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A New Implication for China's Rural Education Reform: Organizational Learning Theory

Difei Shen

Doctoral student
Agricultural Education and Studies Department
223B Curtiss Hall
Iowa State University
Ames, IA, 50011-1040
E-mail: dfshen@iastate.edu

Bert Lynn Jones

Associate Professor
Agricultural Education and Studies Department
201 Curtiss Hall
Iowa State University
Ames, IA, 50011-1040
E-mail: x1jones@iastate.edu

Abstract

After more than two decades of extraordinarily rapid policy-induced development, rural China is now faced with the challenge of transferring to a science- and technology-induced development. For such historical development to come about, China needs a cadre of well-qualified workers and managers in strategic rural locations. Paradoxically China is well known for a rural education policy that produces millions "who can neither apply their learning to scientific and technological industry nor develop new technology for agricultural and rural development." Although numerous reforms have been attempted to ameliorate these conditions, very little progress has been realized. This paper credits past reform failures to single-loop learning and explores potential new "organizational learning" directions for China's rural educational system.

Keywords: Organizational Learning, Single-Loop Learning, Double-Loop Learning, China's Rural Education, China's Exam-Orientated Education Philosophy, Theory-In-Use, Espoused Theory

Introduction

Since the implementation of agricultural reform in 1978, tremendous changes have taken place in China's rural community. Most of these changes were policy induced, the function of which had reached its summit after having been used for more than 20 years (Ma, 1990). Further expansion of rural development and reform requires different development strategies. Ma stated, "The future stable development of the rural economy will depend more and more on science and technology, on the quality of labor, and on the quality of qualified personnel" (p. 30). Education, as the carrier of science and technology, should play an important role in this transformation process from the, now worn-out, policy-induced development process to a science- and technology-induced development process. However, the traditional education system, particularly in rural China, has failed to shoulder the load. "Rural areas still face a shortage of knowledgeable people" (Ma, p. 30). Considering the importance of the rural community in the development of the whole nation, China has started taking some measures aimed at upgrading rural education to enhance its role in rural development, for example, popularizing nine-year compulsory education, setting up more agricultural vocational and technical schools (Cheng, 1986; Ma; Lin, 1993), decentralization (Hawkins, n.d.; Lin), and implementing quality education ("Quality Education," 2000). However, the outcomes are not satisfactory. According to Guo and Sun (1999), the contribution rate of agricultural science and technology to agricultural production in China is only 35% or so, while most of the developed countries have reached 70% or 80%. A strong indicator that China has very low ability in terms of applying existing science or technology and/or creating new science and

technology to support the development of its rural community.

The ineffectiveness of these reforms might be explained by various factors; however, from the perspective of organizational learning theory, it is actually a matter of "doing things right" versus "doing the right thing." Virtually all the reform activities mentioned above took the form of single-loop learning, which is concerned primarily with efficiency (i.e., doing things right); that is, "with how best to achieve existing goals and objectives and how best to keep organizational performance within the range specified by existing norms" (Argyris & Schön, 1978, p. 21). According to Connellan, "There is no point in doing well, that which you should not be doing at all" (as cited in "Students First," n.d.). Single-loop learning will not work when the existing norm is problematic, which is the case of China's rural education. In such cases, double-loop learning, which has the ability to question and modify the guiding norm when it is not appropriate, is needed (i.e., doing the right thing). However, it is not recognized in China.

Purpose

The purpose of this paper is to address problems of rural education and its reform in China from a new perspective; that is, organizational learning theory. Recommendations and implications will be offered as well.

The lead author participated in the Chinese educational system during her entire public schooling. The second author has spent the past seven years as a researcher and extensionist dealing with rural development issues in China. They have experienced China's rapid growth but fear for the systems sustainability when pursued primarily from an economics point of view, which is currently the fashion. Their investigations point squarely to the

need for major reform in the congruence between schooling and career development. However, the authors recognize that problems faced with China's rural education system and the subsequent reform activities discussed in this paper do not only belong to China.

According to a press report of World Education Forum (2000), many developing countries in Asia, Africa, and Latin America, etc., are confronted with same education quality problems in terms of producing qualified personnel. Even some developed countries, such as the United States, are not exempt. A report issued by ACT, which administers college entrance exams in the United States, indicated that "we [the United States] have made virtually no progress in the last 10 years' helping students prepare for college or the workplace" (as cited in Coplin, 2004, p. 11A). As a result, it is expected that this paper can also provide some implications to other countries too.

