Chinese School Principals' Behavioral Intentions in Relation to Green School Practices

by

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Abstract

This elicitation study explored Chinese school principals' beliefs and practices associated with sustainability and green school practices. Using the theory of planned behavior (TPB) as the theoretical framework, this study investigated what school principals in China reported in relation to their salient behavioral beliefs (attitude), normative beliefs (subjective norms), and control beliefs (perceived behavioral control) relative to green school practices. People's attention toward certain behavior was predicted by their attitudes, subjective norms, and perceived behavioral control in actual behavior (Ajzen, 1991). In terms of the green school practices, Chinese school principals reported five top advantages of sustaining a green school: teachers and students with high awareness of environmental protection, comfortable school internal environment, unpolluted surroundings, school leaders' support, and enough teachers who support green school practices. Some of the disadvantages in leading and managing a green school are: teachers and students with weak awareness of environmental protection, polluted surroundings, lack of professionals, and lack of information/knowledge of environmental protection. According to the theory of planned behavior (TPB), school principals'decision-making may be affected by the preferences of others. Regarding green school practices within schools, Chinese school principals indicated some parents, teachers, students, education authorities, and people with the awareness of environmental protection would approve of implementing green school practices. Last but not least, school leaders'

perceived abilities and control over implementing green school practices is a distinctive factor associated with these leaders' intentions regarding such practices (Ajzen, 1991). The Chinese school principals reported that support and attention from senior authorities, people's knowledge/attention toward green schools, cultivating students' awareness of environmental protection, parents' support and anticipation, and people's knowledge of environmental protection would enable school leaders to implement green school practices. They reported lack of funds, lack of support from senior leaders and teachers, as well as negative school environment as obstacles in leading and managing a green school. The responses reported in this study cannot be generalized, but will lay the foundation for future research.

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List of Abbreviations

CCEC	Center for Environmental Education and Communications
DESD	Decade of Education for Sustainable Development
EE	Environmental Education
EfS	Education for Sustainability
ENSI	Environment and School Initiative
ESD	Education for Sustainable Development
ESF	Education for a Sustainable Future
FEE	Foundation for Environmental Education
LEED	Leadership in Energy and Environmental Design
MOE	Ministry of Education
SE	Sustainability Education
SEPA	State Environmental Protection Administration
TPB	Theory of Planned Behavior
UN	United Nations
UNCED	UN Conference on Environment and Development
USGBC	U.S. Green Building Council
WCED	World Commission on Environment and Development

Chapter1 Introduction

Today's world is developing at a rapid rate, and human life is becoming more and more affluent (Asif & Muneer, 2007; Goodland, 1995). However, a serious problem is in front of human beings: the deterioration of the environment (Bell & Gonzalez, 2011; Keshan, 1993). Because many people at present are driven by the idea of limitless growth and minimum cost, too many companies consume natural resources as if there were in limitless supply (Mitchell, 2010). At the same time, large quantities of waste products, many of which are especially hazardous, are produced and deposited to the cheapest and the most deserted places (Schor & Taylor, 2002). This waste results in the pollution of the air, soil, and water, without which humans cannot survive. It is time to take an earnest consideration of how to save the earth and reduce the pressing influence of environmental deterioration. Schools have a role to play in protecting the environment and school leaders all over the world are engaging in practices related to environmental issues (Henderson & Tilbury, 2004).

Edward (2005) proposed that humans and nature should keep a sustainable relationship for a long-term development. Since humans are viewed as embedded within local ecosystems and interrelated to all other ecosystem components, it is important to limit human interference with the ecosystem (Pierotti & Wildcat, 1997). In this manner, humans as well as non-humans within the ecosystem can be assured long term sustainability (Swyngedouw, 2010).

The term "sustainability" gained prominence in the 1983 World Commission on Environment and Development (WCED) report, headed by Gro Harlem Brundtland, former

prime minister of Norway. Though sustainability has been defined in many ways, the most frequently quoted definition is from Our Common Future, also known as the Brundtland Report, which defined sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland, 1987). According to this definition, both human and nature’s needs need to be considered in harmony.

Human development is not contradictory with sustainability (Neumayer, 2010). All definitions of sustainability require that people see the world as a system connecting space and time. When thinking of the world as a system over space, people might understand that air pollution from Asia affects air quality in North America, and that extra use of pesticides in Brazil could harm the fish harvest off the coast of Australia. When thinking of the world as a system over time, people start to realize that the decisions those great-grandparents made about how to hunt and farm continue to affect people’s practices and opportunities today. Humans cannot survive if the air and the environment are seriously polluted. Fortunately, the concept of sustainability gives people an opportunity to think systemically about their roles and behaviors; it helps people understand themselves and their relationship with the world.

Schools have a role to play in the sustainability revolution and global efforts associated with sustainability (Barr, 2011, Birney, 2009). Schools can model and educate pro-environmental knowledge and behaviors to students; school leaders also have the powerful opportunity to help establish a sustainable society through education. Thus, “green

schools" were created through integrating sustainability into education. This integration could provide healthier places for students and teachers and have a minimum negative impact on the environment. In turn, green schools could potentially increase student and teacher participation in sustainable practices (Beaver, 2009). Schools all over the world are engaging in sustainability revolution, but there is a lack of literature in this area that tells people to what extent school principals in China are engaging or planning to participate in the sustainability movement because of the limited amount of research studies available.

Since people do not understand Chinese school principals' participation in sustainability, this elicitation study aims to explore school principals' beliefs related to sustainability and green school practices. Chapter 1 begins with a problem statement. This is followed by the purpose, research questions, and the significance of this study. Delimitations, assumptions, and definition of terms complete the chapter.

Problem Statement

School leaders are very important because they are responsible for the school facility and are expected to support teachers' teaching and students' learning (Kruse & Louis, 2008; Menon, 2011; Rallis & Highsmith, 1986). They are not only instructional leaders, but also school managers. They are individuals that are expected to assume the responsibility of both leadership and management (Cranston, 2011; Leithwood, Harris, & Hopkins, 2008; Manasse, 1985). Effective leadership, which is at the heart of whole-school development, is an inseparable and necessary factor in implementing green school practices (Birney & Reed,

2009). School leaders could support and lead education; they could educate the next generation to live differently on this planet. Thus, school leaders' beliefs and values seem influential to both their school management and students' and teachers' behaviors.

This current study explored China's school principals' behavioral intentions toward green schools, not only because it is the largest developing country, but also because little research about Chinese principals' beliefs relative to green school practices has been investigated. Many schools, including those in China, have developed programs relevant to enhancing students' awareness of protecting the environment. Many school leaders believe that it is much easier to cultivate environmentally friendly young people at school, so they actively promote pro-environmental behaviors and education, such as recycling and reusing, among the younger generation (Boujarwah, Mogus, Stoll, & Garg, 2009; Godfrey, Labhasetwar, & Wate, 2009; Holt, 2009). However, the extent of Chinese school leaders' participation in green school practice is still unknown.

School Leaders and Green Schools

Topics relevant to school leadership have been widely discussed (Flanagan & Jacobsen, 2003; Smith, 2008). For example, Leithwood, Harris, and Hopkins (2008) generally summarized the existing literature concerning successful leadership and presented their own opinions on effective leaders. They analyzed both international examples and their own earlier project to present the main findings from the leadership field. Much recent research shows that there are both indirect (Dinham, 2005; Hallinger, Bickman, & Davis, 1996; Heck,

1993) and direct (Leithwood & Riehl, 2005; Silva, White, & Yoshida, 2011) connections between school leadership and students' outcomes. These studies suggest that people's attention toward school leadership has lasted for a long time and will still continue. However, there is little information about principals' perspectives on how they as school leaders perceive the importance of leading a school to be an environmentally friendly organization.

A limited amount of research has previously studied school leadership and green school practice. There is one theoretical paper (Kensler, 2012) and two empirical studies (Granados & Gámez, 2010; Pepper & Wildy, 2008). Of the empirical studies, research on leading for sustainability in Western Australian Government secondary schools was to determine whether surface understanding of sustainability is enough. It concluded that education for sustainability remains fragmented and leading for sustainability requires deep understanding of sustainability, vision, strong communication skills, and the ability of taking action (Pepper & Wildy, 2008). Other educational research in Spain indicated while there is no formal training in school management, sustainability can be managed by following strategic models or paradigms, such as the triple bottom line approach: the environmental, social, and economic legs of sustainability (Granados & Gámez, 2010). Kensler (2012) stated the importance of integrating ecological and democratic principles into school leadership. She indicated five key findings from these related studies. First, there is little evaluation of whole school approach to sustainability. Second, green school development should be driven by local situation and needs. Third, green school participation reflects democratic principles and

involves all stakeholders. Fourth, a green school aims to practice sustainability through building a healthier environment and reducing costs and environmental impacts. Fifth, students could be more engaged in achieving higher levels in green schools. These studies concluded that an in-depth understanding of sustainability and strategic management are important to successfully implementing green school practices.

With energy costs rising and school budgets shrinking, more and more school principals realize that energy use is a substantial cost that can be reduced through conservation efforts. A long-term strategy for reducing energy consumption is to build a sustainable school, which adopts a variety of design components to reduce energy use by an average of 33% from traditional buildings (Kats, 2006). Schelly and his colleagues (2011) compared the energy conservation efforts at two public high schools built in the 1960s and 1970s in a school district in Colorado. Using quantitative data from the school district, qualitative data from focus groups and interviews, and an analysis of school newspapers, the researchers found the following: first, over the course of eight years, one school was able to reduce its electrical energy consumption by 50%, while another school only reduced 34%; second, pro-environmental behavior within organizations was fostered through integrated efforts at multiple organizational levels, including leadership, individual attitudes and behaviors. This research shows that green school practices promoted pro-environmental behaviors and saved more money, because school leaders incorporated both educational and conservation goals into their school management. In addition, principals, who shared their environmental values

and behavioral expectations with others, also modeled pro-environmental behaviors in education within the school setting. Faculty and students were encouraged and motivated to behave pro-environmentally through every aspect of their lives in school. Tudor, Barr, and Gilg (2008) suggested the best framework for understanding and changing behavior in an organizational setting which incorporates individual and organizational factors as interrelated, integrated, dynamic processes.

Higgis and McMillan (2006) examined how four innovative secondary schools modeled sustainable practices for their students. The researchers conducted interviews, observed daily life, and reviewed school documents. They finally found that modeling was a valuable approach to promoting both learning about sustainability and adoption of sustainable behaviors in schools.

School leaders, especially principals, play a vital role in modeling the direction for successful schools. More than ever, in today's climate of heightened expectations, principals are in the hot seat to improve teaching and learning. Hallinger, Heck and Leithwood, as the representatives in the field of researching leadership and education, have published a number of articles relative to school leader roles and their importance in school development (Hallinger & Heck, 1996; Hallinger & Heck, 1996; Hallinger & Heck, 1998; Hallinger & Murphy, 1985; Learning & International, 2011; Leithwood, Begley, & Cousins, 1990; Leithwood & Montgomery, 1982). These research studies stressed the key roles that leaders play. School leaders are considered to be effective leaders if they identify and understand

others' needs and share their visions with all stakeholders (Glasman, 1984; Greenfield, 1991; Hallinger, 1989; Krug, 1990). Most of the literature analyzed school leaders and their roles, but school leaders' personal views were not taken into consideration (Barth, 1986; Botha, 2006; Matthews & Crow, 2003). In this case, people have little knowledge about school leaders' intentions of school management. Therefore, this study is the first of this kind in the field of educational leadership that explores how school leaders in China perceive green schools and their beliefs about implementing green school practices.

There are many different perspectives toward green schools and environmental education (EE). Disinger (1998) already pointed out the tensions about the relationship between humans and the environment, the definition of education, and external pressures relative to EE. These tensions have been impacting EE since its beginning and show no sign of diminishing. Other researchers also explored EE and sustainability from their different viewpoints (Gayford, 1996; Henderson & Tilbury, 2004; Nam, 1995; Smyth, 2006; Wals, 2009b). Since green schools aim to combine environmentally related curriculum into school education, green schools themselves have been attracting public attention and discussion from their outset (Gendong, 2008; Henderson & Tilbury, 2004). Some published articles and books discussed how to build high performing schools, green school projects, and green school grounds (Dyment & Bell, 2008; Hens, 2009; Weekes, 2009). Several organizations were established to initiate green schools and green projects, such as U.S. Green Building Council (USGBC).

In 2000, USGBC established Leadership in Energy and Environmental Design (LEED) rating system as a way to define and measure green buildings. In 2008, a green school project management guide was distributed by USGBC, presenting sample policies, programs and plans for building green schools. Though it is not easy being green, it is widely acknowledged that green schools benefit people's life and education (Walley & Whitehead, 1994). Green schools can be built but it requires leadership which supports green school practices.

Green schools cannot be built without effective leadership. School leaders, especially principals, demonstrate actions related to instructional, participative, and environmental leadership (Ackley, 2009). In this case, school leaders' perspectives and beliefs would affect the success of implementing green school practices. School leaders of different attitudes and intentions perform differently toward environmental issues. Therefore, it is necessary to know to what extent the school leaders are willing to participate in green school implementation. Although researchers have used the theory of planned behavior (TPB) (Ajzen, 1991) to explore pro-environmental behaviors and attitudes, these studies were focused on college students, with one examining k-12 school leaders (Cordano, Welcomer, Scherer, Pradenas, & Parada, 2010; Veronese, 2012). A few studies used the TPB to analyze people's actions and some pro-environmental practices, but they did not apply the theory to examine school principals' intentions and attitudes relevant to green school practices. Even if several authors used theories like the TPB (Ajzen, 1991) in their research to examine people's behavioral

intentions, little has explored Chinese school principals' behavioral intentions in relation to green school practices (Cordano, Welcomer, Scherer, Pradenas, & Parada, 2010).

Purpose of the Study

Since there are no research studies associated with school principals' beliefs about green school practices in China, the purpose of this study is to begin filling that gap. This study used the TPB to elicit Chinese school principals' salient beliefs relative to the implementation of green school practices to provide the first-hand results from the principals' angles. This study is an elicitation study because elicitation studies are recommended when using the TPB to establish the cognitive foundation of a population's salient beliefs (Ajzen, 1991). I examined Chinese school principals' perspectives about green school practices through open-ended questions because they could solicit school leaders' salient beliefs immediately (Sutton et al., 2003).

The questions were developed based on the TPB, which is one of the most influential and popular conceptual frameworks for the study of human action (Ajzen, Czasch, & Flood, 2009). According to the theory, people's expectations and values about engaging in a behavior form their behavioral, normative, and control beliefs. These beliefs in turn, influence people's attitudes, subjective norms, and perceived behavioral control toward their intentions, and ultimately, their behavior. For the first time, this study provides insight regarding the attitudes, subjective norms, and perceived behavioral control of Chinese school principals relative to sustainability and green school practices. It can also provide foundation

of this kind for future research in the field of educational leadership.

Research Questions

The following research questions served the purpose of the study.

1. What salient beliefs do school principals in China report relative to managing schools with green school practices?
2. What individuals do school principals in China report as important to their implementation of green school practices?
3. What do school principals in China report that facilitates or inhibits their managing schools with green school practices?

Significance of the Study

Since there is little research using the TPB to explore Chinese principals' ideas in relation to green school practices, this study can provide an opportunity for the public to hear and understand the principals' beliefs. Meanwhile, this study can provide first-hand responses from Chinese principals, which lay the foundation in the field of educational leadership for future research. As the largest developing country of the world, China's environmental impact is very influential at present. Therefore, the green school project has been attracting China's attention for a long time. To realize the long-term development without damaging the environment, Chinese policies have grown to be more sophisticated in emphasizing environmental problems (Zhang, 2008). The National Environmental Publicity and Education Action Essentials (1996-2010) issued in 1996 mandated the importance of establishing green

schools to promote EE in schools (Wu, 2002). However, people do not know the degree to which school principals in China are engaging in green school practices. Furthermore, there is little meaningful research that school leaders can rely on in the face of decisions relative to sustainability and green school practices in China. In this case, this study is necessary and important to fill the gap in the field of educational leadership.

Delimitations

This study has the following delimitations:

1. This study began in March 2012 and ended in August 2012. Those surveyed in this study included school principals throughout China with or without experience related to green school practices. Prior experience with sustainability and green schools may impact perspectives and attitudes.
2. The study did not include other school leaders and teachers. Data used were collected from current school principals. However, it is important to acknowledge that other school leaders and teachers do play a role in the implementation of green school practices and sustainability.
3. Conclusions drawn from this study may or may not be applicable to similar cases or situations. Additional studies are necessary to add more knowledge on this topic, as this study aims to do.

Assumptions

This research study makes three assumptions relative to the participants and the survey

instrument used to collect the data. First, the responses received from the respondents would accurately reflect their professional opinions. Second, the participants in this study would answer all of the open-ended survey questions openly and honestly. Third, the survey asked the right questions in an effort to elicit the salient beliefs of Chinese school principals regarding green school practices.

Definition of Terms

Attitude toward the Behavior—According to the TPB, the attitude toward the behavior is a person's overall appraisal of a behavior. In this study, it indicates the participants' general perceptions and evaluations of implementing green school practices (Ajzen, 1991).

Subjective Norms—According to the TPB, the subjective norms are a person's perceptions of general social pressure to determine whether or not to perform the targeted behavior. In this study, it indicates the participants' perceptions of pressure from their significant others (Ajzen, 1991).

Perceived Behavioral Control—According to the TPB, the perceived behavioral control is the extent to which a person perceives the ease or difficulty of performing the behavior. In this study, it indicates the enablers or difficulties participants found that could affect the implementation of green school practices (Ajzen, 1991).

Salient Beliefs—The salient beliefs are the essence of the TPB that first come to mind when respondents are asked open-ended questions (Ajzen & Fishbein, 2000; Higgins, 1996).

Green School—The U.S. Green Building Council (USGBC, 2010) defines a green

school as “a school that creates a healthy environment that is conducive to learning while saving energy, resources and money” (p.1).

Sustainability—According to Brundtland Report (1987), sustainability is defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (p.43).

Organization of the Study

The rest of the study is organized into four chapters. Chapter 2 presents a review of existing literature related to the topics addressed throughout this study, including an overview of sustainability, its relationship with organization and education, green school practices, the TPB and the elicitation study. Chapter 3 describes the research design and methodology of the study. The instrument used to gather the data and sample selection is explained. Chapter 4 analyzes the findings. Finally, Chapter 5 concludes with a discussion of the findings, recommendations for practice, and implementations for future research.

Chapter 2 Review of Literature

This chapter presented a review of literature exploring research related to the status of the principals' pro-environmental behaviors in China. It includes: an overview of sustainability, the relationship between sustainability and organizations, sustainability and education, sustainable leadership, green school practices, an introduction of the TPB and its application, and an introduction of the elicitation study and its connection with the TPB. The purpose of this review of literature is to discuss and critique research studies associated with school principals' intentions of green school practices, situate the current study within the existing knowledge base, identify gaps in the current research, and demonstrate how the current study addresses one specific gap in the field of educational leadership in relation to Chinese school principals' intentions of green school practices.

Sustainability

The term sustainability remains a relatively new concept with multiple related terms and definitions. This study uses sustainability and sustainable development interchangeably, signifying the capacity of living systems to satisfy human needs in the present without diminishing their capacity to do so in the future (Edwards, 2005). Although the essence of the concept of sustainable development is clear enough, as a relatively new concept, its exact interpretations trigger debate. Voinov and Smith (2008) asserted that this debate resulted in various definitions that suited people's particular applications. Thus, sustainability became easier to understand than to explain (Voinov & Smith, 2008).

Neumayer (2010) rebutted that “there is no tension between human development and sustainable development” (p. 3) because human development and sustainability can interact with each other without destroying the balance. Redclift (1992) insisted that the definition of sustainable development from Brundtland’s report focused on enhancing current and future potential to meet human needs and aspirations rather than the protection of nature or the environment. He thought that the focus on humans was the cause of discrepancy in regard to a clear definition of sustainability. Hopwood (2005) held a quite different understanding of this concept. He insisted that Brundtland’s report explicitly recognized the dependency of humans on the environment and that humans tried to meet their needs in a much wider sense than merely exploiting resources. Both Voinov (2008) and Hopwood (2005) considered humans as elements of nature rather than the dominators of it. Though “sustainable development” is composed of two words that once seemed mutually incompatible, it is in fact an extremely profound concept (Arima, 2009).

There have been various opinions on sustainability, but it is important to consider the concept based in different contexts. For example, in China, because of the growing population and declining agricultural land, and also because of the new and increasing consumer demands and expectations, the unsustainable goods were produced and the environment was polluted (Breslin, 1996). Fortunately, educators and school leaders, who noticed the issues about the environment, engaged in developing creative learning activities to enhance students’ awareness of environmental protection, such as integrating the theme of

the Yangzi River into several subjects in a school at Beijing (Yi & Wu, 2009). It has been noted that China's education is infusing environmental issues into the basic level of education. However, largely because of the regional differences in the vast nation, China now is facing difficulties while implementing environmental education at school (Tian, 2008). The contexts are the basis on which sustainability and EE rely. The contexts also determine whether sustainability is based on a social, economic, or ecological perspective (Brown, Hanson, Liverman, & Merideth, 1987).

It is commonly acknowledged that there are three aspects in sustainable development, economy, environment, and society, which are often presented as three interconnected rings (Giddings, Hopwood, & O'Brien, 2002; Hardi, 1997; Hopwood, et al., 2005) (see Figure 1). As in Figure 1, sustainability is realized when the three aspects overlap in a balanced way without conflicts. This study did not focus on the overlapping areas of the model, but was developed upon a nested model which presents that the environment, society, and economy are interrelated and cannot be separated in order to successfully implement sustainability (Giddings, et al., 2002) (see Figure 2). Economy is nested within the society because the economy is based on the development of the society. Both the economy and the society are within the environment, which means those two are subject to the laws and limits of the environment. Sustainability is at the center of the three factors, which calls for the intentional and intelligent integration of human and ecological systems. It is humanity's will to "improve everyone's quality of life, including that of future generations, by reconciling economic

growth, social development, and environmental protection" (UNESCO, 2005, p. 3). To protect the environment and realize sustainability, people cannot ignore the existence of the biosphere, so the following part will analyze the relationship between the biosphere and sustainability in view of existing research.

