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SCHOOL PRINCIPALS' BEHAVIORAL INTENTIONS OF SUSTAINABILITY: A QUALITATIVE STUDY IN CHINA

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Abstract

This study specifically looked into what Chinese school principals reported in relation to their salient behavioral beliefs (attitude), normative beliefs (subjective norms), and control beliefs (perceived behavioral control) relative to green school practices by using the Theory of Planned Behavior (TPB). In general, the study indicated that participating Chinese school principals saw teachers' and students' awareness of environmental protection, physical environment within a school, and the surrounding environment as advantages to implementing green school practices. They also reported that most stakeholders would support green school efforts. However, factors such as limited knowledge, money, and personnel would be potential barriers for leading a green school. This study will be the first of this kind in the field of educational leadership that explores Chinese principals' perspectives relevant to green school practices, and therefore, will serve as a foundation for future research.

INTRODUCTION

The concept of "green school" was first introduced to China in 1996, informed by the European "Eco-schools" (Henderson & Tilbury, 2004). The Eco-school program represents the largest internationally coordinated whole-school environmental education program. This program is democratic and provides opportunities for young people to engage in school and community activities. Its goal is to promote sustainability, which at the same time, is the aim of building a green school. A green school prepares young people for sustainable living through its teaching and daily practices (Beaver, 2009). Since a number of China green school documents and electronic materials were translated into English, people were able to gain access to the current status of green schools in China. According to these materials, the Chinese government commended 3,207 schools at various levels from sixteen provinces as green schools, as of October, 2000 (Zhiyan & Hongying, 2004). The green school concept has spread relatively quickly throughout China.

However, there are some challenges that are interfering with Chinese green school practices. First, the exam-oriented education, which focuses more on exam results than student understanding of the curriculum content, is constraining the development of green schools, both within individual schools and across the country (Chen et al., 2005; Deng & Poon-McBrayer, 2004). Second, most educators in China are unfamiliar with green school projects due to a limited educational budget and lack of professional training (McNeil & Hathaway, 2005). In the face of these challenges, educators in China, especially school leaders, are expected to take the lead in changing the situation in order to create a quality learning environment for their students and to improve their lives in the future. Therefore, Chinese school principals, the most influential factors for green school practices in China (Wu, 2002), are the primary target of this study.

Since there is a lack of research that explores principals' salient beliefs in relation to green school practices in China, this study begins a new line of inquiry. The purpose of this study was to identify what Chinese school principals reported in relation to their salient behavioral beliefs (attitude), normative beliefs (subjective norms), and control beliefs (perceived behavioral control) relative to green school practices. The theory of planned behavior (TPB) (Ajzen, 1991) served as the theoretical framework of our study. This paper will first review the literature on sustainability and education in China and then present the results of our elicitation study.

Sustainability in China

In this study, we use the term sustainability to signify the capacity of living systems to satisfy human and non-human needs in the present without diminishing their capacity to do so in the future (Edwards, 2005). Consumerism across the globe causes resource depletion, pollution, and waste, all pressures on the environment that likely reduce the capacity of future generations to meet their own needs (Breslin, 1996). The sustainability movement aims to examine and revise present day unsustainable practices into more sustainable practices. Some examples of these practices include recycling of water and waste.

Some key Chinese leaders and educators noticed the importance of sustainability at an early time. China became 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, to implement the strategy of sustainable development, and to transform old ways 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).

In order to sustain the environment, and, at the same time, develop the economy, the Chinese government and environmental departments at all levels have seriously carried out the "Decision on Some Issues Concerning Environmental Protection." Some of the actions have included: closing 84,000 small enterprises that were wasting natural resources and polluting the environment; eliminating or retrofitting outmoded production equipment with new technology; and, establishing test and control systems across industries to reduce pollution and other environmental challenges (Yuqing, 2008).

Sustainability and Education in China

Sustainability is about engagement, along with learning and leading to create a positive, empowering future for today's children and future generations. Because sustainability brings life to learning and learning to life, its relationship with education is very close; in many ways, the sustainability movement depends upon education. Wheeler and Bijur (2000) stated that people might not be able to challenge the existing environmental problems, although they may wish to, because people do not necessarily have sufficient knowledge and understanding of sustainability. In some economically poor countries, poverty causes environmental problems, which, in turn, aggravates poverty. In more affluent countries, unsustainable practices occur because of ignorance or a lack of related policies (Wheeler & Bijur, 2000). Since many reasons exist for the lack of knowledge and understanding about sustainability, it is possible to see the importance of education and how it can play a role in introducing sustainability-related knowledge to students and educators (Wheeler & Bijur, 2000).