Methods

This paper is based on related literature review and the experience of the lead author as a life-long product of the Chinese educational process. Her educational life-history, coupled with the second author's 35-year career as an extensionist and researcher dealing primarily with rural youth development are utilized in a quasi-ethnographic fashion as one facet of the methodology for this research. Detailed library, Internet, and other data-based searches were used resulting in information that focuses primarily on the educational psychology framework encompassed in the related areas of Organizational Development and Learning System, Workplace Competency Development, Effective Teaching, Curriculum Design, Confluent Learning, and Chinese Education History. In addition to these information sources both

authors are currently involved with focus groups, interviews, and historical document review data generation processes on rural education in China. Researchers and educators from the main Agricultural branch of Zhejiang University, Zhjiang Normal University (a major teacher education institution in the region), and numerous local rural Chinese school systems within Zhejiang Province are likewise involved with the research.

In China, public schools were and are still playing a dominant role in educating people. As mentioned, the lead author received her education in public schools in China for about 18 years before she obtained her Master Degree. Those experiences as a student acquainted her with the Chinese education system, both its problems and challenges, especially from the learners' perspective. In addition, before the lead author came to the U.S to pursuer her PhD Degree, she taught in a college for a year, as a result of which she also understand the system from the perspective of an educator.

Findings

Nature of Education

Before exploring organizational learning theory in the case of the Chinese rural education system, it is necessary to understand the nature of education first. According to Sparkes (1993), "education can be helpfully defined as the process through which individuals assimilate and discover information, skills and understanding" (as cited in Nichols, 2001, p. 16). There are three educational levels in this definition – that is information, skills and understanding. Information refers to "the knowledge that can be memorized and recalled", while skills are described as "abilities and functions that an individual can do" (Nichols, p. 16). Both are comparable to lower levels of Bloom's Cognitive Taxonomy, knowledge,

comprehension, and application in a similar environment (as cited in “Effective Teaching,” n.d.). Understanding, on the other hand, involves “grasping concepts and being able to use them creatively” (Nichols, p. 16), corresponding to higher levels of Bloom’s Cognitive Taxonomy, analysis, synthesis, evaluation (as cited in “Effective Teaching”), and generativity (B. L. Jones, personal communication, October 18, 2002). Thus, the ultimate goal of education “is not to simply transfer knowledge or skills...What really counts in education is the ability to truly understand subject matter so that it can be applied in various circumstances” (Nichols, p. 19). In other words, students should have both “Professional Technical Skills” (PTS) and “Professional Practical Skills” (PPS).

“PPS” and “PTS” are two kinds of education that are most frequently written and discussed among writers, except that they are described in different terminologies by different writers. Basically speaking, “PTS” refers to a specific subject matter, for example, mathematics. It is “associated with technical aspects of performing a job and usually includes the acquisition of knowledge” (Page, Wilson, & Kolb, 1993; as cited in Rainsbury, Burchell, & Lay, 2002, p. 9). It is often termed as “Technical Knowledge” or “Hard Skills.” “PPS”, on the other hand, refers to the ability to put into practice “PTS” in the real life situation, which is usually named “Soft Skills” or “Life Skills” by other writers. “PTS” is the base upon which “PPS” scaffolds. It is “PTS” that can be acquired, comprehended, and applied; but it is “PPS” that brings “PTS” up to higher levels of Bloom’s Cognitive Taxonomy. Mastering of both types of education makes students not only able to do what an expert does (i.e., know what and know how), but also able to think what an expert thinks (i.e., know why). However, to realize this goal of education,

students are required to apply deeper learning approaches (Nichols, 2001). They need to take responsibility for their own education and have the opportunity to take an active role in learning, so that they can make meaning of their education and finally construct knowledge (i.e., generativity) instead of passively receiving information from the teacher.

Organizational Learning Theory in China’s Rural Education System

Organizational learning theory was mainly put forward by Argyris and Schön (1978; 1996), as a theory about the effective learning process of organizations. Organizational learning is built upon theory of action, which “examines reality from the point of view of human beings as actors” (“Double Loop,” n.d., ¶ 2). According to Argyris and Schön (1978), each individual has two theories of action, espoused theory (i.e., what people think or say that they will do) and theory-in-use (i.e., what people actually do), and there is always a mismatch existing between these two theories. Theory-in-use, which is the mental maps of individuals regarding how to act in certain situations that include how they plan, implement and review their actions, actually governs people’s everyday life, even though people claim their espoused theories (Argyris & Schön, 1978). For example, Managers “typically see themselves as rational, open, concerned for others, and democratic, not realizing that their actions are competitive, controlling, and defensive” (Bolman & Deal, 1997, p. 145). From the perspective of theory of action, individual learning happens when the mismatch between his/her espoused theory and theory-in-use is detected and corrected (Argyris & Schön, 1978).