Figure 1

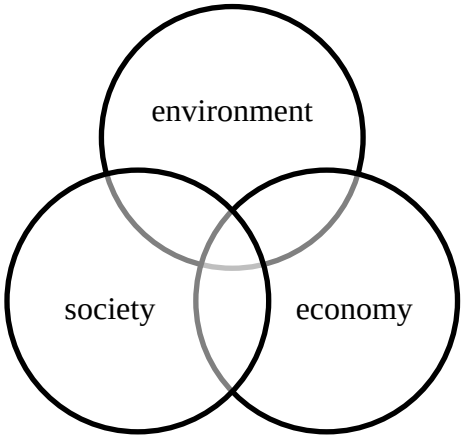
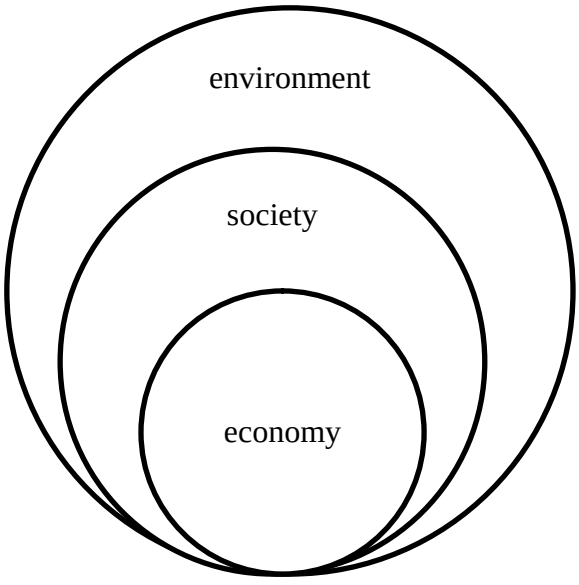


Figure2



Biosphere and Sustainability

A large amount of research has proposed that the biological systems of the earth are being threatened by constant unsustainable exploitation of natural resources and habitat loss (Bridgewater, 2002; Goklany, 1998; Palmer et al., 2004). For example, massive overhunting of wildlife for meat across the world is now causing extinctions of numerous species (Milner-Gulland & Bennett, 2003). Loss and degradation of remaining natural habitats is continuously accelerating. Easter Island, located in the Pacific Ocean, was once forested when first colonized by Polynesians about 400 AD. The forests were then cleared to provide areas to grow crops and make dug-out canoes for fishing. Yet by 1722, all of the trees had been cut down. There were no boats for fishing, and its population had declined to about a third of what it once was (Sutherland & Reynolds, 1998). It is true that humans, through cultural developments such as agriculture and trade, have increased the carrying capacity of local environments (McMichael, Butler, & Folke, 2003), which caused the imbalance of nature (Mbatu, 2010; Pimm, 1991). Thus, it is urgent to conserve biodiversity and maintain healthy natural systems while meeting the material needs and requirements of a huge population.

In 1992, in Rio de Janeiro, the United Nations Conference on Environment and Development brought the issues of the biosphere, sustainability, and their influence on humans to the attention of the world's leaders. Agenda 21 and the Conventions on Biological Diversity, Climate Change and Desertification were agreed upon to serve as guides toward

what is now termed sustainable development. This term means incorporating care of the environment rather than depleting it, with greater social equity and respect for communities and their wisdom (Bridgewater, 2002).

To meet the goal of maintaining balance between sustainability and the biosphere, many researchers suggest 3 R's: reducing, reusing, and recycling. The 3 R's were suggested to be new approaches to managing waste and keeping the balance between sustainability and the biosphere (Gordon, 1986; Unruh, 2008). All species need to be respected because they have their inherent values (Edwards, 2005). The next part of the literature review examines the existing knowledge of the relationship between humans and sustainability.

Humans and Sustainability

There is an increasing tendency of environmental degradation such as climate change, deforestation, biodiversity loss, and air and water pollution (Fowler, 2008; Group, 2009). These are considered vicious factors that lead to risk, not only for other species, ecosystems, and the biosphere, but also for humans (Boulter, 2005; Fowler, 2008; Mueller, 2009). Most people also admitted that many human activities are currently reducing the long-term ability of nature to provide goods and services, which affects current human health and well-being (Lele, 1991).

Surprisingly, the literature on human development and sustainable development have long been separated (Neumayer, 2010). Neumayer (2010) argued that there was no real difference between human development and sustainable development, and he put forward

several examples to explain that sustainability and the human development literature could learn from each other. Dziuban and his colleagues (2005) suggested that humans should seek to understand the world and their own actions in it without overexploitation. As stated by Shelton (1991), humans are inseparable members of the universe and are interdependent participants with duties to protect all elements of nature.

In terms of the role that nature plays in a human's life, many researchers claimed that nature is a community in which humans belong, rather than a "commodity" for humans to exploit (Edwards, 2005; Giddings, et al., 2002). Therefore, human development must be in harmony with the environment, protecting the essential aspects of ecosystems such as air, water and soil to achieve sustainable development (Edwards, 2005). However, developing countries, such as China, are facing growing problems in their relationships with nature. The environment in China is severely threatened by unsustainable resource extraction, the country's exceptionally fast economic growth, an uncontrolled increase in tourism, and climate change (Sang, 2011). Thus, it is necessary to take a look at how developing countries, such as China, deal with its relationship with sustainability and its impact on the environment.

Sustainability in China

At the Rio Conference, more than 170 governments agreed to act together to pursue the goal of sustainable development. Developed nations, such as North America and Japan, and developing countries, such as China and Indonesia, reached a consensus of reducing

environmental problems. They all endeavored to make changes to put an end to the vicious cycle of environmental degradation and economic decline (Environment & Development, 1992). China is a developing country with a large population and a relatively low level of economic development. However, today's China is experiencing economic growth and greater energy use. In order to implement a strategy of low resource consumption, proper consumption patterns by consumers, and stable and sustained economic growth, the only way out is to persist in following the strategy of sustainable development (Zhang & Wen, 2008; Zhang & Wen, 2001a).

China was one of the first countries to formulate and carry out a strategy of sustainable development two months after the UN Conference on Environment and Development in 1992 (Yi & Wu, 2009; Zhang & Wen, 2008). The government of China put forward the Ten Countermeasures to Environment and Development in China (1992), then organized and constituted the Agendum of the 21st Century in China (1994) (Yi & Wu, 2009). These documents urged China to persevere in its basic national policy of protecting the environment, implementing the strategy of sustainable development and changing the old way of production. The goal of those documents was to establish a new economic and social system in accordance with China's long-term interests of developing its economy and enhancing environmental protection (Yi & Wu, 2009). The government of China has also strengthened environmental legislation and has invested the equivalent of US $12 billion over the period from 1998 to 2007 to encourage sustainable development (Diesendorf, 2003). Cities are

closing their most polluting factories and moving others away from residential and commercial areas. Modernized industry, which produces steady improvements in the efficiency of energy, has been introduced. In China, coal is being gradually replaced by the less-polluting natural gas for domestic heating and hot water use (Diesendorf, 2003). All these practices suggest that China is trying to be a responsible country that combines the handling of climate change with its execution of its sustainable development strategy in order to accelerate the progress of building a resource-conserving and environmentally friendly society (Yi & Wu, 2009; Zhang & Wen, 2008).

Though China has made great efforts in environmental improvement, there are still challenges. For example, research shows that many policies are mandated to protect the biology and nature, but they are actually not well-implemented (Zhang & Wen, 2008). Thus, environmental pollution and ecological degradation in China have continued to be serious problems, resulting in great damage to the economy and people's daily lives. Therefore, people in China have taken the relationship between humans and nature into consideration. This study also focuses on Chinese schools and their school leaders. The next section tries to seek insights from organizations associated with sustainability in order to help people know more about Chinese schools, which are also important organizations in the field of education.

Sustainability in Organizations

Modern humans are all grouped into different organizations in the society according to their individual and social needs. Some may work for business organizations and some others

may be affiliated with educational organizations. If one part of an organization goes wrong, the rest cannot function well. If too many parts of an organization fail at once, the organization dies. Schools as educational contexts for students are important organizations people have to take into consideration. In this case, how organizations like schools manage to survive the competitive society became an issue that people care about. One way is to be sustainable. The purpose of this section is to analyze how organizations are managed in the face of the increasing environmental problems.

Modern management theory is constricted by a fractured epistemology, which separates humanity from nature (Brandon, 1999). However, reintegration is a necessity if organizational science is to support ecologically and socially sustainable development (Benn, Dunphy, & Gri ths, 2006; Gladwin, Kennelly, & Krause, 1995; Shrivastava, 1995). Epstein (2008) posited that regulations, community relations, cost and revenue imperatives, and societal and moral obligations were main reasons that explained why sustainability demands our urgent attention. At first, government laws and industry codes of conduct require that companies must increasingly address sustainability. Second, the general public is increasingly aware of the importance of sustainability and the influences that corporations have on the society and the environment. Third, “sustainability can create financial value for the corporation through enhanced avenue and lower costs” (Epstein, 2008, p. 20). Finally, companies have a responsibility to manage themselves in a sustainable way because of their impacts on society and the environment. Shrivastava (1995) also added that ecological

sustainability provides a basis for creating competitive advantage to draw consumers who want ecologically friendly products. Meanwhile, improved pro-environmental performance of companies improved the ecosystem and the environment of communities in which companies operate. Therefore, there is a need to manage organizations with sustainability to keep the balance between humans and nature.

There are some tensions between humans and ecology in the process of developing sustainability in organizations. However, studies around organizations such as Fuji Xerox, INCO and Panasonic show that human and ecological sustainability are integrated processes and can mutually enhance each other (Benn, et al., 2006). However, effective sustainability processes within organizations do not generally begin with individual's desire; but with the development of a strategy that has the commitment of senior executives and the board of directors (Epstein, 2008). Therefore, the following section explains leaders' role in an organization's sustainable development, which provides insights for people to understand school leaders' roles in Chinese schools.

Business Leaders and Sustainable Development

In order to reach the goal of sustainability, organizational leaders, such as school principals, must make efforts to continuously assess their organizations and the environment where they operate. The reason is that sustainability can help to improve their own businesses and can improve human life and the living environment (Epstein, 2008). As Epstein stated, companies, which are able to develop strategies to reduce their negative impacts on the

environment, can gain advantages over competitors. For example, Ford experienced a loss of revenue and overall market sharing in 2006 because of a decrease in sales of large vehicles. Its managers didn't blame consumers or anyone else, and they viewed this loss as consumers' concerns on fuel prices and greenhouse gas emissions. The company now is investing in improving the materials of their vehicles via new technologies. Though Ford is not among the industry leaders such as Toyota, it doesn't focus on its commercial interests but on humans and the environment, which is a big step toward sustainable development. Ford's experience indicates that leaders' commitments and attitudes have great impacts on pushing companies toward a full integration of sustainability (Epstein, 2008).

Organizational leaders are important to developing organizational strategies because leaders can directly decide to introduce new ideas into an organization, set specific goals, and encourage innovation initiatives from subordinates (Harborne & Johne, 2003). It is the same at school with school leaders. In order to understand to what extent organizational leaders are willing to be sustainable and make changes, the following section focuses on leaders' attitudes toward the environment and sustainability, which may provide foundation for the analysis of Chinese school leaders' views on green school practices in this study.

Leaders' Attitudes toward the Environment

Many people have analyzed managers' opinions of social responsibility and related concepts (Bowman, 1977; Deniz-Deniz & Garcia-Falcon, 2002; Holmes, 1976; Rojsek, 2001). Social responsibility is expressed as a basic value that motivates people to behave right

according to the social norms. These studies primarily examine managers' attitudes toward the responsibility for economic growth of business since managers are usually focused on the economic dimensions of corporate responsibility (Salzmann, Ionescu-Somers, & Steger, 2005). Thus, for many people, business leaders are traditionally only accountable for financial success in an organization.

There are a few research studies related to managers' or leaders' attitudes associated with the environment and sustainable development (Cummings, 2008; Leszczynska, 2010). According to the results of these studies, managers from the more developed countries, such as Australia, had a higher awareness of needs in the area of the organization and environmental protection in business. They emphasized more concern on global environmental problems while managers from the less developed countries, such as China, believed that international ecological problems need to be subjected to a national policy (Cummings, 2008; Leszczynska, 2010). Though there was an awareness gap in relation to sustainability among different nations, managers noticed the importance of implementing sustainable practices in their respective organizations.

According to Epstein (2008), implementing sustainability initiatives is quite different than implementing other strategies in an organization, because realizing sustainability is decided by leaders' attitudes, stakeholders' awareness, and their collective efforts. A successful sustainability initiative integrates new strategies into existing organizational structures, which simultaneously improves social, environmental, and financial performance.

Leaders play important roles in achieving success in corporate sustainability, which indicates that leaders' attitudes are crucial factors for implementing sustainable practices in an organization. However, some business leaders do not possess enough knowledge about sustainability and corporate sustainability relevant to environmental problems. It is necessary to inform these leaders of the knowledge of sustainability in managing their organizations. Wheeler and Bijur (Wheeler & Bijur, 2000) pointed out that effective sustainable practices should be incorporated into the education system in all relevant areas, including the field of business. In this case, education becomes a key of leading people to the right track of valuing and practicing sustainability. Due to the importance of education in people's daily life, the next section investigates how education functions in the society to sustain the relationship between humans and nature.

Sustainability and Education

Most people, especially young people, imagine their future as a rosy picture. In this picture, each individual leads a happy life, has a good job, and creates better lives for their children. At the same time, there might be a depleted, conflicted picture of the planet in their minds (Wheeler & Bijur, 2000). It seems that people poison the water, the air, and the food, while they work hard to secure a healthy and meaningful future for themselves and their offspring. Wheeler and Bijur (2000) pointed out that people may not be able to challenge the existing environmental problems although they wished to. It is because people do not have sufficient knowledge and understanding of this issue. In some economically poor countries,

poverty causes environmental problems, which in turn aggravates poverty. The vicious cycle is ongoing and results in more problems in relation to the environment and poverty. In more affluent countries, unsustainable practices occur because of ignorance or lack of related policies (Wheeler & Bijur, 2000). In order to inform humans of the knowledge of the environment and the relationship between humans and nature, it is necessary to introduce sustainability related knowledge to students and educators via education, as the first step toward global sustainability (Wheeler & Bijur, 2000). Sustainability is about creating a positive future for humans through learning, leading, and engaging in sustainable practices (Birney & Reed, 2009). It is a practical activity for communities, educators, and young people. In this way, education is a way, by which people may find whether their practices are sustainable or not, to inform the knowledge of sustainable practices. The next section focuses on education development associated with sustainability in China in order to provide insights for people to better understand Chinese principals' perspectives in relation to green school practices in this study.

Early Environmental Education (EE)

Environmental education (EE) was defined by the Tbilisi Declaration in 1977 as a comprehensive lifelong education that should be responsive to a rapidly changing world. EE in United Nations Educational, Scientific, and Cultural Organization (UNESCO) report in 1977 was defined as:

> preparing the individual for life through an understanding of the major problems of the

> contemporary world, and the provision of skills and attributes needed to play a productive role towards improving life and protecting the environment with due regard to ethical values. (p. 24)

By analyzing the current major environmental problems and education's role in them, UNESCO's final report (UNESCO, 1977) presented some strategies and recommendations for the development of EE. The ultimate goal of EE is to inform people of the knowledge of keeping a harmonious relationship with the environment while pursuing their own development (UNESCO, 1977). Individuals acquire knowledge, skills, values, and experiences related to sustainability through EE, which enables them to act individually and collectively to solve present and future environmental problems. EE provides people with the awareness of building partnerships, understanding Non-Governmental Organization (NGO) activities, developing participatory approaches to urban planning, and ensuring future markets for eco-business.

Education for Sustainable Development (ESD)

Education for sustainable development (ESD) has been described in a broader way and is therefore different that EE (Gough, 2005; Mckeown & Hopkins, 2003). ESD has apparently prevailed over EE in recent years because it not only attempts to readdress the importance of environmental protection in education, but also focuses more explicitly on the close relationship between humans and nature (Elliott & Davis, 2009). It further emphasizes humans' roles in sustainable development. In practice, EE focuses mostly on nature study,

conservation, and reducing human impact (Arbuthnott, 2009; Elliott & Davis, 2009; Mckeown & Hopkins, 2003; Shallcross, Loubser, Le Roux, O'Donoghue, & Lupele, 2006; Wheeler & Bijur, 2000). In the 1992 Earth Summit in Rio de Janeiro, Agenda 21 was declared to stress the importance of integrating ESD into all disciplines, whose overall intent was to address the necessity of sustainability for both the environment and society (Mckeown & Hopkins, 2003; Wheeler & Bijur, 2000). Meanwhile, education for sustainability (EfS) demands integrating economics and equality with environmental concerns and recognizes that "human rights and social justice are just as essential to sustainable development as environmental sustainability" (Gough, 2005, p. 342), which meets the requirements of Agenda 21 (Mckeown & Hopkins, 2003; Wheeler & Bijur, 2000). ESD is now frequently used at the international level and within the documents of United Nations (UN) (Fien & Tilbury, 2002; Mckeown & Hopkins, 2003). It focuses on developing both locally and culturally appropriate programs, which increases the likelihood of successful ESD programs while decreasing the risk of introducing inappropriate programs (Mckeown & Hopkins, 2003). There are many similar terms in the international literature relevant to education and sustainability, such as Education for sustainable development (ESD), education for sustainability (EfS), education for a sustainable future (ESF), environmental and sustainability education, and even more simply, sustainability education (SE) (Mckeown & Hopkins, 2003). This next section focuses on ESD and explores its origins and meanings.

Origins of ESD

While the root of ESD can be traced back to the early 1970s, its blossoming occurred in 1992 at the Earth Summit held in Rio de Janeiro. Agenda 21 is the starting point of ESD, with each chapter focusing on an issue central to sustainability. It presents a comprehensive plan of action to be taken globally, nationally, and locally by UN agencies, governments, and major organizations, such as NGOs, to reduce human impacts on the environment (Wals, 2009a). A chapter in Agenda 21, named "Promoting Education, Public Awareness and Training," was dedicated to the specific issues of education. This chapter emphasizes that humans should fully recognize the importance of education, which provides knowledge and improves the capacity of people to address environment and development issues (Agenda 21, 1992).

Agenda 21 calls on governments, international agencies, businesses, and civil society groups to: ensure that basic education for all is achieved, make environmental and development education available to people of all ages, integrate environmental and development concepts into all education programs, and involve schoolchildren in studies on environmental health, including safe drinking water, sanitation, food and the various impacts of resource use (Agenda 21, 1992). In this way, ESD is about engaging people in issues related to sustainability and contributing to sustainability through education, which enables humans to generate innovative ideas so as to solve problems and crises regarding sustainability (Fien & Tilbury, 2002; Wals, 2009a).

Meanings of ESD

According to a 2009 review of ESD from the United Nations Decade of Education for Sustainable Development (DESD), people of different countries or regions hold various definitions of ESD, which share common elements with subtle differences in their respective contexts (Wals, 2009a). For example, in Chile, ESD means:

> A fundamental part of citizenship education, an opportunity to satisfy human needs through a pedagogy that fosters the cultural transformation towards a sustainable society and which permits education to re-think itself and to work in favor of the democratization of knowledge, the collective construction of an ethic of human action which promotes the development of participatory and supportive educational communities. (p. 26)

In the Arab world, ESD contributes to "the acquisition and practice of knowledge, values, and skills that ensure balance between the economic, social, and environmental aspects of development and the observance of both individuals and society development and progress in life" (p. 26). In China, ESD, in accordance with common scientific understanding, is viewed as a kind of education "that develops values that support sustainable development, with the intention to help people learn relevant knowledge and values and to develop the right and healthy habits and lifestyle which will lead to sustainable development for the whole society" (p. 26). ESD in China focuses on changing behaviors and lifestyles in a scientific way, while in Chile, ESD emphasizes developing the capacities and qualities people need to be able to actively, thoughtfully, and collectively contribute to sustainable development. It is

evident that interpretations of ESD are wide ranging, but some key words are frequently used in the definitions of ESD, such as human awareness, learning, participation, and satisfying the needs of the present without compromising future generations. This implies that humans are changing their attitudes and behaviors toward sustainability and gradually reaching consensus. Since “the ultimate aim of education is shaping human behavior” (Hungerford & Volk, 1990, p. 8), it is necessary to look at how ESD works in shaping human behaviors in their daily lives.

ESD Worldwide

According to the review from the UN Decade of Education for Sustainable Development (DESD, 2005-2014) in 2009 (Wals, 2009a), a Google search for “Education for Sustainable Development” yielded 89,000 websites in March of 2005, the year the DESD began. In January 2009, the middle of the DESD, the same search yielded 215, 000 websites. The same search I performed at the end of 2011 yielded about 678,000 websites. The above findings show that ESD has been attracting people’s attention all the time and the search of ESD is increasing every year since the beginning of the UN DESD. This indicates that human beings gradually understand the important role that education plays in sustainable development. Thus, ESD has an opportunity to become one of the emerging types of education all over the world.

Many governments support combining ESD with formal education because “formal education reaches hundreds of children and young people across the globe” (Wals, 2009b, p.

48), and schools are seen as “key places to develop capacities in a structured environment to help address those challenges” (p. 48). Within formal education, ESD is mostly connected to curriculum (Porritt, Hopkins, Birney, & Reed, 2009), teachers’ and educational leaders’ training (Peterson, 2009), and educators’ professional development (Shallcross, et al., 2006). However, most ESD activities worldwide are generated by NGOs rather than formal government organizations. These NGOs sometimes work with formal education systems but “more often in non-formal and informal learning settings” (Wals, 2009a, p. 54). Informal or non-formal learning is the collective learning that takes place outside of formal educational systems, such as in the contexts of families, communities, etc. Informal or non-formal education is generally voluntary by active participation and sharing ideas, which are important components of lifelong learning. Informal education occurs everywhere, and sometimes even appears within formal education and local school systems (Wals, 2009a). In this way, ESD can be used in both formal and informal education.

