCET) representing seven national educational organizations was formed in 1950 (National Public Broadcasting Archives, 1993c). Ralph Steetle, the executive director of JCET, recalled that "Seventy-five witnesses testified; seventy-one favored the principle of reserving TV channels for education" in front of the FCC's general TV channel assignments hearings in 1950 and 1951 (1959, p. 427). Upon the collective efforts of JCET, school systems, colleges, state departments of education and other educational agencies, FCC set aside two hundred and forty two special channels for educational use in 1952. Fifteen channels were added to the list in 1959 (Joint Council on Educational Television, 1959). The social response to the government's positive attitude toward educational television was that many state and private agencies and foundations started to contribute in various ways to the development of educational television. "Many of the 18 ETV stations on the air in 1955 had received substantial gifts in equipment and funds from commercial broadcasters," said Steetle (1959, p. 430).

Besides assigning special channels for educational use, through legislation the government also proposed federal funds to support the development of educational television for training purposes. This legislation included the National Defense Education Act in 1958, the Educational Television Facilities Act in 1962, the Public Broadcasting Act in 1967 and the Public

Telecommunications Financing Act in 1978. In 1969, CPB formed the Public Broadcasting Service (PBS) as a national agency to manage and provide programming, distribution and representation services for educational television stations nationwide. Though various government funds were made available, they were all temporary funds for the purpose of providing an incubator for educational television to become self-sufficient. Most educational television stations were not able to become self-sufficient by the time the funds expired and the only choice left to them was either to become commercial or to dissolve. For example, the WOI-TV station owned by the Iowa State University was sold to Capital Cities Communications, Inc. in 1994 (Special Collections Department, n.d.) and the Midwest Program on Airborne Television Instruction (MPATI) was allowed to dissolve in 1971 (National Public Broadcasting Archives, 1993a). The development of educational television has never gone beyond the situation limited by the availability of funds from various sources. Much like the destiny of educational radio, the conflict between the Nixon administration government and public broadcasting at the beginning of 1970s led to less support from the government. The development of educational television slowed down in the 1970s.

Other Examples of Educational Technology Innovations

During this time period, other communication technologies were also explored for distance education use for the purpose of delivering audio/video enriched interactive quality education.

One such technology is telephone. Certainly telephone wasn't a new communication technology at that time, but its use for educational purpose had not been explored much until 1960s. In 1965, the University of Wisconsin, Madison, employed an Educational Telephone Network (ETN) to deliver postgraduate medicine education to physicians at remote sites.

Prerecorded lectures were delivered over ETN and live Q&A class activities were organized with groups of individuals assembled at different locations throughout the state. By 1967, eighty four listening stations were established in Wisconsin hospitals, courthouses, and university learning centers in forty one counties, and about one hundred and fifty programs were delivered through the network (McNeil, 1967). In 1973, music programs were offered through ETN. These programs soon became "one of many ETN series that reach over 20,000 Extension students a year" (Wedemeyer, 1975b, p. 83). In the ten years following the University of Wisconsin's ETN initiative, educational telephone networks had become especially popular in delivering medical education programs to remote sites at minimal costs. Other educational institutions developed similar educational telephone networks in other states including Alabama, Arizona, Utah, Missouri, Nebraska, New Jersey, South Carolina, Texas, West Virginia and New York (The Regional Medical Programs Collection, 1991).

Educational use of satellite technology came on the scene when NASA launched the ATS-six, the world's first education satellite, in 1974 (The Mission and Spacecraft Library, 1999). About the same time, the U.S. Office of Education (currently the National Institute of Education) developed the Educational Satellite Communication Demonstration project, through which government funds were allocated to support a series of Health/Education Technology (HET) experiments to extend education and health services through satellite to rural areas including Alaska, Appalachia and Rocky Mountain region (Cowlan & Foote, 1975). The Rocky Mountain Educational project involved the broadcasting of instructional programming to a constituency living in some fifty-six Rocky Mountain communities. The Appalachian Educational Satellite Project (AESP), based at the University of Kentucky, started in 1972 with the purpose of disseminating career education to teachers in the thirteen Appalachian states. This project was discontinued in 1975. But after a strong request from Appalachian region, the AESP project was resumed and expanded until 1979 when transitioned into a non-profit corporation

named the Appalachian Community Service Network (ACSN) (the Learning Channel) that combined satellite and cable television systems to deliver educational programs (Douds, 1982). The Alaska Education project was implemented to deliver community-oriented educational video programs to Alaskan schools. The Washington-Montana-Idaho-Alaska Regional Medical School program was conducted to disseminate medical education over a four-state region. With AST-six, all of these educational satellite projects engaged the use of two-way interaction allowing some of the sites to talk to the central studio by using satellite radio. Another example of using satellite communication technology to deliver education programs was the "Star Schools Program" sponsored by the Department of Education from 1988 to 2007 (U.S. Department of Education, n.d.).

Yet another innovative communication technology emerging during this period with unprecedented evolutionary impact on distance education's development into the twenty first century was the computer and networking technology. The University of Illinois was a pioneer educational institution in this area. They started to research computer technology in the 1950s. Their PLATO, built in the 1960s, is recognized as the first CAI (computer assisted instruction) system. The US Department of Defense was the government agency researching computer network technology for the purpose of helping their researchers at remote locations to effectively discuss and share their research products (King, 1972). They started their research as early as the 1960s and constructed the first computer network, Advanced Research Project Agency Network (ARPANET), in the late 1960s. The successor of ARPANET, NSFNET opened networking technology access to general educational institutions for educational use in the late 1980s. But since computer and networking technologies were mainly at research exploration and infrastructure construction stage, and there were not many hardware and software resources available, the educational potentials of these technologies were not fully discovered during this period. Many schools had purchased computers but the usage of these computers was very low

(Education Week, 1983, 1985; National Center for Education Statistics, 1982; Shavelson, 1984). There has been dramatic change since the 1990s when more and more educational institutions jumped onto the informational technology bus and developed their initiatives to deliver education via network to remote learning locations.

The Growth of Organizations Involved in Distance Education

The social organizations contributing to U.S. distance education development continued to grow alongside the growth of the distance education field. They served as a social platform for distance education activists to share experiences and resources, to communicate on issues and to make their voices heard by the government and the public. Many of these organizations also provided financial aids to support various distance education initiatives.

The National University Extension Association (NUEA) continued to grow during this period. By 1940, NUEA had fifty-two member institutions, of which forty-four reported that they were offering some kind of instruction by correspondence. Their enrollments were mainly in college credit programs. In the following years, member institutions continued to report that they had started to offer courses at various levels including college credit courses, college non-credit courses, high school courses and other courses, and had started to employ various technologies in their distance education programs. To help member institutions share and distribute good practices, resources and concerns, NUEA started to publish newsletters on correspondence study during the 1950s. During the 1980s it began to release an annual report on the status of distance education programs offered by its member institutions. In addition, NUEA helped to support varied research on distance education. In 1966, for example, it supported a study on the feasibility of developing a syllabus repository for member institutions (Powell, 1966). In 1980, NUEA changed its name to the National University Continuing and Adult Education Association

(NUCEA) and then in 1998 to University Continuing and Adult Education Association (UCEA). Its reputation as a national association promoting U.S. distance education was well recognized by the government and social public.

The National Home Study Council (NHSC), founded in 1926, had gained national recognition in two areas in this period (DETC, 2001, 2007; Griffiths, 2007). First, NHSC received recognition as a national association representing U.S. proprietary distance education before the Congress and the public on behalf of the U.S. home schools. In 1935, Dr. Noffsinger was named by President Franklin Roosevelt to attend the Sixth International Congress on Commercial Education. Later, the distance education practice code written by Dr. Noffsinger became the Federal Trade Commission's first "Trade Practice Rules for Home Study Schools" (DETC, 2001, p. 8). In 1974, NHSC testified against the Trade Regulation Rule published in the *FEDERAL REGESTER* by the Federal Trade Commission (Johnstone, 1974). In 1989, together with other associations and agencies, NHSC testified before the Congress in favor of Veterans' Education and Disability Legislation. In the late 1980s and the early 1990s, NHSC sponsored a series of occasional studies on various issues confronting home study's future development in the U.S. Secondly, NHSC became an accreditation organization that supervises and self-regulates its member distance education schools. In 1955, an independent nine-member Accrediting Commission was established to develop standards for quality distance education used by all its member institutions. Soon, this Commission was recognized by both the U.S. Secretary of Education and the Council for Higher Education Accreditation (CHEA) as a nationally recognized accrediting agency in the field of distance education. Since then, it has provided accrediting services to degree-granting institutions, high schools, postsecondary schools and military institutions. In 1994, NHSC changed its name to Distance Education and Training Council (DETC).

International Council of Correspondence Education (ICCE) is yet another influential distance education organization with a focus on global distance education development. ICCE started as a one-time conference in 1938 and soon developed into an international distance education association. Through activities like World Conferences on Open and Distance Education, regional conferences and a series of publications, ICCE committed itself into the promotion of the concept of "access," "quality," "research," "international representation" and "educational technology" in distance education (Bunker, 2003, p60). Many globally recognized distance education scholars served on its committee, including Charles Wedemeyer (1968-1972), Borje Holmberg (1975), and John Daniel (1985). Beginning in the 1960s, ICCE developed an affiliation with the United Nations through UNESCO to help promote international distance education (International Council for Open and Distance Education, n.d.). In 1982, ICCE was renamed to the International Council for Open and Distance Education (ICDE) to better reflect international distance education development.

In addition to the aforementioned academic associations, there were also other social organizations that supported the U.S. distance education development. The Carnegie Corporation Foundation that funded Dr. Noffsinger's study which caused the inception of the NHSC in 1926, continued to provide funding for distance education projects. Example projects include the Correspondence Education Research Project (CERP) in the 1960s that studied the past and present status of U.S. correspondence education to shed light on its future (MacKenzie *et al*., 1968), and, the Articulated Instructional media (AIM) project at the University of Wisconsin that introduced a new way of organizing distance education resources to better service distance learners (Wedemeyer & Najem, 1969). Besides serving as a funding resource, the Carnegie Foundation also made efforts to push the government to pass policies in favor of national educational technology development. In 1965, the Carnegie Commission was established to study the potential of the educational use of television. In 1967, the Commission released a report

entitled *Public Television, a Program for Action,* which prompted the government to pass the 1967 Public Broadcasting Act to provide federal aid for educational television operation. The Act led to the inception of the CPB. In 1979, the Commission published another report *A Public Trust: the Future of Public Broadcasting* proposing the establishment of a government public trust fund to further promote educational broadcasting.

Ford Foundation is another Carnegie-like national organization that played an instrumental role in the promotion of U.S. distance education during this time period. The Foundation established the Fund for Adult Education (FAE) and the Fund for the Advancement of Education (TFAE) in the early 1950s and continuously supported various research projects on the promotion of educational television for more than a decade (Ford Foundation, 1976). The aforementioned Eastern Educational Network and the Midwest Program on Airborne Television Instruction projects were two example projects funded by the Ford Foundation in the 1960s. Other examples include the National Educational Television Center (NET) established in 1952, the series of "Continental Classroom" courses delivered since the 1960s, the interconnected Public Television System established in the 1970s, and the new Satellite Interconnection System built in the 1970s. From 1951 through 1976, the Ford Foundation had invested about 300 million U.S. dollars to promote educational use of radio and television technologies.

The Exploration of Distance Institution Structure

During this time period, distance education in the U.S. had not only grown quickly and adapted a lot of innovative technologies to the enhancement and the enrichment of teaching and learning activities, it had also gone through some experiments with regards to the development of an effective distance education system. Dr. Charles Wedemeyer, the William H. Lighty Professor of Education, and the AIM project at the University of Wisconsin stood out on this topic as the

AIM concept not only set a milestone in U.S. distance education history but also directly contributed to the Open University movement around the world.

The AIM project was a four-year project funded by the Carnegie Foundation from 1964-1968 (Wedemeyer & Najem, 1969). In this project, Dr. Wedemeyer and his colleagues explored a systems approach to the running of a distance learning system. A sequence of interdisciplinary advanced courses in humanities, social studies and sciences were developed in a combination of short sessions, off-campus seminars and independent study-based learning activities (Wedemeyer, 1969). This project tested the idea of the combination of different communication technologies, teaching activities, self-directed learning activities and an organized learning support system to deliver good quality but low cost programs. Though the project failed, their idea of designing an open education system and its implication on independent study were well recognized by both U.S. and international scholars. After the AIM project, there were similar Open University experiments carried out in the U.S., such as the American Open University in the 1970s and 80s (University of Mid-America, 1981) and the American Open University in the early years of the twenty –first century (Daniel, 2004), but none of them survived.

While the idea of one national Open University system was not implemented well in the U.S. distance education, another type of organizational structure became very popular– consortium. A consortium is "an organizational arrangement of two or more institutions that work together in designing or delivering courses, or both" (Moore & Kearsley, 2005, p. 5). One such example consortium was the United States Armed Forces Institute (USAFI), located in Madison, Wisconsin. The USAFI, originally known as the Army Institute, a correspondence school initiated by the War Department, had been collaboratively operated by the War and Navy Departments as an all-service school open to personnel of all the armed forces since 1942. Though developing some courses, USAFI relied on their cooperating civilian educational institutions to provide the majority of the distance education courses, and all the courses were

accreditation assured. In 1943, the USAFI had offered about five hundred college and high school level courses to U.S. troops around the world and four hundred and fifty of these courses were provided by their cooperating educational institutions (Benbow, 1943). Other example consortia include the National Technological University (NTU) established in Colorado in 1984 with over fifty member educational institutions (NTU, 2003), the National University Telecommunications Network (NUTN) who partnered with about sixty educational institutions since 1982 (NUTN, n.d.) and the Western Governors University funded by the governors of 19 U.S. states (Western Governors University, n.d.).

High School Correspondence Education Development / Supervised Correspondence Study

A new player that emerged in this period of U.S. distance education history was the supervised vocational correspondence education to high school students. The idea of providing supervised vocational correspondence education to high school students was initiated by Sidney Mitchell, the superintendent of schools at Benton Harbor in Michigan. He proposed this idea in the early 1920s when he saw many students dropping out of high school without the vocational skills to earn a modest living. In the article *For The 90 Per Cent* published in *The School Review* (Mitchell, 1923), he offered logical reasoning for the feasibility of adapting vocational correspondence education to high school students, emphasized the potential of enriching the curriculum of small high schools with flexible vocational components with affordable instruction cost, and suggested that vocational correspondence education would be most beneficial to the ninety per cent of high school students who were at risk of dropping out of school before their expected graduation.

Encouraged by about one hundred leading educators, Mitchell soon carried out his vocational correspondence education plan (Childs, 1963, p. 24). He approached proprietary

correspondence schools, including the American School and the International Correspondence Schools, to secure courses that were later offered to an experimental group of ten students in 1923. Experienced teachers were selected to supervise the correspondence high school learners during regular school days. His experiment turned out to be very successful, and by 1934 his students were able to choose from over four hundred vocational subjects (MacKenzie *et al*., 1968, pp. 31-32). From 1923 through 1930, more than one hundred public high schools conducted similar experiments and there was a clear voice, both in publications and in the high school system, that encouraged the use of supervised correspondence instruction to enrich high school curriculum in the U.S. (Noffsinger, 1939, p. 190).

In addition to the high school systems, many state universities were inspired by Mitchell's experiments. They started to provide supervised correspondence education to high school students in the 1930s. The University of Nebraska was the first state university that jumped onto this as early as 1929. In two years, they successfully recruited students from eight high schools. This project later received financial support from the Carnegie Foundation for the Advancement of Teaching fund in 1932 and again in 1934, receiving five thousand dollars each time. Later, it became a Works Progress Administration (WPA) project, receiving funds from the government for about ten years (Childs, 1963, p. 26). The US army also joined this game. In the 1940s, thousands of army personnel benefited from correspondence high school education through the U.S. Armed Forces Institute (USAFI) and the U.S. Marine Corps (USMC) Institute. By 1990, thirty-seven member institutions of the NUEA offered correspondence courses at the high school level (National University Continuing Education Association, 1990, p. 80).

Distance Education Moving into Cyberspace (1990s to present)

Computer and networking technologies which emerged in the 1960s have undergone significant development since the 1990s. The Telecommunications Act of 1996 especially speeded up the process. This Act asked that FCC remove all barriers to the deployment of advanced telecommunications and information services to all families in the U.S., and that all telecommunications and information services providers provide non-profit organizations like schools and libraries with computing and networking services at reasonable and affordable rates. By 2003, over 60% of the U.S. households had computers (Newburger, 2001; The U.S. Census Bureau, 2003). By 2007, 83% of the U.S. adults had Internet access. 80.8% of them had Internet access at home and the rest accessed Internet at libraries, work, schools and other places (The U.S. Census Bureau, 2007). The National Science Foundation released its *Report of the NSF Task Force on Cyberlearning* on June 24, 2008, in which they noted that computer and networking technologies present "…the potential to transform education throughout a lifetime, enabling customized interaction with diverse learning materials on any topic... Learning does not stop with K–12 or higher education; cyberlearning supports continuous education at any age" (Borgman *et al*., 2008, p. 7). U.S. education, like many countries around the world, has welcomed the emergence of the Information Age.

Telecommunications Infrastructure Development and Services for Education

As was mentioned previously, the earliest computing and networking technology exploration can be traced back to the construction of the ARPANET in the late 1960s with the involvements of four universities, including UCLA, the Stanford Research Institute (SRI), the University of California at Santa Barbara, and the University of Utah (Beranek, 2000). Its

successor NSFNET, founded by the National Science Foundation in the late 1980s, continued to bring more and more educational institutions on board, and the national education and research telecommunications and information infrastructure continued to expand. An intermediate national education and research telecommunications and information infrastructure finally emerged in the mid-1990s, comprised of one NSFNET backbone system, several regional networks and many campus based networks (Frazer, 1996).

Many non-government organizations soon entered the scene in the late 1990s and have gradually strengthened the role of educational institutions in the continued growth of the education and research oriented telecommunications and information infrastructures and services. Some organizations have taken the role of assisting educational institutions to build computer network infrastructures, such as the Internet 2 and the National LambdaRail (Internet2, 2008; West, 2008). Others represent educational institutions to raise government and public awareness of the educational value of telecommunications and information services. EDUCAUSE, for example, comprised of over twenty-two hundred educational institutions, has been politically active since the U.S. Congress considered a revision of the telecommunications law in 2005 (EDUCAUSE, 2005, 2007, 2008). EDUCAUSE has also been recognized by the National Telecommunications and Information Administration (NTIA), a bureau of the U.S. Department of Commerce, as the authority registrar to manage the ".edu" domain since 2001.

Higher Education Virtual Campus Movement

Higher education institutions are not only an important participant in the development of telecommunications and information technologies but are also big users of these technologies. According to EDUCAUSE's most recent Core Data Service (CDS) study, nearly eighty percent of higher education institutions have included strategies and directions for IT development in

their campus strategic plans, and seventy-one point three percent have already had a stand-alone IT plan. On average, every ten students will have access to nine computers on campus while more than half of the students have their own computers. Ninety point eight percent of their classrooms were equipped with computers having Internet connectivity and ninety seven point nine percent have had broadband Internet connection in their residence halls. Ninety-three percent of educational institutions reported that they support at least one Course Management System (CMS) (Hawkins & Rudy, 2008, pp. 11-33). All these IT developments have not only strengthened institutions' management of on-campus teaching and learning activities but also, through the establishment of a wall-free virtual campus, empowered them with the capability of extending educational opportunities to the over 80% of the U.S. people who have Internet access.

Many educational institutions, private and public, profit and non-profit, two-year and four-year, working independently or collaboratively, started to build their virtual campuses during the 1990s. Examples include the Jones International University, the University of Phoenix, the State University of New York Learning Network (SLN) consortium, the Penn State World Campus, the Western Governors University, to just name a few. According to the series of status reports released by the US Department of Education between 1998 and 2005, distance education student population had doubled every three years from 1994 to 2001 and the majority of educational institutions had either already started to offer Internet-based distance education programs or had planned to start their Internet –based distance education programs soon (National Center for Education Statistics, 1997, 1999, 2002, 2005a). Many educational institutions also offer hybrid courses to residence students for reasons that include saving limited classroom spaces, helping residence students sort out class schedule conflicts, and bringing more Internet-based resources to the classrooms.

While higher education institutions have been working diligently on the construction of virtual campuses and on the extension of their educational programs nationwide and/or even

globally, the federal government has started to act as well, albeit cautiously, in favor of the promotion of telecommunications and information technologies based distance education. Through the Higher Education Amendments of 1998, a special project called "The Distance Education Demonstration Program (DEDP)" was authorized to help qualified higher education institutions be exempted from certain statutory and regulatory requirements so that they are able to provide remote learners good access to their education programs (U.S. Department of Education, 1998). Fifteen institutions were selected at the inception of the DEDP project in 1999, an additional eight institutions and one consortium were added in 2001. Five more institutions joined the DEDP project in 2003 and three of which offered only Internet-based instruction. By 2005, the DEDP project had twenty-four active participants including nine private for-profit institutions, seven private non-profit institutions, four public universities, three consortia and one public system. According to their third report to the Congress, the distance education programs offered through the project greatly increased distance students' access to education programs (U.S. Department of Education, 2005).

K-12 Education Virtual Campus Movement

The use of telecommunications and information technologies in the promotion of K-12 education has long been the focus of the government at different levels and a series of studies and reports has been conducted focusing on the instructional use of computer networks in K-12 education since 1980s (National Center for Education Statistics, 1984, 2005b; Office of Technology Assessment, 1987, 1988, 1989). The Telecommunications Act of 1996 and the No Child Left Behind Act of 2001 were two major governmental efforts in helping to promote the K-12 virtual campus movement across the nation. Two federal funds were established through these two Acts: the Universal Service Fund and the Enhancing Education through Technology

program. To be able to receive these funds, state governments, school districts, county offices of education and charter schools are mandated to have strategic plans on how they will effectively and efficiently deploy telecommunications and information technologies in their K-12 education development.

The *National Education Technology Plan 2004* indicated that, through the efforts of different parties, the K-12 virtual campus movement has gained significant progress over the past decade (U.S. Department of Education, 2004). The National Center for Education Statistics studied the development of Internet technology in K-12 education from 1994 through 2003 and concluded that ninety-nine percent of the U.S. K-12 schools have been connected to the Internet and every five students have had access to at least one computer at school (2005b). Other than schools' efforts to increase students' access to the Internet, the combined effects of other social parties' efforts have given most students access to the Internet through other locations including homes, libraries and other public locations (Corporation for Public Broadcasting, 2003; National Center for Education Statistics, 2003).

As the status of K-12 schools' moving into cyber space has become more and more mature, many virtual schools have been established. The Virtual High School (VHS) funded in 1996 is such an example (U.S. Department of Education, 2007, pp. 73-76). Based in Massachusetts, VHS was the product of a joint operation between the Concord Consortium and the Hudson school district. Their courses are delivered entirely online, ranging from the core and elective courses leading to a high school diploma to the Advanced Placement courses preparing students for college education. All the courses are designed by VHS teachers, following the National Education Association's guidelines for high-quality online courses. In 2008, VHS had over four hundred and seventy-five member schools from about two thirds of the states and thirty four countries, and over ten thousand students enrolled in their two hundred and ninety online courses (Virtual High School, 2008). Other VHS-like virtual schools include Colorado Online

Learning, Florida Virtual School, Iowa Online Advanced Placement Academy, Michigan Virtual High School, and others, (U.S. Department of Education, 2007). By 2004, more than one fourth of the states had established virtual campuses, and one in four K-12 schools has offered courses through the Internet. The major virtual school providers include state agencies, regional agencies and consortia and local public school districts (U.S. Department of Education, 2004, pp 34-35). The number of students taking online courses has been growing rapidly in the past six years. From 2002 to 2005, the overall K-12 online course enrollment has shown a sixty percent increase, from an estimated 0.3million to 0.5 million enrollments (National Center for Education Statistics, 2008, p. iv).