Organizations are composed of individuals, but not all the collections of individuals can be termed as organizations

(Argyris & Schön, 1978; 1996). Similarly, organizational learning does not simply equal the collectivity of its members' (i.e., individuals') learning. "By establishing rule-governed ways of deciding, delegation, and setting the boundaries of membership, a collectivity becomes an organization capable of acting" (Argyris & Schön, 1996, p. 9). This definition indicates that organizations can learn as well. Organizations also have the espoused theory and theory-in-use. Take a public university for example; its espoused theory includes its organizational charts, its policy statements, and its job descriptions, etc, whereas its theory-in-use is its actual behavior (Argyris & Schön, 1978). And just like the individual learning, organizational learning happens when its espoused theory and theory-in-use are in conflict with each other. On the other hand, this definition implies that even though organizational learning is undertaken by individuals in the organization, it can be called organizational learning only if the detection and correction of the mismatch is encoded in the organization and becomes a part of the organizational theory-in-use (Argyris & Schön, 1978; 1996).

China's rural education system can be viewed as an organization with its collective rules to govern ways of deciding, delegating, and setting the boundaries of membership. For example, exams' being the final assessment of students' performance is a kind of collective rule. It helps the organization decide who can be classified as good students, and therefore can pursue higher education. The espoused theory of China's rural education system can be described as the purpose of rural education it claims, which is to produce competent rural youth (i.e., those who master both "PTS" and "PPS" education) for the development of rural community (Guo & Sun, 2001), while its theory-in-use is actually producing "millions of exam experts" (Lin, 1993, p.

28) of "PTS." There is a discrepancy between the espoused theory and theory-in-use, which then leads to a series of reforms in the rural education system, such as popularizing nine-year compulsory education, setting up more agricultural vocational and technical schools (Cheng, 1986; Ma, 1990; Lin), decentralization (Hawkins, n.d.; Lin), and implementing quality education ("Quality Education," 2000). All these reforms become part of the theory-in-use of China's rural education system. For example, quality education has become one of the main goals of running rural education in China ("Three Goals," 2003).

However, these reforms are not effective in terms of bringing the espoused theory and theory-in-use of China's rural education into congruence. "Criticisms remain revolving around educational quality and the extent to which this is providing the skills [i.e., both "PTS" and "PPS"] needed in a marketised economy" (Venter, 2002, p. 7). The reason can be explained from the two learning styles of organizational learning, single-loop learning and double-loop learning. Nevertheless, before further elaboration of the organizational learning style of China's rural education system; it is beneficial to first better understand the organization itself, the nature of education it depicts, the philosophic perspectives on education behind its two theories of action, and subsequent learning process and styles.

China's Rural Education

In China, the leading philosophy of education is traditional. Reflected in practice is the exam-orientated education system that has existed for centuries. Although the format and the purpose of exams have been changed throughout the history of China, the key essence, which uses exams as the assessment tool, stays unchanged. Originated in 16th century B.C., exam-

orientated education took the form of a systematic imperial civil service examination, the purpose of which was selecting able men for high official positions (Cleverley, 1985). During the process learners learned principally by rote memorization to prepare for the examination; as a result, they did not understand what they had learned and were not able to apply what they had learned (Cleverley). After the establishment of the People's Republic of China in 1949, exam-orientated education was resumed and used till now mainly as a way to help China realize four modernizations: "significant advances in the areas of agriculture, industry, national defense, and science and technology" (Surowski, 2000, 1976-Present section, ¶ 1). It has been so deeply rooted in Chinese society that "people regard those who pass the exam as dragons and those who fail the exam as worms" (Lin, 1993, p. 26).

Exam-orientated education in modern China (i.e., after 1949) can be broadly defined as the kind of education that focuses on transferring "Technical Knowledge" (i.e., "PTS" education) and using all kinds of exams as the final evaluation measurement (Lin, 1993). It places heavy emphasis on textbooks, memorization, and examination of core academic subjects" (Su, 1996, p. 142). Under the exam-orientated education system, students are passive receivers of information from teachers, with an aim of passing exams. In 1920s, Tao "recognized the grave problem of education in China: Traditionally, teaching consisted of spoon-feeding, and learning was largely by rote" (as cited in Su, p. 134). What was true about education in old times is still true today. "Exams have become the striving target for teaching and studying activities....Chinese education has become an education for exams" (Lu, 2000).