There are a number of studies analyzing how to integrate sustainability into teaching and learning in order to achieve ESD. For example, a water education program for adults in North Carolina conducted by Cockerill (2010) shows that adults are eager to learn, and that both urban and rural residents find EE useful. Covitt et al. (2009) investigated how the current, informal knowledge of students differs from accepted scientific knowledge in the field of Water Science. They found that most students were unable to grasp the holistic picture of the water cycle. Though results showed that the middle and high school students demonstrated

higher ability to visualize the whole system than elementary students, lack of visualization separated what students learn in the classroom from their knowledge of the environment around them. Even if both adults and educators emphasize the usefulness of EE, the actual EE at school is not enough. According to the results Covitt and his colleagues presented, the knowledge students learned in classroom cannot be integrated into their real lives. Therefore, better curricula are needed to help students understand how environmentally related class lessons can be applied to their daily lives.

Middlestadt et al. (2001) conducted a qualitative study in Jordanian schools on water conservation education to investigate how different young adults (10^{th} graders with the average age of 15.6) learned about water and how the education impacted their community. Their study resulted in students' increased knowledge of water conservation, which shows that hands-on education is more effective than lecture-based education. They also found that the parents of all participants increased their conservation efforts. He (2010) investigated EE in rural Chinese schools by conducting a series of EE activities throughout China suited to local conditions. He discovered that exam-oriented education was still a mainstream in China, and he suggested that reliance on test scores should be lessened in order for environmental and sustainable education to be effectively promoted. He also found that when culture and local issues were concerned, the success of EE would be increased. Children could be inspired to action if they are able to research environmental problems and solutions on their own. It can be concluded based on these examples that ESD needs to be implemented

according to different ages, cultures, and local conditions, combining scientific teaching methods to maximize its effectiveness. The purpose of this study is to explore Chinese principals' behavioral intentions in relation to green school practices. Therefore, the following section will introduce how ESD develops in China and how Chinese educators view sustainability.

ESD in China

There are great challenges for Chinese educators today. First, a huge population forces primary and middle schools to enroll far more students in a class than their counterparts in Europe and America. The class size in China averages 40 to 50 students (Jin, 2011; Liu et al., 2011). Second, severe competition for college and school admission causes an education oriented toward high scores in exams, which leads both the government and society to regard enrolment rate in the current schools as the benchmark of evaluating school effectiveness. The Chinese government and educators have been dedicated to overcoming the existing problems to develop sustainably. They attempted to make changes toward quality education rather than exam-based education. In 2001, the national curriculum reform raised public awareness that education shouldn't be focused exclusively on mastery of literal knowledge and exam competition (Yi & Wu, 2009). China's education is confronting big challenges, but China, as a large developing country, has a role to play in serving people's needs today and creating a better future for their offsprings. Thus, educational leaders in China need to concern seriously the relationship between sustainability and education. The next section

examines how China adopted ESD and the three phases that EE/ESD experienced in China (Yi & Wu, 2009).

For many decades, China was slow to recognize its environmental problems. According to the research Tian (2008) did related to China's ESD policy, it was Premier Zhou who first advocated environmental protection and EE and asked the State Council to pay more attention to pollution in 1969. The research showed that ESD experienced three phases in China. Chinese people, especially the national leaders, recognized the importance of the environment for the first time after the Stockholm Conference, which directly led to the First National Meeting on Environmental Protection in Beijing in 1973. The second phase from 1983 to 1992 was a period in which EE in China was forming and developing. The Second National Meeting on Environmental Protection held in 1983 resulted in the government's recognition of strengthening EE for officials and average citizens. Following this, EE activities in China varied and the contents of EE became more explicitly defined. EE began spreading to the whole society. The third phase began in 1992, as the UN Conference of Environment and Development was held at Rio de Janeiro in Brazil. The First National Meeting for EE in China was jointly held by the Ministry of Education (MOE) and State Environmental Protection Administration (SEPA). The importance of EE was enhanced in schools. This indicated that EE has come into a new period. The National Action Guideline for Environmental Propaganda and Education in 1996 symbolized EE as not only a political task but also a part of academic research (Tian, 2008). According to a review of Chinese

literature from 1979 to 2005, the number of papers on ESD increased while that of EE decreased in 2004 and 2005 (Tian, 2008). This suggests the possibility that ESD is becoming more popular and replacing EE in China.

There are still problems existing in ESD in China today. First, ESD has been adopted to develop environmental consciousness in different regions or cities in China. For example, Beijing and Shanghai were well-prepared for the Olympic Games (2008) and the World Expo (2010), which improves public awareness of environmental protection. However, those in the countryside still lag behind because they do not have sufficient knowledge of EE or ESD. Second, EE and ESD have been emphasized toward citizens of middle and upper classes and students of primary and middle schools, but they are not emphasized enough for workers in industry or agriculture. Third, environmental consciousness is still low among Chinese people because of limited knowledge, technology, and management. Fourth, EE has not yet acquired systemic insurance as a main feature in schooling, such as funding, technology, and management (Tian, 2008; Yi & Wu, 2009). Therefore, a lot of work must be done to make full use of ESD, which may promote public awareness of environmental protection and educate Chinese people to behave more friendly to the environment.

Over the last decade, ESD has been widely implemented “under the leadership of the Chinese National Commission for UNESCO with extensive participation of local schools” (Zhang, 2010, p. 11). Du Yue, Deputy Secretary General of the Chinese National Commission for UNESCO, mentioned that during the period of the UN DESD, China had

accomplished three major shifts: from an international concept of ESD to a Chinese concept, from intervention and action research to public policy-making, and from school-based innovation to school-community partnership-building (Du, 2008). ESD now "has become a unique education innovation with increasing recognition" (Zhang, 2010, p. 11).

Sustainable Leadership

As I mentioned before, sustainability is about the relationship between people, their purpose, and their place (Uzzell, 2002). It is about engaging, learning and leading to create a positive, empowering future for today's children and their children. Because sustainability brings life to learning and learning to life, its relationship with education is very close. This section broadly examines the relationship between school leadership and sustainability based on existing literature, which includes a wide range rather than focusing exclusively in China.

Birney and Reed (2009) stated, "When a school places sustainability at the core of its activity, it supports adults and young people's learning, their contribution to and improvement of their community and the sustainability of our planet" (p. 3). Therefore, schools are crucial places where students can gain knowledge about protecting the environment and learn pro-environmental behaviors. The school leaders play important roles in making all these things happen. They may achieve the purpose of increasing the knowledge of sustainability and cultivating a sustainable young generation. This section explores the empirical research of school leaders' importance relative to implementing ESD and pro-environmental behaviors.

Leadership in Education

Leadership has two functions: providing direction and exercising influence (Leithwood & Riehl, 2005). Leaders mobilize and cooperate with others to achieve a shared goal. They cultivate the conditions in which a shared vision develops. They help to establish effective conditions for others, and they exercise formal authority and encompass different roles to impact others' behaviors.

According to Birney and Reed (2009), educational leadership has a positive impact on children's lives through the development of schools and communities. Porritt emphasized that the essence of education is to prepare young people for the future, and leadership is to serve students' needs (Porritt, et al., 2009). Leithwood and Riehl (2005) stated that leadership has significant impacts on student learning, because students benefit most of all from the positive effects of strong school leadership, which provides them access to high quality instruction and a well-designed curriculum. Due to the important influence educational leadership has at school, today's educational leaders undertake more responsibilities. They are expected to spearhead the instructional process and guide professional development of schools to meet both internal and external goals. Internally, they build school capacity to satisfy the needs of students and faculty. Externally, they have to face the pressure imposed from the outside. Meanwhile, school leaders and educators want schools and students to have a long-term improvement. However, the increasing depletion and imbalance of physical, economic, and social resources require educational leaders to rethink the fundamental principle of school

education. The principle is managing a school for a sustainable future and keeping a balance between technology, knowledge, and population growth (Porritt, et al., 2009). Thus, the following section will focus on school principals to provide insights of how school principals' view sustainability and green school practices.

School Principals and Sustainability

A famous Chinese educator, Tao Xingzhi, once said: "The principal is the spirit of a school. If one wants to discuss a school, he must first talk about its principal" (Wenzhong, 2004, p. 86). It is not easy to exercise leadership in a school. A school principal undertakes a range of tasks and demands, and he/she transits through multiple roles in a single school day. In the public eye, he/she can be a politician and an educator. In the eyes of faculty and students, a principal can be a parent, a care-giver, and a disciplinarian (Ackley, 2010). As professionals, they are responsible for managing a school efficiently to sustain its long-term development. They are supposed to solve tough issues. They need to have the patience and good judgment to handle each child based on his/her individual background, capacity, and stage of development.

As the natural environment is becoming more sensitive and at-risk, an increasing number of educational leaders are making environmental protection and environmental consciousness a top priority (Ackley, 2010). Therefore, they want to implement sustainable school practices, integrating ESD into school curriculum and daily routine, to create a healthy learning environment for children and educators. At the same time, these practices can reduce

environmental impacts and lower costs. In this case, the intention of a school principal in relation to implementing sustainable practices contributes to the development of a school and sustainability.

Ackley's research in 2009 examined how green schools promoted pro-environmental behaviors and attitudes through the leadership practices of school principals (Ackley, 2009). A three-phase methodology was implemented, which included: an examination of a document relevant to the principal's work as a leader of a green school, an observation in the principal's school, and two separate interviews that focused on both the principals' everyday work and their values, beliefs, motivation, and challenges. The document analysis shed light on the five school principals' early experiences with ecological issues and in the greening progress. This research revealed the school principals' views on green school movement and showed six distinct roles that a green school leader plays on a daily basis. The roles are inspirational/motivational model, supporter, collaborator, student, instructional leader, and manager/planner. School principals need to build relationships not only with children, parents, and teachers, but also with the outside community. The sustainable school principals, such as those mentioned in Ackley's study, undertake different responsibilities compared to traditional school leaders. Environmental leaders are different from traditional leaders, because a new form of eco-centric management and leadership is required to transform to ecological sustainability (Shrivastava, 1994). Environmental leaders must keep environmental concerns as the focus of their leadership, while school leaders traditionally

must keep student education at the forefront of their leadership (Moos, Krejsler, & Kofod, 2008). Therefore, a sustainable school principal is a hybrid of environmental leader and school leader.

Ackley (2009) proposed five values that sustainable school principals have. First, the sustainable school principals are student-centered. Second, they highly respect teaching and collaboration. Third, they feel the importance of family and community involvement in the school. Fourth, they promote pro-environmental behaviors at school and commit to environmental protection. Fifth, they communicate their environmental concerns with the stakeholders, such as faculty, students, and the community. They are able to discuss the importance of a natural environment with others in detail. These values motivate a principal's pro-environmental behavior and his/her school management. In this way, principals can educate themselves, shape the curriculum related to environmental issues, and encourage powerful professional development for faculty. These will further motivate pro-environmental practices and values among faculty and students at school.

Wenzhong (2004) agreed that having a set of values, which are in line with school mission, is necessary for sustainable school leaders. With these values, school leaders can provide guidance, influence, and support for their faculty and students to impart environmental knowledge and cultivate environmental stewards in schools. Thus, a sustainable school principal plays an important role in the process of implementing sustainable practices.

Green Schools

Because of the call for EfS, people in every aspect of society, including formal education, begin to rethink and reform their current practices (Henderson & Tilbury, 2004). The whole-school sustainability initiatives operating across the globe strengthen the possibilities for schools to innovate and showcase changes in practice for a better future. Because of the importance of the whole school approaches to teaching and learning about sustainability, Kensler (2012) proposed a brand new theoretical framework integrating democratic and ecological principals. Its purpose was to provide insights for people to understand more about green schools compared to traditional schools. According to Kensler (2012), green schools indicated an emerging international trend in k-12 education. In this case, it is necessary to know how green schools develop in China, which may lay research foundation for national and international education development.

Many national initiatives, such as green schools in China, Enviroschools in New Zealand, and Sustainable Schools in Australia, are being carried out in order to pursue the goals of developing a new approach to education, renovating educational processes, and achieving quality education (Gough, 2005). These initiatives not only teach about sustainability via curriculum (Birney & Reed, 2009), but also promote designing and building healthy and high performance facilities (Gordon, 2010). Through the process of recycling, reusing, and reducing of ecologically intelligent materials, adults and children engage in knowledge learning and practices of environmental protection for the future (Goleman, 2009).

Though labels for these initiatives are different, they will be collectively called green schools in this study. This section will explore what a green school is, its importance and how they work in practice.

What is a Green School?

"Schools are already caring places, but a green school extends this commitment into new areas" (Porritt, et al., 2009, p. 6). A green school prepares young people for sustainable living through its teaching and daily practices. It teaches students to care for themselves, for each other, and for the environment. It is to develop self-esteem and reach high standards of achievement. It cares about energy and water consumption, production of waste, and the safe quality of food. More generally, a green school also cares about the challenges and opportunities for those living in its community and others of the world. It cultivates students to become leaders and citizens understanding how the natural world works and to have the knowledge, values, and skills to act effectively on that understanding (Stone & Ecoliteracy, 2009).

A green school in practice is "the physical result of a consensus process of planning, design, and construction that takes into account a building's performance over its entire 50- to 60-year life cycle" (Gordon, 2010, p. 1). It is built with the goal of creating clean, healthy, quiet spaces to reinforce ideal learning (Beaver, 2009). It has minimal negative impact on the environment and lower overhead costs compared to conventional schools. The USGBC defines a green school as "a school that creates a healthy environment that is conducive to

learning while saving energy, resources and money" (USGBC, 2010, p. 1). A green school is not limited to new school design and construction. It also considers the possibility for renovating and restoring old or more stable school buildings. Therefore, building green schools is quite beneficial and important for leading today's children toward a sustainable future.

Characteristics and the Benefits of Building Green Schools

Characteristics of Green Schools

According to Birney and Reed (2009, p.5), a green school has seven characteristics:

1. Green schools take into consideration of human impacts on the ecological environment. This benefits both the school campuses and their communities. It has a positive impact on healthy living and environmental protection.
2. Green schools set their purposes within a broader global context and share an understanding of these purposes among stakeholders in schools. This makes sustainability the core purpose of the schools rather than an add-on initiative. This core purpose influences every aspect of the schools' policies, strategies, and operations.
3. Green schools improve student engagement and participation in school activities. Green schools provide opportunities for students to be involved in school management and development, so students are more ready to engage in pro-environmental behaviors. Research also shows that students are willing to be

representatives working with faculty, solving complex issues and dilemmas of sustainability.

4. Green schools are not contradictory with other educational policies or initiatives. Rather, they provide a way of building coherence and connection across activities and purposes in schools.
5. Green schools, in accordance with sustainability, provide clear direction for school development. They help to integrate sustainability into the curriculum and improve student achievement.
6. Green schools emphasize improving students' learning. Students' learning interest will be enhanced in green schools. Students can see how their behaviors impact the world and their future through a rich range of opportunities, such as hands-on and outdoor practices.
7. Green schools *engage in curriculum change and development.* Meanwhile, sustainability affects how the curriculum is structured and implemented. They are mutually interconnected and interactive.

The Benefits of Going Green

Green schools are "the ultimate example of a win-win situation" (Beaver, 2009, p. 7). They benefit students, teachers, administrators, communities, and the planet. As the locus of education, school buildings are places where children gather together and develop basic skills to be productive future members of the society. Green schools generally are constructed with

sustainable and durable building materials in order to provide a healthier learning environment for student learning. A healthier indoor environment in green schools decreases the opportunities for students, teachers, and administrators to get sick, and increases attendance rate compared to conventional schools (Beaver, 2009). Abundant natural light and outdoor views help students and teachers become more productive with higher enthusiasm. With improved student achievement in a green school, school districts can meet state or federal standards. Compared to a traditional school, a green school saves on average $100,000 per year, which reduces the overhead costs of a school (Beaver, 2009). In this way, administrators and school districts have more money to purchase useful textbooks or hire more teachers.

According to Gordon (2010), green schools have five benefits. They are learning benefit, budget benefit, health benefit, operational benefit, and pedagogical benefit. Because green schools provide a healthy environment, they benefit the health of students and faculty, which further improves their teaching and learning. Green schools may cost more in the outset but save more for the future. The schools cost more to cover better and more efficient materials at the beginning, but save more in the long run because the materials used are long-lasting and will benefit the environment. The healthier environment of green schools benefits both students and teachers' health and improves their attendance rates. Money saved in green school operations can be used to employ more teachers and introduce more equipment. Finally, environmental quality benefits school teaching, which in turn impacts student

achievement.

In summary, green schools have many positive characteristics and benefits for both humans and their living environment. ESD calls for actions and decision–making, so schools cannot only speak for the future but must act for the future (Breiting, Mayer, & Mogensen, 2005). Therefore, it is necessary to establish green schools for a sustainable future.

Myths and Facts of Green Schools

Generally, there are some misunderstandings about green schools which hinder their implementation and development. Beaver (2009, p.13) attempted to clarify green schools and revealed the myths of green schools, which was summarised as follows:

1. Green schools are not considered cost-effective. In fact, green schools do not cost more than conventional schools. A report by Langdon (2007) compared 100 established green school buildings with a random sample of traditionally designed buildings controlling for time, location and cost. There was no significant difference in average costs for green buildings compared to conventional buildings. In addition, a conventional school building can be transformed into a green school without investing too much. According to the USGBC, green schools on average use 33% less energy and 32% less water than conventionally built schools (the Center for Green schools, n.d.). In this case, money can be saved through building green schools, which then can be used to hire new teachers and buy more textbooks.

2. Implementing green school practices is considered too complex and imposes burdens

on school faculty. In fact, green schools provide opportunities for stakeholders to develop green job skills. This is not a burden, but a chance to develop new skills for the new green economy.

3. People thought green schools only could be built in some developed or rich regions. In fact, green schools might not look the same in every region but they can benefit every community. Green schools in Asia and North America may have different standards. A green school in Kentucky may have different project measurements than its counterpart in Los Angeles. Green schools are for everyone, not only for certain groups.

4. People do not believe that green schools can improve student achievement. In fact, green schools provide a healthier learning environment for students, which prevents distraction and increases the rate of participation. According to research, “Students with the most daylighting in their classrooms progressed 20% faster on math tests and 26% faster on reading tests in one year than those with less daylighting” (Council, 2009, p. 3). Therefore, green schools make students’ learning more productive.

Green School Initiatives Worldwide

Programs and practices of green schools at present are often implemented around the whole school approaches to sustainability. According to the findings from Henderson and Tilbury (2004), there are some typical programs worldwide relevant to green schools.

1. Environment and Schools Initiative (ENSI). ENSI was established in 1986. It now has 13 members, mostly from Europe, but also including Australia. ENSI supports

educational development, which improves dynamic qualities, environmental understanding, and participation in teaching and learning (Breiting, et al., 2005). It focuses on schools, students, teacher trainers, and administrators. It aims to promote dialogue and develop individual responsibility in the process of teaching pro-environmental knowledge and behaviors. Research and international opportunities are provided to exchange information and experiences from member countries.

2. Foundation for Environmental Education (FEE) Eco-schools. With 28 member nations and more than 10,000 schools participating, the FEE Eco-school program represents the largest internationally coordinated whole-school EE program. It involves not only Europe and South Africa, but also Asia and South America. FEE Eco-schools encourage active participation in environment-related issues and educate students the knowledge of environmental protection. This program is designed to encourage whole-school learning with a key focus on curriculum for a healthy environment. It is based on Agenda 21 and focuses on waste, water, and energy. Its member nations have flexibility to tailor the programs according to their own needs under a common framework.
3. Green School Award in Sweden. This was established by the Swedish Government in 1998. It is to encourage and support the development of teaching and learning for sustainability. Students are encouraged to influence, participate, and undertake

responsibility. Its focuses are pre-school, compulsory, and non-compulsory schools. Participating schools must meet certain criteria before applying for the green school Award, which can be valid for three years. This program integrates ESD into the curriculum in the process of teaching and learning.

4. Enviroschools in New Zealand. The Enviroschools concept was adopted by New Zealanders in the 1990s. The real Enviroschools were established in New Zealand in 2002. It mainly focuses on kindergarten, primary, and secondary schools. It encourages strong partnership and communication to enhance existing EE initiatives. Finally, students will become more involved in its planning, criteria setting, assessment, and evaluation.
5. Sustainable schools in Australia. The sustainable schools program in Australia enables students to work toward having a good quality of life in a sustainable environment by developing learning environments and learning experiences (Gough, 2005). It integrates ESD into both curriculum and educational context. It also proposes eight doorways for schools to operate toward a more sustainable future. They are food and drink, energy and water, travel and traffic, purchasing and waste, building and grounds, inclusion and participation, local well-being and global dimensions (Birney & Reed, 2009). It also involves the whole-school community. Therefore, students are more confident and enjoy group work in learning, and faculty becomes more passionate in teaching and working.

6. Green schools in China. The green school project in China was established in 1996. It is funded by the State Environmental Protection Administration (SEPA) (Henderson & Tilbury, 2004). The key focus areas of this program include whole-school environmental management and protection, EE curriculum and professional development, and greening of school grounds. It encourages schools to make full use of their educational resources. It focuses on primary schools, middle schools, kindergartens, vocational schools, and special need schools.

Based on the above understanding of green schools initiatives worldwide and nationwide in China, the next section explains China's green school program in detail to get an overview of green school's development in this country, which is the focus of this current study.

Green Schools in China

Green school projects were first proposed by the former State Environmental Protection Bureau of China and the former State Education Commission of China through the National Environmental Publicity and Education Action Essentials (1996-2010) in 1996 (Wu, 2002). It is based on the international concept of ISO 14000 and has been informed by the European "Eco-schools" (Henderson & Tilbury, 2004). It was mandated to promote environmental protection and sustainable development and to foster EE in kindergarten, primary, secondary, and tertiary school levels. Since 2000, it has been run by the Center for Environmental Education and Communications (CCEC) and the local CCEC networks. There were a total of

3,207 schools at various levels that were named green schools in sixteen provinces by October of the 2000 (Zhiyan & Hongying, 2004). This indicates that China's ESD has entered a new era.

China's green school project encourages schools to make use of both internal and external educational resources. It emphasizes integrating EE into school curriculum, aiming to raise awareness of environmental protection through education. According to research, EE is taken seriously by 80% of top school officials, and EE is taught in both classroom and extracurricular activities in China. Schools work hard to create a green culture and a green campus (Zhiyan & Hongying, 2004). The national government provides funding to encourage EE and green school establishment. China also hosted an international seminar in 2004, sharing experiences and learning from similar programs worldwide (Henderson & Tilbury, 2004). It is obvious that green school project in China is gaining increasing attention from the public.