Modern Distance Education for All

Besides helping millions of citizens to access education at a distance and becoming an indispensable supplement to classroom education, Internet-based distance education has also demonstrated its capability of meeting the education needs of special populations.

Distance Education for Military Population

As mentioned previously, the use of distance education to deliver training and education to military personnel deployed worldwide is nothing new in the U. S. distance education history. Following the USAFI and DANTES experiences, a new Army distance education institution, eArmyU, was launched in 2001 to take advantage of the modern telecommunications and information technologies. The eArmyU, inheriting the partnership-based operational structure of its predecessors, developed a partnership with IBM Global Business Services, which provides hardware assistance and technology support, with thirty one educational institutions which

provide distance learning courses leading to about one hundred and forty five degrees or certificates, and with PeopleSoft which provides education support services (eArmyU, n.d.). Since its inception, the eArmyU has delivered over three thousand distance education courses to close to three hundred thousand U.S. soldiers deployed worldwide. Other examples of military distance education endeavors include the Navy College's partnership with twenty-eight colleges and universities to offer degree education to U.S. sailors (Navy College Program, n.d.) and the U.S. Coast Guard Institute's partnership with seventy colleges and universities to deliver higher education courses to over forty thousand men and women on active duty (Coast Guard Institute, n.d.). In a report the U.S. Government Accountability Office wrote to the Secretary of Defense detailing the Department of Defense's distance education initiatives, it was noted that the Army, the Air Force and the Navy have all had military distance education projects (1997).

Distance Education for Minority Populations

Telecommunications and information technology based distance education has also benefited minority populations. The U.S. Government Accountability Office (GAO) released a reported titled *Distance Education: Growth in Distance Education Programs and Implications for Federal Education Policy* on September 26 2002. In this report, they indicated that, though not many, there were Minority Serving Institutions offering distance education courses in the 1999-2000- school year. To further explore the development of distance education in Minority Serving Institutions, the GAO studied over four hundred and fifty Minority Serving Institutions eligible for the federal student fund programs and released two status reports in 2003 (The U.S. Government Accountability Office, 2003a, 2003b). Through the studies, the GAO had gained a better picture of the status nationwide, and reported that more than half of the federally funded Minority Serving Institutions delivered distance education courses in the 2002-03 school years.

Of those who didn't offer distance education, over half of them indicated that they would like to offer distance education in the coming future if they could secure funds and resources. Of the three types of Minority Serving Institutions (Historically Black Colleges and Universities, Hispanic Serving Institutions and Tribal Colleges) GAO studied, Tribal Colleges tended to push harder in the direction of developing distance education. The GAO's interpretation was that Tribal Colleges had more students than other Minority Serving Institutions who can not attend traditional classroom due to place-bound tribal and familial responsibilities. The reports also indicated that the two most common distance education delivery modes deployed by Minority Serving Institutions are Internet based online courses and live courses via videoconferencing systems. The reports further noted that the two major reasons that Minority Serving Institutions use distance education are the delivery of education to those place-bound students and the extension of education opportunities to older, working or married students (The U.S. Government Accountability Office, 2003a, p. 9).

Distance Education for Population with Disabilities

The rapid development of telecommunications and information technologies has not ignored the U.S. citizens with disabilities. The U.S. Department of Commerce's study in 2001 indicated that sixty-eight point four percent of the three to twenty four year-old population with disabilities had at least one computer at home and fifty six point seven percent of them had Internet access from any location; of the older population from twenty-five to sixty year-old with disabilities, eighty-two point eight percent had at least one computer at home and seventy-four point four percent had Internet connectivity (pp. 66-68).

Attributed to legislation, such as The Americans with Disabilities Act (ADA) signed into law in 1990 and the Telecommunications Act of 1996, most educational institutions in the U.S. have developed special institutional policies to prohibit discrimination against people with disabilities for their right to education. Therefore, distance education programs developed in a traditional education institution environment, abiding by the institution's policies, have actually already had an in-born promise, whether explicitly or implicitly stated, for students with disability. The World Campus, a distance education wing of Pennsylvania State University, has been striving for equal opportunities for people with disabilities to access their distance education courses for years: "Penn State encourages academically qualified students with disabilities to participate in its educational programs. We are committed to equal opportunity in our admissions policies and procedures and are dedicated to providing reasonable accommodations for qualified students" (Penn State World Campus, n.d.-a). The Chancellor's Office of California Community Colleges System is another example. In 1999, they created *Distance Education: Access Guidelines for Students with Disabilities* that served as the System-wide guideline for the assessment of the accessibility capability of all the distance education programs offered by the System's colleges (Chancellor's Office, 1999). Yet another example is The National Center on Disability and Access to Education. They held national conferences titled "National Summit on Disability and Distance Education" in both 2004 and 2005, and systematically studied the issues and challenges in accessing distance education for students with disabilities. Their suggestions included the establishment of an Accessibility Council within the U.S. Department of Education, the strengthening of the government organizations' leadership role in the development, implementation and assessment of various standards and policies, the direct involvement of accessibility advocates in school districts' educational plan development, and the promotion of universal design principles nationwide (The National Center on Disability and Access to Education, 2005).

Besides the aforementioned three special populations, distance education has served many other special populations as well. The Stanford University EPGY Online High School, fully accredited by the Western Association of Schools and Colleges, and the John Hopkins University—Center for Talented Youth are two online distance education providers offering gifted students opportunities to receive the type of education they deserve ranging from K-12 to advanced undergraduate programs. The MorningStar Academy, a Christian K-12 online home school accredited by the National Private Schools Accreditation Alliance, offers Biblically based Christian home schooling courses to home schoolers across the country.

Chapter 6

Comparison and Discussion

Introduction

The review of each country's distance education history reflects the numerous changes the field has gone through in both countries over the past 100 years. Some changes had positive effects in terms of promoting the field while others tended to slow down the field's development process. Whether these changes were positive or negative, the review of both countries' distance education histories indicates that the development curves for distance education have gone up over time in both countries. A close inspection of both countries' century-long distance education histories from a socio-historical approach, however, reveals that major commonalities and differences do exist in the two countries' distance education histories. In this chapter, the major commonalities and differences that have contributed to the field's positive yet diversified development trajectory in the two countries are discussed.

Changes in the Two Countries' Distance Education Development: Commonalities

The Emergence of a Distance Education Community

Community refers to a group of people who have commonalities. Community develops a sense of belonging and identity (Cohen, 1995). Each country's century-long distance education history witnessed the gradual formation of a community. This community is less obvious than communities built on geography or kinships since it has been developed based on shared interests

and experiences with distance education among dispersed social agents. However, it emerged naturally as a social phenomenon.

In both countries, the early distance education initiatives were undertaken by individual education activists. The commonality among these visionary educational activists is that they all considered technology a useful tool to reach out to those audiences who could otherwise not have access to education because of various geographic and socio-historical barriers. Later, more and more followers came onto the scene with the same passion and interest. They continued to support the integration of new communication technologies into the field, and, more importantly, as indicated in the distance education history in both countries, they started to connect with each other and had formed various distance education groups. This led to distance education's evolution from individual efforts to group efforts, which in turn brought distance education initiatives to much larger scales. Entering the twenty-first century, almost all social entities have participated in distance education at various levels. These social entities and their members, due to their shared interests, experiences and passions for distance education, have contributed to the emergence of a distance education community that was started by individual pioneers (See Figure 6-1).

In addition to its diversification, this community sees its growth through the expansion of its various components. In China, correspondence education and evening schools were once a privilege to a handful of national universities, but after years of reforms and development this privilege is now commonplace. By 1993, twenty-two provinces, cities and autonomous regions had developed various correspondence education units (State Education Commission, 1993). The issue is no longer whether a province, city or autonomous region has a correspondence education program, but rather how widely correspondence education has been accepted. According to the government's report in 2002, Shandong province itself had three hundred and eighty-four correspondence education centers/class units across the province (Ministry of Education, 2002f).

The RTVU system, China's higher education institution specifically designated for the delivery of distance education, has been expanded from one central and twenty eight provincial RTVUs in 1979 to one central and forty-four provincial RTVUs in 2008 (CCRTVU, 2006a).

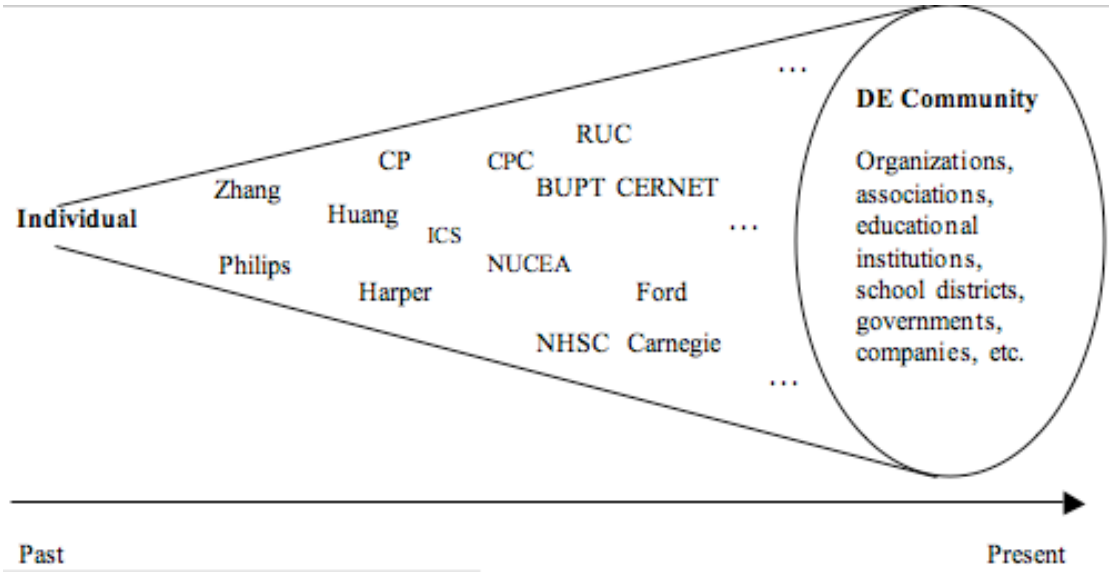


Figure 6-1: The Emergence of Distance Education Community

In the U.S., the expansion of the various components of the distance education community can be seen through the growth of the organizations promoting and supporting the development of distance education. National Home Study Council (NHSC) has grown from its original thirteen proprietary vocational and home study charter school memberships in 1926 to one hundred memberships in 2007, with the subscription of many degree-granting institutions, high schools, postsecondary institutions, and military institutions from twenty-eight states and seven countries (DETC, 2007). National University Continuing Education Association (NUCEA), an organization established in 1915 with eighteen land-grant university members and four private institution members, now has accredited higher education institution members across the fifty states and sixteen countries (NUCEA, 1990; UCEA, 2008). A series of surveys by the National Center for Education Statistics (NCES) charts the growth of higher distance education institutions

nationwide (1999; 1997; 2003). In a recent study done by the National Association of State Universities and Land-Grant Colleges (NASULGC), 67% of the presidents & chancellors of their two hundred and fifteen member institutions reported that online education was critical to their institutions' long-term operation (2008).

The Development of Distance Education Professionalization

A profession is a group of people participating in similar practices that require certain knowledge, proficiency, improvement, understanding and ethics (Kasher, 2005). After a century of development, distance education in both countries has developed into a true profession. Professionals involved in today's field of distance education have better access to advanced knowledge and skills than their counterparts in the early days of the field.

In its early stages of development, distance education in both countries was similar to a cottage industry. Proponents focused on course development from a "craft" approach (Moore, 1993, p. 1) and claimed that distance learners could receive the same knowledge as other students without a teacher's presence. Shanghai Fine Art Institute wrote in their student recruitment flyer that "特设函授一部，使学者得足不出户，不妨职业，而习成专门之学" (We have a correspondence teaching unit, through which, learners learn professional drawing skills without leaving home and career). Caleb Phillips wrote in his advertisement that "Persons in the Country desirous to learn this art [shorthand], may by having the several lessons sent weekly to them, be as perfectly instructed as those that live in Boston." For these early correspondence programs, one or several instructors developed course materials, mailed them to distance learners and periodically corresponded with learners. To achieve learning in this early form of distance education, according to William R. Harper, distance instructors needed to be "painstaking,

patient, sympathetic, and *alive*" and distance learners to be "earnest, ambitious, appreciative, and likewise *alive*" (1990, p. 5, emphasis in original).

After a century development, distance education has made significant progress and has gone through a professionalization process. This process has involved division of labor and specialization. Within educational institutions, design teams are created to develop technology-rich courses; learner support teams are set up to provide help to learners on both academic and non-academic issues, and, administrative and logistical units are formed to oversee the operation of the whole system. Table 6-1 is a comparison of distance education teaching models from a century ago and contemporary distance teaching models. Outside of educational institutions, various companies have emerged to provide specialized professional services. A majority of them are information technology companies that build learning management systems to store course materials and/or to host teaching and learning activities. Many others specialize in related services. In China, a nationwide learning support system, called "OPEN", was approved by the government in 2001. Based on the RTVU system, OPEN provides a full slate of learner support services ranging from recruitment through graduation. It has developed partnerships with thirty-one higher education institutions and established over one thousand learning centers across the country. In the U.S., companies like Prometric, CatGlobal, and Pearson Virtual University. Enterprises designate themselves as online learning evaluation/testing services.

Table 6-1: A Comparison of Distance Education Teaching Models from a Century Ago and Contemporary Teaching Models.

	Early Distance Teaching Model	Contemporary Distance Teaching Model
China	Commercial Press Correspondence School (1915) had two units that handled all correspondence education affairs. The course development unit had five sub-groups–business, math, language, literature, and English. Staffs at this unit designed course materials and corrected students' assignments; Correspondence student registration unit collected fees and sent course materials to students (Commercial Press, 1992, pp 744-746).	Modern Distance Education Institute of Beihang University (1999) has four units. Teaching & Learning Dept. manages student academic record, new student orientation, exam arrangement, course tutoring, and online tutor recruitment. Learning Resource Dept. manages learning resources and course design. Technology Dept. manages academic administrative system and LMS. Recruitment & Graduation Dept. is responsible for marketing, learning center development, certificate and degree award.
U.S.	Chautauqua Correspondence School (1878): "… while the work (correspondence course) bore the name of Chautauqua, it was really in the hands of individual instructors, who conducted the correspondence and received all the fees. There was no organization or uniformity of program and the officers of the Assembly exercised no supervision over the work" (Noffsinger, 1926, p10-11).	Penn State World Campus (1998) has five units. Academic Affairs oversees the all aspects of World Campus operation. Adult Learner Enrollment Services provides services from financial aid, academic advising, course registration and application, disability accommodation, to technical help. Learning Design unit designs and maintains courses. Evaluation, Program Planning and Management is responsible for program planning and management and for quality assurance. Marketing Communications advertises courses, maintains and improves World Campus social reputation and recognition.

The professionalization process has greatly raised the threshold of the field. To enter the field, advanced education becomes a prerequisite. The 2006 statistics report of China's RTVU system indicates that 92% of their full-time faculty have education at the bachelor degree level and beyond. At the beginning of 2008, CRTVU was seeking applications for twenty-five open positions ranging from faculty to administrative staff roles. Four out of the nine faculty positions required a doctor's degree and the rest required a master's degree or higher education experience. In the U.S., NUCEA's study indicated that most of their member institutions required their chief

officer to have an earned PhD degree and senior officers a master's degree or higher education (Moore, 1980). DETC surveyed 67 of its accredited distance education institutions (2007) and the survey result was consistent with the trend discovered earlier by Moore. The degree-granting institution participants, for example, indicated that 53% of their distance education instructors had doctoral degrees. In addition to advanced knowledge, to remain in the field, one is expected to maintain satisfactory professional competencies. The following is an excerpt of the professional competency descriptions that Penn State World Campus expects of its instructional designers. Similar competency descriptions exist in all contemporary distance education institutions and companies.

> Instructional designers (IDs) are responsible for portfolios of courses–new courses, courses in revision, and courses in maintenance. IDs work collaboratively with faculty regarding distance education pedagogy and the use of technology in online courses. Ultimately, decisions related to the design and development (although not to the academic content or instructional process) of online courses rest with the instructional designer of the course.
>
> Instructional Designer Desk Job Description [Main categories]:
>
> 1. Leadership/Problem Solving
> 2. Learning Systems Theory–ISD Model, ADDIE Model, Learner Characteristics
> 3. Learning Theory
> 4. Online Technologies/Tools
> 5. Assessment Strategies and Theory
> 6. Distance Education Theory

The professionalization process also sees the formation of group norms of conduct associated with each country's distance education development. In China, the group norms of conduct are written by the government and its agencies, and over the years, policies have changed with regard to the conduct expected of institutions of distance education. The U.S. government, on the contrary, does not exercise sole control over distance education. Many organizations develop their own norms of conduct to regulate their member institutions. For example, DETC, formerly National Home Study Council, with the purpose of promoting "sound educational

standards and ethical business practices within the correspondence field" (n.d.), adopted its own standards for the accreditation of home study schools. Together with six regional accreditation organizations and many national and specialized accreditation organizations, DETC has formed a collective force to assure that U.S. distance education institutions are engaged in fair competition for common goodness and provide high quality services.

The Growth of a Discipline

Both countries' century-long distance education histories have seen the proliferation of academic platforms specifically developed for distance educators to conduct and share their studies, thoughts and experiences. These academic platforms, according to Becher and Trowler (2001), are the indicators of a discipline. The typical academic platforms being utilized by distance education scholars in both countries are publications, conferences, organizations and academic programs.

Publication is the platform by which distance educators communicate with each other through writings. The most valuable academic publications include peer reviewed journals and books. In China, there were few such publications until after multi-media technology-based education was promoted nationwide in the late 1970s. The National Center for Educational Technology began publication of *Zhongguo Dianhua Jiaoyu (China's Educational Technology)* in 1980. This journal focused on the use of multi-media technology in both traditional and distance education settings (*China Education Yearbook* Editorial Dept., 1984, p. 564). A group of periodicals dedicated to distance education emerged with the establishment of the national RTVU system. Scholarly books on distance education were first seen on distance educators' bookshelves in the late 1980s. By comparison, the U.S. has a much longer history of scholarly

publications on distance education. Table 6-2 lists examples scholarly publications in the two countries.

Table 6-2: Examples of Scholarly Publications in the Two Countries

China	Journals *Zhongguo Yuancheng Jiaoyu (China Distance Education)* (sponsored by China Central RTV University) *Xiandai Yuanjuli Jiaoyu (Modern Distance Education)* (sponsored by Heilongjiang RTV University) *Kaifang Jiaoyu Yanjiu (Open Education Research)* (sponsored by Shanghaishi Jiaoyu Weiyuanhui) Books Xingfu Ding's *Yuanjuli Gaodeng Jiaoyuxue Daolun (Introduction of Higher Distance Education)* (1988) Jianshu Zhou's *Shijie Gaodeng Hanshou Jiaoyu Gaiguan (Overview of International Higher Correspondence Education)* (1988) Xingfu Ding's *Shijie Yuanjuli Gaodeng Jiaoyu Gaiguan (Overview of International Distance Education)* (1990) …
U.S.	Journals *The American Journal of Distance Education* *Journal for Asynchronous Learning Networks* *Quarterly Review of Distance Education* Books Bittner & Mallory's *University Teaching by Mail* (1933). Wedemeyer's *Brandenburg Memorial Essays on Correspondence Instruction I and II* (published in 1963 and 1966 respectively) MacKenzie, *et al.'s Correspondence Instruction in the United States* (1968). Moore and Kearsley's *Distance Education: A System View (1996, 2005)* …

Conferences and symposiums are the platforms by which distance education scholars share their thoughts, research and experiences through presentation and interaction. In China, conferences and symposiums in the early years were mainly convened by the government. Their main purpose was the dissemination of policies, collection of information on distance education practices at different locations and suggestions for improvement. Entering the new century, along with the rapid increase in the number of distance educators, more academically-oriented conferences have emerged. By comparison, the U.S. has a long tradition of distance education organizations convening conferences and symposiums. These conferences and symposiums are

more academically oriented. Attendance is voluntary and interest-based, and therefore attracts a much broader audience, ranging from novices to well-known scholars. Table 6-3 gives examples of conferences and symposiums in both countries and Table 6-4 is a comparison of the themes of the two major distance education conferences in the two countries.

Table 6-3: Examples of Conferences and Symposiums in Both Countries

	Conference	Organizer	Purpose
China	*The Higher Correspondence Education Symposium* since 1965.	MOE	More policy and practice oriented
	China International Distance Education Conference since 2002	*Zhongguo Yuancheng Jiaoyu* (journal)	Policy, practice, research technology, and international collaboration
U.S.	*American Symposium on Research in Distance Education* (1988, 1990)	ACSDE (American Center for the Study of Distance Education)	Both academic and practice oriented
	Annual Conference since 1915	UCEA (formerly NUEA)	
	Annual Conference since 1938	ICDE (formerly ICCE)	
	Annual Conference since 1926	DETC (formerly NHSC)	
	Annual Conference since 1985	University of Wisconsin-Madison	

Table 6-4: A Comparison of the Published Conference Themes

China–China International Distance Education Conference (2007)
• Chinese distance education development, trend and emerging issues • Higher continuing education and Internet-based education development, trend, practices and strategies • Educational reform vs. Radio & TV university development • Digital learning harbor–the future of Chinese distance education • Corporate-based online universities • Public learning service system–the innovation of educational service • The functions and potentialities of off-campus learning centers • Global e-learning successful examples • The prospect and opportunities of Internet-based vocational education • Community education development in information era
U.S.–Annual Madison Conference on Distance Teaching and Learning (2007)
• Critical success factors and innovative practices in distance education & training. • The key components of effective applications: needs analysis, course design, teaching

- methods, active learning, learner support, management, policy, and evaluation.
- Successful approaches, strategies, and techniques.
- Active teaching/learning methods for effective engagement, motivation, and performance outcomes.
- Major issues, new developments, and trends in distance education.
- Knowledge about teaching/training at a distance.
- Networking among distance educators, practitioners and administrators.
- Share of program resources via technology.

Academic association is the third type of platform that indicates the growth of a discipline. These associations have constitutions and by-laws by which they conduct and oversee academic activities including publications, conferences, seminars, workshops and research projects. China had no academic association dedicated to distance education until the middle of the 1980s (*China Education Yearbook* Editorial Dept., 1984). The Institute for Distance Education Research, based at the Central RTV University and established in 1985, is the first association that was established to oversee academic activities in distance education. By comparison, the U.S. distance education associations have emerged as the U.S. distance education field has grown. They have organized all kinds of academic activities and have played an instrumental role in U.S. distance education history. Table 6-5 is a list of example academic associations established during different time periods.