The exam-orientated education system covers urban education as well as rural education, under which students' responsibilities of their education were stolen. Brown (1996) stated, "Deep learning does not take place when we steal these responsibilities from the learner" (p. xxi). As a result, there is no way that Chinese rural students can reach higher levels of Bloom's Cognitive Taxonomy to construct knowledge. Actually, most of them are either called "high score and low ability" or "low score and low ability." The only difference between these two kinds of students is whether or not a student can pass exams (of "PTS"). Whatever score level a student falls; s/he is not capable of applying his/her knowledge creatively or generating new knowledge. They do not have "PPS." Lin (1993) stated, "Rural schools are turning out millions of exam experts who do not know how to apply their knowledge to actually life settings, they lack the ability to work or to solve problems independently" (p. 28).

Single-Loop Learning and Double-Loop Learning in China's Rural Education

According to Argyris and Schön (1978; 1996), there are two kinds of organizational learning, single-loop learning and double-loop learning. The working mechanism of each learning style can be explained by the theory-in-use model. As shown in Figure 1, there are three elements in this model, governing variable, action strategy, and consequences. The governing variable is the norm that guides people's action; the action strategy is the action people take based upon the governing variable; while consequences are the results of the action strategy (Smith, 2001). They function in a sequential order, and, according to Argyris and Schön (1978), reflect organizational theory-in-use.

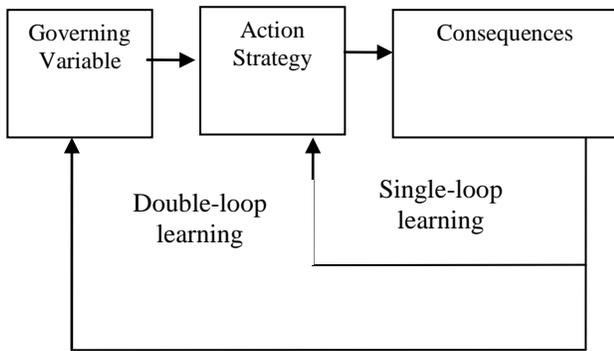


Figure 1. Theory-in-use model (Smith, 2001).

If the consequences brought about by action strategy align with the organizational intention, the theory-in-use leads to the expected behavior of espoused theory. There is a match between these two theories of action. However, it is usually not the case in the real life. More often than not, there is a mismatch existing. When this mismatch is detected and corrected at the level of action strategy and consequences, single-loop learning happens, whereas double-loop learning occurs when the mismatch is detected and corrected in ways that involve the modification of an organizational present governing variable(s) (Argyris & Schön, 1978; 1996).

In other words, single-loop learning refers to the ability “to detect and correct the deviations from predetermined norms” (Morgan, 1997, p. 86). The resulting behavior is often referred to as “doing things right”, whereas double-loop learning theory describes the action of being able to take a ‘double look’ at the situation by questioning the relevance of operation norms” (Morgan, p. 87); that is, “doing the right thing.”

Figure 2 illustrates the theory-in-use model of Chinese educational theory. Under the traditional exam-orientated education philosophy, which is the governing norm, rural students are treated as empty vessels, receiving and storing whatever information the teacher dictates in order to pass exams through different action strategies that are designed based on the governing norm. Consequently, most these students produced by the education system are either “high score and low ability” or “low score and low ability.”