However, there are still some existing problems interfering with the growth of green schools in China. First, outmoded conventions of education theory and teaching pedagogy are constraining educational initiatives, such as the green school project. Since China's education is still exam-oriented, students fail to apply pro-environmental knowledge to practical problems though they are taught pro-environmental knowledge (Wu, 2002).

Second, most educational officers, policymakers, school principals, and teachers are unfamiliar with the concept of ESD and some related perspectives. Similar to public schools

in western countries, Chinese public schools are managed by governments and funded mostly from taxes. The national government of China has contributed strong financial and policy support to education, but some schools in poor districts are still lagging behind and unfamiliar with ESD and green schools (Wen et al., 2008). Because the educational budget is limited compared to a big class size and a large school population in these districts, it is difficult to implement green school practices.

In addition, many teachers are not adequate to teach and model pro-environmental knowledge and behaviors because they have never been trained for professional development relevant to green school practices or ESD (Zhiyan & Hongying, 2004). Finally, the blind pursuit of green school quantity over quality negatively impacts the healthy development of green schools in China (Zhiyan, Hongying, & Xuhong, 2004). In terms of the green school criteria in China, schools are required to reach the same achievement associate with environmental improvement and EE, without any space for flexibility.

In the face of these challenges, educators in China, especially the school leaders, are expected to take the lead in changing the situation in order to create a good learning environment for the students now and make their life different in the future. Therefore, Chinese school principals, the most influential factors for the development of ESD and green schools in China, become the key target of this current study (Wu, 2002).

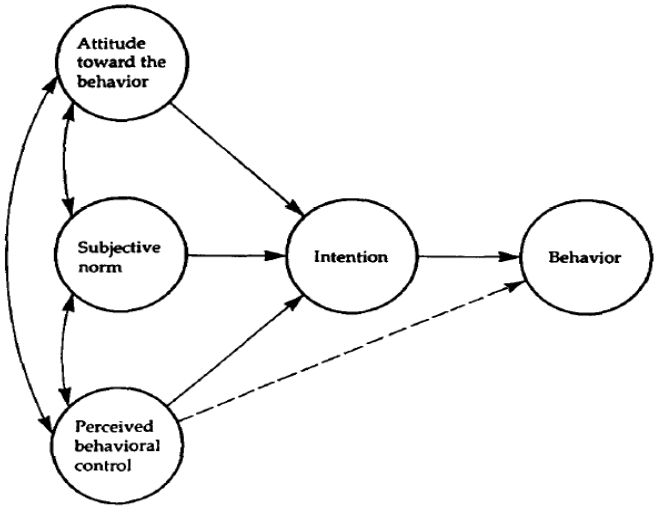
The following section will focus on the TPB, which will be used as the theoretical framework of the study to explore Chinese principals' intentions in relation to green school

practices through their attitudes, subjective norms and perceived behavioral control.

Theory of Planned Behavior (TPB)

The theory of planned behavior (TPB), extended from the theory of reasoned action (Ajzen & Fishbein, 1980; Azjen, 1988), was "designed to predict and explain human behavior in specific contexts" (Ajzen, 1991, p. 181). The TPB proposes a model about how human behavior is guided (see Figure 3). It predicts the occurrence of a specific behavior, and the intention phase is a precursor of the behavior. This intention is determined by three variables: attitude toward the behavior, subjective norm and perceived behavioral control. These variables predict the intention to perform a behavior. Because each of the variables in the model possesses special meaning within the theory, their explanations follow in separate sections.

Figure 3 The Theory of Planned Behavior (Ajzen, 1991, p. 182)



Intention

As in the original theory of reasoned action (Ajzen, 1991), a person's behavior is

determined by one's intention which is, in turn, a function of one's attitude toward the behavior and the subjective norm. The central factor in the TPB is the individual's intention to perform a behavior. Intentions are the cognitive representations of a person's readiness to perform a given behavior, and they are considered to capture the motivational factors that influence a behavior. According to Ajzen (1991), "the stronger the intention to engage in a behavior, the more likely should be its performance" (p. 181). In comparison with previous models of attitude-behavior relationships, the TPB contributed greatly by using intention as a proximal measure of behavior (Francis et al., 2004).

Three Important Variables in the TPB

According to the TPB, human behavior is guided by three kinds of considerations: attitude toward the behavior, subjective norm and perceived behavioral control.

Attitude toward the Behavior

Attitude toward the behavior is a person's overall appraisal of a behavior. It is determined by the individual's beliefs about outcomes of performing the behavior (behavioral beliefs) and the corresponding evaluations of the outcomes of the behavior (Ajzen, 1991; Francis, et al., 2004). Thus, a person who positively values the outcomes of a behavior will have a positive attitude toward a behavior. Conversely, a person who negatively values the outcomes of a behavior will have a negative attitude toward a behavior.

Subjective Norm

Subjective norm is a person's perceptions of general social pressure to determine

whether to perform the targeted behavior. It is determined by two components: beliefs about how other people wish them to behave, and the outcome evaluations of each belief (Ajzen, 1991). Thus, if a person perceives that their significant others, such as family members and close friends, support (or disapprove) the behavior and the outcome of performing the behavior is valued positively (or negatively), they are more (or less) likely to intend to perform it.

Perceived Behavioral Control

Perceived behavioral control is the extent to which a person perceives the ease or difficulty of performing a behavior, and it is posited to reflect both past experience and anticipated obstacles (Ajzen, 1991). It includes two aspects: how much a person has control over a behavior and how confident a person feels to perform or not to perform the behavior. According to Ajzen (2002), "a measure of perceived behavioral control can serve as a proxy or actual control and contribute to the prediction of the behavior in question" (p. 666). Perceived behavioral control is expected to interact with attitudes and with subjective norms in determining intentions. It is also expected to interact with intentions to affect the targeted behavior.

Salient Beliefs

Salient beliefs are attributed an important role in the TPB (Downs & Hausenblas, 2005; Montano & Kasprzyk, 2008; Sutton, et al., 2003). They are the essence of the TPB and are considered accessible beliefs that first come to mind when respondents are asked open ended

questions (Ajzen & Fishbein, 2000; Higgins, 1996). Salient behavioral beliefs, beliefs about the consequences of performing certain behavior, are assumed to be the driving force behind an individual's attitude. Salient normative beliefs provide the framework for subjective norm. They are beliefs about the views of significant others. And salient control beliefs, which are beliefs about factors that might impede or facilitate performing the behavior, provide the structure for perceived behavioral control. The TPB was carefully designed to explain human behaviors and their intentions toward a behavior, which is closely related to the purpose of this study of exploring Chinese principals' behavioral intentions associates with green school practices. Therefore, the TPB is adopted as the fundamental framework of this study.

Applications of the TPB

The TPB provides a theoretical framework for systematically investigating the factors which influence behavior choices. It has been widely used to investigate behaviors such as pro-environmental behaviors (Ando, Ohnuma, Bl baum, Matthies, & Sugiura, 2010), health related behaviors (Downs & Hausenblas, 2005; Godin & Kok, 1996; Pawlak et al., 2008), behaviors about environmental concerns (De Groot & Steg, 2007), parents' attitude toward public education (Goh, 2009), organizational behaviors (Parker, 2011; Schelly, et al., 2011), and consumer behaviors (J. R. Smith et al., 2009). It gradually becomes a reliable tool in the studies of pro-environmental behaviors in social psychology (Arbuthnott, 2009; Davis & Morgan, 2008; De Groot & Steg, 2007; Fornara, Carrus, Passafaro, & Bonnes, 2011; Harland, Staats, & Wilke, 1999; Heath & Gifford, 2002; Kaiser, Hübner, & Bogner, 2005; Stern, Kalof,

Dietz, & Guagnano, 1995; Taylor & Todd, 1995, 1997; Wall, Devine-Wright, & Mill, 2007). For example, Wall and his colleagues (2007) combined and compared the TPB with Schwartz's norm-activation theory to address the need for systematic theory comparison and development in environmentally significant behavior research. De Groot and Steg (De Groot & Steg, 2007) tested whether the TPB could explain human intention of using a park-and-ride facility in Netherlands, which indicated that environmental concerns were directly related to attitudes toward using this facility. The research found that positive attitudes, positive subjective norms, and high perceived behavioral control toward the use of the facility were related to stronger intention to use the facility. Another research conducted by Ando and his colleagues (2010) also applied the TPB to explore the determinants of individual and collective pro-environmental behaviors in Germany and Japan. It was concluded that subjective norms and perceived behavioral control respectively played important roles in Japan and Germany regarding individual behavior. Social factors played an important role in collective pro-environmental behaviors. It seems that the TPB is gaining attention and being widely adopted in research, which indicates its particularity and importance in exploring human behaviors and intentions. Therefore, this study uses the TPB as its theoretical framework to explore Chinese school principals' behavioral intentions relevant to green school practices.

Elicitation Study

Ajzen (1991; Ajzen & Fishbein, 1980) developed several guidelines for the TPB, one of

which was to conduct an elicitation study to determine a population's salient behavioral, normative, and control beliefs prior to developing a forced response survey. There are three recommendations of applying elicitation studies: using open-ended questions in conducting an elicitation study to assess a population's behavioral, normative and control beliefs; rank-ordering the beliefs while analyzing the content; and determining the five to ten most salient beliefs.

Elicitation studies are important because they provide researchers with valuable information concerning people's perceptions of a behavior. People acquire their beliefs from various sources such as personal experiences and interpersonal communications. At the end, some of the beliefs may persist over time and some of them may be forgotten. New beliefs may be formulated by negative and positive experiences based on old and new cognition (Ajzen & Fishbein, 1980). Thus, it is important to use elicitation studies to identify which belief is the most evident to determine human attitude, subjective norm and perceived behavioral control to establish the cognitive foundation of a population's salient exercise beliefs. According to Downs and Hausenblas (2005), "elicitation studies are necessary to develop a meaningful understanding about the reasons that people do or do not exercise" (p. 4).

Application of Elicitation Study and the TPB

In spite of the importance accorded to salient beliefs by the TPB, the elicitation stage has received little research attention. Most studies relevant to the TPB are conducted without the

elicitation stage (Downs & Hausenblas, 2005). Even though some researchers used elicitation studies and the TPB in their studies, they did not report sufficient information regarding elicitation studies to determine participant correspondence (Downs, Symons, & Heather, 2003; Downs & Hausenblas, 2005).

There are only several studies combining elicitation studies with the TPB. Ajzen and Driver (1991) conducted an elicitation study in which they identified salient instrumental and affective beliefs with respect to various activities such as biking and mountain climbing. A research study conducted by Goh (2009) used the TPB and elicitation study to investigate the salient beliefs customers hold towards the education service sector in Australian. This study indicated that the TPB provided a more structured method for elicitation as compared to previous studies that did not used any established behavioral theoretical framework. Since this study is to explore Chinese principals' intentions in relation to green school practices, I designed this study as an elicitation study using the TPB as the theoretical framework to develop survey questions to better solicit responses from Chinese principals.

Summary

This chapter has provided extensive literature to demonstrate that green schools are attracting attention in China and can be developed further. Since school principals play key roles in ESD and implementing green school practices, it is necessary to understand how school principals in China consider green school practices in their minds to better develop green movement. The TPB was adopted in many fields to investigate human behavioral

intentions, but it was rarely used in the field of educational leadership. There is no single research that has ever adopted the TPB to do an elicitation study of exploring Chinese school principals' behavioral intentions regarding green school practices, which is the reason why I chose to present this research. The next chapter will introduce the method that is going to be used in this study before and after the data collection.

Chapter 3 Methods

Because of the call for Education for Sustainability (EfS), many countries strengthened and initiated practices for a better future, such as green schools, Enviroschools and Sustainable Schools (Gough, 2005). These practices not only teach about sustainability through curriculum, but also help to design healthy and high-performance buildings for schools (Birney & Reed, 2009). Research studies suggested that there are many benefits for schools who participate in establishing green schools, such as decreasing the opportunities to get sick at school, increasing attendance rates, and providing sufficient natural light (Beaver, 2009). Green schools have been highly valued in China, and there have been 3,207 schools at various levels that were named green schools in sixteen provinces by the end of 2004 (Zhiyan & Hongying, 2004). However, research indicates that many problems, such as outmoded teaching pedagogies and test-based education, prevents Chinese green schools from being implemented successfully (Wu, 2002).

As discussed in Chapter 1, the purpose of this elicitation study was to explore Chinese principals' intentions in relation to green school practices, though many researchers suggested that policy makers and teachers should be responsible for establishing green schools and promoting pro-environmental awareness (Zhiyan & Hongying, 2004). Principals are the most influential factors for the development of ESD and green schools (Wu, 2002). This study is necessary because there is little research that elicits principals' salient beliefs of green school practices by using the TPB (Ajzen & Driver, 1991; Azjen, 1988). Additionally, there is a need

to explore Chinese principals' prominent opinions about green schools practices because China as the largest developing country contributes to global environmental problems. Therefore, it is important and meaningful to conduct this study.

An open-ended survey with nine questions was adopted based on the TPB (Veronese, 2012). All questions would be translated into Chinese and sent to school principals in China after back translation. This is an elicitation study which is to identify participants' salient beliefs regarding implementing green school practices. The results of this elicitation study can be used in future research to design direct measures for assessing human behavioral intentions based on the TPB in the development of close-ended survey questions. This study will provide insights to the research of educational leadership in relation to school principals' attitudes, subjective norms, and perceived behavioral control associated with green school practices.

Research Questions

To carry out the purpose of this study, the following research questions were examined:

1. What salient beliefs do school principals in China report relative to managing schools with green school practices?
2. What individuals do school principals in China report as important to their implementation of green school practices?
3. What do school principals in China report that facilitates or inhibits their managing schools with green school practices?

This chapter describes the research design, the researcher's role, participants, instrumentation, data collection procedures, and data analysis for this study.

Research Design

This study is a qualitative study, using open-ended survey questions designed as an elicitation study (Downs & Hausenblas, 2005). I use qualitative research in order to clearly report the viewpoint of the participants. In this case, a detailed description can be produced (Roberts, 2010). Descriptive research involves collecting data to answer questions about current status of an issue and provides systematic, factual, and accurate characteristics of an existing phenomenon, which is the case for this study (Gay & Airasian, 2003; Isaac & Michael, 1981). There is a researcher-designed survey based on the TPB that has been successfully used in the United States to explore U.S. school leaders' behavioral intentions of green school practices (Veronese, 2012).In this study, I used this developed open-ended survey questions to explore Chinese principals' behavioral intentions of green school practices.

The Researcher's Role

The role of the researcher for this study is to examine principals' significant thoughts about green school practices in China. As a researcher of this study, I identified my own biases, values, and personal background before conducting the survey and its following analysis. I examined myself regularly, listened to experts' recommendations, and frequently reflected my thoughts and exchanged ideas with peers and professors. Additionally, I

protected the rights of the participants without revealing their personal privacy. These steps will also be described in detail in the section of data collection.

Participants

The participants of this elicitation study are a group of Chinese school principals who may or may not be familiar with sustainability and green school practices. The snowball method of sampling was used to achieve a variety of Chinese principals. Snowball sampling is a technique used for recruiting future participants based on the social connections of the existing sample group (Noy, 2008). As a result, the sample group grows with each survey response which creates the snowball effect.

The snowball sampling began by identifying a group of school principals in China who were contacted through my former classmates, friends, most of all, my parents. Based on this group, an email list of known school principals in China was developed to encourage their participation in the initial round of surveys. More participants were involved after the initial round of participants used their social connections. Thus, the participant population and sample provided strong data and necessary participants to complete this study.

Instrumentation

Researchers have designed a survey to examine principals' pro-environmental behaviors among principals in the United States (Veronese, 2012). I adopted the existing questionnaire to explore principals' salient beliefs about green school practices in China. Elicitation studies are recommended when using the TPB to establish the cognitive foundation of a population's

salient exercise beliefs (Downs & Hausenblas, 2005). This elicitation study used the TPB as its theoretical framework to elicit responses from the participants regarding green school practices.

The TPB was “designed to predict and explain human behavior in specific contexts” (Ajzen & Driver, 1991, p. 181). According to the TPB, human behavior is guided by three variables: attitude toward behavior, subjective norm and perceived behavioral control (Ajzen, 1991; Azjen, 1988). The survey was framed based on the three variables of the TPB. There are nine open-ended questions in the survey, which can be divided into three sections. Each section corresponds to each variable of the TPB.

Section one of the survey assesses participants’ attitudes toward green school practices. It has three items:

1. What do you believe are the ADVANTAGES of leading and managing your school to be a green school?
2. What do you believe are the DISADVANTAGES of leading and managing your school to be a green school?
3. Is there anything else you associate with your own views about leading and managing your school to be a green school?

Section two of the survey includes three questions examining how significant others affect participants’ opinions on green school practices:

4. Within or outside your organization, who are the individuals, if any, who would

APPROVE of you leading and managing your school to be a green school?

5. Within or outside your organization, who are the individuals, if any, who would DISAPPROVE of you leading and managing your school to be a green school?
6. Is there anything else you associate with other people's views (within or outside your organization) about you leading and managing your school to be a green school?

Section three of the survey explores the factors that might affect participants' performance of implementing green school practices:

7. What factors or circumstances would ENABLE you to lead and manage your school to be a green school?
8. What factors or circumstances would make it DIFFICULT or IMPOSSIBLE for you to lead and manage your school to be a green school?
9. What other issues, if any, come to mind when you think about leading and managing your school to be a green school?

Data Collection

The data collected were all in Chinese, so language translation was necessary in this study. The entire data needed to be translated back and forth. Back translation has been widely used to test the accuracy of the translation and to detect errors in translation in the social sciences (Brislin, 1970, 1980). Therefore, I invited peers who are fluent in both English and Chinese to back translate the collected data to ensure the accuracy of translation throughout the data collection process. Data were collected from late March through August,

2012 via an electronic survey system named Qualtrics. A link containing the survey was first sent to five principals selected to pretest whether the Chinese version of the open-ended questions made sense to them. Peers and parents' suggestions were also taken into consideration to improve the quality of the survey questions in Chinese. After the improvement of the Chinese version of the open-ended survey, I sent pre-notice letters to the participants by March 20, because pre-notice letters were reported to be effective in increasing response rates (Dillman, 2007). The purpose of a pre-notice letter was to provide a positive and timely notice for the participant about the following survey. I then emailed the survey with a cover letter to each of the participants on March 26. The cover letter stated the purpose and importance of the survey, emphasized that the participants' privacy would be kept confidentially, and affirmed that their participation was imperative to the success of the survey and the future study. Because reminders have a powerful influence on response rates, I sent reminder emails to the target population at two week intervals after the initial distribution (Dillman & Groves, 2011; Dillman et al., 2009).

Data Analysis

An elicitation study was developed based on the TPB in order to understand what Chinese school principals would report in relation to implementing green school practices. This study elicited open-ended responses to nine questions regarding Chinese principals' intentions relevant to green school practices. The following steps were performed to analyze the collected data:

Step 1: Initial reading of the collected survey response. By reviewing the survey results, the researcher had an overview of the participants' viewpoints.

Step 2: Organization and coding of responses. Since the survey was developed based on the three variables of the TPB, the responses were sorted and grouped in Chinese under each variable: attitudes, subjective norms, and perceived behavioral control.

Step 3: Conducting analysis of each category. The response categories were ranked from the most frequent to the least frequent.

Step 4: Translating responses into English and using member check during the translation. Because language translation cannot be nicely matched, it is necessary to have an outsider who is not involved in the study to check the accuracy of the translation.

Step 5: Reviewing of total transcripts and getting ready for reporting results. A final review can help to discover some problems which might be ignored at the outset (Roberts, 2010). It is also necessary to make comparisons with previous literature to ascertain the validity of the survey.

Limitations

The first significant limitation of this study is that this elicitation study has limited sample size, so the findings cannot be generalized to the whole nation. The second significant limitation of this study is certain ambiguity regarding the meaning of terms and questions. Since participants' understanding and knowledge of green schools in China is various, it is not easy to determine whether they hold the same viewpoints with the researcher even though

efforts have been made to clarify survey questions. The third significant limitation is that there might be some minor differences in the survey translation because both English and Chinese have their own standard expressions, and not all words can be matched perfectly on both sides. In order to minimize these differences, an outsider was invited to check the accuracy of language translation.

Summary

The purpose of the study is to explore principals' intentions in relation to green school practices in China. I used the existing survey to elicit the participants' emergent responses. Each question of the survey was developed based on the TPB. All questions are aligned with the three research questions guiding the study. I sent surveys electronically to each participant. Finally, five steps were adopted to collect and analyze the data.

Chapter 4 Analysis

The purpose of this elicitation study is to explore China's school principals' salient beliefs relative to green school practices by using qualitative methods to answer the following research questions centered on the TPB:

1. What salient beliefs do school principals in China report relative to managing schools with green school practices?
2. What individuals do school principals in China report as important to their implementation of green school practices?
3. What do school principals in China report that facilitates or inhibits their managing schools with green school practices?

Participant responses to the survey questions allowed people to better understand what school principals in China report about the advantages and disadvantages of green school practices, their willingness to implement these practices, and whether or not they feel confident in implementing such practices. This is important because there is little research in China that has mentioned school principals' behavioral intentions about green school practices. This study will be the first in the field of education to explore Chinese school leaders' salient beliefs relative to green school practices by using the TPB.

Participants

The sample for this elicitation study was a group of Chinese school principals who may or may not be familiar with sustainability based on their responses. Ninety-four school

principals completed the questionnaire. Only thirty-eight people completed the questionnaire at the beginning, which was far from enough to form a strong data set for this study. To make the process of data collection more effective, both the explanation of the questionnaire and the recruiting statement were refined and polished several times. Meanwhile, the online steps and requirements of how to respond to each open-ended question were explained in detail. The link of the questionnaire was further sent to more school principals' email boxes based on the information gained from their schools' online homepages and from the researcher's own social connections. Finally, more and more principals participated in responding to the questionnaire. Most of the respondents held an administrative position in public schools, and several of them were from private schools. Of the respondents, 4 (4.30%) were from remote countryside, 90 (95.70%) came from cities.