Table 6-5: Examples of Academic Associations in Distance Education

	Academic Associations
China	The Institute for Distance Education Research (1985) Regional distance education research institutes (late 1980s) China Education Technology Association (1991) Cooperation Conference of Teaching Resources (2002) National Coordinating Group of Higher Distance Education (2000)
U.S.	University Continuing Education Association (1915) Distance Education and Training Council (1926) International Council for Distance Education (1938) United States Distance Learning Association (1987) American Association for Collegiate Independent Study (1993) EUCAUSE (1998)

The fourth platform is the development of academic programs focused on DE as a discipline. This is the major platform through which the field cultivates young distance education scholars. In China, such academic programs started to grow in the 1980s when experience and knowledge had been accumulated through the intensive development of correspondence, radio and TV technology-based DE from the 1950s to the 1980s. After years of preparation, undergraduate programs on radio and TV technology were piloted at several universities. In 1986, the Academic Degrees Committee of the State Council approved three universities, including Beijing Normal University, Hebei University and Huanan Normal University, to develop master programs on educational technology. By 2001, a national survey indicated that there were over sixty universities offering undergraduate programs on education technology (Huang, 2003). About half of them offered master's degrees and four offered PhD degree programs. Distance education is listed as a major component in the curriculum for these programs, and a research emphasis is promoted for those students pursuing a master's and/or doctoral degree. In comparison, U.S. scholars started to offer courses on distance education more than a decade earlier than Chinese scholars. Dr. Charles Wedemeyer's series of faculty lectures on correspondence education in the early 1960s and his series of seminars in independent study in the early 1970s, both at the University of Wisconsin-Madison, were the first of its kind courses on distance education. In the late 1980s more and more higher education institutions in the U.S. began to offer courses on distance education that led to either a certificate or a degree. Dr. Connie Dillon, professor of Educational Leadership and Policy Studies at University of Oklahoma, compiled a list of thirteen universities that offered distance education programs (1992). Distance Education Clearinghouse maintained by the University of Wisconsin-Extension has a list of distance education degree and certificate programs and providers (University of Wisconsin-Extension, 2007). Table 6-6 and Table 6-7 are comparisons of the curricula of two degree programs from both countries that have a distance education component.

Table 6-6: Beijing Normal University's Educational Technology (EdTech) Program

Degree	Major	Study Area	Curriculum
Bachelor's	EdTech	Educational Technology	Instructional Design, Introduction of DE, Multimedia Technology Theory and Practice, Education Evaluation, etc.
Master's and Doctoral	EdTech	Nine research areas: EdTech Theory, Instruction Design, Knowledge Media, Information Technology, Integration of EdTech with Course Development, Digital Learning Environment and Resources, etc.	Introduction of DE, Educational Technology, Instructional Design, Key Technologies and Their Applications in E-Learning, Theory and Practice of E-Learning, Theory and Practice of DE, Development of Theory and Applications in Educational Technology, etc.
Master's	DE	Four research areas: DE Theory, Online Learning and Cognition Development, Learning Environment and Resources, Distance Education Economics and Management	Teaching and Learning in DE Adult Education, Instructional Design and Course Development, DE Foundation, Theory and Practice of Learning Support in DE, Quality Management for DE, Digital Learning Environment and Learning Resource, Research Methods in DE, Design and Development for Online Courses, Introduction of Economics for DE, New Media and Technology in DE, Project Management in DE, Seminar on DE

Table 6-7: University of New Mexico's Organizational Learning and Instructional Technology (OLIT) program

Certificate/ Degree	Major	Study Area	Curriculum
Certificate	OLIT	eLearning	Theory and Practice of Distance Learning, Culture and Global eLearning, eLearning Course Design, Management of Learning Systems
Master's	OLIT	Distance education	Besides the courses listed above, other advanced courses on distance education include: Instructional Design, Management of Learning Systems, Management of Distance Education, Theory and Practice of Distance Learning, Instructional Television, eLearning Course Design, Culture and Global eLearning
Doctoral	OLIT	Distance Education	Besides the courses listed above, other advanced courses on distance education include: Advanced Instructional Design, Research in Distance Education, Advanced Instructional Technology Seminar

The Diversification of Technologies Integrated in Distance Education

As distance education relies on technology to support remote teaching and learning activities, the development of the various technologies and their potentials for distance education use are always under study by distance education scholars. In fact, the majority of researchers studying distance education development tend to segment its history based on the most popularly used technologies of the time. This approach is "not only to follow convention, it is almost certainly the simplest way of approaching the task" provided that we understand appropriately the relationship between technologies as a tool and distance education development as a broad discipline (Moore, 2003, p. 3).

Figure 6-1 is a mapping of the communication technologies deployed in China's and the U.S.'s distance education histories on a time axis. China and the U.S., two countries in opposite hemispheres, have introduced the same types of communication technologies in the same

sequence. The shared general development trend begins with print technology that supports only asynchronous and individual-based distance teaching/learning activities, following which both countries have deployed a great variety of technologies in their development of distance education. After a century of development, they both have achieved the capacity to build technology-rich distance learning environments that support a variety of distance teaching/learning needs: asynchronous and synchronous, individual and group-based, as well as single media and multi-media integrated.

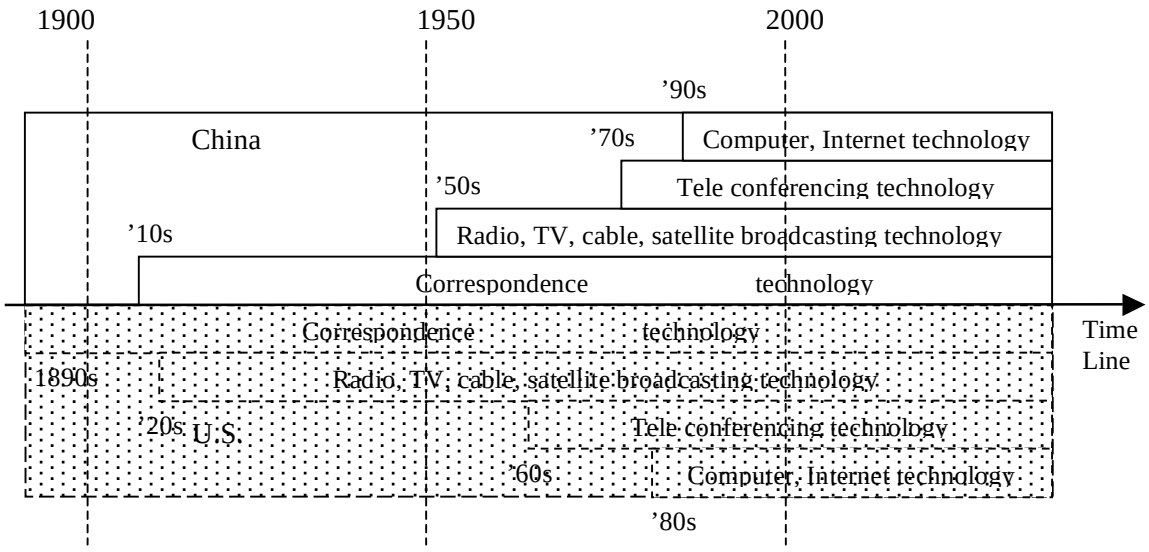


Figure 6-2: The Timeline of Distance Education Technologies Used in China and the U.S.

As their readiness for the adoption of different technologies varied depending on their socio-historical contexts, both countries have brought technologies to their distance education development at different speeds, as illustrated in Figure 6-2. In China, printing was the major technology in use in distance education before the 1950s. This, as indicated in previous chapters, was due to the unstable social political situation. Since the 1950s when the Communist Party of China consolidated political power, technologies have been adapted to distance education

development at an unprecedented speed. Other technologies have been brought into distance education at an average rate of one technology each twenty years. In comparison, the U.S. has brought technologies into their distance education development at a much more stable speed. From printing technology to Internet technology, its adaptation of new technology is at the average rate of one technology every thirty years. This means China has accomplished in about fifty years what took a century in the U.S. One major reason accounting for this difference appears to be the direct involvement of the Chinese government, which was able to pull resources from the whole society in a short period of time to support a prioritized project that was considered critical to overall socio-economic development. In the U.S., progress in the field is more deliberate and depends on the accumulation of enough resources and non-official support to move to next level of development.

The Social Recognition of Distance Education

Education is the major channel through which people receive knowledge, skills and necessary credentials to live their lives and to contribute to social development. But many people, constrained by factors like occupation, family, physical location and social class, do not have access to traditional brick and mortar-based education and are forced to give up the opportunity for a traditional education. Distance education, utilizing communication technologies, literally gives people a chance to break these barriers and gain or regain access to education. After a century of practice, the social value of distance education has been well-recognized and welcomed by society. Distance education has been contributing to socio-economic development in both countries in various ways and serving a variety of social populations (See Table 6-8).

Table 6-8: Distance Education Social Recognition

Distance Education Category	China	U.S.
Higher Education	Since 1930s	Since 1890s
Adult Continuing Education	Since 1900s	Since 1870s
K-12 Education	Since 2000s	Since 1920s
Military	Since 2000s	Since 1940s
Other Education and Training (Farmers, workers, teachers, women, minorities, disabled population, inmates, etc.)	Since 1900s	Since 1870s
Special category (disaster response)	Since 2000s	Since 2000s

Considering that the history of distance education in both countries is a century long, three of the above categories stood out during my comparison. First, the U.S. has a much longer distance education history in K-12 education. The earliest high school distance education initiative could be traced back to the 1920s when Sydney B. Mitchell, the superintendent of schools in Benton Harbor, Michigan proposed the concept of "supervised correspondence instruction" (Mitchell, 1923, 1940). In comparison, China's high school distance education started in the beginning of the twenty-first century with the launch of two large government projects–中小学"校校通"工程 (The K-12 School-School Connection Project) and "农村中小学现代远程教育"工程 (The K-12 Modern Distance Education in Rural Areas Project) (Ministry of Education, 2000; State Council, 2003). The reason for this difference can be found in the differences in the education systems–China's education system has a much more rigid pre-determined curriculum than the U.S. education system, and thus, has less opportunity for earlier exploration of innovative teaching strategies but has faster speed of adapting new technology once the new technology is proven to be effective.

Secondly, U.S. military distance education history is also much longer than China's. Its history dated to the 1940s with the establishment of the United States Armed Forces Institute (USAFI) (DANTES, 2007) while China's military distance education history started with the

establishment of BaYi School in 2000 (Bayi School, 2006; *China Education Yearbook* Editorial Dept., 2001). In addition to the autonomy of different groups in the U.S. education system, the U.S. government's deployment of their soldiers around the world might also contribute to this history. It uses distance education to break time and location barriers to deliver education and training programs to U.S. soldiers abroad.

The third category that deserves a little bit more exploration is the special category of disaster response. The use of distance education in this capacity occurred recently in both countries. In China, SARS swept across the entire country in 2003. To cut the spreading channels of virus, most school systems were closed. To minimize the educational loss, many schools deployed distance education and their students were able to continue their study without leaving home (Beijing Municipal Education Commission, 2003a, 2003b; Xie, 2003). In the U.S., distance education has also been used to maintain academic continuity in response to natural disaster. In August 2005, Hurricane Katrina struck coastal Louisiana and areas around New Orleans. Most campuses in these areas were flooded and thousands of students were displaced. To help these students to continue their studies and also to build a "bridge" for them to go back to their home institutions for the spring semester, a group of Sloan Consortium (Sloan-C) member institutions quickly stepped up and initiated the "Sloan Semester." As Bruce Chaloux, the director of SREB Electronic Campus and also one of the major people involved in the launching of the "Sloan Semester" recalled, "twenty-one days after Katrina struck the Gulf Coast, an entire online 'institution' had been established with a full complement of online courses, online application and registration services, student advising and financial aid–and students were registering for free online classes" (NASULGC, 2008). About eight hundred online courses developed by one hundred and thirty-five Sloan-C member institutions from thirty -six states enrolled one thousand five hundred and eighty-seven displaced students (Sloan Consortium, 2006). As distance education's ability to respond quickly to disaster has been discovered only

recently in the early twenty-first century, how it will contribute to the construction of a national disaster quick response system or mechanism is still unknown. Ten years from now, reflecting on the contribution of distance education in both countries to an economic recovery from the current global economy downturn, we might have a better understanding of the social function of distance education.

Changes in the Two Countries' Distance Education Development: Differences

Open University–A Social Entity, a Social Concept

Inspired by the successful experience of UK Open University, many countries established their own Open Universities in the 1970s and 80s. They were attracted by the features of Open University–a systems approach to function and an economies-of-scale approach to growth. More importantly, they saw in an Open University a promise of achieving the mission of "Open Education" (Wedemeyer, 1973c, pp. 3-4) for all. This international distance education development trend has been seen in China's distance education history through the growth of the RTVU system since the 1980s, but failed to find a place in the U. S. distance education development even though U.S. distance education scholars were among the first group of pioneers testing the "Open University" idea back in the 1960s.

China's Open University: The RTVU System and Chinese Government

The Radio and TV University (RTVU) system is China's Open University. Chinese government has played an instrumental role in its thirty-year development. From its birth through

its different development stages, the RTVU system's history is filled with the government's commitments and direct involvements.

Direct Government Involvement

As was discussed in the chapter on China's distance education development, the RTVU system was established as one of the government's innovative self-salvation movements against the disastrous consequences of the Culture Revolution (CR). Carrying such a historical mission, the RTVU project became a political task of the government and was promoted using a "top-down" process.

The original proposal to establish a national RTVU system (See Appendix G: The Proposal for the Establishment of the RTV Universities) and the chronology of the CRTVU's history were overseen by two central government senior officers: Xiaoping Deng, the vice-chairman of Central Committee of the Communist Party of China (CPC) who initiated the Open University idea, and Yi Fang, the vice prime minister of the State Council who collaborated on the project. Under their direct leadership, China's powerful political machine began to build the RTVU system in the late 1970s. The State Education Commission (SEC) and the Central Broadcasting Bureau (CBB) were assigned the task of leading a special central planning committee; the State of Council urged local governments to provide all necessary supports; and, members from twelve central government agencies formed the board of trustees of the RTVU system. From the approval of the proposal to the day the system kicked off its first semester, the whole preparation process took only one year, from February 1978 to February 1979.

Government's Engagements Reflected through the RTVU System's Structure

Figure 6-3 is the organizational chart of the national RTVU system, through which the System's inborn connection with the government is clearly illustrated. The administrative relationship between the System's different units and the corresponding central/local governments includes the auspices and supervision of the RTVUs' human resources, budget, and daily operations for each RTVU's strategic development.

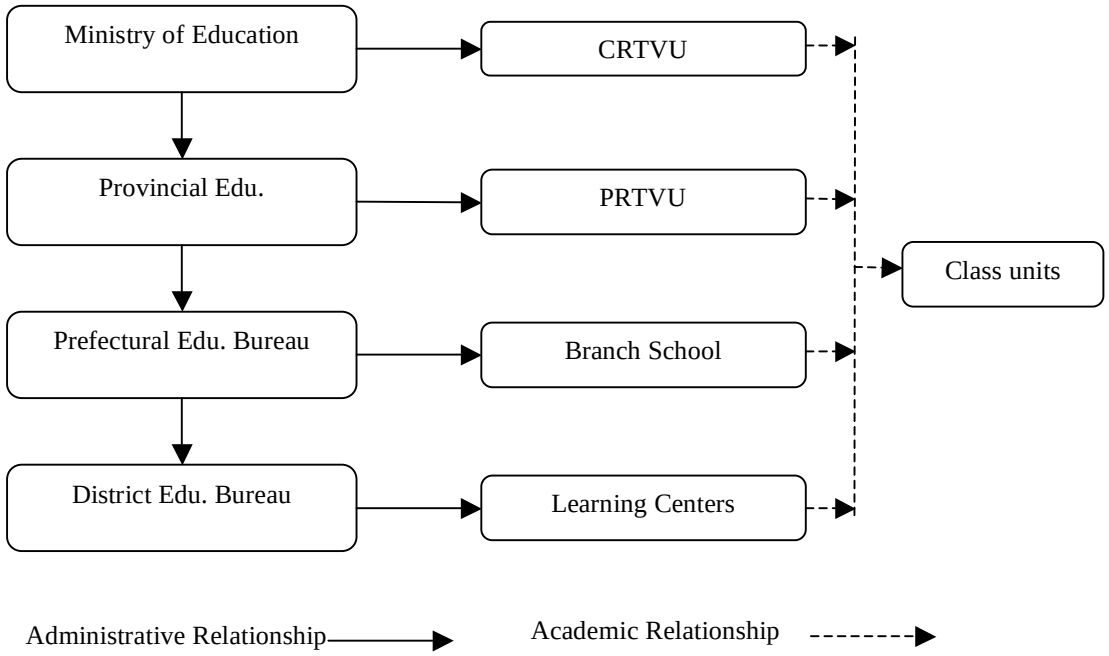


Figure 6-3: The RTVU System Organizational Chart

Besides the administrative relationship between the RTVU system and the central/local governments, there are also government representatives appointed to key positions within the RTVU system: The presidents of the RTVU system are appointed by the governments at the corresponding levels. In addition, a Secretary position is specifically set up at each RTV university, functioning as the representative of the Communist Party of China and involved in all decisions made on the RTVU system's development, to make sure that the whole system grows in

the direction that the government expects. Appendix H lists the former presidents of the Central RTV University (CRTVU). They were all appointed by the Ministry of Education and most of them held a senior position at the Ministry of Education before assuming the presidency of the CRTVU. The underlined is the Secretary position that represents the Communist Party of China to guide the system's development.

Enrollment Change Reflects the Government's Influence

Because of the aforementioned various liaisons with the government, the RTVU system always operates under the government's scrutiny. Figure 6-4 is the system's degree-student enrollment change curve that matches the RTVU system development phases discussed in the chapter on China's distance education history. Figure 6-5 illustrates the system's higher education market share change when the government was decentralizing the education system and strengthening quality education. Figure 6-6 shows the system's student body change when the government was working on the provision of open education.

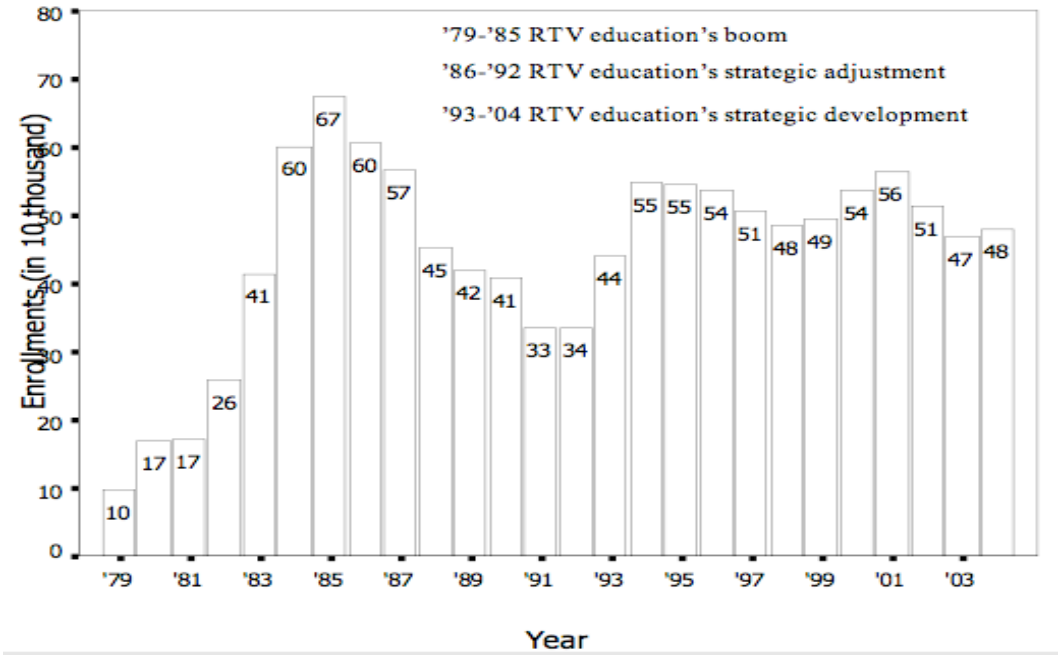


Figure 6-4: The Degree Student Enrollment Change Curve of the RTVU System (1979–2004).

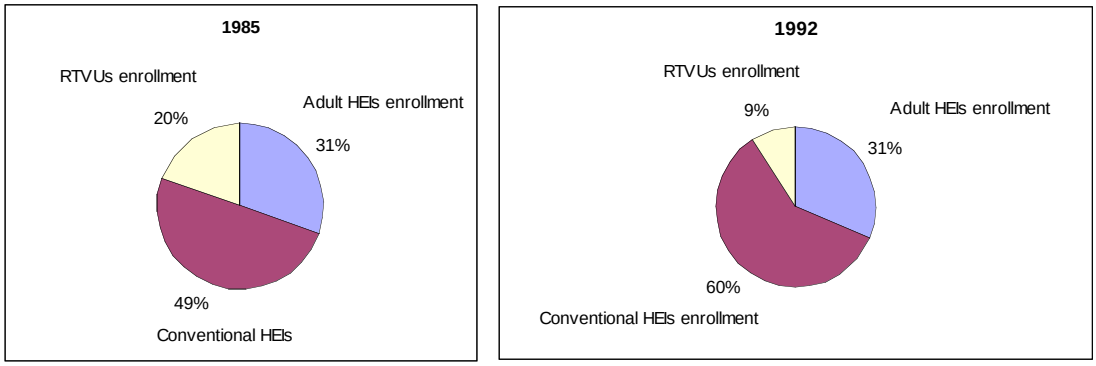


Figure 6-5: The RTVU System's Higher Education Market Share Change from 1985 to 1992.

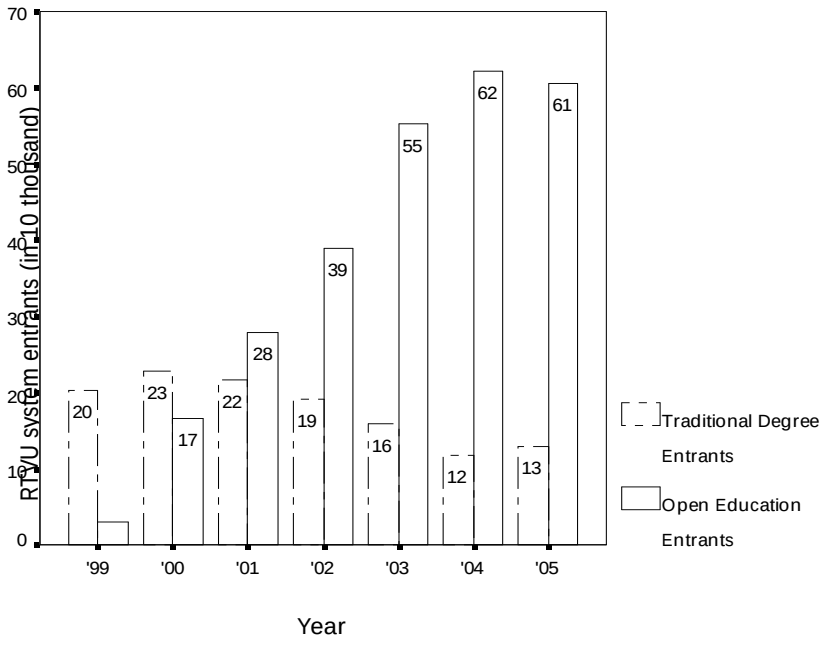


Figure 6-6: The RTVU System's Student Population Change from Degree Education to Continuing Education.

The U. S. Open University: The Dream of a Few People

The U. S. is "the nation that gave birth to almost all the main methods on which the success of the OUs depend" (Moore & Kearsley, 2005, p. 36) but it failed to establish its own Open University. Among the group of the U.S. scholars envisioning the concept of "Open University," several actually made the effort to test the idea in the U.S. context. Their efforts did not give birth to an American Open University but their adventures left an important page in international distance education development in general and U.S. distance education history in particular.

Professor Charles A. Wedemeyer and His AIM Project

One of the most important figures behind the concept of Open University is Dr. Charles Wedemeyer, the University of Wisconsin William H. Lighty Professor of Education. Growing up in a modest family that "was rich in books, magazines, and an atmosphere of excitement with respect to finding out things, solving problems, and knowing about people and events past and present" (Wedemeyer, 1981, p. xv), he had great sympathy for people who did not have an opportunity to receive an education.