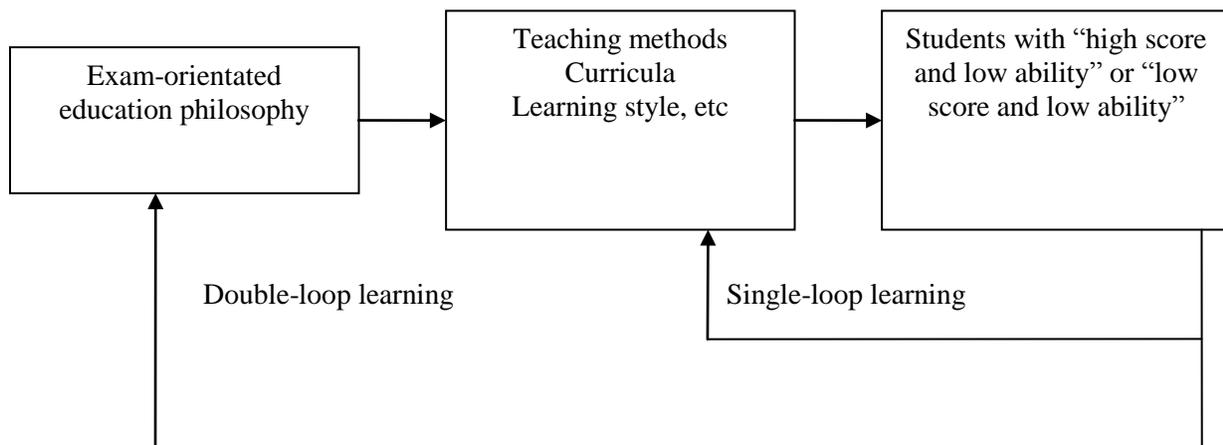


Figure 2. China’s rural education theory-in-use model.

As mentioned earlier, there is a mismatch between the espoused theory and theory-in-use of the rural education system in China, which stimulates organizational learning; that is, a series of reforms in China's rural education system. However, all of these reforms have taken the form of single-loop learning because they focus on reforming action strategies to correct the consequences without questioning the exam-orientated education philosophy, the governing norm. Take "quality education" reform for example, some rural schools developed their own curricula to help students develop life skills for the workplace, however, the summative assessment instrument remains exams that assess core technical knowledge (i.e., "PTS" education), which is the governing norm.

Implications and Recommendations

Reflected in the process of transferring from policy-induced development to science- and technology-induced development, the espoused theory of China's rural education system requires students to be able to apply science and technology creatively in various circumstances. Thusly students should apply a deep learning approach to "truly understand subject matter" (Nichols, 2001, p. 19). However, under the present exam-orientated education system in rural China, students' rights of "understanding" have been taken away. Education equals transmitting information from teachers to students. There is no need for students to synthesize, analyze, evaluate, and generate knowledge. As a result, "students will gain at best a naïve grasp of knowledge within their field of study (Nichols, p. 20), which is actually training (Posner, 1995). In no way can students apply what they learn under various circumstances, which is education (Posner). Lin (1993) said, "They [graduates from rural schools] can not draw up a

contract, or write a poster or an advertisement... Few can use what they have learned to analyze the advantages and disadvantages of their areas and to utilize local resources to increase their earnings" (p. 29). Therefore, the governing norm, the exam-orientated education, is actually the real cause for the discrepancy between espoused theory and theory-in-use.

From the perspective of organizational learning, double-loop learning should be used to reform China's rural education system, because single-loop learning works only when the guiding norm is correct. Morgan (1997) stated that "using single loop learning, the organization can only detect and correct the deviations from predetermined norms, but they are unable to question the appropriateness of what they are doing" (p. 86). Double-loop learning, on the contrary, can overcome this weakness because it has the ability to question and modify guiding norms when they are not appropriate. It creates a double feedback loop that connects the detection of errors not only to action strategies and consequences but to the very norm which defines and guides these strategies and consequences as well. It is the learning that results in a change in the governing variable, as well as in its strategies and consequences. "It is this kind of self-questioning ability that underpins the activities of systems that are able to learn to learn and self-organize" (Morgan, p. 86). As a result, without questioning and correcting the real source of the problem, the exam-orientated education system, reforms on rural education in China will continue to be futile. Take reforming teaching methods for example, which is part of the "quality education" reform, some schools that try to use more student-orientated teaching methods find themselves ending up with the old "banking" teaching method, because the new teaching methods cannot help students pass exams.

In conclusion, organizational learning theory, especially double-loop learning theory, can provide China with the theoretical rationale to reflect upon its learning process and question the validity of its governing norm before it starts any reform regarding rural education. In addition, double-loop learning theory can also stimulate the questioning of the philosophic rationale behind the governing norm of China's rural education. This may lead to a more thorough reform, because the philosophic perspective "is a basic set of beliefs that guide action, whether of the everyday garden variety or action taken in connection with a disciplined inquiry" (Cuba, 1990, p. 17) (as cited in Broido & Manning, 2002, p. 435). It is necessary for China to reform the exam-orientated education system to facilitate students to apply deep learning approach and then master both "PTS" and "PPS" education. However, the reform won't be successful either unless the underlying philosophic stance is adjusted accordingly. Admittedly, applying double-loop learning style to reform China's rural education system will take time and energy; it is worthwhile based on the fact that more competent rural youth will be produced to help the development of rural China through science and technology.