Figure 4: Map of China Indicating the Participants by Location

Of the 94 participants, approximate 40 (42.55%) of them were from Shandong Province, 54 (57.45%) were from other provinces, including Beijing, Shanghai, Fujian, Gansu, Guangdong, and Hubei. The map of China indicated the current school location of the respondents with stars (see Figure 4). This data revealed that we had a diverse group of participants represented in the study based on geographic location from around China.

Number of Participants' Responses

There are ninety-four respondents to the nine open-ended questions grounded in the TPB with a total of 747 responses elicited (as shown below in Table 1). As the table shows, the total number of responses to each question ranges from 64 on the "Other associated with others' views" question to 94 on the "Advantages" question. The mean beliefs per person for each question ranges from 0.59 to 2.31 responses per person. A limited number of people listed five or more responses, suggesting that participants were open-minded and were not constrained by the format of the survey (Sutton, et al., 2003).

Table 1

Descriptive Statistics for Responses (Beliefs) Elicited by the Nine Open-Ended Questions

Questions	Total responses	Mean responses per person	No. of people who gave 5 or more beliefs	% of people who gave 5 or more beliefs
Advantages	94	2.22	5	5.32

Disadvantages	92	1.67	0	0.00
Other associated with your views	74	1.41	0	0.00
Approve	91	2.31	6	6.59
Disapprove	90	0.59	0	0.00
Other associated with others' views	64	0.70	1	1.56
Enable	89	2.24	5	5.62
Difficult/Impossible	86	1.41	0	0.00
Other issues that come to mind	67	1.57	2	2.99

Results

The TPB was designed to predict human behavior under certain circumstances (Ajzen, 1991). This study was developed based on the three important variables in the TPB: attitude toward the behavior, subjective norms and perceived behavioral control. The purpose of the study is to explore Chinese principals' salient beliefs of green school practices since there is little research that has focused on this aspect before. The study aims to gain an understanding of what school principals report relative to their attitudes, subjective norms, and perceived behavioral control as they are related to implement green school practices and sustainability. Responses by the participants of the study to nine open-ended questions were compiled and

used to develop tables for analysis. During the analysis, I discussed the top five responses of each question more thoroughly and then briefly explain the remaining responses.

Attitudes

Based on the TPB, there were three open-ended questions designed according to the first variable—attitude toward behavior, to elicit responses from principals regarding their attitudes or salient behavioral beliefs toward sustainability and green school practices. This section represented responses from participants in terms of their attitude or salient behavioral beliefs relative to sustainability and green school practices. These responses reflected whether the participants were in favor of going green or not, and whether they wanted to have a green school.

Tables 2, 3, and 4 showed the coding frame for the “advantages,” “disadvantages,” and “other” responses provided by the participants regarding their attitudes toward the implementation of green school practices. This section detailed and highlighted the differences among three tables. The response count column of each table conveyed the number of individuals out of 94 who reported on each coded item. This is crucial because it provided insights into the attitudes of current school principals relative to sustainability and the potential advantages and disadvantages associated with each salient belief reported. At the same time, each table presented the corresponding percentage out of the total responses in each coded item category according to participants’ responses based on survey questions for “advantages,” “disadvantages,” and “other.” Table 2 listed all item codes for question of

"advantages," its relative number of responses, and the percentage of each item code among all "advantage" responses. Table 3 listed all item codes for question of "disadvantages," its relevant number of responses, and the percentage of each item code among all "disadvantage" responses. Table 4 listed all item codes for question of "other" responses, which included all other responses relative to principals' personal views associated with leading and managing a green school. Table 4 contained the number of response to the question of "other" and the percentage of each item code among all "other" responses. The top five item codes in each column were discussed in detail and the other categories were briefly explained.

Table 2

Coding Frame for the "Advantages" Question and Numbers/Percentages of Participants Who Gave Responses in Each Category

Item Codes for Advantages	Response count	Response Percent
Strong awareness of environmental protection of teachers and students	34	36.17
Nice physical environment at school	33	35.11
Geographic advantage	18	19.15
Great attention from school leaders	17	18.09
Enough teachers/manpower	14	14.89

Enough funds	11	11.70
Perfect curriculum system	11	11.70
Large green area	11	11.70
Social activities	10	10.64
Active participation and support from teachers and students	10	10.64
Effective management and system	10	10.64
Support from government	5	5.32
Excellent leadership team at school	4	4.26
Support from parents	3	3.19
Cost effectiveness	3	3.19
Students' impact	3	3.19
School's history	3	3.19
Rich Resources	2	2.13
Students having experience of management	1	1.06

According to the assessment of question one based on the "advantages" of a school in Table 2, 34 (36.17% of total responses) respondents reported "strong awareness of environmental protection of teachers and students" as the most commonly reported advantage in leading and managing a green school. For the coded item "strong awareness of environmental protection of teachers and students," the majority of the representative

responses included were represented by statements like: “teachers and students love and protect their classrooms and campus plants,” “everyone at school has formed the habit of saving resources because of the local reality of harsh environment and lack of rain.” They proposed that schools could not go green if both teachers and students only had very weak consciousness of protecting the environment, which in their minds is the priority and advantage of leading and managing a green school.

Of the respondents, 33 (35.11% of total responses) considered “nice physical environment at school” as an advantage in leading a green school. In terms of “nice environment at school,” one of the participants reported: “we have many green plants and large areas of grass in our school which provided the bases for leading toward a green school,” and some reported that they already had the green campus environment for leading to be a green school.

“Geographic advantage” ranked the third highest among the “advantages” based on the number of individual responses to each coded item. Eighteen (19.15% of total responses) out of the 94 participants reported that their schools were located in places without serious pollution and with pretty natural environment, which is quite convenient for teachers and students to be close to nature and gain inspiration for green schools.

Seventeen (18.09% of total responses) participants reported that “great attention from school leaders” is the fourth highest advantage which impacts a school to be a green school. One representative participant reported: “Our school leaders support and pay special attention

to green school construction because it can create nice learning environment for cultivating excellent students." "School leaders in my school view school development and improvement as their primary task," as reported by another representative respondent.

"Enough teachers or manpower," (14.89%) was ranked fifth among all "advantages" categories, has 14 responses. It represented those statements regarding teachers as the primary group in leading to be a green school, such as "We have lots of teachers who will support leading a green school," "Our teachers are cooperative in developing good initiatives." Participants believed that initiatives like green school implementation could be more successful and could be progressed much faster with more teachers at school. These statements reported that their school teachers were very positive to school improvement, so they believed that enough teachers were a big advantage to support green school construction.

"Enough funds" presents well-funded schools which have enough money to develop green school project. "Perfect curriculum system" means some respondents thought their school had perfect curriculum with environmentally friendly contents that would help to build a green school. "Large green area" indicates that some schools have large areas planted with plenty of green vegetation. In this case, students can learn from the existing resources at school relevant to protecting the environment.

"Social activity" means that some schools have planned lots of activities for students to get close to the society, to learn from others, and to know how to protect the environment by their own eyes and hands. "Active participation and support from teachers and students"

directs towards teachers' and students' enthusiasm and positive attitude to green school project. "Effective management and system" shows that 10 out of all respondents think that their schools have great managing and working system which enable their school to be a green school.

"Support from government" means that some schools can get enough funding from either local or national government for school development, so "support" here is more inclined to economic support. Green school project needs both economic support from government and school leaders' attention. "Excellent leadership team at school" indicates that several respondents considered that their schools had great leadership teams, communicating and working together. "Support from parents" shows that several school leaders view support from students' parents as their advantage of leading to be a green school, because they believed that parents would influence schools a lot.

"Cost effectiveness" means that respondents viewed green schools as a cost effective project. "Students' impact" indicates that students as a big group at school impacts green school construction, which can be either a good or a bad impact. The respondents here preferred good impacts their students brought and thought the good impacts to be an advantage in leading to be a green school. "School's history" shows that several schools with a long history since its initial establishment are full of natural beauty and rich cultural legacy to build a green school.

"Rich resources" means schools are abundant in physical materials, such as online

teaching and learning and library collection. “Students’ having experience of management” represents ideas like: “Student leaders in each class know how to coordinate with teachers and students because they know how to manage and help others via their daily work.” Therefore, several respondents believed that experienced student leaders would help green school development because they had experiences in management.

Table 3

Coding Frame for the “Disadvantages” Question and Numbers/Percentages of Participants Who Gave Responses in Each Category

Item Codes for Disadvantages	Response Count	Response Percent
Lack of funds	35	38.04
Weak awareness of environmental protection of teachers and students	28	30.43
Poor surrounding environment	17	18.48
Lack of professionals	16	17.39
Lack of information/knowledge	15	16.30
Lack of green area at school	10	10.87
Lack of attention from government and relative departments	9	9.78

Overloaded with students	6	6.52
Lack of active participation from students	5	5.43
Disjoined education among society, school, and family	4	4.34
Limited time	3	3.26
Curriculum system—lack of green school content	3	3.26
Stubborn thoughts	2	2.17
Lack of resources	2	2.17
Lack of teachers' participation	1	1.09
Hard to spread because of large school scale	1	1.09
School's history	1	1.09
Lack of social activities	1	1.09
Take away other initiatives' energy	1	1.09

Review of the Table 3 for "disadvantages" shows that 35 (38.04% of 92 responses) of the respondents reported "lack of funds" as the most common disadvantage for leading and managing a school to be a green school. For the coded item "lack of funds," representative responses were: "Our school does not have enough money to construct a green school," and "We are short of funds to focus on green school."

"Weak awareness of environmental protection of teachers and students" comprised up to 28 (30.43% of 92 responses) responses, which ranked the second highest among all the coded categories. One representative participant reported: "We do not have environment-related

contents in our curriculum and teaching process, so students and teachers are not aware of green school." Another respondent stated: "Students in our school are not used to recycling wastes and saving water."

"Poor surrounding environment" and "lack of professionals" represented 17 (18.48% of total responses) and 16 (17.39% of total responses) of the responses for "disadvantages," respectively. These responses suggested that school principals believed that the surrounding poor environment, such as factory pollution, impacted green school construction. They also believed that professionals and experts were very crucial to green school development, which they really needed.

Fifteen (16.30% of total responses) respondents reported "lack of information/knowledge" as a disadvantage of leading to be a green school. Some representative statements were: "I have no idea of what is a green school," "No one ever reminds me that we can develop a green concept at school," and "I have never heard of green school."

"Lack of green area at school" indicates that some respondents believed that their schools did not have enough plants and grass area. In this case, it is hard for teachers and students to ingrain green thoughts into their daily life. "Lack of attention from government and relative departments" means that some respondents considered government and related departments were not paying attention to green school project, which prohibited leading a green school. "Overloaded with students" implies that some school leaders thought they have

too many students, which might slow the step of leading a green school.

"Lack of active participation from students" expressed respondents' view relevant to students' participation. "Disjoined education among society, school, and family" indicates that education among society, school and family were not closely related. On the contrary, they were disconnected. "Limited time" means that some schools did not have enough time to focus on green school development, because they had other projects that were running or they must pay particular attention to test.

"Curriculum system—lack of green school content" implies that schools were not competent in leading to be green schools because they did not even have any green school relevant contents in their curriculum system. "Stubborn thoughts" indicates those whose thinking system was hard to be changed. They believed that the old existing school system was good enough and was not necessary to change. "Lack of resources" shows respondents' worry about green school resources.

"Lack of teachers' participation," which is as important as student participation, cannot be disregarded in leading a green school. At last, "hard to spread" means that many people at school were not familiar with the concept of green school, so it was hard to spread the word of building a green school.

It is easy to ignore people's real attitude if constrained only by "advantages" and "disadvantages." Therefore, the "other" question was developed in order to elicit more deep thoughts from the respondents and provide them more space to share their attitudes

associated with sustainability and green school.

Table 4

Coding Frame for the "Other" Question and Numbers/Percentages of Participants Who Gave Responses in Each Category

Item Codes for Others	Response Count	Response Percent
Special attention from government	13	17.57
Knowledge/information of green school	13	17.57
No	11	14.86
Improving surrounding environment	9	12.16
Improving Inner-school environment	8	10.81
Students' support	7	9.46
Teachers' attention	6	8.11
Funds/Capital	6	8.11
Life related education	4	5.41
Parents' support	4	5.41
Societal recognition	3	4.05
Improving curriculum system	3	4.05
Attention from school	3	4.05
Attention from leaders	3	4.05

Professional managing team	2	2.70
Quality education	2	2.70
Mutual influence between schools	2	2.70
Carrying out concrete measures	2	2.70
Professionals	2	2.70
Mutual influence between students	1	1.35
Parents' quality	1	1.35
Establishing school culture	1	1.35
National policy	1	1.35
File examining and approving pace of Education Bureau	1	1.35
Parents' literate level	1	1.35
Support from community	1	1.35
Executive Interference from government	1	1.35
Current education system	1	1.35

There are several item codes that overlap among "advantage," "disadvantage," and "other" categories, such as "government attention," "funds," and "curriculum system," which are all among the top five in each category. Though these overlapped items belong to different aspect of respondent's attitude toward leading a green school, they highlight school leaders' collective view over leading and managing a green school. There are several other

item codes that overlap between either “advantages” and “other” or “disadvantages” and “other.” Those between “advantages” and “other” are: “teacher and student support,” “parent support,” and “school leaders’ attention.” This indicates that the respondents hoped for more attention and support from school stakeholders. Those between “disadvantages” and “other” are: green school “professionals,” “surrounding environment,” and green school “information/knowledge.” This implies that the respondents expected that the existing disadvantages could be improved.

Assessment of Table 4 indicates that for the “other” category, 13 (17.57% of total responses) of the respondents reported “special attention from government” and 13 (17.57% of total responses) reported “knowledge/information of green school” as another two factors for consideration. One of the respondents reported: “Support and help from government will improve the construction of school development.” The other representative respondent reported: “People’s knowledge of green schools must be improved in order to enhance their awareness of environmental protection.”

Eleven (14.86% of total responses) of the respondents reported “no” when asked the question: Is there anything else you associate with your own views about leading and managing your school to be a green school? All of the other respondents made comments. Nine (12.16% of total responses) respondents preferred “improving the surrounding environment” of their schools because they believed that the outside pollution and people’s bad habits would more or less influence students’ daily behavior at school. Meanwhile, eight

(10.81% of total responses) respondents preferred “improving inner-school environment.” They believed that school’s inner environment was the foundation of leading and managing a green school.

“Students’ support” represents respondents’ view about the importance of students at school. They considered students’ support an important factor in leading and managing a green school. Several respondents believed that teachers provided ongoing education for students, so “teachers’ attention” is important in green school development. As mentioned before, “funds or capital” is a big issue whenever a new project is initiated. This can be an “advantage” or a “disadvantage” in leading a green school.

“Life related education” implies that education is supposed to relate to people’s life rather than totally focusing on textbooks. In this case, people will be more close to the environment and know how to protect nature. Several respondents reported their work needed “parents’ support.” There are also responses relevant to “societal recognition,” which means that respondents sometimes felt frustrated and confused because there were few supporters from the society. They felt they were not recognized by others.

Since a few schools did not include green school related contents in their curriculum, they hoped for “improving curriculum system” in order to cultivate students and teachers with more green thoughts. “Attention from school” means that respondents wanted the whole school to pay attention to green school project rather than only a small group. The respondents also wanted leaders from every aspect besides school leaders to pay attention to

green school building. They believed that “attention from leaders” is important for school’s present and future.

Some schools did not have professional teams that could help them with green buildings, so respondents reported “professional managing team” as an issue that needs to be concerned. “Quality education” was proposed in China to make changes over the traditional test-focused education. Its focus is creativity, flexibility and scientific teaching in education (Hui, 2010). Therefore, respondents wanted “quality education” to drive green school project moving forward. Some respondents thought they were not familiar with green school because they did not have enough information from other school from which they could learn. In this case, “mutual influence between schools” is crucial in leading a green school.

Some schools did not have detailed plans and steps in building green schools, so respondents thought they needed “carrying out concrete measures” according to their specific situation rather than blindly following suit. “Professionals” who master green school related knowledge and skills are also very important in leading a green school. One respondent believed that students could influence each other in many ways, such as daily habits and behaviors, which would affect green school development. Therefore, “mutual influence between students” was reported.

“Parents’ quality” is a way to describe whether or not student parents are environmentally friendly because their impact toward students is very great, which indirectly influences green school development. One respondent considered “establishing school culture”

for green school is the foundation of leading a green school because the whole school would shape the atmosphere of protecting environment once the green culture is created and formed. One respondent viewed the policy relevant to education in a nation as an important factor in leading a green school, which was coded as “national policy.”

The Education Bureau is the highest education authority in China, so it takes time for each initiative or project to be approved before actual implementation. Therefore, one respondent hoped for speeding up the “file examining and approving pace of Education Bureau.” Some student parents had received education but some had not. In this case, one respondent thought “parents’ literate level” would more or less influence students’ acceptance of green school. “Support from community” means that the respondent believed that leading a green school needed to get support from its surrounding community, which would provide great help to a school.

One respondent reported that the “executive interference from government” relevant to green school should be balanced with school’s current condition and time constraint without interrupting too much on school’s normal operation. Finally, “current education system” in China was considered a big challenge in leading a green school.

In summary, tables 2, 3, and 4 presented the participants’ overall attitudes toward the implementation of green school practices. The top five item codes of “advantages,” “disadvantages,” and “other” were explained in detail and the remaining item codes summarized from the responses were briefly clarified. The following part centers on

analyzing responses related to participants' subjective norms regarding implementing green school practices.

Subjective Norms

Based on theTPB, three open-ended questions were presented to the participants according to the second variable—subjective norms. The three questions were to elicit responses from principals regarding their subjective norms as it relates to green school practices. Subjective norms indicate a person's perception of general social pressure, which determines whether someone decides to perform the targeted behavior or not (Ajzen, 1991). This section represented responses from the participants in relation to their subjective norms relative to sustainability and green school practices.

The next three tables represented the responses by the participants in terms of who would approve and disapprove of the implementation of sustainability and green school practices. Coding frame was used for "approve," "disapprove," and "other" questions. This section highlighted and detailed the differences among three tables. The response count column of each table conveyed the number of individuals out of 94 who reported on each coded item. This is important because it provided insights into the subjective norms or external social pressure that current school principals experienced relative to who would approve or disapprove of green school practices and sustainability. Meanwhile, each table presented the corresponding percentage out of the total responses in each coded item category according to participants' responses based on survey questions for "approve," "disapprove," and "other".

Table 5 listed all item codes for question of “approve,” its relative number of responses, and the percentage of each item code among all “approve” responses. Table 6 listed all item codes for question of “disapprove,” its relevant number of responses, and the percentage of each item code among all “disapprove” responses. Table 7 listed all item codes for question of “other” responses, which included all other responses relative to other people’s views associated with leading and managing a green school. Table 7 contained the number of response to the question of “other” and the percentage of each item code among all “other” responses. The top five item codes in each column were thoroughly discussed and the other categories were briefly explained.

Table 5

Coding Frame for the “Approve” Question and Numbers/Percentages of Participants Who Gave Responses in Each Category

Item Codes for Approve	Response Count	Response Percent
Some parents	43	47.25
Some teachers	35	38.46
Some students	30	32.97
Everyone	14	15.38
Education authorities	11	12.09
People of the awareness of environmental protection	9	9.89

Municipal government	8	8.79
All staff at school	8	8.79
School leaders	6	6.59
Leaders from city education bureau	5	5.49
Educational administration at provincial level	2	2.20
Advocates from organization of environmental protection	2	2.20
Some leaders	1	1.10
Department in charge of green school project	1	1.10
Residents from local community	1	1.10
Local government agencies	1	1.10
Some enterprises	1	1.10
Architecture firms	1	1.10
Local department of environmental protection	1	1.10
Schools of large scale	1	1.10
Some principals	1	1.10
Some educators	1	1.10
Some celebrities	1	1.10
Some who pay attention to school development	1	1.10

Some who care students' health	1	1.10
Board of education	1	1.10
Retired principals	1	1.10
Some close schools	1	1.10
Modern scholars	1	1.10
The educated	1	1.10
New school teachers graduated from college		1.10
People supporting school culture development	1	1.10
Workers	1	1.10
General public	1	1.10
Vice principal	1	1.10
Local Bureau of Parks and Woods	1	1.10
Relatives	1	1.10
Teachers' family members	1	1.10
Members of parent committee	1	1.10
Environmental health maintainers	1	1.10
Fauna and flora conservation agency	1	1.10

Assessment of Table 5 shows, that for "approve" 43 (47.25% of total responses) of the respondents indicated "some parents" would approve of the principal leading and managing a

green school. Support from parents is important regarding school development and construction. A substantial number of respondents believed that “some teachers” 35 (38.46% of total responses) and “some students” 30 (32.97% of total responses) would approve of leading and managing a green school. Teacher and staff involvement would be critical for such a cultural change at school. At the same time, students’ participation would help to accelerate the success of leading to be a green school. Fourteen (15.38% of total responses) participants reported “everyone” would approve of leading and managing a green school. Eleven (12.09% of total responses) respondents reported “education authorities” would support green school construction. “Education authorities” includes local and national education departments and relevant leaders in them.

Several respondents thought that “people of the awareness of environmental protection” would approve of leading a green school, because those who were aware of protecting the environment knew the importance of leading and managing a green school. Each “municipal government” governs many aspects of each city, including its individual education or school plans, so eight (8.79% of total responses) of the participants reported that “municipal government” would approve of leading and managing a green school. Some respondents believed that “all stuff at their school” would approve of green school project.

“School leaders” were considered as supporters of green school projects, because some respondents believed that their school leaders were positive toward leading a green school. Since some schools were supported by their city’s education bureau, respondents in these

schools believed that “leaders from city education bureau” would approve of leading a green school. A province, which can be compared to one state in the United States, is at higher stratum than a city in China. In this case, “educational administration at provincial level” has more power over each school, which is why several responses proposed it as an approver in leading a green school.

The respondents also believed that people from organizations, such as Bureau of Environmental Protection, would approve of building a green school, so there was a coded item named “advocates from organization of environmental protection.” “Some leaders” from different organizations and different levels might approve of green school project. Besides, the respondents believed that certain department either nationally or provincially that is in charge of green school project would also approve of leading and managing a green school, which was codes as “department in charge of green school project.”