The four-year Articulated Instructional Media (AIM) project (1964-1968) funded by the Carnegie Foundation was one of his major experiments on open learning. The project went through two development phases and a sequence of interdisciplinary advanced courses in humanities, social studies, and the sciences were developed through a combination of short sessions, off-campus seminars, and independent study (Wedemeyer & Najem, 1969; Wedemeyer, 1969). This project experimented with several main components of the "Open Education" (Wedemeyer, 1973) concept, including the integration of different communication technologies, the division of teaching activities, the testing of self-directed learning and the development of an organized learning support system. During its second phase of development from 1966 through 1968, the project experienced merger and reorganization. Its merger with the University Extension dealt the final blow to the experiment. A decade later, reflecting on this specific experience, Wedemeyer commented that the failure of the project came because of the lack of control over faculty, curriculum, funding and accreditation. He believed that "a large-scale, non-experimental institution of the AIM type would have to start with complete autonomy and control" (Wedemeyer, 1982, p. 23).

The AIM project's merging with the University Extension did not end Wedemeyer's "Open Education" journey. A year later, Wedemeyer had a chance to propose his idea in front of

the Wisconsin governor–"a corollary system of education for all the people of the Wisconsin state, cradle-to-grave" (Wedemeyer & Ghatala, 1972, p. 2). The proposal was not adopted by the state because the state government and the representatives of state's traditional educational institutions were more skeptical than supportive of the idea. While looking for an opportunity to practice his "Open Education" concept, Wedemeyer had been diligently working on his "Open Education" model. He systematically analyzed what he believed to be the necessary components of an open education institution (Wedemeyer, 1965); studied open education institution systems in different countries (Wedemeyer, 1972a); synthesized the characteristics of open learning systems (Wedemeyer, 1973c); proposed ten minimum requirements an open education institution must meet (Wedemeyer, 1973b); developed a conceptual matrix for an open education institution, a tentative three-stage learner-oriented operation model and a planning matrix for modeling an open education institution (Wedemeyer, 1973a); and addressed the impact of social factors on the formation of an open education system (Wedemeyer, 1975a; Wedemeyer & Starkweather, 1972). In *Learning at the Back Door*, published in 1981, he proposed fourteen questions that education authorities should ponder before making a step toward the establishment of an open education institution (Wedemeyer, 1982, pp. 68-72).

Wedemeyer saw the spread of open education as a battle that "leads towards learner freedom and the open consent of the instructed" (Wedemeyer, 1972b, p. 65). This battle would in no way be easy or short, as it "threatens established education; and if one thinks of a complete open education system–cradle-to-grave–it threatens every part of the establishment" (p. 67).

From the University of Mid-America to American Open University: Donald R. McNeil's Dream

Ten years after Wedemeyer's AIM experiment, another effort to establish an American Open University was underway. The leading figure was Dr. Donald R. McNeil, an alumnus of

the University of Wisconsin. McNeil witnessed and experienced the university's well-recognized extension programs. His belief in the potential of an Open University system also developed because of his years of experience assuming administrative positions in several institutions, including the Chancellor of the University of Wisconsin Extension, the Chancellor of the University of Maine, a board member of the Public Broadcasting Service and the director of the California Postsecondary Education Commission (National Public Broadcasting Archives, 1995).

McNeil's Open University experiment was based at the University of Mid-America (UMA) which originated in 1971 as the State University of Nebraska (SUN) for the purpose of fully utilizing the University of Nebraska's statewide educational television system to reach underserved and unserved rural populations in the state of Nebraska. The UMA was incorporated in 1974 to expand the SUN experience across the Mid-west region (McNeil, 1982). By 1980, the UMA served seven Mid-western states and eleven Mid-western universities. As a funded project, the UMA was operated under the pressure to become self-sufficient by the time the federal funds were slated to end in 1982. McNeil assumed the presidency of UMA under such conditions in June of 1978. After his ascension, Dr. McNeil proposed major adjustments to the UMA's organizational emphasis for the purpose of attracting more students, expending available resources more effectively and seeking potential funding providers. A review of McNeil's presidential activities from 1979 through 1982 indicates that a major portion of his time was allocated to fundraising issues. As the UMA approached the expiration date of federal funding, many institutions and organizations showed interest in funding the UMA but not one took the first step because "in a politically charged atmosphere, funders were unwilling to take the risk of being the first to endorse a new institution that seemed to challenge the basic assumptions of conventional institutions" (McNeil, 1982, p. 33). The UMA was finally dissolved in 1982.

The dissolution of UMA was not the end of Dr. McNeil's Open University dream though. By 1979, the second year after his acceptance of the position of president, McNeil had already started to think about the possible future of the UMA project: phasing out, becoming a production and distribution facility for tele-courses or stepping forward to build a national distance education institution offering its own credit courses and degrees. The last idea was supported by the Board of Trustees and an internal AOU Planning Group was formed in 1980. During this period, McNeil was in frequent correspondence with interested individuals and made frequent visits to different organizations and institutions to seek suggestions and possible supports (National Public Broadcasting Archives, 1995). In June 1981, *The Plan for the American Open University* was approved by the Board of Trustees:

> AOU, a university for working adults who wish to study part-time, will utilize modern communications technologies and methods of distance education. The American Open University will be a nationwide system that will provide educational opportunities for adults who are unwilling or unable to participate in conventional programs. The AOU programs will supplement those of conventional institutions by providing a curriculum for each degree that students can complete through testing and transfer services along. A program of AOU-sponsored instruction will be offered in each degree program for students requiring additional course work to complete the degree. These courses will be made available to students through innovative delivery techniques that utilize the mails, various communication media, and the network of local study centers created by AOU. AOU will award credit for learning through transfer of credits from other institutions, through standardized examinations, and through assessment of learning from experience. Credit will also be awarded for military occupation specialties and for non-collegiate courses approved for credit by the American Council on Education. (University of Mid-America, 1981, p. 1)

Unable to secure funding for the AOU before the dissolution of the UMA, McNeil was forced to accept the conditional offer from the New York Institute of Technology (NYIT) in 1983 to establish the AOU as an integral component of the NYIT. The AOU was renamed to the American Open University of New York Institute of Technology (AOU/NYIT). In 1987, under the direction of the Chancellor of NYIT, who believed that the AOU model did not work, the marriage between AOU and NYIT was dissolved.

Comparing AOU's five years of operation (1983-1987) with the original plan approved by the UMA Board of Trustee, the fundamental problem leading to AOU's failure is that the university never had a chance to become fully autonomous. Although acting in an advisory capacity to NYIT, McNeil and his AOU team lost control of the destiny of AOU. This is clearly illustrated through McNeil's correspondence with the AOU Board members and through his separation negotiations with the NYIT president and Chancellor during his last few months working at AOU/NYIT. With the dissolution of the AOU/NYIT, McNeil's dream of an American Open University died.

Modern U.S. Open University Experiment

The most recent effort for a U.S. Open University (USOU) occurred in the end of 1990s. Based on its partnership experience with a number of U.S. institutions including the California State University and the Western Governors University, United Kingdom Open University (UKOU) established its U.S. sister institution– USOU– in 1998 (Daniel, 2000, 2004). The mission was set to "Open as to people," "Open as to places," "Open as to methods," "Open as to ideas," "Open as to the world," and "Open as to time" (USOU, 2001). John Daniel, UKOU's then vice-chancellor, was the major advocate of this initiative. Dr. Richard Jarvis, who resigned as the chancellor of the University and Community College System of Nevada to become the founding Chancellor of USOU, noted of Daniel's role in the USOU initiative that he "had a vision—a deep personal vision—of an American version of the OU." Daniel had "great passion for his vision … [that] OU access in the U.S. would be a good thing even if it didn't turn a large profit"(as cited at Meyer, 2006).

Intensive research had been done on the planning of USOU's curriculum based on which USOU decided to start with a modest rollout plan: targeting a few geographic areas and a few

interest groups, initially delivering upper division undergraduate courses in the high demand areas of business and computer technology and gradually developing courses in other disciplines, seeking partnerships with major community colleges, and relying heavily on the use of the Internet (Blumenstyk, 1999; Daniel, 2000, 2001a). USOU not only designed its own courses but also adapted courses from UKOU and Athabasca University. Hence, many of USOU's courses were cross listed as both USOU and UKOU or both USOU and Athabasca University (Daniel, 2000; Athabasca University, 2000). To gain social recognition, USOU started to seek accreditation from both national and regional accrediting agencies at its early development stage (Blumenstyk, 1999). The two accrediting agencies they applied to for accreditation were DETC and the Middle States Association of Colleges and Schools (MSACS). USOU planned to offer seven courses in its first semester but only five were delivered and 90 students were enrolled in spring of 2000 (Arnone, 2002a; Blumenstyk, 1999; Daniel, 2000). By the end of 2001, there were 660 enrollments in more than 30 courses.

While some U.S. institutions saw USOU's growth as being faster than anticipated (Arnone, 2002a), the UKOU, who provided a loan to USOU, didn't think so and decided to close this U.S. sister institution in the summer of 2002, after an investment of about $20 million. The official reason was that "… the branch [USOU] wasn't generating enough revenue or enrollments to offset growing debts" (Arnone, 2002b). Actual reasons attributed to USOU's closure were complicated and various (see Arnone, 2002a; Daniel, 2004; Tilson, 2002; and Meyer, 2006). Daniel vividly described the challenges USOU had been facing with since its inception "we naively thought America was one country, and we quickly found out that it wasn't" (As cited at Carnevale, 2000). Though trying to deliver diversified distance education courses through partnership with well-known institutions and trying to increase its social recognition through accreditation from both national and regional accrediting agencies, USOU was still deemed to be a failure in the U.S. context.

Accreditation System–Quality Assurance

Along with open access to education, quality assurance is another major topic in the development of distance education in both countries. The quality of these unconventional teaching and learning activities has been challenged since the birth of distance education in both countries. In response, distance education advocates and institutions in both countries seek social recognition through an accreditation process. Neither country has an accreditation system specifically set up for distance education. Instead, their distance education accreditation systems have grown as an extension of the existing traditional education accreditation system. Therefore, China's distance education accreditation system continues to be under the government's control and the U.S. distance education accreditation system is based on collaborative efforts of distance education advocates and institutions.

China's Centralized Distance Education Accreditation System–The Government Maintains the Authority over Distance Education Quality Control

China has a centralized distance education quality control system because of the role that the Ministry of Education (MOE) plays in national education development. By law, MOE, the former State Education Commission, reports to the State Council and exercises sole control over national education development (Ministry of Education, n.d.). Though a series of educational reforms decentralized the national education system in the 1980s and 90s, MOE's complete authority over education quality control has never been revised. The educational decentralization reforms released MOE from many unnecessary administrative responsibilities, and made it possible for MOE to concentrate more closely on its control of the quality of education on a national basis.

In fact, the assurance of the quality of modern distance education is one of the main areas that MOE has greatly strengthened following the educational decentralization reforms. In the accreditation system, MOE stays at the top and controls the quality of national distance education development through two major activities. First, MOE is the only nationally-recognized authority that approves an institution's legitimacy to offer distance education. For this reason, after the end of the ten-year Cultural Revolution, the Chinese government spent great time and effort to recover the records of the correspondence education institutions approved by MOE before the Cultural Revolution (Ministry of Personnel, 1983). Without those records, graduates of the correspondence education institutions would not have been able to receive benefits earned by their correspondence education experience. Today, though most higher education institutions are connected to the Internet and have met the hardware requirements to deliver distance education through the Internet, only sixty-seven of them have been approved to deliver degree education through the Internet (Ministry of Education, 2007a). Second, MOE organizes various types of evaluations of those distance education institutions they have approved. To closely monitor the quality of the RTVU system's Intellectual Cultivation Reform and Open Education project launched in 1999, for example, MOE initiated and organized several rounds of evaluations including mid-term project evaluation, final project evaluation and a series of randomized expert evaluations (Ministry of Education, 2001b, 2002a, 2003a, 2004a). Evaluations were done in eight areas including adherence to the strategic development plan, organizational structure and operation, faculty and staff support, teaching and learning equipment and systems, curriculum planning and course development, teaching and learning models, learner and learning management and support systems, and evaluation and assessment (Ministry of Education, 2004a). Since 2001, the sixty-seven higher education institutions approved to deliver degree education through the Internet have been mandated to participate in the evaluations organized by MOE on a yearly basis (Ministry of Education, 2001a).

The middle level of China's distance education accreditation system involves local governments and their educational agencies. These are the regulatory arms of the MOE at local areas. They plan local distance education growth to meet local development needs and they check with MOE to make sure that their local plans are consistent with MOE's national guiding plan. As part of the decentralization reforms instituted by MOE, these regional and local agencies also have the responsibility of monitoring the daily operations of those distance education institutions located within their territories. When MOE conducts nationwide evaluation of distance education institutions, local governments and their educational agencies help to coordinate the evaluation processes within their territories. For example, in the annual evaluation of the sixty-seven higher education institutions offering degree education online, local governments and their educational agencies evaluate the distance learning centers of those institutions that reside within their territories, and report to MOE (Ministry of Education, 2001b).

On the lowest level are the individual institutions offering distance education. To be qualified to deliver distance education, they not only must have the required hardware in place but also have to meet both local and national socio-economic development needs. Institutions who successfully receive approval from both central and local governments but fail to pass the various evaluations collaboratively administered by MOE and local governments, find their privilege to deliver distance education to be suspended. The regional RTV universities within the RTVU system, following the series of educational decentralization activities, operate no differently from conventional institutions with regard to meeting both national and regional socio-economic development needs (Ministry of Education, 1988).

The U.S. Self-Regulating Accreditation System–The Distance Education Community Has the Responsibility for Quality Assurance

The U.S. has a much more decentralized education accreditation system. It has been established based on the common understanding that "education is primarily a State and local responsibility …. It is States and communities, as well as public and private organizations of all kinds, that establish schools and colleges, develop curricula, and determine requirements for enrollment and graduation" (U.S. Department of State, n.d.). With this same understanding, a decentralized distance education accreditation system has emerged from the existing education accreditation systems.

In this system, the federal government does not have centralized authority to accredit distance education institutions or programs because, in the U.S., accreditation is basically "a means of conducting non-governmental, peer evaluation of educational institutions and programs" carried out by private accrediting agencies (U.S. Department of Education, 2008). The federal government, however, is involved in the process through the Department of Education, which recognizes accrediting associations who meet the government's standards and criteria for being a reliable accrediting agency. The major purpose of the government's involvement is two-fold. The first purpose is to help the public gain more confidence in the quality of distance education provided by the institutions accredited by the recognized accrediting agencies; the second is to help those accredited distance educational institutions to establish eligibility to participate in various government assistance programs, such as federal student financial assistance programs.

The U.S. government is not the only source from which accrediting agencies receive national recognition. There are non-governmental coordinating associations for accreditation that play similar roles. The two major non-governmental coordinating associations include the Council for Higher Education Accreditation (CHEA) and the Association of Specialized &

Professional Accreditors (ASPA). These are national advocates and provide an institutional collective voice for self-regulation of academic quality through accreditation. With the common understanding that the U.S. accrediting agencies should not serve as a regulatory arm of the federal government, these two associations work closely with the government to assure that the accreditation practice continues to be a private, non-governmental, voluntary, peer-review process, and to limit the authority of the Department of Education to use accrediting agencies to regulate the academic affairs of educational institutions (Eaton, 1998, 2004).

At the middle level of the U.S. accreditation system are three types of accrediting agencies: national accrediting agencies, regional accrediting agencies and specialized/professional accrediting agencies. National agencies accredit institutions regardless of their physical location. They accredit either an entire institution or individual programs developed in their area of expertise. Regional accrediting agencies generally accredit institutions within their territories and there are currently eight regional accrediting agencies that cover all fifty States. In most situations, specialized/professional accrediting agencies have a national scope but only accredit the specific programs within an institution that prepare students to enter into a specific profession. Technically speaking, receiving recognition from the Department of Education, CHEA or ASPA is not a prerequisite for these associations to function as accrediting agencies. But being recognized by the Department of Education or being a member of CHEA or ASPA greatly legitimizes an accrediting agency's existence as a reliable authority on the academic quality of the educational institutions it accredits. By receiving national recognition through the Department of Education, CHEA or ASPA, an accrediting agency's standards are also accepted by other members of the association. Hence, though on a voluntary basis, most accrediting agencies seek recognition by the Department of Education and/or apply to become a member of CHEA and/or ASPA. To improve cooperation and collaboration between regional accrediting agencies, a task force was formed at the end of the 1990s, through whose efforts, five

areas were recognized as essential to the distance education practices for every region (Lezberg, 2007). These five areas include institutional context and commitment, curriculum and instruction, faculty support, student support, and evaluation and assessment (Regional Accrediting Commissions, 2001). It is noteworthy that, in the U.S. distance education accreditation system, there is one accrediting agency that has been specifically dedicated to distance education for over eighty years–Distance Education and Training Council (DETC). DETC's scope is national, and it accredits institutions offering distance education programs ranging from high school diplomas up through professional doctoral degrees across the country. DETC also has a long history of accrediting military distance education, which is not common in most other accrediting agencies.

The bottom level of the U.S. accreditation system covers those institutions that offer distance education. As was discussed previously, the accreditation practice in the U. S. is on a private, non-governmental, voluntary basis. Each institution decides whether it wants to deliver distance education, whether to seek accreditation, and from whom it wants to seek accreditation.

Development of a Nationwide Information Network Infrastructure: Accessing Education through the Internet

In both countries, the introduction of computer networking technologies has extended the power and reach of distance education. All the features of previously deployed communication technologies are not only inherited but also made easier to use through the appropriate development of user-friendly interfaces, and the communication processes are becoming easier, faster and more convenient. Though China and the U.S. have both built their own nationwide information infrastructures for academic use, the stances the two countries' governments took during the development of their information infrastructures for academic use are completely different.

Chinese Government's Approach: We Will Do It Together

China started to research computer networking technologies in the late 1980s. The major project carried out during that time period was the government project, National Computing and Networking Facility of China (NCFC), which piloted the idea of constructing a national backbone network. The project was charged by the Chinese Academy of Sciences (CAS) and was jointly implemented by China's two other top research universities, Tsinghua University and Peking University. Launched at the end of 1989, this project received financial support from the World Bank, the Chinese government and the CAS (CNNIC, 2006). In three years, the three research units had developed their campus networks, linked the three campus networks together and built China's first Research & Education backbone network–NCFC (See Figure 6-7). In 1994, NCFC was connected to the global Internet through the Sprint Company of the United States, and became a milestone in China's information infrastructure development history.

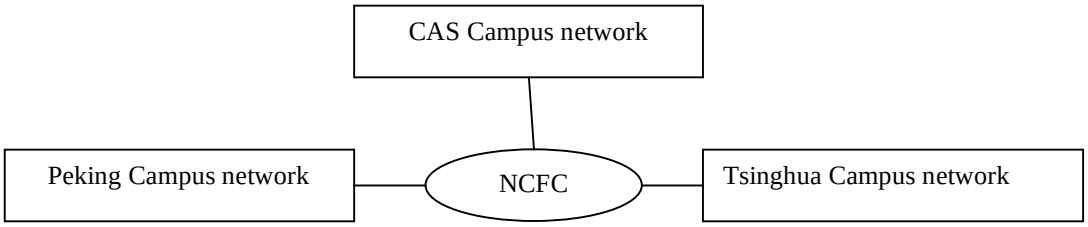


Figure 6-7: NCFC Network Architecture

Based on NCFC, the Chinese government launched a much larger project in 1994, the China Education and Research Network (CERNET). This national network infrastructure was constructed mainly for research and education use. Their ambition was to finally have most research and education institutions across the country connect to the CERNET backbone network, and through that connect to the global Internet (See Figure 6-8). In this giant project, the Chinese government again accepted the main responsibility for the development of the CERNET

backbone network and the ten regional networks, but all research and educational institutions were encouraged to seek their own financial aid to build their campus networks and to get ready to connect to CERNET (CERNET, 1994). According to Jianping Wu, the director of CERNET, the government invested in the construction of the CERNET and the ten regional networks through four national projects including the eighth Five Year plan (July 1994–Dec 1995), the ninth Five Year plan (Oct 1996–Dec 1998), the "211" project (Nov 1998–July 2001) and the "Modern Distance Learning" project (Sept 1999–Dec 2001) (Wu, 2005).

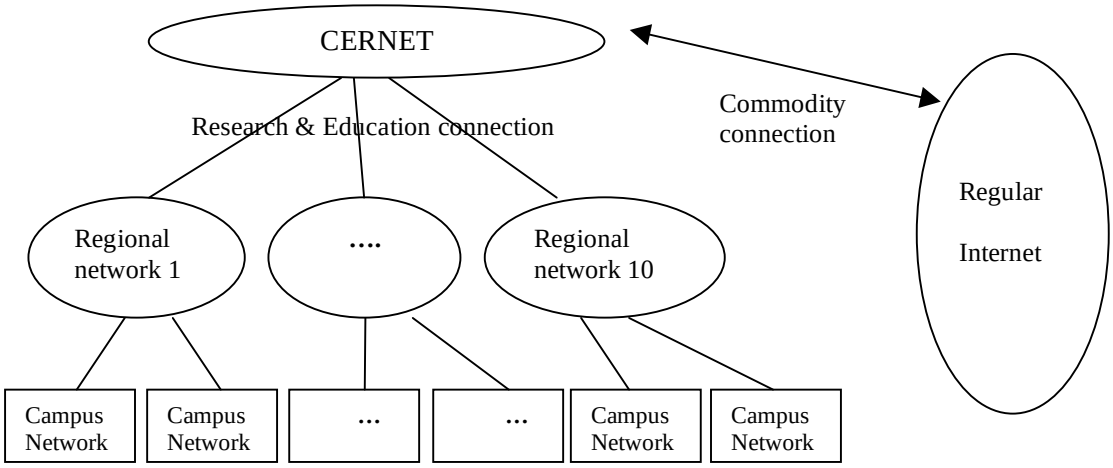


Figure 6-8: CERNET Network Architecture

To effectively manage CERNET, the Chinese government established a five-level management system under the direct leadership of MOE: The CERNET Leading Group has representatives from MOE's different departments and is the highest regulatory body; the CERNET Administration Committee has representatives from MOE and the ten regional networks with the responsibility of handling major issues related to the CERNET's strategic development; the CERNET Expert Committee consists of experts from the ten regional networks and is responsible for providing technical guidance; the CERNET National Network Center is located at Tsinghua University and manages CERNET daily operation and services; and, the Regional Network Centers and Main Nodes are located at ten national research universities in

eight cities with the responsibility of monitoring regional network operation (CERNET, 2006). After ten years of development, the CERNET backbone network has connected over two hundred cities in thirty-one provinces and more than fifteen hundred universities and research institutes were attached to the CERNET through the ten regional networks (An & Wu, 2005).

CERNET has become an important component of the government's national research and education development plan. In *The 21st Century Education Invigorating Plan* promulgated by MOE at the end of 1998, CERNET is to serve as the major distance education platform for the implementation and growth of the Modern Distance Learning project (Ministry of Education, 1998). 67 universities and institutions participated in the Modern Distance Learning project and delivered degree education through the Internet (Ministry of Education, 2002c). Besides delivering distance education programs, CERNET is also used for other research and education purposes. The China Academic Library & Information System was developed based on CERNET in 2002 and more than one hundred university libraries were linked to each other; several university-based digital museums were established based on CERNET; and, national key research labs were also connected through CERNET (Zhang, 2005).

In August 2003, the Chinese government launched the "China Next Generation Internet" (CNGI) project for the purpose of upgrading the infrastructure. The project was under the leadership of the National Development and Reform Commission of China (NDRC) and seven other government departments. As the only national backbone network connecting many research and education institutions, CERNET was included as a main component of the CNGI project. Half of the CNGI fund (US $ 169 million) went to the CNGI-CERNET 2 related projects (Liu, 2004). The CNGI-CERNET 2 backbone network went into formal operation in 2004 and connected most major research universities across the country (An & Wu, 2005).