Reference

- Argyris, C. (n.d.). *Double loop learning*. Retrieved March 20, 2003, from <http://tip.psychology.org/argyris.htm>
- Argyris, C., & Schön, D. A. (1978). *Organizational learning: A theory of action perspective*. Boston: Addison-Wesley.
- Argyris, C., & Schön, D. A. (1996). *Organizational learning II: Theory, method, and practice*. Boston: Addison-Wesley.
- Bolman, L. G., & Deal, T. E. (1997). *Reframing organizations: Artistry, choice and Leadership* (2nd ed.). San Francisco: Jossey-Bass.
- Broido, E. M., & Manning, K. (2002). Philosophical foundations and current theoretical perspectives in qualitative research. *Journal of college student development*, 43(4), 434-445.
- Brown, J. H. (Ed.). (1996). *Advances in Confluent Education: Integrating consciousness for Human change*. London: Jai Press.
- Cheng, K. M. (1986). China's recent education reform: The beginning of an overhaul. *Comparative Education*, 22(3), 255-269.
- Cleverley, J. (1985). *The schooling of China*. Sydney: George Allen & Unwin.
- Coplin, B. (2004, October 21). Education reform should keep the workplace in mind. *USA Today*, p. 11A.
- Guo, F. C., & Sun, W. Z. (1999). Non Chun Jiao Yu Gai Ge De Hui Gu Yu Zhan Wang. [The history and future of rural education reform]. Retrieved July 10, 2003, from <http://www.edu.cn/20011017/3005486.shtml>

- Hawkins, J. N. (n.d.). *Centralization, decentralization, recentralization: Educational reform in China*. Retrieved September 9, 2004, from <http://www1.worldbank.org/education/globaleducationreform/pdf/hawkins.pdf>
- Lin, J. (1993). *Education in post-Mao China*. Westport: Praeger.
- Lu, Y. Z. (2000). Lightening students' workload [Electronic version]. *China Today*, 49(6).
- Ma, Z. X. (1989-90). A difficult turning point: A review of educational reform in China's rural areas. *Chinese Education: A Journal of Translations*, 22(4), 29-37.
- Mississippi State University. (n.d.). *Effective teaching in agriculture and life sciences*. Retrieved September 6, 2002, from <http://www.ais.msstate.edu/TALS/index.html>
- Morgan, G. (1997). *Images of organization* (2nd ed.). California: SAGE.
- Nichols, M. (2001). *Teaching for learning*. Retrieved January 6, 2004 from <http://www.ucol.ac.nz/%7Em.nichols>
- Posner, G. J. (1995). *Analyzing the curriculum* (2nd ed.). New York: McGraw-Hill.
- Quality education, focus of China's educational reform: NPC. (2000, March 9). *People's Daily*. Retrieved January 2, 2003, from <http://english.people.com.cn/english/200003/09/eng20000309L101.html>
- Rainsbury, E., Hodges, D., Burchell, N., & Lay, M. (2002). Ranking workplace competencies: Student and graduate perceptions [Electronic version]. *Asia-pacific Journal of Cooperative Education*, 3(2), 8-18.
- Smith, M. K. (2001). *Chris Argyris: Theories of action, double-loop learning and organizational learning, the encyclopedia of informal education*. Retrieved March 20, 2003, from <http://www.infed.org/thinkers/argyris.htm>
- Students first...using service quality at BGSU*. (n.d.). Retrieved December 14, 2003, from <http://www.bgsu.edu/offices/pr/monitor/pastissues/11-17-97/service.html>
- Su, Z. X. (1996). Teaching, learning and reflective acting: A Dewey experiment in Chinese teacher education. *Teachers College Record*, 98(1), 126-152.
- Surowski, D. B. (2000). *History of the educational system of China*. Retrieved December 12, 2004, from <http://www.math.ksu.edu/~dbski/publication/history.html>
- Three goals set for China's rural education reform. (2003, September 16). *People's Daily*. Retrieved September 9, 2004, from http://english.people.com.cn/200309/16/print20030916_124344.html
- Venter, K. (2002). *Employers' perceptions of skill, education and the impact of global competition in the People's Republic of China*. Retrieved November 13, 2004 from, http://www.clms.le.ac.uk/publications/workingpapers/working_paper38.pdf