“Residents from local community” was believed as an influential group by the respondents that would approve of building a green school. “Local government agencies” are at the lowest stratum among national and municipal executive organizations, but they are the first ones to know and decide whether or not some initiatives can be implemented. Respondents also believed that “some enterprises” would approve of green school project because many companies at present are cooperating with schools to seek common development and mutual progress.

“Architecture firms” were also believed to be supportive of leading a green school

because respondents considered that many architects would like to build environmentally friendly buildings. “Local department of environmental protection” sometimes impact school development, so it was considered as a factor in managing a green school. Respondents also believed that “schools with large scale” would approve of building a green school because they would have more space for growing plants and be more convenient for students to gain handy knowledge of the environment.

“Some principals” would approve of green school project. “Some educators,” such as teachers, researchers of education and well-known education scholars, would also approve of leading a green school. Respondents believed that “some celebrities” who center on education career would approve of green school project.

Some people “who pay attention to school development” would like to see a bright future of the school according to the respondent’s responses. Those “who care students’ health” would also like to support building a green school if they found it benefit students’ growth. Any change at school needs to be approved by the “Board of Education;” therefore, the respondents viewed it as an important approver.

Though some principals have retired and might not have any power at school, they are still influential and might impact school staff’s decision, so “retired principals” is another group in approving green school building. Schools can compete and learn from each other, so those with close friendship, which was coded “some close schools,” could support each other and reach mutual goals sometimes. “Modern scholars” were believed to be positive and

supportive of creative and beneficial stuff, so they were proposed by the respondents as a likely approving group.

“The educated” indicates those who have received education, and they might be desperate for change. “New school teachers graduated from college” is a group of people who are willing to change the old and create new things. “People supporting school culture development” would also like to approve of leading a green school.

“Workers” would approve of leading a green school because they have their kids learn or live in school and would like their kids to enjoy better environment. “General public” would approve of green school project if they benefit from it. A “vice principal” of a school would also support building a green school if the person is willing to participate in school development.

“Local Bureau of Parks and Woods” is a local authoritative organization that is in charge of plans of growing plants and environmental protection, which would approve of leading a green school. If the principals’ “relatives” would approve of building a green school, this project would be implemented much easier. “Teachers’ family members” is also an important group that could approve of green school project.

Parents is a large group that impacts school decision, so it is important to get “members of parent committee” involved. If leading a green school is found beneficial to the environment, the respondents believed that “environmental health maintainers” would like to approve it. Likewise, “fauna and flora conservation agency” would also approve of building a

green school.

Table 6

Coding Frame for the "Disapprove" Question and Numbers/Percentages of Participants Who Gave Responses in Each Category

Item Codes for Disapprove	Response Count	Response Percent
No one	46	51.11
Some parents	16	17.78
Some teachers	4	4.44
Several students	3	3.33
Some individuals in society	3	3.33
People of no awareness of environmental protection	3	3.33
Some school leaders	3	3.33
Some leaders in education bureau	3	3.33
Competent department of the government	3	3.33
Peripheral vendors	2	2.22
People of conservative thoughts	2	2.22
Practitioners	1	1.11
People who don't care life quality.	1	1.11

Business people	1	1.11
Education bureau	1	1.11
Officers facing retirement	1	1.11
Officers not living locally	1	1.11
Competing schools	1	1.11
Some educators	1	1.11
Stakeholders of school board of education	1	1.11
Self-centered people	1	1.11
Some government officers	1	1.11
Surrounding residents	1	1.11
Profit-driven enterprise	1	1.11
Local government agencies	1	1.11

Evaluation of Table 6 shows that for “disapprove” 46 (51.11%) of the respondents reported “no one” would disapprove of leading and managing a green school. They believed that green school project was beneficial to everyone, so nobody would prevent it from happening. However, 16 (17.78%) responses indicated that “some parents” would disapprove of green school construction. One of the participants reported: “Some parents who are self-centered or totally focus on their own interests would disapprove.” Only 4% of the respondents believed “some teachers” would disapprove. Three (3.33%) respondents believed that “several students” would disapprove of leading a green school and another 3.33% of the

respondents believed that “some individuals in society” would disapprove of green school project. All other “disapprove” responses were lower than 4%.

“People of no awareness of environmental protection” indicates those who are not aware of anything about environmental protection, so they would disapprove of building a green school. “Some school leaders,” including leaders at every department or level, were believed to be in the disapproving group. “Some leaders in education bureau” were also viewed as hard to change, so they would disapprove of new initiatives.

“Competent department of the government” here refers the department managing local or provincial education career. There are many vendors selling food and toys around schools, which is coded as “peripheral vendors.” They would disapprove of building a green school because respondents believed that green school project would affect their businesses. “People of conservative thoughts” are hard to be changed, so they were presented by the respondents.

Some respondents thought “practitioners” would disapprove of leading a green school because they are willing to change and be creative but they would like to see real change rather than merely talking and planning. “People who do not care life quality” would not mind whether or not the environment is bad, so the respondents believed that they would disapprove. “Business people” cares more about their benefits and interests, so some respondents believed that they would disapprove of green school building.

“Education bureau” might not approve of green school development because the initial cost of a green school is too much in their minds. Officer who will soon retire would not care

new initiatives like green schools. They were coded as “officers facing retirement.” Officers who live far from a school or not live locally were believed to be reluctant to support green school project, which were coded as “officers not living locally.”

Competition is good for schools’ mutual progress, but some “competing schools” did not want the others to exceed them, so they would disapprove of building a green school. “Some educators” believed that leading a green school was not useful, and they might disapprove of it. “Stakeholders of school board of education” might also disapprove of green school development if they found it not effective and efficient at the beginning.

The respondents believed that “self-centered people” would not approve of leading a green school because they cared more about themselves than others’ benefits. “Some government officers” would disapprove of green school project if they gained nothing and cost too much at its outset. Residents living around a school might doubt whether or not leading a green school would benefit them. They were coded as “surrounding residents.”

“Profit-driven enterprise” is like those businessmen who care about their own costs would not approve of building a green school. “Local government agencies” might also not approve of leading a green school because they found no profit at its beginning.

It is easy to ignore a person’s other perception of general social pressure if constrained only by “approve” and “disapprove”. Therefore, the “other” question was developed in order to elicit more deep thoughts from the respondents and provide them more space to share their thoughts associated with other people’s views about sustainability and green school.

Table 7

Coding Frame for the "Other" Question and Numbers/Percentages of Participants Who Gave Responses in Each Category

Item Codes for Others	Response Count	Response Percent
No	14	21.88
Societal recognition	11	17.19
Education authorities	6	9.38
Healthy concept of green school	5	7.81
Strong awareness of environmental protection	3	4.69
Attention of the nation	2	3.13
The need of environmental protection	2	3.13
Teachers' thoughts	2	3.13
Education reality	2	3.13
Some parents	2	3.13
Organizing and training	2	3.13
Life education	2	3.13
Environmental protection education	2	3.13
The need of school building	2	3.13
Thoughts inspired by visiting advanced schools	2	3.13

National leaders' attention	2	3.13
Leaders of educational department	2	3.13
Controlling and improving the polluted environment	2	3.13
Anticipation of superior leaders	1	1.56
The need of developing new countryside	1	1.56
School management positioning	1	1.56
Conflict between educational and executive management	1	1.56
Global energy crisis	1	1.56
Complete required materials and equipment	1	1.56
Establishing archives of green schools	1	1.56
Students' civilization quality	1	1.56
Abnormal climate	1	1.56
Declined social ethics	1	1.56
Deteriorated natural environment	1	1.56
Staff children's education	1	1.56
Staff family's support	1	1.56
Community	1	1.56
Model city of environmental protection	1	1.56

Establishing ecological city	1	1.56
Sense of responsibility	1	1.56
Teachers' support	1	1.56
Educational funds	1	1.56
Students' support	1	1.56
The need of human survival	1	1.56
Energy shortage all over the world	1	1.56
People's requirements toward health	1	1.56
Local department of environmental protection	1	1.56
Local residents	1	1.56
Education authority's policy	1	1.56
Senior leaders	1	1.56
Quality education	1	1.56
Other districts' leaders	1	1.56
School characteristics	1	1.56
School autonomy	1	1.56
National greening policy	1	1.56
The implementation of green area	1	1.56
School promotion efforts	1	1.56

School education quality	1	1.56
Graduation rates	1	1.56
Local economy	1	1.56
People paying attention to education	1	1.56

There are several item codes that overlap among “approve,” “disapprove,” and “other” categories, such as “parents,” “teachers,” “students,” and “people of awareness of environmental protection.” They are all among the top five item codes in “approve” and “disapprove” category. Besides, “leaders” is another often quoted item by the respondents in these three categories. Although these overlapped items belong to different aspects of respondent’s perception of general pressure toward leading a green school, they highlighted school leaders’ collective view associated with other people’s perspectives over leading and managing a green school. There are several other item codes that overlapped “approve” and “other.” They are: “community” and “teachers/staff family’s support.” This indicates that the respondents viewed community and school staff’s relatives as important groups that would approve of leading and managing a green school.

Review of Table 7 indicates that for the “other” category, 14 (21.88% of total responses) of the respondents reported “no” when asked the question: Is there anything else you associate with other people’s views (within or outside your organization) about you leading and managing your school to be a green school? Eleven (17.19% of total responses) of the respondents reported “societal recognition” as a factor when considering other people’s view.

One participant reported: “Recognition from the society helps push green school construction forward.” Another response was: “Not until the whole society knows the importance of green schools, can we lead and manage a green school successfully.”

Six (9.38% of total responses) and 5 (7.81% of total responses) of the respondents respectively reported “education authorities” and “healthy concept of green school” as factors associated with other people’s view. One representative statement of “education authorities” was: “We need more support from authoritative departments associated with education to build a green school.” One respondent reported that “if healthy concept of green schools is established, I believe that more people would like to be involved.” Three (4.69% of total responses) of the respondents reported people’ “strong awareness of environmental protection” as another idea associated with other people’s view about leading and managing a green school. Of the remaining responses in the “other” category, no single item code received more than 2 (3.13% of total responses) responses.

“Attention of the nation” indicates that the respondents wished that leading a green school can gain attention from the whole nation. Because of “the need of environmental protection,” respondents believed that other people would approve of building a green school. “Teachers’ thoughts,” which can be supportive or negative, could impact leading a green school.

It is difficult to change the existing mode of education in China, so “education reality” became the respondents’ concern. “Some parents” would approve or disapprove of leading a

green school. The respondents also believed that appropriate “organizing and training” of school staff would benefit green school construction.

Education is not only constrained at school, but also can be implemented at home through daily life. Therefore, “Life education” might impact students’ view on green schools. On the other hand, “environmental protection education” is important to cultivate green school related ideas into people’s minds. Some respondents believed that schools would approve of building a green school if they found that they indeed needed one, which was coded as “the need of school building.”

By visiting some green schools with abundant experience, the respondents believed they could gain more knowledge about green schools. This was coded as “thoughts inspired by visiting advanced schools.” If the leaders of a nation pay special attention to school initiatives, green school construction would be much easier, as reported by the respondents. This was coded as “national leaders’ attention.” “Leaders of educational department” would to some extent impact school initiatives if they disapprove.

The respondents hoped for “controlling and improving the polluted environment” in order to create satisfying condition for building a green school. Superior leaders, citywide or nationwide, would expect a better development of each school, which is coded as the “anticipation of superior leaders.” Some respondents considered that people would approve of leading a green school if they found it a must of developing new countryside. This was coded as “the need of developing new countryside.”

How a school is managed and led would affect whether or not it is effective in the process of being a green school, which is “school management positioning.” Current education in China cannot totally get rid of some old teaching pedagogy, such as exam-oriented education. In this case, school leaders can executively focus on exams to reach graduation rates, and they can integrate sustainability related initiatives into students’ learning instructionally. This “conflict between educational and executive management” would impact people’s view toward a green school. “Global energy crisis” might affect people’s minds and daily habits. In this case, people would try to save more energy and protect the existing resources.

Building a green school requires necessary materials and equipment, which was coded as “complete required materials and equipment.” Meanwhile, “establishing archives of green schools” helps people retrieve through existing experiences. “Students’ civilization quality” would impact the culture and the development of a school.

“Abnormal climate” caused by serious environmental pollution would impact the construction and progress of green schools. The “declined social ethics” among people delayed their awareness of environmental protection. The “deteriorated natural environment” would influence the implementation of green schools, because it might cause the lack of resources of green school construction.

School “staff family’s support” was considered important in leading a green school. Approval from school “community” is also important. Some cities were nominated as “model

city of environmental protection," which can be good examples for leading and managing a green school.

The respondents thought of "establishing ecological city" as a beneficial step toward leading a green school. People's "sense of responsibility" would also impact their beliefs on building a green school and protecting the environment. "Teachers' support" is important in leading a green school.

"Educational funds" is indispensable in every school initiative, which is important to leading and managing a green school. "Students' support" is crucial in school development, too. In terms of "the need of human survival," people might support green school project.

Because of the "energy shortage all over the world," the respondents thought people might care more about environmental education. At the same time, "people's requirements towards health" is a factor that caused more people to center on the environment and its related education. "Local department of environmental education" would also impact school leaders' decision about leading a green school.

"Local residents" would support or show negative attitude to building a green school, which could be an important factor in school development. The respondents pointed that policies of some education authority would embrace environment-related contents which might impact green school construction. This was coded as "education authority's policy." "Senior leaders" in every aspect of the society might have different opinions about leading a green school.

“Quality education” as the basic education mode in China was considered crucial to assist green school development. Leaders within or outside a school district would impact building a green school, which was coded as “other districts’ leaders.” Some respondents viewed “school characteristics” as a key in developing school culture and cultivating students.

Respondents also believed that schools which had more self-autonomous power would be easier to implement green school project. This was coded as “school autonomy.” A nation’s environmental policy would affect school leaders’ decisions of leading a green school, which was coded as “national greening policy.” “The implementation of green area” was concerned by the respondents, because they believed that people’s awareness of protecting the environment would finally be enhanced and the existing pollution would be controlled and changed, which would lead to the real implementation of green area.

How a school promotes or spreads the word of green school out is also important to leading a green school, which was coded as “school promotion efforts.” Some respondents considered that a schools’ “education quality” directly impact students’ learning and teachers’ professional development. Some schools focused too much on “graduation rates” rather than educating students’ daily behaviors and habits.

Some respondents considered “local economy” an important factor that impacts the development of a green school. People who pay attention to education would care what a green school is. They were coded as “people paying attention to education.”

In summary, tables 5, 6, 7 presented the participants' subjective norms toward the implementation of green school practices. The top five item codes of "approve," "disapprove," and "other" were explained in detail and the remaining item codes summarized from the responses were briefly clarified. The following part focused on analyzing responses related to participants' perceived behavioral control regarding implementing green school practices.

Perceived Behavioral Control

Based on the TPB, there were three open-ended questions designed according to the third variable—perceived behavioral control, to elicit responses from school principals regarding their perceived behavioral control over the implementation of green school practices. Perceived behavioral control reflects how much a person has control over a behavior and how confident a person feels to perform or not to a behavior (Ajzen, 1991). This section represented responses from participants in terms of their perceived behavioral control relative to sustainability and green school practices. These responses reflected whether the participants were in favor of going green, and whether they wanted to have a green school.

Tables 8, 9, and 10 represented the responses reported by the participants in terms of what would enable a school leader to implement green school practices or what would make it difficult/impossible to implement sustainable practices. Coding frame was used for the "enable," "difficult/impossible," and "other" questions relevant to respondents' control beliefs. This section highlighted and detailed the differences among the three tables. The response count column of each table conveyed the number of individuals out of 94 who

reported on each coded item. This is important because it reflected how much control a school principal feels to implement green school practices, which indicated their perceived behavioral control over leading and managing a green school. Meanwhile, each table presented the corresponding percentage out of the total response in each coded item category according to participants' responses based on survey questions for "enable," "difficult/impossible," and "other." Table 8 listed all item codes for question of "enable," its relative number of responses, and the percentage of each item code among all "enable" responses. Table 9 listed all item codes for question of "difficult/impossible," its relevant number of responses, and the percentage of each item code among all "difficult/impossible" responses. Table 10 listed all item codes for question of "other" responses, which included all other responses respondents have in mind associated with leading and managing a green school. Table 10 contained the number of response to the question of "other" and the percentage of each item code among all "other" responses. The top five item codes in each column were thoroughly discussed and the other categories were briefly explained.

Table 8

Coding Frame for the "Enable" Question and Numbers/Percentages of Participants Who Gave Responses in Each Category

Item Codes for Enable	Response Count	Response Percent

Support and attention from senior authorities	16	17.98
People's knowledge/attention toward green school	15	16.85
Cultivating students' awareness of environmental protection	12	13.48
Parents' support and anticipation	11	12.36
People's knowledge of environmental protection	10	11.24
Constructing beautiful campus environment	8	8.99
Teachers' support	8	8.99
All staff participation	7	7.87
Pursuit of school leaders	7	7.87
Funding support	6	6.74
Social attention toward environmental protection	6	6.74
Government support	5	5.62
Teachers' knowledge	5	5.62
Worsening natural living environment	5	5.62
Well-established managing system	5	5.62
Needs of low-carbon living style	4	4.49
Student participation	4	4.49
Common cooperation of school, community and	4	4.49

enterprises		
School existing material conditions	3	3.37
Rapid development of economy	3	3.37
Excellent teachers	3	3.37
Common pursuit of all staff	3	3.37
Individual responsibility	3	3.37
Standard campus managing environment	2	2.25
School leaders' rich experience	2	2.25
Learning from elite schools	2	2.25
Parents' awareness of environmental protection	2	2.25
School's existing achievement	2	2.25
Propagandizing	2	2.25
National policy support	2	2.25
Advanced idea	2	2.25
Harmonious society	2	2.25
Community support	2	2.25
Improving surrounding environment	2	2.25
Whole education system values green concept	2	2.25
Support from educational department	1	1.12

Schools' good tradition	1	1.12
Improved living standards	1	1.12
Expert guidance	1	1.12
Extensive implementation of environmental education	1	1.12
Implementing environmental protection activities	1	1.12
Student impact	1	1.12
Perfect environmental education network among school, family and society	1	1.12
Rapid development of school	1	1.12
Food insecurity	1	1.12
Managers' policy implementation	1	1.12
Principals' self-belief	1	1.12
Scientific education	1	1.12
Quality education	1	1.12
Protecting existing nonrenewable resources	1	1.12
Exploring nonrenewable resources	1	1.12
Setting up documents for a green school	1	1.12
Support from the public	1	1.12
Appropriate plan	1	1.12

Changing China's exam-oriented education mode	1	1.12
More rights and power	1	1.12
Performance evaluation	1	1.12
School's attention	1	1.12
Teachers' and students' joint efforts	1	1.12
Support from close schools	1	1.12
Community support	1	1.12

Respondents reported several circumstances which would make it possible or enable to implement green school practices. Review of Table 8 shows that for "enable," 16 (17.98% of total responses) respondents viewed "support and attention from senior authorities" as an enabler to leading and managing a green school. For the coded item "support and attention from senior authorities," respondents reported phrases such as: "high attention from senior authorities," "support," and "full recognition of the implementation of green school practices."

"People's knowledge/attention toward green school," which accounted for 15 (16.85% of total responses) responses, was reported as the second highest among all coded enablers. One of the representative respondents reported: "It is important to know what is a green school and its importance before implementing green school practices." Another respondent reported: "People's great attention can support green school construction and development."

Of the respondents, 12 (13.48%) and 11 (12.36%) respectively reported "cultivating

students' awareness of environmental protection" and "parents' support and anticipation" as key factors to enabling school leaders to lead and manage a green school. They believed that students' awareness of environmental protection should be developed at their early age, which enables green school practices. They also believed that parents' support and anticipation is very crucial for school leaders to build a green school and implement its related practices. Another 10 (11.24%) of the total responses reflected "people's knowledge of environmental protection" as an enabler to building a green school. According to one representative respondent, "the more people are aware of green school, the better to implement this new project."

Some respondents believed that if campus environment could be improved, people would be more willing to participate in leading to be green school, which was coded as "constructing beautiful campus environment." "Teachers' support" is an indispensible enabler in building a green school, as reported by the respondents. "All staff participation" at school is the hope of the respondents which would enable successful implementation of building a green school.

The respondents believed that if school leaders pursue the goal of leading a green school, it would be successful. This was coded as "pursuit of school leaders." Any project would cost more or less, therefore, "funding support" is an important enabler to building a green school. If the whole society pays special attention to environmental protection, it would indirectly enable green school building, which was coded as "social attention toward environmental

protection."

Without "government support," any project, including leading a green school, could not be successful. If teachers at school were well informed of the knowledge of environmental protection, students would further learn more from them. In this case, "teachers' knowledge" is a crucial enabler in leading a green school. The respondents believed that because of the worsening living environment around, people would be more than happy to change it to be healthier and cleaner. This was coded as "worsening natural living environment."

"Well-established managing system" implies a system of building a green school which includes comprehensive plan, circulation, research, production and development, etc. The respondents believed that because of the "need of low-carbon living style," people would be more aware of the importance of protecting the environment, which would enable the management of a green school. "Student participation," like "teacher s' support," is also necessary in leading a green school.

Leading and managing a green school is not a school' own business. It would involve many stakeholders, such as surrounding communities or companies. In this case, the respondents reported "common cooperation of school, community and enterprises" as an enabler to leading a green school. "Individual responsibility" means people would be more involved if they personally embrace a sense of responsibility in the process of leading a green school. The respondents believed that if a school's material condition is sufficient, such as resources relevant to green school development, its green school development would be

much easier. This was coded as “school existing material condition.”

Due to the “rapid development of economy” in the society, the respondents considered leading a green school could be the trend of education. Besides “teachers’ knowledge” mentioned above, sufficient “excellent teachers” is another factor enabling leading a green school, because they would wisely plan green school related curriculum in teaching. If managing a green school is the “common pursuit of all staff” at school, the respondents considered it a crucial enabler to the implementation of a green school.

“Standard campus managing environment” indicates that a school has certain rules or norms that can regulate students’ and teachers’ daily activities, including their behaviors toward surrounding environment. “School leaders’ rich experience” was believed to be an enabler of leading a green school, because leaders were flexible and creative based on their experiences according to the respondents. “Elite school” implies those famous schools with or without green school experience. The respondents reported “learning from elite schools” in order to highlight the importance of borrowing and learning experiences from others to enable green school construction.