The U. S. Government's Approach: I Will Help You Start, You Survive the Market

In the U.S., the earliest exploration of computer networking technology was done by the Department of Defense's Advanced Research Projects Agency (ARPA) in the late 1960s. They built ARPANET, the first computer networking infrastructure, for the purpose of connecting researchers at geographically distributed universities and government laboratories (King, 1972). As a federally-funded project, ARPANET was a restricted network that only allowed government research labs and ARPA-affiliated research universities to gain access, which is similar to China's NCFC (See Figure 6-9). ARPANET was later broken into several networks in the mid 1980s (Beranek, 2000). NSFNET is the successor of the ARPANET's research-oriented network experiment.

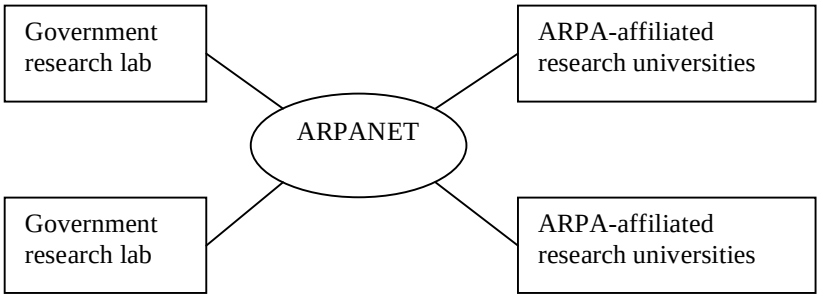


Figure 6-9: ARPANET Network Architecture

The National Science Foundation started to fund NSFNET in 1986 with the goal of developing a single research Internet infrastructure nationwide. NSFNET was designed to be a three-tiered infrastructure including the NSFNET backbone network, regional networks and campus networks, which is similar to China's CERNET (See Figure 6-10). Unlike ARPANET, which had restricted access, NSFNET was open to all academic institution users. All academic institutions were encouraged to submit proposals to receive financial aid to build their campus networks and to connect to NSFNET through regional networks. By 1992, there were sixteen

regional networks, midlevel networks, and supercomputer centers which served as the nodes of the NSFNET backbone system, and over four thousand networks connected to NSFNET (Frazer, 1996, p. 35).

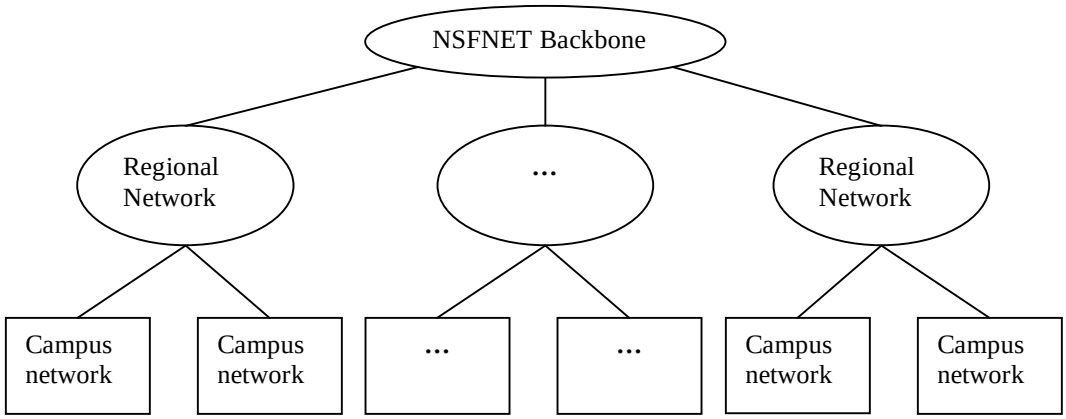


Figure 6-10: NSFNET Network Architecture

Besides opening access for educational institutions, NSFNET also had commercial partners. In 1987, Merit Network, Inc., the state of Michigan and two other commercial companies–IBM and MCI–joined the NSFNET project with a cooperative agreement to help to upgrade and maintain the NSFNET backbone service (National Science Foundation, 2000, p. 11). NSF's explanation of the inclusion of commercial interests as a part of the NSFNET was, according to Steve Wolff, program director for NSFNET at that time, "It had to come … if it didn't come in a coordinated way, it would come in a haphazard way, and the academic community would remain aloof, on the margin" (2000, p. 12). In 1993, NSF released *Solicitation 93-52, Network Access Point Manager, Routing Arbiter, Regional Network Providers, and Very High Speed Backbone Network Services Provider for NSFNET and the NREN Program*, which was an indication of NSF's decision to transition the backbone system to commercial providers. A transitional time period was established (1993 to 1995), during which all regional networks were to detach from NSFNET and connect to commercial backbone networks of their own

choice. The retirement of the NSFNET indicated the end of a government-founded national research and education backbone network and the rise of a commercial architecture supported by multiple commercial backbone network service providers (see Figure 6-11).

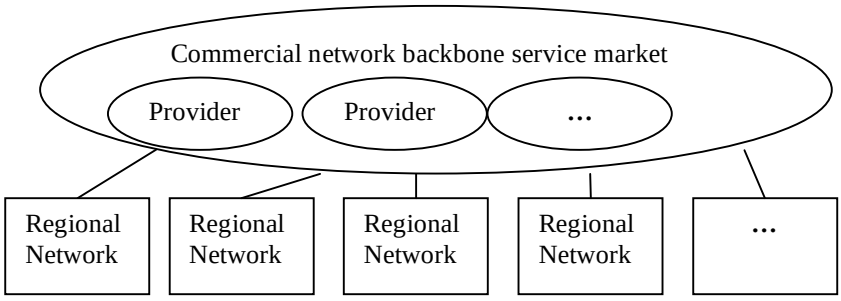


Figure 6-11: Commercialized Infrastructure Architecture

After the close of NSFNET, the educational institutions attached to it were at the crossroads of the Information Highway. While they were accorded more options to continue their Internet connectivity, they had to make sure that the commercial components of the newly built connections were affordable and would not compromise their research and education based mission. To gain a voice in national networking issues in the wave of Internet commercialization and privatization, U.S. education institutions decided to stand up and protect themselves against commercialization. Internet2 (I2) and National LambdaRail (NLR) were established as an advanced national research networking consortium that connects universities and research facilities with both research and commodity connection services (Internet2, 2008; West, 2008). Many regional research networks were established across the country, including CENIC, NYSERNET, Front Range GigaPop, 3ROX, and others. These regional networks serve as the aggregation points connecting local education institutions to the national research backbone networks (I2, NLR) and then to the regular Internet (See Figure 6-12). A national research and education information infrastructure owned by research and educational institutions finally emerged. As Tom West, the CEO of NLR, wrote in NLR's 2007 Summary Report, "Going into

its fifth year NLR, …, is fulfilling the vision of putting the control, power, and the promise of an advanced network infrastructure into the hands of U.S. scientists and researchers and educators" (West, 2008, p. 1).

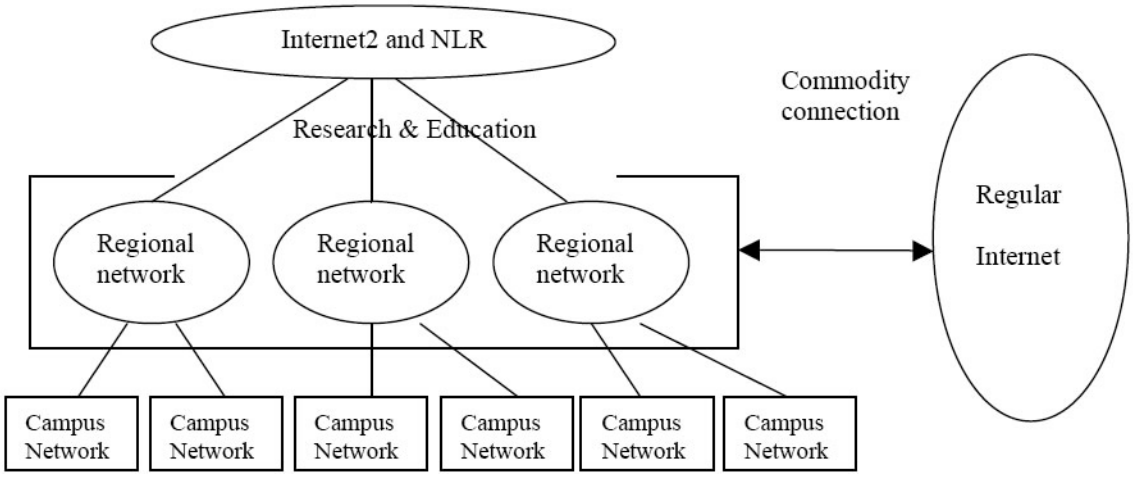


Figure 6-12: The U.S. Research and Education Network Architecture

Chapter 7

Summary and Conclusions

Introduction

In the previous chapters, inspired by my interest in the development of international distance education, I researched distance education historical development in China and the U.S. The purpose was to see what understandings result from a comparative analysis of the growth of the same social phenomenon–distance education–in two different socio-cultural contexts. This chapter summarizes the major development themes of the century-long distance education histories in both countries, and concludes with the findings of three major social agents (individuals, Type I social groups and Type II social groups) who have shaped each country's distance education development in the past. This study further suggests that, as these social agents continue to play the key roles in driving the trend of distance education in the future, appropriate consideration of these social agents' roles in planning the field's future is important.

Conclusions from the Comparison of the Two Countries' Distance Education Histories

Chapter 4 and Chapter 5 illustrate that the history of the development of distance education in both China and the U.S. was far from smooth. Established to meet a need for easy access to flexible education, distance education has been a product of its social environment since its emergence. As a result of the value (or lack thereof) perceived by the social agents most influential or in control of the society during a given period, distance education has experienced a

waxing or waning of importance in both countries over time. During its century-long history, however, this social phenomenon has seen an expansive, if erratic, development in both countries.

Although occurring in two very different socio-cultural contexts, the development of distance education in both countries shares some major commonalities. As indicated in the first part of Chapter 6, from individual behaviors to organizational efforts, from incidental events to strategically and scientifically planned organizational activities, from intuition-based exploration to academically-tested behaviors, from traditional paper and pen-based correspondence education to today's prevalent multi-media based modern distance education and from meeting individual needs to serving society as whole, distance education has grown from simple to complex and from a minor activity into something quite socially significant in both countries. In fact, distance education continues to adapt in response to the changing needs of its environment. Unless the environment in which it operates goes through a dramatic and revolutionary change that leaves distance education no place to ground itself, it is plausible to believe that these commonalities will remain as distance education continues to develop in both countries.

Differences are also seen in between the two distance education histories. While many of the differences are incidental, others have been inherited from social differences and have become a characteristic of a country's distance education development. The second part of Chapter 6 discusses the three major differences that are unique to each country: First, China has one of the world's largest Open University systems, while the U.S. does not, even though the U.S. was among the first to test the Open University concept; second, China has a government controlled and mandatory quality assurance system in place, while the U.S. has a non-governmental and peer-review based self-regulation mechanism in operation; and third, the Chinese government has been directly involved in the construction of a national information network infrastructure while the U.S. government supported the construction of such an infrastructure at the early stage but later stepped away. All these differences are rooted in the social histories and traditions of the

two countries. China is a socialist-communist country with all social activities organized under the principle of democratic collectivism. The Chinese government has a long tradition and history of assuming leadership in major social activities affecting the country's political and economic conditions. By comparison, the U.S. is a democratic society that values the freedom, judgment and responsibility of individuals and social organizations in all social activities, leading to a tendency toward local- or self-regulation.

From a development standpoint, it can be assumed that these commonalities and differences will continue to direct the future of distance education in both countries. But, since ensuing events will be different, so will be distance education's responses. Therefore, to more effectively understand the past of distance education in both countries to make this understanding applicable to the field's current and future developments, the social agents who contributed to the formation of these commonalities and differences must be examined. These social agents and their roles in each country's distance education development are much more stable than the commonalities and differences existed in very much diversified social events. In fact, the functioning of these social dynamics and forces determines the necessary nature of the existence of the aforementioned commonalities and differences. In the following section, these social dynamics and forces, including individuals, social organizations and government, are discussed.

Understanding the Histories–Revealing the Key Social Agents Shaping Each Country's Distance Education Development

Individuals: The Perpetual Driving Force

It is a universal understanding that individuals are the basic component of social life. They initiate activities, participate in the events created by others and inherit activities originated

by previous generations, all of which contribute to the formation of social history. Distance education, as a particular social practice, is not an exception since all activities relevant to its development have involved individuals. As the basic unit of distance education activities, individuals are the most immediate factor that drives distance education forward and are the perpetual driving force of distance education development.

Individuals Shape Each Country's Distance Education History

This relationship of individuals to distance education development has been clearly captured in my review of both countries' distance education histories. If it were not for early distance education pioneers like Yuanji Zhang, Xiang Zhou, William Harper, J.S. Noffsinger, and others, the history of distance education in both countries would have been less rich and productive. The individuals mentioned in this study represent but a small number of the distance education advocates whose activities show current and future scholars that, in both countries, the history of distance education has been shaped by individuals just like us.

Individuals Share Commonalities

These individuals, based on my observation of their achievements, have commonalities. First, they are well-educated, have a strong sense of social responsibility, and passionately believe in educational democracy, that is, extending education to every citizen. For example, Yuanji Zhang, a participant of the Hundred Days' Reform and inspired by his belief that education is an important social component that benefits both individuals and society, established the CPCS and the mobile library to extend access to education. Dr. Charles Wedemeyer, through his various experiments and explorations, as well as through his writings (such as *Learning at the Back*

Door), showed his strong passion for removing barriers that prevent people from receiving education.

Second, these individuals have broad connections to each other via different social channels. In China, they connect with each other mainly through governmental communication channels, such as the meetings and conferences convened by the government at different levels. This became especially obvious after the Communist Party of China took over the country in 1949. This type of connection is more politically-based than scholarship-based. It was only in the 1980s, after the emergence of scholarly activities such as publications and academic conferences, that connection channels in China began to diversify. In the U.S., distance education advocators develop scholarship-based connections with each other mainly through academic activities, most of which are organized and supported by distance education organizations. It is because of the dedicated work of thousands of distance education pioneers and scholars that distance education was able to achieve continuous development in both countries, even though the development curves are not consistent.

Individuals Are Social Beings

Having said that individuals are the perpetual force driving each country's distance education progress, the analysis of their activities reiterates the fact that these individuals are social beings who live and work in specific social contexts. Their beliefs, passions and forces internal to themselves are socially constructed–they act in a society where the actions of others have already created rules and structures that they cannot ignore. To achieve the large-scale success seen in the distance education histories in China and the U.S., it demands the work of many individuals, rather than that of a few, to adjust social rules and structures to create a benign environment for distance education to grow. Not understanding this fundamental social

mechanism is the major reason why Zhang's Commercial Press Correspondence School and Zhou's Chinese & Western Art Correspondence Xue Tang could not revive after the war time periods, why China's RTVU system could continue to grow despite the changing social environment in the past two decades, why U.S. distance education did not grow following Caleb Phillips's correspondence education initiative in 1729, why the Society to Encourage Studies at Home was closed after Anna Ticknor's death, why Dr. McNeil's open university dream failed while many countries have greatly benefited from their mega distance education institutions.

After years of mixed experiences and lessons, both countries' distance education advocates have learned that, to be heard and to be able to promote distance education effectively, they must work together as a group or groups. Rooted in each country's history and traditions, different social groups have emerged and played different roles pushing each country's distance education movement forward.

Social Groups: The Powerful Social Engine

Just as Sanderson points out, "Though individuals are the units of adaptation, they are not the units of actual evolution. The units of evolution are necessarily social groups, structures, and systems at all levels of size and complexity. It is they that evolve, even though they do so only through the purposive action of individuals" (1999, p. 14). This is to say that individual forces must combine to form social groups in order for evolution of a social initiative. This mechanism of social evolution can be seen in the century-long distance education histories of both countries.

Social Groups: Organizations vs. Governments

There are two types of social groups identified in this study: Type I social group and Type II social group. A Type I social group refers to social organizations that have organizational bylaws; have a stated mission, vision and goals; have board(s) and/or committee(s); have staffs and offices; have publications; and organize social events including conferences, meetings, seminars, etc. To be a part of a Type I social group, individuals must apply for membership. The distinction between a Type I social group and other social communities is that members of a Type I social group are bound together by the group's bylaws and policies, and assume more responsibility and commitment than other social communities that are more loosely structured. A Type I social group is an important component of the community of interest discussed in previous chapters, since it is a major platform by which individuals sharing the same interest connect to each other. In this way, individual forces are turned into group power.

By comparison, a Type II social group is easier to identify. A Type II social group refers to the government of a country and its branch offices and agencies in different political districts. Its membership is citizenship-based and its members have very diversified interests. It has a much more complicated organizational structure and runs a huge civil service system. There are two major things that differentiate a Type I social group from a Type II social group. First, a Type II social group's bylaws, mission, vision and goals are established by legislation, which means failure to abide by its rules and policies have much more serious consequences. Second, a Type II social group has a steady and giant budget source–a national tax system–that empowers it with the capability to finance any project.

This study indicates that it is these two social groups that serve as the main social engines driving the development of distance education in both countries. In particular, it is the prevalence

of Type I versus Type II forces that have shaped the differences in the history of distance education in China and the U.S.

Type I and II Social Groups in the U.S.

Type I social groups have played a key role in the development of distance education in the U.S. For example, the NUEA has been a strong Type I social group in support of distance education development in the higher education sector. DETC has been instrumental in the historical development of U.S. proprietary distance education. The Carnegie Corporation Foundation and the Ford Foundation have provided funds to support many important distance education projects. The Internet2, National LambdaRail and Sloan Foundation (through the Sloan Consortium) have played critical roles in contemporary distance education development in the U.S. They are very different Type I social groups with different goals, but their efforts, deliberately or not, have had a collective and positive effect on U.S. distance education development. They provide U.S. distance education scholars with a platform on which to share their interests, to pursue their passion for group-based activities, to develop political influence to mute noises from the society, and to serve as a clearinghouse to record the history, represent the present, and strive for a promising future in the field. Most of U.S. distance education organizations under the Type I social group category are self-reliant and encourage the growth of autonomy. They look with suspicion on governmental interference, encourage local cooperation for the common good, and support the ideal of service and social usefulness. Being unconnected to the government, these social organizations "respond assertively to encroachment upon their boundaries. They do so because their members feel themselves to be under so severe a threat from some extrinsic source that if they do not speak out now they may be silenced for ever" (Cohen, 1995, p. 109).

The Type II social group, the U.S. government and its agencies, has not been as active as the Type I social group in U.S. distance education history. The U.S. government's approach to education is that education is considered to be an aid to national economic development, and it is more interested in guiding through legislation and funding than in pursuing direct political pressure and involvement. As Kandel indicated, "what in other countries has been organized by central governments has in the US been left to local and group initiative and enterprise under the slogan of 'service' for both the individual and society" (1933, p. 40). The U.S. government's involvement in U.S. distance education history includes several pieces of legislation, including the Morrill Acts in 1862 and 1890, the Smith-Lever Act in 1914, the G.I. Bill in 1944, the Communication Acts in 1937, the Public Broadcasting Act in 1967, the Telecommunications Act of 1996 and the No Child Left Behind Act of 2001. A notable exception is the government's direct involvement in the development of distance education for the military. Since national security and defense is on the U.S. government's priority list, it is no surprise that military education is considered to be inherently different from public education and accorded the government's direct involvement.

Type I and II Social Groups in China

In China's century-long distance education history, the opposite has been true: the Type II social group has played a larger role than the Type I social group. Except for the period of history prior to 1949, China's distance education history could be seen as a history of the Communist Party's direct involvement in distance education. From the restoration of correspondence education in the early 1950s, to the expansion of radio and TV education through the establishment of the RTVU system in the early 1980s, to the nationwide distance education strategic adjustment started in the late 1980s, and to the emergence of China's modern distance

education system in the late 1990s, the Chinese government's influence and control are everywhere. The Chinese government's endeavors in distance education development are attributed to their perception of the purpose of education: social control. Education in China was once a privilege for people of a higher social class. For common people, the ability to pursue an elite education is akin to receiving a pass to climb the social ladder and become a member of the upper class. Controlling education, for the Chinese government, is equivalent to the control of opportunity. Though currently China has been in transition from elite education to mass education, the fundamental perception of education for social control still remains, and the Chinese government continues to have the final voice in national distance education development.

The Type I social group dedicated to distance education development started to emerge in the 1980s but the Type II social group's position in China's distance education development has not changed. Many of the Type I social groups were established as part of the RTVU system and, hence, their social activities are under the audit of the government. Compared with those affiliated with the RTVU system, the China Education Technology Association (CAET) is a comparatively independent Type I social group which fosters, facilitates and coordinates the development of technology for educational use among its member institutions. A further exploration of its organizational background information, however, indicates that CAET has a close relationship with the government. The Secretary of the CRTVU serves as the current president of CAET and the vice-director of the National Center of Educational Technology, another government agency, assumes CAET's current executive vice-president position. China's National Coordinating Group of Higher Distance Education is another example. It is an influential Type I social group targeting the promotion of higher distance education but its bylaws clearly state that their activities are under the audit of MOE. Hence, Type I social groups in China have a strong connection with the Type II social groups and, in many cases, serve as an

informal extension of the Type II social group's wing in the field. The role that the Type I social group has played has actually strengthened the Type II social group's control of China's distance education development.

Characteristics of Data Sources

The different roles that the two types of social engines have played in the history of distance education in both countries are reflected in the nature of the historical materials collected for this study.

While collecting materials illustrating the history of distance education in the U.S., I was overwhelmed in the first few months by receiving access to an unexpectedly large collection of data. This ranged from data created by individuals to that created in the name of various social groups from various data sources. These data are quite separate from each other as they are the records of individual historical events and many of which show only a piece of an historical event. Faced with so much pertinent but seemingly unconnected data, and challenged by the specificity of the data, I spent much time reflecting on the conceptual framework of this study, on the nature of the data being collected and on the relevance of the data sources. I ultimately was able to look past the diverse nature of the data and capture the development themes of the U.S. distance education history. My mind started to clear up and the tension and pressure caused by the diverse nature of the data were released.

When I began to collect data on China's distance education history, I found a very different situation. The data sources were more simplified and more organized. Most of the data collected came from official information channels, including Type II social groups, such as the Chinese government, Ministry of Education, local government, the RTVU system and the other government agencies. Not much came from Type I social groups. Also, in China's distance

education history, most historical events have clear connections with each other. Because of the centralized governance mechanism, most historical events happened within the hierarchical political system established by the Chinese government. Since the 1980s, although the Chinese government has allowed for flexibility and accorded some autonomy to Type I social groups, as noted previously, China's distance education development has remained under the control of Type II social groups. The nature of the data and data sources has not much variation.

Conclusion

Knowing the past is important, since social development is based on inheritance. In this study, knowing the past is not simply knowing the "facts" of what happened. It is more important to understand how things happened, what the connections are between these events, what social agents have contributed to these events, in what way and why. This study examined the century-long history of distance education in China and the U.S. A comparative analysis reviewed the commonalities and differences found in the field's development in both countries. Further examination of the mechanism behind the social phenomenon of distance education revealed the social agents who have shaped its history in both countries and are responsible for the explanation of the commonalities and differences found in these histories. Individuals are the perpetual driving force of distance education development, and social groups are the most powerful social engine moving distance education forward. The Type I and Type II social groups identified in this study have played different roles in distance education's development in each country.

Understanding the roles the three key social agents have played in both countries' distance education histories sheds light on both countries' present and future distance education developments. Overestimating the influence of one social agent may lead to a failed distance education practice but the same can be said for underestimating one social agent's power of

changing the field. Rooted in each country's history and traditions, these social agents will continue to play the roles that have been played by their predecessors in the past one hundred years to contribute to the development of distance education that each nation "desires or that it deserves" (Kandel, 1993, p. xxiv). This should be recognized in any examination of the topic.

Understanding that both countries' distance education histories have been shaped by different social agents helps to enrich the discussion on the trends of national and international distance education dynamics. As was discussed in Chapter one, there are three main debates on international distance education dynamics: A global convergence process (convergence theory), a colonization process (Westernization approach) and a diversification process (culture perspective). Although the scope of this study is not sufficient to conclude that one process is more prevalent than another, the socio-historical approach this research takes in the study of China and the U.S. distance education histories provides a new way of studying the question.

The knowledge gained in this study aids planning of the field's future development in this globalizing world by directing our attention to the importance of social agents in distance education development, rather than to a seeming random kaleidoscope appearance of distance education around the world. The key to the understanding of international distance education dynamics is not the stable trends embedded in one country's distance education history that suggest continuing on the same historical path, nor is it the social disruption that argues for changing things that were in the past key elements of success. Both stable trends and social disruption are important factors affecting distance education's future development, but it is the judgment and effort of the social agents that really matters. Further study of this approach to distance education development in other countries is recommended.

Bibliography

Primary Sources–China

An, J., & Wu, J. (2005, Nov 1-3). *CERNET2 project.* Paper presented at the 2005 Chinese-American Networking Symposium, Washington, D. C.

Bayi School. (2006). *Bayi school profile*. Retrieved December 28, 2007, from http://www.81xy.com/News/fzgc/200609/News_20060905094206.html

Becker *et al*. (1932). The reorganization of education in China: Report of the League of Nations' mission of educational experts. Paris: League of Nations.

Beijing Municipal Education Commission. (2003a, May 20). About synchronous teaching through the "classroom in the Air". Retrieved October 26, 2007, from http://www.bjedu.gov.cn/bjedu/77688193083768832/20050907/11972.shtml

Beijing Municipal Education Commission. (2003b, May 23). Beijing opened "Pre-school education by air". Retrieved October 26, 2007, from http://www.bjedu.gov.cn/bjedu/77688193083768832/20050907/11975.shtml

Beijing Radio and Television University. (n.d.). *University profile*. Retrieved April, 16, 2008, from http://www.btvu.org/gaikuang/gaikuang.htm

BUPT Network College. (2006). *College profile–Historical development*. Retrieved September 18, 2007, from http://www.buptnu.com.cn/college/history.htm

CABTS. (2008). *The profile of the Central Agricultural Broadcasting and Television School*. Retrieved January 23, 2008, from http://www.ngx.net.cn/xuexiaogaikuang/t20080414_18516.htm

CCRTVU. (1989). *The selected documentaries on the radio and TV university development: 1978-1988*. Beijing: The CRTVU Press.

CCRTVU. (1993). *Education statistics yearbook of Radio and TV University in China (1992-1993)*. Beijing: CRTVU.

CCRTVU. (2006a). The CRTVU system. Retrieved November 11, 2007, from http://www.crtvu.edu.cn/topicpage/xitong/jianjie.html

CCRTVU. (2006b). *Education statistics yearbook of Radio and TV University in China*. Beijing: CRTVU.

CCRTVU. (2007). *Education statistics yearbook of Radio and TV University in China*. Beijing: CRTVU.

CCRTVU. (n.d.). *China LiaoYuan RTV School*. Retrieved January 18, 2008, from http://www.crtvu.edu.cn/topicpage/jiaoxuejigou/zhongguoliaoyuanguangbodianshixuexiao.html

CCRTVU. (n.d.). *The historical development of CRTVU, 1978-1998*. Beijing: The CCRTVU Press.

CERNET. (1994). History: The principles for planning and development of CERNET. Retrieved August 28, 2007, from http://www.edu.cn/cernet_jian_jie_1327/20060323/t20060323_3800.shtml

CERNET. (2006). *CERNET administrative structure*. Retrieved October 18, 2007, from http://www.edu.cn/cernet_jian_jie_1327/20060323/t20060323_3811.shtml

CETV. (2001). *The introduction of China Education Broadband Satellite network*. Retrieved June, 18, 2007, from http://www.lcjyxt.net/xx/dmfwxx/htm/ucjy/CEBsat/pt.htm

CETV. (2008). *CETV profile*. Retrieved June, 18, 2008, from http://www1.cetv.edu.cn/others/cetv-tv/index.php

China Education Yearbook Editorial Dept. (1984). *China education yearbook 1949-1981*. Shanghai: China Encyclopedia Press.

China Education Yearbook Editorial Dept. (1986). *China education yearbook 1982-1984*. Shanghai: China Encyclopedia Press.

China Education Yearbook Editorial Dept. (1987). *China education yearbook 1985, 1986*. Shanghai: China Encyclopedia Press.

China Education Yearbook Editorial Dept. (1993). *China education yearbook 1992*. Beijing: Renmin Eduation Press.

China Education Yearbook Editorial Dept. (2000). *China education yearbook 1999*. Beijing: Renmin Eduation Press.

China Education Yearbook Editorial Dept. (2001). *China education yearbook* 2000. Beijing: Renmin Eduation Press.

China Education Yearbook Editorial Dept. (2002). *China education yearbook 2001*. Beijing: Renmin Eduation Press.

China Education Yearbook Editorial Dept. (2003). *China education yearbook 2002*. Beijing: Renmin Eduation Press.

China Education Yearbook Editorial Dept. (2004). *China education yearbook 2003*. Beijing: Renmin Eduation Press.

China Education Yearbook Editorial Dept. (2005). *China education yearbook 2004*. Beijing: Renmin Eduation Press.

China Education Yearbook Editorial Dept. (2006). *China education yearbook 2005*. Beijing: Renmin Eduation Press.

CNNIC. (2006). *The Internet timeline of China*. Beijing: China Internet Network Information Center.

CNNIC. (2008). *Statistical survey report on the Internet development in China*. Beijing: China Internet Network Information Center.

Commercial Press. (1992). *The ninety-ninth anniversary of the Commercial Press: Me and the Commercial Press*. Beijing: Commercial Press.

Commercial Press. (2004). *A century of Commercial Press*. Retrieved July 06, 2007, from http://www.cp.com.cn/ht/newsmore.cfm?iSno=17

Deng, X. (1977). A few opinions on science and education work. In X. Deng (Ed.), *Selected works of Deng Xiaoping (Vol 2)*. Beijing: Renmin Publish.

Deng, X. (1978). Speech at the national education work conference. In X. Deng (Ed.), *Selected works of Deng Xiaoping (Vol 2)*. Beijing: Renmin Publish.

Liu, B. (2004, December 27). China launches new generation Internet. *China Daily*.

Ministry of Education. (1980). *On the promotion of correspondence education and evening college at higher education institution*. Beijing: Ministry of Education.

Ministry of Education. (1981). *About the change of application process for higher education institutions to establish correspondence education and evening college*. Beijing: Ministry of Education.

Ministry of Education. (1983). *About conferring bachelor degree to graduates of correspondence education, evening college of higher education institutions*. Beijing: Ministry of Education.

Ministry of Education. (1988). *The interim provisions for RTVU system management*. Beijing: Ministry of Education.

Ministry of Education. (1996). *The ninth five-year plan of national education development and strategic plan for 2010*. Beijing: The Ministry of Education.

Ministry of Education. (1998). *The 21st century education invigorating plan*. Beijing: Ministry of Education.

Ministry of Education. (1999a). *Notice on the CRTVU intellectual cultivation reform and open education experiment project*. Beijing: Ministry of Education.

Ministry of Education. (1999b). *The regulation on the establishment of correspondence education division and evening college within regular higher education institutions*. Beijing: Ministry of Education.

Ministry of Education. (2000a). *Comments on the support of several higher education institutions to establish Internet Education Schools to pilot modern distance education*. Beijing: Ministry of Education.

Ministry of Education. (2000b). *Notice on the launch of School-School-Connection project at primary and secondary schools*. Beijing: Ministry of Education.

Ministry of Education. (2000c). *The plan of the primary and secondary teacher continuing education project: 1999-2002*. Beijing: Ministry of Education.

Ministry of Education. (2001a). *About conducting annual evaluation of the institutions offering modern distance education*. Beijing: Ministry of Education.

Ministry of Education. (2001b). *About the mid-term evaluation of CRTVU's Intellectual Cultivation Reform and Open Education project*. Beijing: Ministry of Education.

Ministry of Education. (2002a). *About the mid-term evaluation report of CRTVU and 22 provincial RTVUs' intellectual cultivation reform and open education experiment*. Beijing: Ministry of Education.

Ministry of Education. (2002b). *Currently Released Ad Hoc Technical Standards for Modern Distance Education*, from http://www.edu.cn/html/keyanfz/yuanchengjiaoyu.shtml

Ministry of Education. (2002c). *The list of 67 universities approved to provide modern distance education*. Beijing: Ministry of Education.

Ministry of Education. (2002d). *Technical standard system for modern distance education and eleven ad hoc standards, v1.0*, from http://www.edu.cn/html/keyanfz/ycjy01.shtml

Ministry of Education. (2002e). *The tenth five-year plan of national education development*. Beijing: Ministry of Education.

Ministry of Education. (2002f). Education statistics in Shangdong Province. In MOE Department of Development and Planning (Ed.), *2002 Education statistics yearbook*. Beijing: Ministry of Education.

Ministry of Education. (2003a). *Mid-term evaluation report of Inner Mongolia RTVU and other 21 provincial RTVUs' Intellectual Cultivation Reform and Open Education project*. Beijing: Ministry of Education.

Ministry of Education. (2003b). *MOE's guidance on the establishment of a national teacher education networking consortium*. Beijing: Ministry of Education.

Ministry of Education. (2004a). *About the final evaluation of CRTVU's intellectual cultivation reform and open education experiment*. Beijing: Ministry of Education.

Ministry of Education. (2004b). *The education invigorating plan for 2003-2007*. Beijing: Ministry of Education.

Ministry of Education. (2005). *Normal education bureau senior officer Song Yonggang's talk on the development of the National Teacher Education Networking Consortium and the organization of the second round nationwide primary and secondary teacher training*. Beijing: Ministry of Education.

Ministry of Education. (2007a). *List of higher education institutions recognized by MOE to deliver degree education through Internet*. Retrieved March 08, 2008, from http://www.moe.gov.cn/edoas/website18/info30375.htm

Ministry of Education. (2007b). *MOE's notice on the final evaluation of CRTVU's intellectual cultivation reform and open education experiment*. Beijing: Ministry of Education.

Ministry of Education. (2008a). *The eleventh five-year plan of national education development*. Beijing: The Ministry of Education.

Ministry of Education. (2008b). *The outline of CRTVU's eleventh five-year development plan*. Beijing: Ministry of Education.

Ministry of Education. (n.d.). Functions: Ministry of Education of the People's Republic of China. Retrieved March 18, 2008, from http://www.moe.edu.cn/english/ministry_f.htm

Ministry of Personnel. (1983). *The list of higher education institutions being approved to establish correspondence education and evening schools before 1966*. Beijing: Ministry of Personnel.

National Modern Distance Education Network for Rural Government Officials. (2005). *A debrief of the modern distance education for rural government officials project–December 2005*. Retrieved Jan, 18, 2008, from http://www.dygbjy.gov.cn:8008/yjdt/gzjb/200611/t20061109_1432.htm

People's Daily. (April 11, 2005). *CPC Committee decided to expand the project of introducing modern distance education to rural government officials*. Beijing: People's Daily Press.

RUC News Office. (2008). The earliest university offering correspondence education. Retrieved March, 3, 2008, from http://news1.ruc.edu.cn/102731/53919.html

RUC School of Continuing Education. (n.d.). *RUC School of Continuing Education profile*. Retrieved October 16, 2007, from http://www.sce.ruc.edu.cn/xygk_displaynews.asp?id=191

Shanghai Government Local Records Office. (2000). *Xiang Zhou*. Retrieved June, 18, 2007, from http://www.shtong.gov.cn/node2/node4/node2250/node4424/node54530/node61870/node61872/userobject1ai40620.html

Shanghai Government Local Records Office. (2001). *Shanghai Art records: Appendix II: Art events records*. Retrieved Nov, 18, 2007, from http://www.shtong.gov.cn/node2/node2245/node73148/node73157/index.html

State Council. (2003). *State Council's decision on strengthening education in rural areas*. Beijing: The State Council of the People's Republic of China.

State Education Commission. (1987a). *The temporary regulation on regular higher education institutions' correspondence education*. Beijing: State Education Commission.

State Education Commission. (1987b). *Temporary regulation on the approval authority of the RTVU system's educational programs*. Beijing: State Education Commission.

State Education Commission. (1987c). *The decision of the SEC on the reform and development of adult education*. Beijing: State Education Commission.

State Education Commission. (1988a). *About the decentralization of approval authority of regular higher education institutions' correspondence education and evening colleges education*. Beijing: State Education Commission.

State Education Commission. (1988b). *The temporary regulation on Radio and TV Universities*. Beijing: State Education Commission.

State Education Commission. (1989). *The guidance on the management of satellite TV teacher education*. Beijing: State Education Commission.

State Education Commission. (1990). *An updated list of regular higher education institutions approved to provide correspondence, evening diploma education in 1989*. Beijing: State Education Commission.

State Education Commission. (1993). *The list of regular higher education institutions approved to provide correspondence, evening diploma education in 1993*. Beijing: State Education Commission.

State Education Commission. (1995a). *Opinions on the implementation of "The guideline for education reform and development in China" in the RTVU system.* Beijing: State Education Commission.

State Education Commission. (1995b). *Notice on the evaluation of correspondence education and evening college provided by regular higher education institutions*. Beijing: State Education Commission.

State Education Commission. (1997). *Notice of the updated list of regular higher education institutions being approved by SEC to provide correspondence education and evening college education , and the continuation of correspondence education and evening college education approval procedure*. Beijing: State Education Commission.

The Central Committee of CPC & The State Council. (1993). *The guideline for education reform and development in China*. Beijing: The Central Committee of CPC & the State Council,.

The Central Committee of CPC & The State Council. (1999). *The Central Committee of CPC and the State Council's decision on furthering education reform and fully promoting quality-oriented education*. Beijing: The Central Committee of CPC & the State Council,.

The Central Committee of CPC. (1985). *The decision of the Central Committee of the CPC on the reform of education*. Beijing: The Central Committee of the Communist Party of China.

The Central Committee of CPC. (2005). *CCPC's suggestions on the development of the 11th five-year plan for economy and social development in China*. Beijing: The Central Committee of CPC.

The School of CRTVU-General Staff Department of PLA. (2007). *The profile of the School of CRTVU-General Staff Department of PLA*. Retrieved December 28, 2007, from http://www.zcxy.com.cn/Article_Show.asp?ArticleID=8

Tianjin RTVU. (n.d.). *Tianjing RTVU profile*. Retrieved March, 18, 2008, from http://60.28.60.3/xxgk/index.html

Tsinghua University News Center. (2005). *Birth with technology innovation and develop in the era of social transformation: The facts of distance education development at Tsinghua University*. Retrieved Jan, 16, 2008, from http://news.tsinghua.edu.cn/new/news.php?id=10447

World Bank. (1985). *China: Issues and prospects in education*. Washington D. C.: The International Bank for Reconstruction and Development.

Wu, Q. (2004). *Keynote speak on the launch of "One Village One College Student" project press conference*. Retrieved Nov, 18, 2007, from http://www.moe.gov.cn/edoas/website18/37/info7537.htm

Xie, X., & Li, F. (1990). *The educational records of China Radio and Television Universities (1979-1988)*. Beijing: The CRTVU Press.

Xie, X. (2003, April 30). Fighting SARS–Beijing launched K-12 classroom in the air. *Youth News*.

Zhang, S. (1997a). *In memory of my father Yuanji Zhang*. Shanghai: Dongfang Press.

Zhang, S. (1997b, May 6). My father and library business. *Haiyan Newspaper*.

Zhang, B. (2005, Nov 1-3). *Key Applications over CERNET*. Paper presented at the 2005 Chinese-American Networking Symposium, Shenzhen, China.

Primary Sources–U.S.

Adams, H. B. (July, 1891). University extension and its leaders. *Review of reviews, III*, 593-609.

Arnone, M. (2002a, February 15). United States Open U. to close after spending $20-million. *The Chronicle of Higher Education*. p. 44.

Arnone, M. (2002b, June 14). Britain's Open U. gets a partner from America. *The Chronicle of Higher Education*. p. 32.

Athabasca University. (2000). *Strategic agreement signed between the Open University of Canada, the UK and the US*. Retrieved April 16, 2009 from http://www.athabascau.ca/reports/usou.htm

Benbow, S. D. (1943). University of the armed forces. *Journal of Educational Sociology, 16*(9), 577-590.

Beranek, L. (2000). Roots of the Internet: A personal history. *The Massachusetts Historical Review, 2*.

Bergmann, H. F. (2001). "The silent university": The Society to Encourage Studies at Home, 1873 -1897. T*he New England Quarterly, 74(*3), 447-477.

Blumenstyk, G. (1999, July 23). Banking on its reputation, the Open University starts an operation in the U.S. *The Chronicle of Higher Education*. p. A36.

Borgman, C., Abelson, H., Dirks, L., Johnson, R., Koedinger, K., Linn, M., *et al*. (2008). *Fostering learning in the networked world: The cyberlearning opportunity and challenge–A 21st century agenda for the National Science Foundation*. Washington, D. C.: National Science Foundation.

Bureau of The Census. (1975). *Historical statistics of the United States, Colonial Times to 1970 (Bicentennial ed.)*. Washington, D.C.: U.S. Government Printing Office.

Carnevale, D. (2000, March 10). In some states, governors are told, distance learning is too regulated. *The Chronicle of Higher Education*. p. A44

Chancellor's Office. (1999). *Distance education: Access guidelines for students with disabilities.* Sacramento, CA: Chancellor's Office California Community Colleges.

Chautauqua Institution. (n.d.). *History and archives*. Retrieved May 18, 2007, from http://www.ciweb.org/history.html

Childs, G. B. (1963). Supervised correspondence instruction. In C. A. Wedemeyer (Ed.), *The Brandenburg memorial essays on correspondence instruction I (*pp. 22-33). Wisconsin: The University of Wisconsin, University Extension.

Coast Guard Institute. (n.d.). *Distance education programs.* Retrieved August, 18, 2008, from http://www.uscg.mil/hq/cgi/links/links_distance_ed.asp

Corporation for Public Broadcasting. (1981). *Status report of public broadcasting*. Washington, D.C.: Corporation for Public Broadcasting.

Corporation for Public Broadcasting. (2003). *Connected to the future: A report on children's Internet use.* Washington, D. C.: Corporation for Public Broadcasting.

Cowlan, B., & Foote, D. (1975). *A case study of the ATS-6 Health, Education and Telecommunications projects: Agency for International Development (Dept. of State).* Washington, D.C.: Office of Education and Human Resources, Agency for International Development (Dept. of State), Bureau for Technical Assistance.

Daniel, J. S. (2000, May 24-27). *The Open University going global*. Paper presented at the World Education Market. Vancouver, British Columbia, Canada. Retrieved April 28, 2009 from http://www.open.ac.uk/johndanielspeeches/WEMVancouver.htm

Daniel, J. S. (2001a, September 7). Lessons From the Open University: Low-Tech Learning Often Works Best. *The Chronicle of Higher Education*. p. 24.

Daniel, J. S. (2001b, September 10-11). *Introductory remarks*. Presented at the Expert Meeting: Impact of Globalisation on Quality Assurance, Accreditation and the Recognition of Qualifications in Higher Education. UNESCO, Paris. Retrieved April 18, 2009 from http://www.unesco.org/education/studyingabroad/adg_speech.shtml

Daniel, J. S. (2004, June 9). *The sustainable development of open and distance learning for sustainable development*. Paper presented at The Commonwealth of Learning Institute on Strategies for Sustainable Open and Distance Learning, Sydney, BC, Canada. Retrieved March 18, 2008, from http://www.col.org/resources/speeches/2004presentations/Pages/2004-06-09.aspx

DANTES. (2007). *Mission brochure*. Pensacola, FL: DANTES.

DETC. (2007). *DETC 2007-2008 Directory of Accredited Institutions.* Washington, D.C.: Distance Education and Training Council.

DETC. (2007). *2007 distance education survey: A report on course structure and educational services in Distance Education and Training Council member institutions*. Washington, D. C.: Distance Education and Training Council.

DETC. (n.d.). *About us*. Retrieved March 26, 2008, from http://www.detc.org/about.html

Distance Education and Training Council. (2001). *The history of the distance education and training council.* Washington, D. C.: Distance Education and Training Council.

Douds, M. J. (1982). *The reshaping of an innovation. ACSN-The Learning Channel, 1974-1982. An executive summary prepared for National Institute of Education. ERIC, ED238398.*

eArmyU. (n.d.). *Outstanding success.* Retrieved March 08, 2008, from https://www.earmyu.com/public/public_earmyu-about_earmyu.aspx

Eaton, J. S. (1998). *1998 Higher Education Act: A summary of important and positive changes in federal policy toward voluntary accreditation*. Retrieved Feb 28, 2008, from http://www.chea.org/Research/index.asp

Eaton, J. S. (2004). *Is the era of self-regulation over*? Retrieved Feb 28, 2008, from http://www.chea.org/Research/index.asp

Education Week. (1983). p 7. July 27.

Education Week. (1985). p 6. March 27.

EDUCAUSE. (2005). *Higher education's perspective on telecommunications reform*. Washington, D. C.: EDUCAUSE.

EDUCAUSE. (2007). *Broadband America–Realizing the vision.* Washington, D.C.: EDUCAUSE.

EDUCAUSE. (2008). *A blueprint for big broadband.* Washington, D. C.: EDUCAUSE.

Federal Communications Commission. (1975). Educational radio. *Information Bulletin, 21-B.*

Ford Foundation. (1976). *Ford Foundation activities in noncommercial broadcasting 1951-1976.* New York: Ford Foundation.

Frazer, K. D. (1996). *NSFNET: A partnership for high-speed networking–Final report 1987-1995*. Ann Arbor, MI: Merit Network Inc.

Goodspeed, T. W. (1916). *A history of the University of Chicago, founded by John D. Rockefeller, the first quarter-century*. Chicago, IL: University of Chicago Press.

Griffiths, C. (2007). A letter to explain the recognition the U.S. Secretary of Education has granted DETC, upon request by Michale Lambert, Executive Director of DETC.

Harper, W. R. (1990). On teaching by correspondence. In R. W. Rohfeld (Ed.), *Expanding access to knowledge: Continuing higher education NUCEA 1915-1990 (pp. 4-12)*. Washington, D.C.: National University Continuing Education Association.

Hawkins, B. L., & Rudy, J. A. (2008). *EDUCAUSE core data service fiscal year 2007 summary report.* Washington, D. C.: EDUCAUSE.

ICCE. (1938). *Report of the first international conference on correspondence education.* Victoria, B.C.: The Department of Education.

International Correspondence School. (1900). *Mechanics' pocket memoranda: A convenient pocketbook. (6th ed.).* Scranton, PA: The Colliery Engineer Company.

International Council for Open and Distance Education. (n.d.). *History.* Retrieved October 16, 2007, from http://www.icde.org/oslo/icde.nsf/id/4C6B472DE41309EAC1256F9900534AF5?OpenDocument

Internet2. (2008). *2007 Member report.* Ann Arbor, MI: Internet2.

Iowa Digital Library. (n.d.). *W9XK experimental television at Iowa Digital Collection.* Retrieved January 16, 2008, from http://digital.lib.uiowa.edu/cdm4/browse.php?CISOROOT=/w9xk

Johnstone, J., M. (1974). *Comments of the National Home Study Council: Before the Federal Trade Commission in the matter of advertising, disclosure, cooling-off, and refund requirements concerning proprietary vocational and home-study schools.* Washington, D.C.: National Home Study Council.