Not only “students’ participation,” but also “parents’ awareness of environmental protection” would impact a school’s decision on certain project. If parents know the importance of protecting the environment, students would feel and learn such awareness through their daily life. “School’s existing achievement” would to some extent stimulate the development of a green school, as reported by the respondents. The respondents also believed

that appropriate “propagandizing” citywide or nationwide would enable the rapid construction of green schools.

If China’s “national policy” would “support” leading a green school, it would be much easier to build a green school. The respondents wished that people would have more “advanced ideas” associated with green school construction, such as recycling resources and saving energies. This would also make it possible to leading a green school. Once the society of a country is harmonious without conflicts, the respondents believed that building a green school is not a difficult work. This was coded as “harmonious society.” “Community support” would enable school’s new project, such as building a green school, because each school has its own community in its neighborhood that would be a potential enabler of leading a green school, as reported by the respondents.

Serious pollution, which is a global hot topic, has affecting people’s health, so “improving surrounding environment” has become the essential work of the whole world. If the environment around a school can be improved, the respondents believed that it is possible to build a green school. Concept like green school is brand new which takes time for people to digest. The respondents believed that if the “whole education system values green concept,” leading a green school would be possible. Leading a green school is an important step in the field of education, so the respondents considered the “support from educational department” is an enabler in leading a green school.

If a school has enough space and resources for green buildings, green plants and

renovation, the respondents believed that this “school’s good condition” would make leading a green school possible. In the respondents’ perspective, people are more and more civilized and their living condition has improved a lot. Therefore, people’s “improved living standards” requires better construction, such as green school buildings, which are environmentally friendly. “Expert guidance” indicates the guide from experts of green school related organizations or professionals with relevant experiences and knowledge.

The respondents believed that if environmental education could be widely implemented, it would accelerate the process of leading a green school. This was coded as “extensive implementation of environmental education.” Some respondents considered “implementing environmental activities,” such as reusing waste, an enabler in leading a green school. Sometimes, student participation would involve more people in leading a green school, which was coded as “student impact.”

A “perfect environmental education network among school, family and society” was believed to enable leading and managing a green school, because the respondents thought the network would cultivate more environmentally friendly kids. The “rapid development of a school,” such as its scale in area, student number and imported resources, would also enable its green school construction. Because of the “growing food insecurity,” people become more aware of the importance of protecting the environment, which indirectly helps leading a green school.

The respondents considered that leading a green school is possible if its manager

implements appropriate policy in its development, which was coded as “managers’ policy implementation.” If a principal self-believes that he or she can successfully lead a green school, it would help the whole process of leading a green school, which was coded as “principals’ self-belief.” The respondents also believed that education with scientific idea would be an enabler in school construction, which was coded as “scientific education.”

“Quality education” focuses on creative, flexible and scientific education (Hui, 2010), which would enable green school progress. Overexploitation has caused serious problems, such as the increasing scarcity of nonrenewal resources (Krautkraemer, 1998). Therefore, the respondents thought of “protecting existing nonrenewable resources” and reasonably “exploiting nonrenewable resources” in order to protect the environment for future generations and benefit green school project.

According to the respondents, a school should have its own files and archives of each program; therefore, they considered “setting up documents for a green school” as an enabler in implementing a green school project. “Support from the public” is also important in school development.

“The ultimate objective in planning is to construct plans for execution” (Fox, Gerevini, Long, & Serina, 2006, p. 212). In this case, the respondents believed that “appropriate plan” would be a great enabler for building a green school. As reported by the respondents, leading a green school could be possible once “China’s exam-oriented education mode” can be “changed.” This implies that the exam-oriented education has caused many problems in kids’

lives, such as lack of active learning ability and sense of team work (Zhemin & Minfen, 2008). The respondents also believed that they could successfully implement green school project if they had "more rights and power." They considered that they could gain more funds and resources if they have much authoritative power in society.

The respondents recommended doing "performance evaluation" to a school periodically in its progress toward a green school. The respondents also hoped to gain attention from the whole school rather than their own efforts in leading a green school, which was coded as "school's attention." If teachers and students can work together toward the same goal of establishing a green school, the respondents believed that green school was not only a dream. This was coded as "teachers' and students' joint efforts." Some schools have formed friendship with other schools and always learn from each other. If schools could gain "support from their close schools," the respondents thought leading a green school is not impossible. Respondents also considered "community support" as an enabler to the implementation of green school practices. Compared to "support from the public," "community support" comes from the local area within a small scale.

Table 9: *Coding Frame for the "Difficult/Impossible" Question and Numbers/Percentages of Participants Who Gave Responses in Each Category*

Item Codes for Difficult/Impossible	Response count	Response Percent

Lack of funds	21	24.42
No	13	15.12
Schools' self-condition	11	12.79
Lack of support from senior leaders	11	12.79
Lack of support from teachers	7	8.14
Unclear plan and ambiguous development idea	6	6.98
Serious pollution around school area	6	6.98
Exam-oriented education	6	6.98
Lack of knowledge/information of green school	6	6.98
Parents' disagreement	5	5.81
Lack of support from students	5	5.81
Lack of support from government	4	4.65
Conservative education concept	3	3.49
Noncooperation from all walks of life	3	3.49
Partial administrative intervention	2	2.33
Lack of joint efforts between teachers and students	2	2.33
Economic gains overpass environmental protection	2	2.33
Inexperienced principals	2	2.33
Lack of professionals/experts	2	2.33

Imperfect school managing system	2	2.33
Pressures	1	1.16
Lack of communication and exchanging experience with other successful schools	1	1.16
National development direction	1	1.16
Lack of support from staff congress	1	1.16
Lack of support from school board	1	1.16
Poor quality of education and teaching	1	1.16
Backward idea	1	1.16
Student lack of innovation consciousness	1	1.16
Teacher lack of innovation consciousness	1	1.16
Poor national literate level	1	1.16
National economy level	1	1.16
Lack of safety around school	1	1.16
Lack of Community support	1	1.16

Assessment of Table 9 indicated that 21 (24.42% of total responses) of the respondents reported “lack of funds” as a reason which would make it difficult or impossible to implement green school practices. For the coded item “lack of funds,” one respondent reported: “Investment into school development is indispensable when new project is going to

be implemented." Other reported responses include phrases like: "funding problem" and "funds not available."

Thirteen (15.12% of total responses) of the respondents reported "no" circumstance would make it difficult or impossible to implement green school practices. Eleven (12.79% of total responses) listed "schools' self-condition" as a constraint to green school implementation. Some respondents reported that their schools located at very remote places where they had little resource, and some reported that their schools were small with too many students, which made it difficult to implement green school practices. However, another 11 (12.79% of total responses) respondents viewed "lack of support from senior leaders" as a key factor of impeding green school practices. They believed that senior leaders' "attitude," "support," "awareness," "opinion," and "recognition" were important to leading and managing a green school. 7 (8.14% of total responses) responses mentioned "lack of support from teachers" was an obstacle in leading a green school. One representative response reported: "without teachers' support, it is difficult to implement school initiative because this group is influential to both school leaders and students."

Some respondents believed that their schools had "unclear plan and ambiguous development idea" of leading a green school. Some thought that schools had "serious pollution around school area." These were all serious problems which hindered green school construction. As mentioned before, the "exam-oriented education" caused many problems in

kids' life, such as lack of active learning ability and sense of team work, which was believed to make it impossible for leading a green school (Zhemin & Minfen, 2008).

"Lack of knowledge/information of green school" was proposed as a factor that would make it difficult to lead a green school, because appropriate knowledge of a green school would make people feel easier to accept it according to the responses. If leading a green school is opposed by student parents, it is hard to implement it successfully because parents would impact students' opinions as respondents reported. This was coded as "parents' disagreement." Meanwhile, "lack of support from students" would also prevent leading a green school.

Some respondents reported the importance of government support in school initiatives, so "lack of support from government" locally or nationally would make it difficult to build a green school. Some respondents believed that the "conservative education concept," such as never changing the traditional teaching mode at school or focusing on exams, was a big barrier in leading a green school. "Noncooperation from all walks of life" means that people from each class or level, either leaders or workers, do not care leading a green school, which would make it very hard to lead a green school.

Some respondents reported that some time government or some authoritative departments interrupted too much in school management which would disturb school routine work and prevent green school construction. This was coded as "partial administrative intervention." If students and teachers do not work together toward the same goal of leading a

green school, it is hard to implement green school project, which was coded as “lack of joint efforts between teachers and students.” Respondents also believed that some businessmen focused too much on economic gains rather than protesting the environment, therefore, the global environment became even worse. The coded item “economic gains overpass environmental protection” was a factor preventing green school construction.

A new aphorism have been motivating educator and policymakers for the past two decades, which is “As is the principal, so is the school”(Lashway, 2003, p. 1). In this case, “inexperienced principals” would not be capable of leading a green school. If a school does not have enough professionals related to building a green school, it is hard to start the work, not to mention its future development. This was coded as “lack of professionals or experts.” The respondents believed that a school could run successfully toward its goal because of its excellent managing methods and smooth communication between different levels at school, which is called “school managing system.” However, if this system is imperfect, the way to leading a green school would be blocked.

The respondents stressed that they were facing “pressures” within and without school, such as high competition for funding and overwork, which would to some extent affect the progress of green school project. Some respondents considered “lack of communication and exchanging experience with other successful schools” as another obstacle to leading a green school, because knowledge and experiences can be learned through mutual communication. The respondents mentioned “national development direction,” which implies whether or not a

whole nation wishes to build environmentally friendly schools, which would largely impact school's future and school leaders' decision.

All stakeholders at school were believed to be important in leading a green school, and staff congress represented all stakeholders at school. Therefore, if "lack of support from staff congress," it is difficult to lead a green school. School board was reported as a group with powerful leaders at school, so a green school could not be built in case of "lack of support from school board." Some respondents believed that "poor quality of education and teaching" would also lead to unsuccessful school development, because they considered that better education and creative teaching methods would match the requirements of leading a green school.

"Backward idea" indicates the idea which is old-fashioned and hard to change. With "backward idea," new initiatives like building a green school would be hard to be implemented. Students and teachers who are reluctant to innovate or do not want to try new things were believed to be barriers for leading a green school. They were coded as "student lack of innovation consciousness" and "teacher lack of innovation consciousness."

As reported by the respondents, leading a green school would be impossible if a whole nation were with poor literate level. "Poor national literate level" indicated few people had received education in a nation. "National economy level" was also considered important because lack of funds would lead to the impossibility of leading a green school. Some respondents believed that it was unsafe around some schools, including potential food and

environmental health. This “lack of safety around school” would impede green school development. Last but not least, “lack of community support” was believed to be an obstacle in leading a green school.

It is easy to ignore other issues that come to a person’s mind associated with leading and managing a green school if constrained only by categories, such as “enable” and “difficult or impossible.” Therefore, the “other” question was developed in order to elicit more deep thoughts from the respondents and provide them more space to share their thoughts associated with other issues they wanted to share about sustainability and green school.

Table 10

Coding Frame for the “Other Problems” Question and Numbers/Percentages of Participants Who Gave Responses in Each Category

Item Codes for Other Problems	Response Count	Response Percent
No	7	10.45
Solid connection with education	7	10.45
School management	5	7.46
Attention from the whole society	5	7.46
How to maintain efficiently and permanently	5	7.46

Green school advantages	5	7.46
Lack of knowledge of green school connotation	4	5.97
Funding problem	4	5.97
Unclear about related problems of green school	4	5.97
Improvement of curriculum system	3	4.48
Resource saving	3	4.48
Enhancing the awareness of environmental protection	3	4.48
Extensive promotion	3	4.48
Implementing practical activities	3	4.48
How to make green school construction a booster of school development?	2	2.99
Schools' long-term development targets	2	2.99
Limitation of school area	2	2.99
Lack of relevant teaching materials	2	2.99
Humanistic education	1	1.49
Constant experimenting	1	1.49
How to stimulate teachers' enthusiasm	1	1.49
How to stimulate students' enthusiasm	1	1.49
Green school is a way to test campus culture	1	1.49

Green school is a way to test environmental construction	1	1.49
Green school is a way to test the quality of teachers and students	1	1.49
Limitation of implementing activities	1	1.49
Play an exemplary role	1	1.49
How to manage a school to be a green school, spiritually first or materially first?	1	1.49
Gaining noattention	1	1.49
How to internalize green school concept into students' minds	1	1.49
School peripheral pollution problem	1	1.49
Building a green society through the construction of building a green schools	1	1.49
Improving educational level	1	1.49
Supervision of environmental protection	1	1.49
Detailed implementation programs	1	1.49
Benefits of building a green school	1	1.49
More students, more difficulties.	1	1.49
Methods are important in leading towards a green school.	1	1.49

Timing	1	1.49
Parents' understanding and support	1	1.49
Comprehensive evaluation from senior authorities	1	1.49
Constant guide of green concept during the later period	1	1.49
Environmental protection training	1	1.49
Education testing	1	1.49
Enough teachers	1	1.49
Structuring a low-carbon society	1	1.49
Whether a green school would bring more burdens	1	1.49
Practicalities of building a green school	1	1.49
The criteria of evaluating a green school	1	1.49
Students' and teachers' respective responsibility	1	1.49
Principals' way of leading	1	1.49
Green school management integrated into teacher and student's assessment	1	1.49

There are four item codes that overlap among "enable," "difficult/impossible," and "other" categories. They are "knowledge of green school," "funding" issues, "teacher" importance, and "student" impact. Although these overlapped items belong to different aspect of respondent's perceived behavioral control over leading a green school, they highlighted school leaders' collective view associated with their own ability and confidence

in leading and managing a green school. There are several item codes that overlapped between “enable” and “other.” They are: “social attention,” “solid connection between education and green school construction,” “saving resources,” “parents’ and students’ awareness of environmental protection,” “implementing green school related activities,” “parents’ support,” “the need of low-carbon lifestyle.” This indicates that the respondents considered the above seven items as important factors that would affect their decision of whether or not to lead a green school. Only one item between “difficult/impossible” and “other” had overlapped, which is “pollution problem around school area.” This implies that the respondents viewed pollution as a serious obstacle in leading and managing a green school.

Evaluation of Table 10 indicated that for the “other” category, 7 (10.45%) of the respondents reported “no” when asked the question: What other issues, if any, come to mind when you think about leading and managing your school to be a green school? Of the respondents, 7 (10.45%) reported “solid connection with education” as a factor when considering other issues that come to mind. One of the participants reported: “Green school practices must be integrated in curriculum and students’ daily life.”

Five (7.46%) of the respondents reported “school management” as a factor that came to mind regarding other issues relevant to green school practices. Phrases such as “improving curriculum system” and “enhancing school evaluation management” were reported. Five (7.46%) of the respondents reported “attention from the whole society” and another 5 (7.46%)

reported “how to maintain efficiently and permanently” as key factors when considering other issues that came to mind. These respondents believed that attention from the outside society could give impetus to green school implementation. They also considered how to make green school implementation a long-term and efficient practice. Of the remaining responses in the “other” category, no single item code received more than 4 (5.97%) responses.

Some respondents asked whether building a green school is beneficial and what they could gain from a green school, which was coded as “green school advantages.” Some reported “lack of knowledge of green school connotation” as a question that came to their minds associated with green school. “Funding problems,” which was an overlapped item among the three categories, was also highlighted here.

Some respondents doubted about leading a green school because they were “unclear about related problems of green school,” such as its importance, its intention, its costs, and so on. In order to implement a green school, the respondents believed that the “improvement of curriculum system” was the first thing that came to their mind, which included integrating environmental protection related contents into daily teaching and learning. “Resource saving,” such as “protecting existing nonrenewable resources” also caught respondents’ attention in leading a green school.

The respondents also believed that “enhancing the awareness of environmental protection” was an important factor affecting green school development. Many businessmen

believed that a product's success is inseparable with the word of mouth the product generates (Godes & Mayzlin, 2004), so the respondents considered "extensive promotion" would help green school developing. The respondents believed that leading a green school could not be separated with real practices that could ingrain good habits into teachers and students' life, which was coded as "implementing practical activities."

Schools were reluctant to accept a green school because they doubted its effectiveness, therefore, the respondents proposed "how to make green school construction a booster of school development" as a concern of leading a green school. The respondents also believed that if "schools' long-term development targets" were to establish environmentally friendly campus and stay healthy, it could be much easier to leading toward a green school. Some respondents reported that they had limited school area for extra construction or growing plants, which they believed to be difficult to implement green school project. This was codes as "limitation of school area."

"Lack of relevant teaching materials" indicates that some respondents considered there were little resources for them to use in their teaching process regarding green schools. The respondents believed that humanistic education could create a positive environment for young people to focus on their schoolwork, grow as a leader, and learn the importance of collaboration (Morton, 2008). In this case, "humanistic education" is closely related to leading a green school. The respondents also believed that leading a green school could not be successful at once, which requires "constant experimenting."

"How to stimulate teachers' and students' enthusiasm" is very crucial reported by the respondents because active participation of teachers and students would make leading a green school possible. The respondents also pointed out that leading a green school had three functions. First, "green school is a way to test campus culture," which means that a school's environmentally friendly culture could be found and shaped through its implementation. Second, "green school is a way to test environmental construction," because there were existing national or international requirements of building a green school (USGBC, 2010). These existing guides of green schools would help to assess whether the building of a school is environmentally friendly or not. Third, "green school is a way to test the quality of teachers and students," because a school could not become a green school without high quality teachers and students possessing strong awareness of environmental protection.

According to the respondents, either school staff or students should "play an exemplary role" of protecting the environment at school or at home if a green school was to be established. The respondents also concerned the question of "how to manage a school to be a green school, spiritually first or materially first." They were not quite clear whether to focus on changing people's minds or converting surrounding condition at its outset. Some respondents reported "gaining no attention" in some new initiatives, such as leading a green school. One respondent said: "leading a green is not the most important work of our school at present and nobody would care."

"How to internalize green school concept into students' minds" is another concern that

came to respondent's minds regarding leading a green school. They hoped that students could keep in mind that developing a green school is a life-long project rather than an immediate success. As mentioned in the "difficult" question, "school peripheral pollution problem" was the same concern among some respondents in the "other" question. As a nice wish, the respondents expected to "build a green society through the construction of building a green school."

"Improving educational level" was proposed by the respondents to stress the importance of literate level in leading a green school. The respondents also believed that through "supervision of the environmental protection" among different departments within and outside of a school, it is possible to lead a green school. "Detailed implementation program" needed to be planned and prepared before real practice, as reported by the respondents.

The "benefits of building a green school" was a big concern among school leaders, the respondents thought of whether people at school could benefit from leading a green school, how and what they could gain via these benefits. Some respondents believed that leading a green school would be "more difficult" with" more students," because cultivating green school related knowledge would cost more time and bring in more pressure with more students at school. "Methods" were believed to be "important in leading towards a green school." Some respondents considered scientific methods in planning and teaching would be a wise choice in green school construction.

"Timing" choice was considered to give rise to creative solution, learning and better

performance, especially to project like green school, as reported by the respondents. The respondents also believed “parents’ understanding and support” was inseparable in leading a green school. The respondents hoped to have “comprehensive evaluation from senior authorities,” in which case they would be more confident in leading a green school.

Leading a green school is a long-term work, therefore, respondents believed that “constant guide of green concept during the later period” was as important as its beginning period. “Environmental protection training” indicates that professional learning and training is necessary to inform more people of the importance of protecting the environment in order to lead a green school. “Education testing” means a periodical test on the achievement of leading a green school.

Leading a green school was considered a process in need of “enough teachers” to participate. Because of the need of “structuring a low-carbon society,” respondents believed that people would be more than happy to cooperate in the process of green school construction. The respondents also doubted “whether a green school would bring more burdens” to their school, either in funds or in teaching.

“Practicalities of building a green school” implies respondents’ question on green schools’ real advantages in practice. Some respondents had no idea of “the criteria of evaluating a green school,” which made it impossible for them to start this project. According to the respondents, they were confused to “teachers’ and students’ respective responsibility” in leading a green school.

"Principals' way of leading" was also considered important in leading a green school. The respondents in this study were all school principals, so they wondered how to lead a green school successfully as a principal. The respondents also concerned how to "integrate green school management into the assessment of each teacher and student." They believed that in this case, everyone at school would be more aware and vigilant of protecting surrounding environment.

Tables 5, 6, 7 presented the participants' subjective norms toward the implementation of green school practices. The top five item codes of "enable," "difficult/impossible," and "other" were explained in detail and the remaining item codes summarized from the responses were briefly clarified.

Summary

This elicitation study was developed based on the TPB in order to explore Chinese principals' behavioral intentions relevant to implementing green school practices. According to the TPB (Ajzen, 1991), I adopted the nine open-ended survey questions centering on attitudes, subjective norms, and perceived behavioral control regarding leading and managing a green school to solicit responses from the participants. All collected responses were compiled and coded for analyzing. The top five item codes from each question were detailed explained and the remaining item codes from each question were briefly discussed.

Generally speaking, the respondents reported strong awareness of environmental protection of teachers and students, nice environment at school, geographic advantage, great

attention from school leaders, and enough teacher/manpower as the advantages to lead and manage a green school. The respondents reported lack of funds, weak awareness of environmental protection of teachers and students, poor surrounding environment, lack of professionals, and lack of information/knowledge as major disadvantages to lead and manage a green school. The respondents reported some parents, some teachers, some students, everyone, and education authorities would strongly approve of leading a green school. The majority (51.11%) of the respondents reported no one would disapprove of green school practices. However, this does not necessarily mean that they will implement green school practices. The respondents reported support and attention from senior authorities, people's knowledge/attention toward green school, cultivating students' awareness of environmental protection, parents' support and anticipation, and people's knowledge of environmental protection as key enablers of the implementation of green school practices. Lack of funds, school's self-condition, lack of support from senior leaders, and lack of support from teachers were reported as key reasons that make it impossible or difficult to implement green school practices.

The next chapter discusses the participants' responses based on the research questions. Through further analysis of their responses, we will gain more insights into the attitudes, subjective norms, and perceived behavioral control these school principals reported relevant to green school practices in China.