Joint Council on Educational Television. (1959). *Educational television today: A status report.* Washington D.C.: Joint Council on Educational Television.

King, S. (1972). Computer Networks (video clip): The Heralds of Resource Sharing.

McNeil, D. R. (1967). The new university extension in Wisconsin. Wis*consin Academy Review, 14(2*).

McNeil, D. R. (1982). *Final report: The UMA experience (1974-1982). National Institute of Education Project No. NIE-G-75-0001*. Lincoln, NE: University of Mid-America.

Meyer, K. A. (2006). The closing of the U.S. Open University. *EDUCAUSE QUARTERLY* 29(2), 5-7

Mitchell, S. C. (1923). For the 90 per cent. *The School Review*, 31(6), 439-444.

Mitchell, S. C. (1940). Supervised Correspondence Study. *Teachers College Record*, 41(4), 318-322.

Moore, R. L. (1980). NUCEA survey research committee 1978-79 survey. *Continuum*, 45(1), 11-24.

NASULGC. (2008). *The strategic case for online learning: Access, engagement and success*. Retrieved March 5, 2008, from http://www.sloan-c.org/adec/

National Association of Educational Broadcasters. (1979). *The Nixon administration public broadcasting papers: A summary 1969-1974.* Washington, D.C.: National Association of Educational Broadcasters.

National Center for Education Statistics. (1982). *Instructional use of computers in public schools.* Washington, D. C.: Department of Education.

National Center for Education Statistics. (1984). *Instructional use of computers in public schools, Spring 1983. Fast response survey system report No. 14*. Washington, D.C.: Department of Education.

National Center for Education Statistics. (1999). *Distance education at postsecondary education institutions: 1997-98 (NCES2000-013).* Washington, D.C.: Department of Education.

National Center for Education Statistics. (1997). *Distance education in higher education institutions: Incidence, audiences, and plans to expand (NCES 98132).* Washington, D. C.: Department of Education.

National Center for Education Statistics. (2000). *Teachers' tools for the 21st century: A report on teachers' use of technology (NCES 2000102)*. Washington, D. C.: Department of Education.

National Center for Education Statistics. (2003). *Distance education at degree-granting postsecondary institutions: 2000-2001 (NCES 2003017)*. Washington, D. C.: Department of Education.

National Center for Education Statistics. (2002). *Distance education instruction by postsecondary faculty and staff: Fall 1998 (NCES 2002-155).* Washington, D. C.: Department of Education.

National Center for Education Statistics. (2003). *Young children's access to computers in the home and at school in 1999 and 2000.* Washington, D. C.: Department of Education.

National Center for Education Statistics. (2005a). *Distance education at higher education institutions: 2000-01 (PEQIS 13): Public-Use Data Files and Documentation (NCES 2005118).* Washington, D. C.: Department of Education.

National Center for Education Statistics. (2005b). *Internet access in U.S. public schools and classrooms: 1994-2003 (NCES 2002018).* Washington, D. C.: Department of Education.

National Center for Education Statistics. (2008). *Technology-based distance education courses for public elementary and secondary school students: 2002-3 and 2004-5*. Washington, D.C.: Department of Education.

National Home Study Council. (1945). *Home study blue book and directory of private home study schools and courses approved by the National Home Study Council*. Washington, D.C.: National Home Study Council.

National Public Broadcasting Archives. (1990). *Pu*b*lic broadcasting timeline. Re*trieved April, 28, 2007, from http://www.lib.umd.edu/NPBA/timeline.html

National Public Broadcasting Archives. (1993a). *Archives of The Midwest Program on Airborne Television Instruction (MPATI).* College Park, MD: University of Maryland.

National Public Broadcasting Archives. (1993b). *Eastern Educational Television Network (EEN)*. College Park, MD: University of Maryland.

National Public Broadcasting Archives. (1993c). *Joint Council on Educational Telecommunications (JCET).* College Park, MD: University of Maryland.

National Public Broadcasting Archives. (1995). *Papers of Donald R. McNeil*. College Park, MD: University of Maryland.

National Science Foundation. (2000). The Internet: Changing the way we communicate. In National Science Foundation (Ed.), *America's investment in the future*. Arlington, VA: National Science Foundation.

National University Continuing Education Association. (1990). *Independent study program profiles 1988-89. Final report.* Washington, D.C.: National University Continuing Education Association.

Navy College Program. (n.d.). *NCP distance learning partnership schools. Re*trieved August, 28, 2008, from https://www.navycollege.navy.mil/storefront.cfm

Newburger, E. (2001). *Home computers and Internet use in the United States: August 2000*. Washington, D. C.: U. S. Census Bureau.

Noffsinger, J. S. (1926). *Correspondence schools, lyceums, Chautauquas*. New York: The Macmillan Company.

Noffsinger, J. S. (1939). Institutional development. *Phi Delta Kappan, 22, p1*90.

NTU. (2003). *2001–2003 Academic Bulletin.* Fort Collins, CO: National Technological University.

NUCEA. (1990). *Expanding access to knowledge: Continuing higher education NUCEA 1915-1990*. Washington, D.C.: National University Continuing Education Association.

NUTN. (n.d.). *The NUTN experience. Re*trieved October, 16, 2007, from http://www.nutn.org/about_us/experience.html

Office of Technology Assessment. (1987). *Computer networks in elementary and secondary education.* Washington, D.C.: U. S. Government Printing Office.

Office of Technology Assessment. (1988). *Power on! New tools for teaching and learning, OTA-SET-379.* Washington, D.C.: U. S. Government Printing Office.

Office of Technology Assessment. (1989). *Linking for Learning: A New' Course for Education, OTA-SET-430.* Washington, D.C.: U.S. Government Printing Office.

Penn State Special Collections. (n.d.). *National University Continuing Education Association–Independent Study Division.* University Park, PA: Pennsylvania State University.

Penn State World Campus. (n.d.-a). *Students with disabilities. Re*trieved July 16, 2008, from http://www.worldcampus.psu.edu/StudentServices_StudentsDisabilities.shtml

Penn State World Campus. (n.d.-b). *World Campus history. Re*trieved Oct, 26, 2007, from http://www.worldcampus.psu.edu/AboutUs_History.shtml

Powell, E., Spencer. (1966). *NUEA correspondence study: A survey questionnaire of replies.* Washington, D. C.: National University Extension Association.

Reber, L. (1916). University extension in the United States. *The ANNALS of the American Academy of Political and Social Science, 67, 82*-192.

Regional Accrediting Commissions. (2001). *Best practices for electronically offered degree and certificate programs*. Retrieved April 18, 2009, from www.wcet.info/resources/accreditation/Accrediting%20-%20Best%20Practices.pdf

Sloan Consortium. (2006). *Sloan Semester Archives*. Retrieved Jan 08, 2008, from http://www.sloan-c.org/sloansemester/

Society to Encourage Studies at Home. (1878). *Fifth annual report.* Boston, MA: Rockwell and Churchill.

Society to Encourage Studies at Home. (1897). *Society to Encourage Studies at Home.* Cambridge: The Riverside Press.

Special Collections Department. (n.d.). *MS 584: Iowans for WOI-TV, Inc.* Ames, IA: Iowa State University.

Steetle, R. (1959). The Changing status of educational television. *Journal of Educational Sociology, 32(9),* 427-433.

The Mission and Spacecraft Library. (1999). *ATS (Applications Technology Satellites).* Retrieved January, 16, 2008, from http://leonardo.jpl.nasa.gov/msl/Programs/ats.html

The National Center on Disability and Access to Education. (2005). *National summit on disability and distance education.* Retrieved July, 18, 2008, from http://ncdae.org/activities/summit.cfm#summitmaterials

The Regional Medical Programs Collection. (1991). *Regional medical programs legislation and activities in the U.S. (1965-1976).* Bethesda, MD: U.S. National Library of Medicine.

The Society for the Promotion of Engineering Education. (1931). *A study of technical institutes: A collateral project to the investigation of engineering education.* Lancaster, PA: Lancaster Press, Inc.

The U. S. Department of Commerce. (2001). *A nation online: How Americans are expanding their use of the Internet.* Washington, D.C.: The U. S. Department of Commerce.

The U.S. Census Bureau. (2003). *Households with computers and Internet access by selected characteristic: 2003*. Washington, D.C.: The U.S. Census Bureau.

The U.S. Census Bureau. (2007). *Internet access and usage: 2007.* Washington, D. C.: U.S. Census Bureau.

The U.S. Government Accountability Office. (1997). *Distance learning: Opportunities exist for DOD to capitalize on services' efforts (NSIAD-98-63R).* Washington, D. C.: The U.S. Government Accountability Office.

The U.S. Government Accountability Office. (2003a). *Distance education: Challenges for minority serving institutions and implications for federal education policy.* Washington, D. C.: The U.S. Government Accountability Office.

The U.S. Government Accountability Office. (2003b). *Distance education: More data could improve education's ability to track technology at minority serving institutions*. Washington, D. C.: The U.S. Government Accountability Office.

Tilson, S. (2002, July 21-25). *United States Open University: Great expectations and cold realities*. Paper presented at the 2002 Western Cooperative for Educational Telecommunications Annual Conference. Park City, Utah. Retrieved March 16, 2009, from http://conference.wcet.info/2002/presentations/files/Tilson.ppt

U.S. Department of Education. (1998). *1998 Amendments to the Higher Education Act of 1965.* Washington, D. C.: Department of Education.

U.S. Department of Education. (2004). *National education technology plan 2004.* Washington, D. C.: Department Of Education.

U.S. Department of Education. (2005). *Distance education demonstration program–Third report to Congress.* Washington, D. C.: Department of Education, Office of Postsecondary Education, Office of Policy, Planning and Innovation,.

U.S. Department of Education. (2007). *Innovations in education: Connecting students to advanced courses online.* Washington, D.C.: Department of Education.

U.S. Department of Education. (2008). *Accreditation in the United States*. Retrieved Feb 28, 2008, from http://www.ed.gov/admins/finaid/accred/accreditation_pg2.html

U.S. Department of Education. (n.d.). *Star schools program.* Retrieved December 18, 2008, from http://www.ed.gov/programs/starschools/index.html

U.S. Department of State. (n.d.). *The U.S. education system: The federal role in education*. Retrieved Feb 28, 2008, from http://usinfo.state.gov/infousa/education/overview/federal_role_education.html

UCEA. (2008). *Membership*. Retrieved January 16, 2008, from http://www.ucea.edu/membership/current.html

University of Mid-America. (1981). *Plan for the American Open University.* Lincoln, NE: University of Mid-America.

University of Wisconsin-Extension. (2007). *Catalogs.* Retrieved September 16, 2008, from http://www.uwex.edu/disted/catalogs.cfm

University of Wisconsin-Madison. (2006). *History of the Wisconsin Idea*. Retrieved March 18, 2007, from http://www.wisconsinidea.wisc.edu/history.html

USOU. (2001). *Mission*. Retrieved April 16, 2009 from http://web.archive.org/web/20010213201630/www.open.edu/about/

Vincent, B. (1888, July 6). Chautauqua college: Formal opening of the institute. *The New York Times.*

Vincent, G. E. (1904). Summer schools and university extension. *Monographs on Education in the United States, 82*3-864.

Vincent, J. H. (1886). *The Chautauqua movement.* Boston: Chautauqua Press.

Virtual High School. (2008). *VHS–Because Classrooms are so 2007! (Fall 07-Spring 08 Yearbook).* Retrieved August, 28, 2008, from http://www.govhs.org/Pages/AboutUs-YearbookF06

Wedemeyer, C., & Najem, R. E. (1969). AIM: From Concept to Reality. The Articulated Instructional Media Program at Wisconsin. *Notes and Essays on Education for Adults, No.61*.

Wedemeyer, C. A. (1963). *The Brandenburg memorial essays on correspondence instruction–I.* Madison, WI: University of Wisconsin Extension: (ERIC Document Reproduction Service No. ED 016186).

Wedemeyer, C. (1965). New uses for the 'tools' of education. *The NUEA Spectator*, 30, 14-19.

Wedemeyer, C. A. (1966). *The Brandenburg memorial essays on correspondence instruction–II.* Madison, WI: University of Wisconsin Extension (ERIC Document Reproduction Service No. ED 021156).

Wedemeyer, C. A. (1969). Evaluation of Continuing Education Programs. *American Journal of Pharmaceutical Education, 33(5).*

Wedemeyer, C. A. (1972a). Analysis of five open university models according to selected factors. *Unpublished manuscript*. Madison, WI: The University of Wisconsin-Extension.

Wedemeyer, C. A. (1972b). The "open" school: Education's runnymede? *Educational Technology*, 12(1), 65-68.

Wedemeyer, C. A. (1973a). *Institution building and evaluation*. Paper presented at the Conference and Workshop on Correspondence Education, Africa, Nairobi, Kenya (ERIC Document Reproduction Service No. ED078298).

Wedemeyer, C. A. (1973b). *The once and future school*. Prepared for Educational Media Council Seminar on Open Learning, Manpower Development and Training Programs, Washington, D.C. (ERIC Document Reproduction Service No. ED099592).

Wedemeyer, C. A. (1973c). *Characteristics of open learning systems. Report of NAEB Advisory Committee on Open Learning Systems to NAEB Conference*, New Orleans, Louisiana (ERIC Document Reproduction Service No. ED099593).

Wedemeyer, C. A. (1975a). *Implications of open learning for independent study*. Paper presented at the 10th ICCE Conference, Brighton, United Kingdom (ERIC Document Reproduction Service No. ED 112766).

Wedemeyer, C. A. (1975b). University extension–A lively mechanism for the Wisconsin Idea. In University of Wisconsin-Madison (Ed.), *A resourceful university: The university of Wisconsin-Madison in its 125th year* (pp. 69-87). Madison, WI: The University of Wisconsin Press.

Wedemeyer, C. A. (1981). *Learning at the back door: Reflections on non-traditional learning in the lifespan*. Madison, WI: University of Wisconsin Press.

Wedemeyer, C. A. (1982). The birth of the Open University-A postscript. *Teaching at a Distance, 21, 21*-27.

Wedemeyer, C. A., & Ghatala, M. H. (1972). Wisconsin's proposed "open" school. *Audiovisual Instruction*, 17(1), 9-12. (ERIC Document Reproduction Service No. EJ 053803).

Wedemeyer, C. A., & Starkweather, J. A. (1972). I am Joe's school. *Education*, 92(4), 119-129.

West, T. (2008). *2007 NLR Summary Report.* Cypress, CA: National Lambdarail.

Western Governors University. (n.d.). *University governance*. Retrieved on March 18, 2008 from http://www.wgu.edu/about_WGU/governors_industry.

Secondary Sources

Abe, M. (1961). Spare-time education in Communist China. *The China Quarterly*, 8, 149-159.

Allen, M., Bourhis, J., Burrell, N., & Mabry, E. (2002). Comparing student satisfaction with distance education to traditional classrooms in higher education: A meta-analysis. *American Journal of Distance Education, 16*(2), 83-97.

Anderson-Levitt, K. (2004). Reading lessons in Guinea, France, and the United States: Local meanings or global culture? *Comparative Education Review, 48*, 229-252.

Atkinson, C. (1941). *Radio extension courses broadcast for credit*. Boston, MA: Meador Publishing Company.

Bates, T. (2001). International distance education: Cultural and ethical issues. *Distance Education, 22*(1), 122-136.

Becher, T., & Trowler, P. R. (2001). *Academic tribes and territories: Intellectual enquiry and the culture of disciplines (2nd ed.)*. Philadelphia, PA: Society for Research into Higher Education and Open University Press.

Bendiksen, M. M. (1983). *The endless summers of Chautauqua (Student Handout)*. New York: New York Archives Magazine.

Bereday, G. (1964a). *Comparative Method in Education*. New York: Holt, Rinehart and Winston, Inc.

Bereday, G. (1964b). Sir Michael Sadler's "Study of foreign systems of education". *Comparative Education Review, 7*(3), 307-314.

Berg, B. L. (1998). *Qualitative research methods for the social sciences* (3rd ed.). Boston, MA: Allyn & Bacon.

Berge, Z., & Mrozowski, S. (2001). Review of research in distance education, 1990-1999. *American Journal of Distance Education, 15*(3), 5-19.

Bittner, W. S., & Mallory, H. F. (1933). *University Teaching by Mail*. New York: Macmillan.

Bruckner, L. I. (1970). *Spare-time higher education in communist China with emphasis on higher correspondence education*. Unpublished doctoral dissertation. Bozeman, MT: Montana State University.

Bunker, E. L. (1998). *An historical analysis of a distance education forum: the International Council for Distance Education World Conference Proceedings, 1938 to 1995*. Unpublished Doctoral Dissertation. University Park, PA: Pennsylvania State University.

Cahill, B. (1985). *Distance education in Asia and the Pacific*. Bangkok: UNESCO Regional Office for Education in Asia and the Pacific.

Campion, M. and Guiton, P. (1991). Economic instrumentalism and integration in Australian External Studies. *Open Learning*. *6*(2): 12-20.

Carey, J. M. (2001). Effective Student Outcomes: A Comparison of Online and Face-to-Face Delivery Modes. *DEOSNEWS, 11*(9).

Chu, G. C., & Schramm, W. (1967). *Learning from television: What the research says*. (ERIC Document Reproduction Service No. ED914900).

Cohen, A. P. (1995). *The symbolic construction of community*. New York: Routledge.

Cunningham, S., Tapsall, S., Ryan, Y., Stedman, L., Bagdon, K., & Flew, T. (1998). *New media and borderless education: A Review of the convergence between global media networks and higher education provision*. Canberra: Australian Government Publishing Service.

Dabbs, J. M. (1982). Making things visible. In J. Van Maanen, J. M. Dabbs Jr. & R. R. Faulkner (Eds.), *Varieties of qualitative research*. Beverly Hills, CA: Sage.

Daniel, J. S. (1996). *Mega-Universities and knowledge media: Technology strategies for higher education*. London: Kogan Page.

Deflem, M. (1996). *Borders of police force: Historical foundations of international policing between Germany and the United States.* Unpublished doctoral dissertation, Boulder, CO: University of Colorado.

Dillon, C. L. (1992). The study of distance education in the United States: Programs of study and coursework. *American Journal of Distance Education*, 6(2), 64-69.

Ding, X. (1994a). China's higher distance education–Its four systems and their structural characteristics at three levels. *Distance Education, 15*(2), 327-346.

Ding, X. (1994b). Economic analysis of Radio and TV Universities education in China. In G. Dhanarajan, P. K. Ip, K. S. Yuen & C. Swales (Eds.), *Economics of Distance Education: Recent Experience*. Hong Kong, China: Open Learning Institute Press.

Ding, X. (1996). *A comparative study of higher distance education systems in Australia and China*. Unpublished doctoral dissertation, Perth, Australia: Murdoch University.

Ding, X. (1998, April 15-17). *Evaluation of distance teaching universities: Chinese perspective and experiences'.* Paper presented at the Shanghai International Open and Distance Education Symposium, Shanghai, China.

Ding, X. (1999). Distance education in China. In K. Harry (Ed.), *Higher education through open and distance learning* (pp. 176-189). London, UK: Routledge.

Dorsher, M. D. (1999). *Hegemony online: The quiet convergence of power, culture, and computers*. Unpublished doctoral dissertation, College Park, MD: University of Maryland.

Dowlah, C. (2004). *Backwaters of global prosperity: How forces of globalization and GATT/WTO trade regimes contribute to the marginalization of the world's poorest nations*. Westport, CT.: Praeger.

Dressel, P. L., & Thompson, M. M. (1973). *Independent Study*. San Francisco, CA: Jossey-Bass.

Epper, R. M. (1996). *Coordination and competition in postsecondary distance education: A comparative case study of statewide policies.* Unpublished doctoral dissertation, Denver, CO: University of Denver.

Feasley, C. E., *et al*. (1989). *Independent study program profile 1987-88*. Washington, D.C.: Independent Study Division, National University Continuing Education Association, (ERIC Document Reproduction Service No. ED 304 582).

Frost, S. E., Jr. (1937). *Education's own stations: The history of broadcast licenses issued to educational institutions*. Chicago, IL: University of Chicago Press.

Fukuyama, F. (1992). *The end of history and the last man*. New York: Free Press.

Gerrity, T. W. (1976). *College-sponsored correspondence instruction in the United States: A comparative history of its origins (1873-1915) and its recent developments (1960-1975)*. Unpublished doctoral dissertation, New York: Columbia University.

Gunawardena, C. N., Wilson, P. L., & Nolla, A. C. (2003). Culture and online education. In M. G. Moore & W. G. Anderson (Eds.), *Hand Book of Distance Education* (pp. 753-775). Mahwah, NJ: Lawrence Erlbaum Associates.

Harry, K. (1999). *Higher education through open and distance learning*. New York: Routledge.

Hayhoe, R. (1996). *China's universities 1895–1995: A century of cultural conflict*. New York: Garland Publishing.

Hoffman, H. R. (1969). *An illustrated method for a descriptive and comparative statistical study of institutions of higher education.* Unpublished doctoral dissertation, University Park, PA: Pennsylvania State University.

Holmberg, B. (1995). *Theory and practice of distance education (2nd ed.)*. New York: Routledge.

Huang, R. (2003). The development status and trend of educational technology discipline at mainland China. *Educational Research*, 12, 28-37.

Hungtington, S. (1996). *The clash of civilizations and the remaking of world order.* New York: Simon & Schuster.

Jiang, W. (1954). The early development of the Commercial Press and Zhonghua Shuju. In J. Zhang (Ed.), *The modern publication history in China (Vol. IV, pp. 390-410).* Beijing, China: Zhonghua Shuju Press.

Johnson, S. D., Aragon, S. R., Shaik, N., & Palma-Rivas, N. (2000). Comparative analysis of learner satisfaction and learning outcomes in online and face-to-face learning environments. *Journal of Interactive Learning Research, 11*(1), 29?9.

Jones, B. (1988). *Distance education in Sweden and Demark.* Manchester, UK: CONTACT.

Kandel, I. L. (1933). C*omparative education.* New York: Houghton Mifflin.

Kasher, A. (2005). Professional ethics and collective professional autonomy: A conceptual analysis. *Journal of the European ethics network,* 11(1), 67-98.

Kinash, S., Crichton, S. and Kim-Rupnow, W. (2004). A Review of 2000-2003 Literature at the Intersection of Online Learning and Disability. *American Journal of Distance Education, 18*(1), 5-19.

Krippendorff, K. (1980). *Content analysis: An introduction to its methodology.* Beverly Hills, CA: Sage.

Kurtz, E. B. (1959). *Pioneering in educational television, 1932-1939: A documentary presentation*. Iowa City, IA: State University of Iowa.

LeTendre, G., Baker, D., Akiba, M., Goesling, B., & Wiseman, A. (2001). Teacher's work: Institutional isomorphism and cultural variation in the U.S., Germany, and Japan. *Educational Researcher, 30*(6), 3-16.

Levenson, W. B. (1945). *Teaching through radio*. New York: Farrar & Rinehart, Inc.

Lezberg, A. K. (2007). Accreditation: Quality control in higher distance education. In M. G. Moore (Ed.), *Handbook of distance education* (2nd ed., pp. 403-417). Mahwah, NJ: Lawrence Earlbaum Associates.

Li, C. (2003). The China: ICT Use in Education. In G. Farrell (Ed.), *Meta-survey on the Use of Technologies in Education in Asia and the Pacific 2003-2004.* Bangkok, Thailand: UNESCO.

Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry.* Thousand Oaks, CA: Sage Publications.

Ma, W. X., & Hawkridge, D. (1995). China's changing policy and practice in television education, 1978-93. *International journal of educational development, 15*(1), 27-36.

MacKenzie, O., Christensen, E. L., & Rigby, P. H. (1968). *Correspondence instruction in the United States: A study of what it is, how it functions, and what its potential may be*. New York: McGraw-Hill.