Chapter 5 Discussion

This study was developed based on the TPB (Ajzen, 1991), which elicited 747 responses relative to school principals' behavioral intentions of green school practices. Ninety-four school principals from around six provinces in China participated in this study. They responded to the nine open-ended questions designed according to the TPB. In this study, the TPB was utilized as a theoretical framework to elicit responses to open-ended questions. The study can be further used to test the theory itself in future research. In China, there is little literature of this kind that has mentioned school principals' behavioral intentions relevant to sustainability, especially by using the TPB. This study was the first to use to use the TPB to explore Chinese school principals' intentions of green school practices and sustainability.

Problem Statement

Sustainability has been attracting global attention since its first appearance in 1983. In the face of global environmental challenges, a lot of people throughout the world began concerning the importance of environmental protection and implementing sustainability related practices into their organizations and systems. In the field of educational leadership, the sustainability movement is growing but it still lacks research, funding and knowledge. Unfortunately, little research has been presented about school leadership and sustainability, especially in China. As the largest developing country, China's contribution in the field of education may lead to global progress in environmental protection. Leading a green school may provide a positive impact and benefit to a school. However, people have no idea of

whether or not school leaders are participating in sustainability movement and to what extent they are willing to participate. This leaves a gap between people's understanding about Chinese school leaders' intentions of green school practices and school leaders' personal views on green schools and sustainability.

Purpose and Research Questions

The purpose of the elicitation study is to explore school principals' intentions in relation to green school practices in China centering on the following three research question:

1. What salient beliefs do school principals in China report relative to managing schools with green school practices?
2. What individuals do school principals in China report as important to their implementation of green school practices?
3. What do school principals in China report that facilitates or inhibits their managing schools with green school practices?

Methodology

This study is a qualitative study based on the TPB and the elicitation study model proposed by Ajzen (1991). This elicitation study elicited responses from the participants to nine open-ended questions based on their behavioral, normative and control beliefs relevant to sustainability and green school practices (Veronese, 2012). This study used the method of snowball sampling to recruit more participants based on the existing social network of the participant population. All data were collected via an electronic survey system named

Qualtrics. Language translation was carefully conducted throughout the whole process regarding the targeted Chinese participants. All survey response themes were listed from the most frequent to the least frequent. Each top five item codes in every question of the survey were explained in detail and the remaining item codes were briefly mentioned. The data collected can be used for future follow-up survey in a broader scale.

Major Findings

Ninety-four school principals from China, varying in gender, age, type of school, community type, with and without knowledge of sustainability and green school practices, participated in this study. School leaders in the study represent both public and private schools in China, with 4.30% from remote countryside and 95.70% from cities. The responses in the study are relevant to school principals' attitudes, subjective norms and perceived behavioral control. Since almost half of the respondents were from Shandong province (42.55%), there might be some geographic differences which would skew the overall attitudes, subjective norms, and perceived behavioral control reported in the study. It is because participants have different values and cultural backgrounds based on the location of their current residence that may impact their behavioral intentions toward the environment.

Attitudes

According to Ajzen (Ajzen & Driver, 1991), attitude toward the behavior is determined by school leaders' behavioral beliefs and evaluation of implementing green school practices. It in turn has an impact on whether or not school leaders will implement green school

practices. Tables 2, 3, and 4 reported the attitudes of school principals relative to sustainable practices. The data of Table 2 reveal several advantages based on the salient beliefs of the respondents related to the implementation of green school practices: strong awareness of environmental protection of teachers and students, nice physical environment at school, geographic advantage, great attention from school leaders, and enough teachers or manpower. Green school movement, as stated by Zhiyan and Hongying (2004), will play a key role in enhancing environmental awareness in young people and improving the quality of education in China. It is the same the other way round. This is why 34 out of the 94 respondents in Table 2 reported “strong awareness of environmental protection of teachers and students” as the top advantage of leading and managing a green school. This is also reflected in a 2009 research study that China’s education is infusing environmental issues into the basic level of education (Yi & Wu, 2009).

In Table 2, 33 (35.11% of total responses) considered “nice physical environment at school” as an advantage in leading a green school. School with “sick” internal physical environments was believed to have an adverse effect on student learning and teacher performance (Clayton, 2012). Comparatively, both teachers and students would perform better with nice physical environment, which would promote their awareness of environmental protection. In this case, green schools with high performance facilities and healthier environment may become a better choice for both teachers and students (Gordon, 2010).

18 (19.15% of total responses) out of the 94 respondents reported “geographic advantage” as an advantage to leading a green school. The participants reported that their schools located at nice neighborhoods without serious pollution and with abundant natural light. They believed that they can lead their schools to be green schools without too much geographic barriers, such as solid waste pollution from nearby factories. On the other hand, green school grounds will contribute to the physical and social well-being of students (Bell & Dyment, 2008).

17 (18.09% of total responses) respondents reported “great attention from school leaders” as an advantage of leading a green school. School leaders have considerable influence on many aspects of a school, such as teacher supervision and student discipline (Coelli & Green, 2011). They are both leaders and managers at school (Cranston, 2011). Therefore, it is much easier to implement green school practices with particular attention from school leaders because they may actively promote pro-environmental behaviors and education among the younger generation (Boujarwah, Mogus, Stoll, & Garg, 2009).

14 (14.89% of total responses) respondents see “enough teachers or manpower” as an advantage in leading a green school. Teachers are an important group at school because they lead and guide students to learn and they can integrate environmental education into curriculum and classroom teaching. Thus, a green school will be implemented with the participation of enough teachers.

The data in Table 3 reveal several barriers to going green: lack of funds, weak awareness

of environmental protection of teachers and students, poor surrounding environment, lack of professionals, and lack of information/knowledge. Some barriers to going green are real and some may reflect misconception. For example, 35 (38.04% of total responses) respondents reported that they lacked funding for building a green school. However, according to early research, the government in China provided enough funding to encourage green school establishment (Zhiyan & Hongying, 2004). Beaver's (2009) study indicates that the overhead cost of a green school is $100,000 less per year than a conventional school in the U.S, which would be utilized to purchase useful textbooks and hire more teachers and professionals. There is no such research in China that has mentioned or estimated a green school's overhead cost. In this case, further research need to be done based on China's specific situation and see whether it is the same with the study result reported by researchers from the U.S.

Of the respondents, 28 (30.43% of total responses) respondents reported "weak awareness of environmental protection of teachers and students" as a disadvantage of leading a green school, which corresponds with the first top "advantage" in leading a green school. This reflects school principals' collective view on the importance of teacher and student importance of environmental protection. 17 (18.48% of total responses) respondents see "poor surrounding environment" at school as a disadvantage of leading a green school. When in nature students' senses come alive and nature in turn enables children to focus and create (Louv, 2008), therefore, poor surrounding environment would affect students' senses of learning and understanding of green school construction.

Sixteen (17.39% of total responses) respondents see lack of professionals as a disadvantage of leading a green school. This is why many schools require school teachers to take courses related to professional development. The early literature also indicates that principals develop the professional capacity of classroom teachers to integrated environmental education into the curriculum (Ballantyne & Packer, 2008). 15 (16.30% of total responses) respondents view lack of information/knowledge as a barrier of leading a green school, which was reflected in the early literature. For example, Wheeler and Bijur (2000) mentioned that people wanted to respond to environmental challenge but they lack sufficient knowledge.

Subjective Norms

According to Ajzen (1991), subjective norms are school principals' perceptions of general social pressure to determine whether or not to implement green school practices. Tables 5, 6 and 7 reported the normative beliefs or social pressures of school leaders relative to the implementation of green school practices. In examining Table 5, the respondents indicated that some parents (47.25%), some teachers (38.46%), and some students (30.97%) would strongly approve of implementing green school practices. Everyone (15.38%) and education authorities (12.09%) were believed to be supporters of leading a green school.

These pressures felt about leading a green school may be a major determining factor in the behavioral intentions of school principals relevant to green school practices. Research indicates that moderate level of pressures would have significantly positive impact on

improving human performance (Devi, 2012). People may feel distressed under extreme and enduring pressure which would cause negative impacts on their performance at work. However, moderate level of pressure would motivate human performance resulting in high productivity. Meanwhile, individuals often conform to the attitudes and behaviors modeled by their peers in a given situation. In this case, peer influence can affect a school principal's determination of leading a green school (Paluck, 2011). According to Table 5, the present study indicates overwhelming support by parents, teachers, students, everyone and education authorities for the implementation of green school practices, which creates a social norm or peer pressures for school principals to be confidently leading and managing green schools.

In examining Table 6, over 40% of the respondents reported that no one would disapprove of leading green schools around them. This does not mean that school leaders and people around are willing to participate in green school practices. This does suggest that there is growing social pressures considering going green as a main trend in current society. As a result, school leaders in this study have an opportunity to gain a thorough understanding of sustainability and the potential social pressures of leading a green school.

Perceived Behavioral Control

According to Ajzen (1991), perceived behavioral control is the extent to which a principal perceives the ease or difficulty of implementing green school practices. The perceived behavioral control includes how much control a principal has over leading a green school and how confident a principal feels to implementing green school practices. In this

way, perceived behavioral control can have impact on whether or not school leaders will lead and manage a green school. Tables 8, 9, and 10 reported the perceived behavioral control of school principals, indicating what would enable or what would make it difficult/impossible to leading and managing a green school. 16 (17.98%) respondents see “support and attention from senior authorities” as an enabler of leading a green school. In early literature, senior authorities/leaders not only exercise formal authority, but also have different roles to impact others’ behaviors (Leithwood & Riehl, 2005). On the contrary, lack of support from senior leaders (12.79% shown in Table 9) can also be seen as a barrier to the implementation of green school practices.

Fifteen (16.85%) and ten (11.24%) respondents respectively reported “people’s knowledge/attention toward green school” and “people’s knowledge of environmental protection” as enablers of implementing green school practices. As stated by Edward (2005), sustainability can become more powerful when being combined with education, which helps people to overcome obstacles to understand the global dilemma. This also can explain why 12 (13.48% of total responses) respondents reported cultivating students’ awareness of environmental protection as an enabler of leading a green school. They all indicated the importance of knowledge. Thus, it is very important for school leaders to expose themselves to green school practices through professional development and educational leadership programs in order to involve teachers, students, parents, and other stakeholders into green school implementation. Without adequate education and related learning opportunity, the lack

of knowledge can be seen as an obstacle in leading a green school.

In examining Table 9, 21 (24.42% of total responses) respondents reported lack of funds as a barrier of leading a green school. Based on early literature, China' government has contributed strong financial support to green school establishment (Zhiyan & Hongying, 2004). However, the educational budget is still limited compared to big class size and large school population in some districts in China. In this case, leading and managing a green school becomes more difficult for Chinese school principals. 13 (15.12%) respondents believed that there were no obstacles of leading a green school. This indicates they were confident and have control over leading and managing a green school.

Unanticipated Outcomes

Given the popularity of the green movement around the world and throughout China, I expected to have many more participants and a higher response rate to the survey, especially with the ability of online data collection and the method of snowball sampling. Snowball method of sampling is often employed to generate fruitful social knowledge of an interactional quality (Noy, 2008). It provides a unique way of reaching more participants based on the existing participants' social network. I expected to have a much greater number of participants as a result of the snowball sampling. However, it might be a result of people's busy schedule or lack of knowledge/information of leading a green school which caused no more than 50 participants during the first three months. Fortunately, more participants were involved when I sought help from my personal social connections. As a result, more than 90

participants were involved in the survey which helped the final completion of this study.

Conclusion

This study adopted nine open-ended survey questions based on the TPB to explore Chinese school principals' intentions in relation to the implementation of green school practices. However, there are several limitations of this study. As an elicitation study, this study cannot be generalized to the whole country of China. There might be some language confusion due to the complexity in translating data between Chinese and English. In order to contribute to the research field of educational leadership and sustainability, there are some recommendations proposed for practices and for future research based on the results of this study.

Recommendations for Practice

This study was developed to explore Chinese school principals' behavioral intentions and beliefs relevant to sustainability and green school practices. There are some recommendations proposed based on a thorough review of the literature in consideration of the practices reported by school leaders participated in this study. The following recommendations are made as a result of the literature review:

1. Policies related to green school practices in China should be well-informed and well-implemented. China has made great efforts in environmental protection. Though many policies are mandated to protect the environment, they do not seem to be well-informed and implemented properly (Zhang & Wen, 2008). It is imperative

to utilize good policies related to green schools to involve more people into the implementation of green school practices.

2. Green school related knowledge needs to be informed in Chinese schools in order to implement green school practices. Education for sustainability has gained increasing recognition in China (Zhang, 2010). However, not everyone at school is familiar with green school and its related knowledge. This requires more practices and strategies. In this case, the whole school approach can be used to ensure the continuity of environmental learning experiences in school life (Ballantyne & Packer, 2008; Kensler, in press, 2012). Since programs and practices of green schools are currently often implemented around the whole school approach to sustainability, schools in China should take into consideration of utilizing the whole school approach to sustainability.
3. Standardized requirements and green school related codes are necessary in the process of implementing green school practices. There are no standardized requirements or expectations in China that can guide school leaders to implement green school practices. Educational leadership standards relevant to sustainability can be integrated into school leaders' daily routine and performance measurement standards to motivate their passion toward implementing school sustainable practices.
4. Based on the data collected in this study, many participants reported lack of funds in

implementing green school practices. Without enough financial support, any program cannot progress. Therefore, China's government and relevant educational institutions should pay special attention and invest appropriately into schools if green school practices are to be implemented.

Recommendations for Future Research

School leaders globally are participating in sustainable practices, but people are not aware of school leaders' personal opinions on implementing green school practices. This study was developed to elicit responses from China's school principals regarding their attitudes, subjective norms, and perceived behavioral control in relation to green school practices. The following recommendations are made for future research as a result of the data collected through this study:

1. There are few research studies relevant to Chinese school leadership and sustainability. Researchers in these areas should conduct more meaningful research, allowing school leaders to understand their roles in sustainability movement with respect to China's special condition and the global development. Participants of the study indicated weak awareness of sustainability at school. Therefore, it is imperative to raise awareness among school leaders and stakeholders of the importance of addressing green school practices. Professional development can be used to inform school leaders of the knowledge of sustainability. Integrating green school related knowledge into curriculum and extracurricular activities will inform

students and teachers of the importance of sustainable behaviors.

2. Participants in the study reported their concerns on other people's view. They wanted to gain support and recognition from their significant relatives or friends. In this case, school leaders should be provided with opportunities to extend their knowledge and understanding of sustainability and its issues to people around them. This can be done through parents' meeting, school board meeting, and casual activities at school.
3. Thirty percent of the participants reported the importance of student participation in the process of implementing green school practices. They noticed the key roles of students in school development. Therefore, school leaders should promote the role of students in decision-making about sustainability issues. Students should be involved in sustainable activities and be encouraged to develop their own sustainable leadership skills.
4. Respondents of the study reported their concerns on maintaining green school practices. Therefore, school leaders should be provided with opportunities to reflect on their own leadership roles in the process of implementing green school practices and consider the qualities that enable them to meet and overcome barriers to progress.
5. Based on the geographic differences of this study, future research can be done through exploring the potential impacts from the geographic location of the respondents relative to the behavioral intentions of school leaders. People from

different locations of China possess respective incomes, customs, and cultures, which will lead to their different perspectives and intentions on the implementation of green school practices.

6. As an elicitation study, this study cannot be generalized to the whole nation. However, it laid foundation for developing close-ended quantitative research study based on the results of this study to involve more participants to measure the effectiveness of the TPB.
7. Future research can be done through exploring how much control China's government has to public and private schools in relation to the implementation of green school practices. Schools in China are subjected to the control of different aspects of the national government. The more control the government has about a school, the less power its principal has to implement new initiatives like implementing green school practices. In this case, it is necessary to understand to what extent a school is controlled by the national government in order to gain insights for the implementation of green school practices and other initiatives at school.
8. More empirical studies in relation to sustainability and green school practices are necessary to inform people of the importance and meaningfulness of implementing green school practices. Thus, not only school leaders, but also other stakeholders of a school will be involved in the green school movement.

9. Professional development is necessary to inform school leaders of the knowledge/information related to sustainability and green school practices. Future research can be done to examine which areas of professional development are more effective in relation to sustainability by using the TPB. In this way, the TPB can be used to test participants' attitudes, subjective norms, and perceived behavioral control over each area of professional development, which will further determine the effectiveness of the professional development and examine whether participants are willing to go green.

Summary

Sustainability has been widely discussed since its emergence. It provides people an opportunity to think systemically about their roles, behaviors, and their relationship with the world. Green school projects were introduced to China since 1996 and many schools there joined the movement of sustainability, but we do not know for sure whether Chinese schools place sustainability at the core of their activities (Wu, 2002). As evidenced by this study, research in the area of sustainability and educational leadership is limited, so we do not know how many China's school principals are willing to participate in implementing green school practices and to what degree. This study is the first of this kind, using the TPB (Ajzen, 1991) as the theoretical framework to explore China's school principals' salient beliefs and their pro-environmental behavioral intentions related to sustainability and green school practices. Since school principals play key roles in education for sustainable development and

implementing green schools, we must understand their attitudes, subjective norms, and perceived behavioral control over the implementation of green school practices. This elicitation study provided an opportunity for people to gain knowledge of China's school principals' intentions of pro-environmental behaviors. It also provided recommendations for practices and future research in relation to the implementation of green school practices.

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Appendix 1 Survey Questions in English

Exploring Green School Practices and School Leadership/Management

1. What do you believe are the ADVANTAGES of leading and managing your school to be a Green School?
2. What do you believe are the DISADVANTAGES of leading and managing your school to be a Green School?
3. Is there anything else you associate with your own views about leading and managing your school to be a Green School?
4. Within or outside your organization, who are the individuals, if any, who would APPROVE of you leading and managing your school to be a Green School?
5. Within or outside your organization, who are the individuals, if any, who would DISAPPROVE of you leading and managing your school to be a Green School?
6. Is there anything else you associate with other people's views (within or outside your organization) about you leading and managing your school to be a Green School?
7. What factors or circumstances would ENABLE you to lead and manage your school to be a Green School?
8. What factors or circumstances would make it DIFFICULT or IMPOSSIBLE for you to lead and manage your school to be a Green School?
9. What other issues, if any, come to mind when you think about leading and managing your school to be a Green School?

Appendix 2 Survey Questions in Chinese

探索：绿色学校实践和学校领导及管理

1. 如果引领和管理你的学校成为绿色学校，你认为你们学校有哪些优势？
2. 如果引领和管理你的学校成为绿色学校，你认为你们学校有哪些劣势？
3. 还有什么事情与你对你引领和管理你的学校成为绿色学校的观点有关系？
4. 无论是在你的学校还是校外，还有哪些个人（如果有的话）会赞同你引领和管理学校成为绿色学校？
5. 无论是在你的学校还是校外，还有哪些个人（如果有的话）会不赞同你引领和管理学校成为绿色学校？
6. 还有什么事情与他人对你引领和管理你的学校成为绿色学校的观点有关系？
7. 什么因素或者环境使你认为能够让你引领、管理你的学校成为绿色学校？
8. 什么因素或者环境是你认为会使你引领、管理你的学校成为绿色学校变得困难或不可能？
9. 当你想到引领、管理你的学校为绿色学校时，你脑海中还会产生其他什么问题？

Appendix 3 Recruitment Script in English

Dear Principal,

My name is Ting Wang, a graduate student from the Department of Educational Foundations, Leadership, and Technology (EFLT) in the College of Education at Auburn University. I would like to invite you to participate in my research study to explore school principals' pro-environmental behavioral intentions related to Green Schools. You may participate if you are a school principal and over the age of 19. Please do not participate if you are not currently a principal in either a public, private, or independent school located in China.

As a participant, you will be asked to complete an electronic survey that should take you less than 30 minutes to complete. At no time will you be obliged to provide your contact information. All survey data will be collected and stored anonymously.

Your participation is completely voluntary. While I do not anticipate any risks associated with participating in this study, your participation will provide the necessary data for a developing line of research on school leaders' management and leadership practices related to Green Schools and sustainability.

If you would like to know more information about this study, an information letter can be obtained by opening the attachment to this email [*I will offer to email the information letter*]. If you decide to participate after reading the letter, you may access the survey from a link in the letter.

If you have questions, please contact me at (334)-734-2503 or tzw0009@auburn.edu , or you may contact my advisor, Dr. Lisa Kensler at lak0008@auburn.edu.

Ting Wang
Ph. D candidate
Educational Foundations, Leadership, and Technology
Auburn University

Appendix 4 Recruitment Script in Chinese

敬爱的校长：

您好！我希望您已经收到了上一封邀请您参与我研究的信函。这封信作为一个提醒函想通知您，自从上次您收到我的问卷起已经过去两周了。如果您已经回复并完成了我的问卷，感谢您的参与。您可以直接删除这封邮件或者忽略它。如果您还没有收到或者忘记完成问卷调查，我希望您可以抽出一些时间来阅读下面的信息，帮助我完成此次问卷。

我是一名就读于美国奥本大学教育基础、领导以及技术发展专业的在读博士。 我希望可以有幸邀请您参与我的研究调查。我所研究的项目是关于探索中小学校长关于绿色学校问题方面的保护环境行为的倾向。如果您是一名在职校长并且年龄超过 19 岁，您就可以参与此次问卷调查。如果你目前不是中国公立、私立或是独立学校的校长，请不要填写此问卷。

作为此次研究的参与者，您将需要完成一个电子形式的问卷调查。该问卷不会花费您超过 30 分钟的时间。您也无需提供您的个人信息。所有的数据将会匿名收集和储存。

您的参与完全是自愿的。我个人认为您的参与不会有任何风险。相反，您的参与会给绿色学校以及可持续发展项目的学校领导的管理及领导方式提供必不可少的有用数据。

如果您愿意了解关于此次研究的更多信息，打开此邮件的链接，您便可以获得一份信息介绍信【我会在邮件中提供信息介绍信】。如果在读完这封信后，您决定参与我的研究。您可打开此链接 https://auburn.qualtrics.com/SE/?SID=SV_9XK7Q0xPCV0wkbq 进入调查问卷系统。

如果您还有什么问题，您可以拨打电话或邮件联系我，我的电话是(334)-734-2503，我的邮箱是 tzw0009@auburn.edu。 您也可以联系我的导师 Lisa Kensler 博士， 她的联系方式是 lak0008@auburn.edu。

王婷
博士候选人
教育基础、领导以及技术发展