McCormick, R. (1992). *Distance higher education in the People's Republic of China.* Unpublished doctoral dissertation. Open University, UK.

Merriam, S. B. (1988). *Case study research in education: a qualitative approach.* San Fracisco, CA: Jossey-Bass.

Merriam, S. B. & Simpson, E. L. (2000). *A guide to research for educators and trainers of adults (2nd ed.)*. Malabar, FL: Krieger.

Moore, M. (Ed.). (1990). *Contemporary issues in American distance education.* New York: Pergamon Press.

Moore, M., & Kearsley, G. (1996). Di*stance education: A systems view.* Belmont, CA: Thomson Wadsworth.

Moore, M., & Kearsley, G. (2005). Di*stance education: A systems view* (2nd ed.). Belmont, CA: Thomson Wadsworth.

Moore, M. (1993). Editorial: Is teaching like flying? A total systems view of distance education. *American Journal of Distance Education*, 7(1), 1-10.

Moore, M. (2003). *From Chautauqua to the virtual university: A century of distance education*. Columbus, OH: Center on Education and Training for Employment, Ohio State University.

Moore, M. (2007). The theory of transactional distance. In M. G. Moore (Ed.), *Handbook of distance education* (2nd ed., pp. 89–105). Mahwah, NJ: Lawrence Earlbaum Associates.

Noblit, G. W., & Hare, R. D. (1988). *Meta-ethnography: Synthesizing qualitative studies*. Newbury Park, CA: Sage.

Perraton, H. D. (2000). *Open and distance learning in the developing world.* New York: Routledge.

Phipps, R., & Merisotis, J. (1999). *What's the difference: A review of contemporary research on the effectiveness of distance learning in higher education*. Washington D.C.: Institute for Higher Education Policy.

Pincas, A. (2001). Culture, cognition and communication in global education. *Distance Education*, 22(1), 30-51.

Pittman, V. V. (1990). Correspondence study in the American university: A historiographic perspective. In M. G. Moore (Ed.), *Contemporary Issues in American Distance Education (*pp. 67-80). New York: Pergamon Press.

Pittman, V. V. (1998). Low-Key leadership: Collegiate correspondence study and 'Campus equivalence'. *American Journal of Distance Education, 12(2*), 36-45.

Pittman, V. V. (2003). Correspondence study in the American university: A second historiographic perspective. In M. G. Moore & W. Anderson (Eds.), *Handbook of Distance Education (pp. 21-35)*. Mahwah, NJ: Lawrence Erlbaum Associates.

Robertson, R. (1992). *Globalization: social theory and global culture*. London, UK.: Sage.

Rogers, E. M., & Steinfatt, T. M. (1999). *Intercultural communication*. Prospect Heights, IL: Waveland Press.

Rumble, G., & Harry, K. (1982). *The distance teaching universities.* New York: Croom Helm/St. Martin's Press.

Saba, F. (2003). Distance education theory, methodology and epistemology: A pragmatic paradigm. In M. Moore & W. Anderson (Eds.), *Handbook of Distance Education (pp 3-20)*. Mahwah, NJ: Lawrence Erlbaum.

Saettler, P. (1990). *The evolution of American educational technology.* Littleton, CO: Libraries Unlimited.

Sanderson, S. K. (1999). *Social transformations: A general theory of historical development (expanded edition)*. Lanham, MD: Rowman & Littlefield publishers.

Schumm, W. R., Webb, F. J., Turek, D. E., Jones, K. D., & Ballard, G. E. (2006). A Comparison of Methods for Teaching Critical Thinking Skills for U.S. Army Officers. A*merican Journal of Distance Education, 20(1*), 39-50.

Shavelson, R., *et al*.. (1984). *"Successful" teachers' patterns of microcomputer-based mathematics and science instruction: A RAND note*. Santa Monica, CA: Rand Corporation, Publications Dept.

Sklair, L. (2002). *Globalization: capitalism and its alternatives.* Oxford, UK.: Oxford University Press.

Silverman, D. (2001). *Interpreting qualitative data: Methods for analyzing talk, text, and interaction (2nd ed.).* Thousand Oaks, CA: Sage.

Smythe, T. C., & Mastroianni, G. A. (Eds.). (1975). *Issues in broadcasting radio, television and cable*. Palo Alto, CA: Mayfield Publishing Company.

Stewart, D. (1999). *The PBS companion: A history of public television*. New York: TV Books, L.L.C.

Thompson, M., M. (1996). *An historical and linguistic analysis of women in the histories and the early literature of adult education, 1926–1962: Toward a balanced historiography of the*

field. Unpublished Doctoral Dissertation, University Park, PA: Pennsylvania State University.

Walsh, D., & Downe, S. (2005). Meta-synthesis method for qualitative research: a literature review. *Journal of Advanced Nursing, 50*(2), 204-211.

Watkins, B. L., & Wright, S. J. (Eds.). (1991). *The foundations of American distance education: A century of collegiate correspondence study.* Dubuque, IA: Kendall/Hunt.

Watkins, B. L. (1991). A quite radical idea: The invention and elaboration of collegiate correspondence study. In B. L. Watkins & S. J. Wright. (Eds.), *The Foundations of American distance education : A century of collegiate correspondence study (pp*. 1-35). Dubuque, IA: Kendall/Hunt Pub. Co.

Wei, R. F. (1997). *China's radio and TV universities and the British OU, a comparative perspective.* Hagen, Germany: ZIFF.

Wei, R. F., & Tong, Y. H. (1994). *Radio and TV universities: The mainstream of China's adult and distance higher education.* Nanjing, China: Yilin Press.

Wilson, D. N. (1991). A comparison of open universities in Thailand and Indonesia. In M. E. Lockheed, J. Middleton & G. S. Nettleton (Eds.), *Educational technology: Sustainable and effective use*. Washington D.C.: Population and Human Resources Department, World Bank (mimeo).

Wolf, M. (2004). *Why globalization works.* New Haven, CT: Yale University Press.

Xiong, M. (1997). *The educational history of the Republic of China*. Chongqing, China: Chongqing Press.

Zhang, W., & Shin, N. (2002). Imported or Indigenous? A comparative study of three open and distance education models in mainland China, India and Hong Kong. Op*en Learning, 17(2*), 167-176.

Zhang, W., Tsui, C., Jegede, O., Ng, F., & Kowk, L. (2000, October 25-27). *A comparison of distance education in selected Asian open universities*. Paper presented at the 14th Annual Conference of the Asian Association of Open Universities, Manila, Philippines.

Zhao, Yuhui. (1988). China: its distance higher-education system. *Prospects, 18(2*), 217-228.

Appendix A

Data Source Inclusion/Exclusion Criteria (DI/EC)

Generic Criteria
The historical material has information about the U.S. DE
The historical material has information about China's DE
Quality Criteria
If research, the results had to be published in scholarly literature2.
If official documents, it had to be conducted under the auspices of official units of national, regional governments, international/ regional educational organizations.
If digitally published, the literature had to be hosted on recognized publishers'3 or original authors' websites.
If digitally published, the official reports had to be hosted by national/regional governments or their educational units, international/regional educational organization's official websites.

[2] Scholarly literatures are dissertations, books, journals, reports, conference proceedings that can be located through databases including university libraries, the Library of Congress, NetLibrary Inc., Dissertation Abstracts database, ProQuest database, ERIC database, EBSCOhost database, Ingenta Select, SilverPlatter, MetaPress database, China Journals Full-text database, China Year Book database, China dissertation database, China journal network, etc.

[3] Recognized publishers refer to the publishers who publish the scholarly literature identified above.

Appendix B

Data Analysis Code Book (DACB)

Historical event	Year	Note

Appendix C

CSETV Class Schedule: Oct. 1986–Feb. 1987

中国教育电视播出课程时间表

（1986 年 10 月 3 日～1987 年 2 月）

播出时间	星期一	星期二	星期三	星期四	星期五	星期六	星期日
6：00—7：30	教育专题节目	教育专题节目	教育专题节目	教育专题节目	教育专题节目	教育专题节目	重播一、三、五的中师课程
7：30—8：20	文选和写作	写作与作文评改	算术	中国古代史	代数与初等函数	现代汉语	重播一、三、五的中师课程
8：30—9：20	文选和写作	写作与作文评改	算术	中国古代史	代数与初等函数	现代汉语	重播一、三、五的中师课程
9：30—10：20	代数与初等函数	文学概论	文选和写作	世界上古中古史	算术	中国现代文学	重播一、三、五的中师课程
10：30—11：20	代数与初等函数	文学概论	文选和写作	世界上古中古史	算术	中国现代文学	重播一、三、五的中师课程
11：30—16：50	重播以上节目	重播以上节目	重播以上节目	重播以上节目	重播以上节目	重播以上节目	重播一、三、五的中师课程
16：50—17：40	化工工艺及计算	工程检测技术	普通化学	古代汉语	工程检测技术	普通化学	财政体制改革专题讲座
17：43—18：33	化工工艺及计算	工程检测技术	普通化学	古代汉语	工程检测技术	普通化学	财政体制改革专题讲座
18：36—19：26	经济数学	新闻采访与写作	心理学	民法	经济数学	古代汉语	中国历代优秀管理思想
19：30—20：20	经济数学	新闻采访与写作	心理学	民法	经济数学	古代汉语	现代经济管理专题讲座
20：23—21：13	美学	普通物理实验(单周) 高等数学辅导(双周)	图书分类与编目(单周) 经济数学(双周)	化工工艺及计算	统计原理及工业统计	图书分类与编目	我国经济建设与经济体制改革
21：16—22：06	高等数学	画法几何	高等数学	美学	高等数学	会计学原理	科技英语虚词分析法
22：10—23：00	高等数学	画法几何	高等数学	美学	高等数学	画法几何	科技英语虚词分析法

Appendix D

China's Modern Distance Education Project

经教育部批准的67所现代远程教育试点学校名单 （2002年2月）		
北京	17	清华大学、北京邮电大学、北京大学、北京师范大学、中国人民大学、北京理工大学、北方交通大学、北京外国语大学、北京中医药大学、北京语言文化大学、北京广播学院、中央广播电视大学、中国农业大学、北京科技大学、对外经济贸易大学、北京航空航天大学、中央音乐学院
上海	8	上海交通大学、复旦大学、同济大学、上海第二医科大学、华东理工大学、东华大学、上海外国语大学、华东师范大学
东北	7	东北大学、东北农业大学、吉林大学、哈尔滨工业大学、大连理工大学、中国医科大学、东北财经大学
四川	6	四川大学、西南交通大学、电子科技大学、西南科技大学、西南财经大学、四川农业大学
湖北	5	华中科技大学、中国地质大学、武汉理工大学、华中师范大学、武汉大学
陕西	4	西安交通大学、西北工业大学、西安电子科技大学、陕西师范大学
广东	3	华南理工大学、华南师范大学、中山大学
江苏	3	南京大学、东南大学、江南大学
福建	2	厦门大学、福建师范大学
湖南	2	湖南大学、中南大学
山东	2	山东大学、石油大学
天津	2	天津大学、南开大学
重庆	2	重庆大学、西南师范大学
安徽	1	中国科学技术大学
甘肃	1	兰州大学
河南	1	郑州大学
浙江	1	浙江大学

Appendix E

National IP Streaming Video Program Schedule for Rural Government Officials

播出时间	节目类别	播出内容	节目时长
09:00—10:00	经营管理	1. 农村要重视发展循环经济	30分43秒
10:00—11:00	适用技术	1. 技能培训：汽车修理工（1） 2. 技能培训：汽车修理工（2） 3. 技能培训：汽车修理工（3）	27分06秒 27分01秒 27分02秒
11:00—12:00	计划生育	1. 儿童营养与饮食 2. 计划免疫	30分05秒 29分56秒
12:00—15:00（重播）	适用技术	1. 鸡腿菇生产技术 2. 燕山板栗栽培与加工	29分47秒 30分01秒
	适用技术	1. 莲藕产品深加工 2. 海岛风能发电 3. 沼气用具的故障与排除	14分56秒 15分28秒 30分12秒
	文化共享工程专栏	1. 韩国良独奏音乐会：《长笛与钢琴奏鸣曲》	53分44秒
15:00—18:00（重播）	经营管理	1. 农村要重视发展循环经济	30分43秒
	适用技术	1. 技能培训：汽车修理工（1） 2. 技能培训：汽车修理工（2） 3. 技能培训：汽车修理工（3）	27分06秒 27分01秒 27分02秒
	计划生育	1. 儿童营养与饮食 2. 计划免疫	30分05秒 29分56秒
18:00	全天课程结束		

Appendix F

The International Correspondence School of Scranton in PA

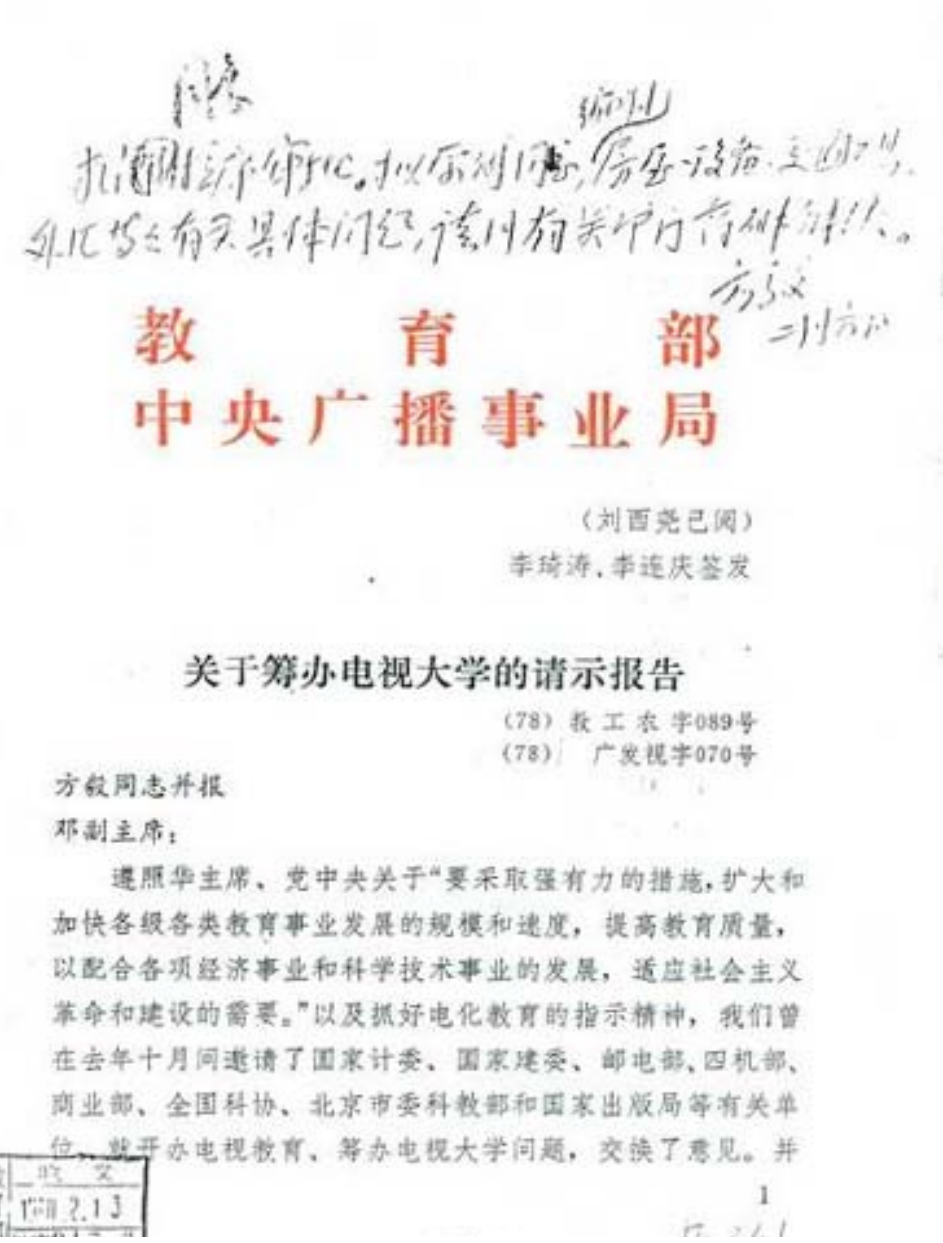
The International
Correspondence Schools,
SCRANTON, PA.

Erected for Education by Mail in 1898.

250,000 Students and Graduates. Faculty of 275

Appendix G

The Proposal for the Establishment of the RTV Universities



教　育　部
中央广播事业局

（刘西尧已阅）
李琦涛、李连庆签发

关于筹办电视大学的请示报告

（78）教工农字089号
（78）广发视字070号

方毅同志并报
邓副主席：

遵照华主席、党中央关于"要采取强有力的措施，扩大和加快各级各类教育事业发展的规模和速度，提高教育质量，以配合各项经济事业和科学技术事业的发展，适应社会主义革命和建设的需要。"以及抓好电化教育的指示精神，我们曾在去年十月间邀请了国家计委、国家建委、邮电部、四机部、商业部、全国科协、北京市委科教部和国家出版局等有关单位，就开办电视教育、筹办电视大学问题，交换了意见。并

Appendix H

The Presidents and Secretary of CRTVU (1980–2006)

姓名/Name	职务/Title	任期/Duration
段洛夫	校长	1980.1～1983.10
王亦山	党委书记、副校长	1980.1～1984.9
	代理校长	1980.12～1984.9
张群玉	党委书记、副校长	1984.9～1985.2
	党委书记、第一副校长	1985.2～1986.12
何东昌	校长（兼）	1984.9～1990.2
张达	第一副校长	1986.12～1994.3
谢新观	党委书记、副校长	1986.12～1990.2
	校长	1990.2～1994.7
周兴林	党委书记	1990.2～1994.3
张庆	常务副校长	1990.2～1995.8
韦钰	校长（兼）	1994.7～2001.11
宋成栋	党委书记、第一副校长	1995.8～1997.10
张尧学	校长（兼）	2001.11～2006.5
于云秀	党委书记、副校长	1997.10～2006.5

Appendix I

Acronyms and Abbreviations

ACSN–Appalachian Community Service Network
ACSDE–American Center for the Study of Distance Education
ADA–Americans with Disabilities Act
AIM–Articulated Instructional Media
AESP–Appalachian Educational Satellite Project
ARPA–Advanced Research Projects Agency
ARPANET–Advanced Research Project Agency Network
ASPA–Association of Specialized & Professional Accreditors
BTC–Beijing Television College
BUPT–Beijing University of Posts and Telecommunications
CABTS–Central Agri. Broadcasting Television School
CAET–China Education Technology Association
CAS–Chinese Academy of Sciences
CBB–Central Broadcasting Bureau
CBS–Columbia Broadcast System
CCRTVU–China Central Radio and TV University
CDS–Core Data Service
CEBsat–China Education Broadband Satellite network
CENIC–Corporation for Education Network Initiatives in California
CERNET–China Education and Research Network
CERP–Correspondence Education Research Project
CETV–China Education TV
CHEA–Council for Higher Education Accreditation
CLSC- Chautauqua Literary and Scientific Circle
CMS–Course Management System
CNGI–China Next Generation Internet
CNNIC–China Internet Network Information Center
CNY– China Yuan Renminbi
CPB–Corporation for Public Broadcasting
CP–Commercial Press
CPCS–Commercial Press Correspondence School
CPTI–Commercial Press Translation Institute
CR–Culture Revolution
CRTVU–China Radio and TV Universities
CSTVNEI–China Satellite TV Normal Education Institute
DANTES–Defense Activity for Non-Traditional Education Support
DEDP–Distance Education Demonstration Program
DENTES–Military e-learning testing center
DETC–Distance Education and Training Council
EPGY–Education Program for Gifted Youth
ETN–Educational Telephone Network

FAE–Fund for Adult Education
FCC–Federal Communications Commission
FRC–Federal Radio Commission
FREC–Federal Radio Education Committee
GAO–General Accountability Office
HET–Health/Education Technology
ICCE–International Council on Correspondence Education
ICDE–International Council for Distance Education
ICS–International Correspondence School
ICT–Information Communication Technology
JCET–Joint Committee on Educational Television
MOE–Ministry of Education
MPATI–Midwest Program on Airborne Television Instruction
MSACS–Middle States Association of Colleges and Schools
NASULGC–National Association of State Universities and Land-Grant Colleges
NBC–National Broadcasting Company
NCES–National Center for Education Statistics
NCFC–National Computing and Networking Facility of China
NDRC–National Development and Reform Commission
NET–National Educational Television Center
NGO–Non-Governmental Organizations
NHSC–National Home Study Council
NLR–National LambdaRail
NPR–National Public Radio
NSFNET–National Science Foundation Network
NTIA–National Telecommunications and Information Administration
NTU–National Technological University
NUCEA–National University Continuing Education Association
NUEA–National University Extension Association
NUTN–National University Telecommunications Network
NYIT–New York Institute of Technology
NYSERNET–New York State Education and Research Network
RUC–Renmin University of China
SEC–State Education Commission
SRI–Stanford Research Institute
SUN–State University of Nebraska
TJRTVU–Tianjin Radio and TV University
TRCU–Tianjin Radio and Correspondence University
UMA–University of Mid-America
UCEA–University Continuing and Adult Education Association
UCLA–University of California, Los Angeles
USAFI–U.S. Armed Forces Institute
USMC–U.S. Marine Corps
USOU–U.S. Open University
VHS–Virtual High School
WPA–Work Projects Administration

VITA

Haijun Kang

EDUCATION

Ph.D. in Adult Education and Comparative & International Education Programs, The Pennsylvania State University, University Park, PA, U.S.A., 2009.

M.Ed. in Higher Education, Tsinghua University, Beijing, China. 2003.

B.A. in English, Inner Mongolia University of Technology, Inner Mongolia, China, 1996.

SELECTED PROFESSIONAL EXPERIENCE

2006–2009 Graduate Assistant, *Learning Design, World Campus, The Pennsylvania State University, University Park, PA, U.S.A.*

2003–2006 Teaching and Research Assistant, *Adult Education Program, Department of Learning and Performance Systems, The Pennsylvania State University, University Park, PA, U.S.A.*

1996–2003 English Faculty, *Foreign Languages Department, Inner Mongolia University of Technology, Inner Mongolia, China*

SELECTED PUBLICATIONS/PRESENTATIONS

Kang, H. & Gyorke. A. (2008). *Rethinking distance learning activities: A comparison of transactional distance theory and activity theory*. *Open Learning* (UK), *23*(3), 203–214.

Kang, H. & Laubach, J. (2009). *Learner support in a partnership-based online testing system.* 2009 AECT International Convention, Louisville, KY, October 27-31.

Shattuck, K., & Kang, H. (2009). *Learner interactions: Research and implications from the field*. The 25th Annual Conference on Distance Teaching & Learning, Madison, WI, August 4–7.

Kang, H. (2007). *Training of distance education faculty: A postmodern thinking*. The International Council for Open and Distance Education (ICDE) International Conference, October 3-5, Toluca, Mexico.

Kang, H. (2007). *A review of comparative studies of research on distance education: Scope, topic, method and instrument*. The 51st Annual Meeting of the Comparative and International Education Society (CIES), in Baltimore, Maryland, February 25 – March 1.

Kang, H. (2006). *Distance education development in the U.S. and China: A comparative, cultural-historical perspective*. The 50th Annual Meeting of the Comparative and International Education Society (CIES), in Honolulu, Hawaii, March 14-18.

Kang, H. (2005). *Training distance education faculty: What trainees think*. The 2005 Professional and Organizational Development Network in Higher Education (POD) Conference. Milwaukee, Wisconsin. October 27 – 30.

Kang, H & F. Fan. (2001). *A study of fostering creative thinking in students through English teaching in mainland China,* The Second International Symposium on Child Development, Hong Kong Baptist University, Hong Kong, June 26-28