For the first half of the twentieth Century, China, like most countries, was slow to recognize its environmental problems. It was Premier Zhou, who in 1969, first advocated environmental protection and environmental education (EE) and asked the State Council to pay more attention to pollution (Tian, 2008). The Chinese people, and especially the nation's 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 National Meeting on Environmental Protection was held in 1983 and resulted in the government's recognition of strengthening environmental education for officials and average citizens. The First National Meeting for Environmental Education (EE) in China was jointly held by the Ministry of Education (MOE) and the State

Environmental Protection Administration (SEPA) in November of 1992, when the UN Conference of Environment and Development was held at Rio de Janeiro in Brazil. It was at this moment that EE was enhanced in Chinese schools. This indicated that EE had entered into a new period. In 1996, the National Action Guideline for Environmental Propaganda and Education symbolized EE as not only a political task, but also a part of academic research (Tian, 2008).

However, there are still challenges with China's education for sustainability. First, public awareness of environmental protection tends not to be very strong in China. Second, sustainability education has tended to occur more for citizens of middle and upper classes. Factory and agriculture workers have tended not to receive sustainability education. Finally, compared to people in some developed cities, such as Beijing and Shanghai, those in the remote countryside still do not receive sufficient education about sustainability related issues. (Tian, 2008; Yi & Wu, 2009).

In order to overcome these challenges, environmental warnings have been conducted across the country and have raised people's awareness of environmental challenges (Du et al., 2010). The national government and local authorities have recognized the importance of the openness of environmental work and have encouraged public participation (Enserink & Koppenjan, 2007). Some universities, middle schools, and primary schools have been involved in the green school movement (Zeng et al., 2009). Overall, China's environmental awareness has increased significantly, but still has room for improvement.

Green Schools in China

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). A green school provides the opportunity for students to develop the knowledge, values, and skills for leading change in their communities (Livingstone & Bober, 2004). China's green school project encourages schools to make use of both internal and external educational resources, while cultivating sustainability-related knowledge through classroom and extracurricular activities. The national government provides funding to encourage green school establishment. An international seminar was also hosted in China in 2004, where learning experiences were shared from similar programs worldwide (Henderson & Tilbury, 2004).

However, the development of green schools is confronted with certain difficulties. First, outmoded conventions of education theory and an exam-oriented approach toward pedagogy are constraining green school projects. Second, most teachers are unclear about the concept of education for sustainability and cannot relate environmental content to the subjects they teach (McNeil & Hathaway, 2005). Third, many teachers and leaders have not received formal professional development in relation to education for sustainability (Zhiyan & Hongying, 2004). Finally, the blind pursuit of green school quantity over quality negatively impacts the healthy development of green schools in China (Zhiyan et al., 2004). Green school approach and "Chinese green philosophy" need both in-depth theoretical and practical exploration for long-term development (Lee, 2010). Therefore,

this study attempted to explore green school practice from the perspectives of Chinese school principals.

Theoretical Framework

In this study, we used the Theory of Planned Behavior (TPB) (Ajzen, 1991) as the theoretical framework. According to the TPB, there are three important variables that predict behavioral intentions, and thus behavior: attitude toward the behavior, subjective norms, and perceived behavioral control (Ajzen, 1991). The attitude toward a behavior is a person's overall appraisal of a behavior. Subjective norms represent the social pressure an individual feels to perform or not perform the targeted behavior. Perceived behavioral control is the extent to which a person perceives the ease or difficulty of performing the behavior. According to Ajzen (1991) these three factors together predict one's behavioral intentions, and their intentions then predict the actual behavior. Figure 1 illustrates the TPB model.

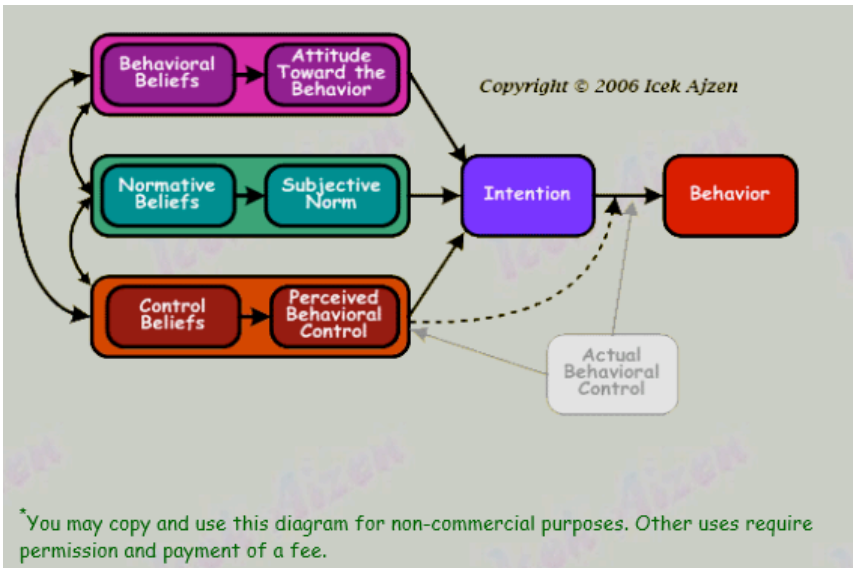

Figure 1: The Theory of Planned Behavior (Ajzen, 2006)

There is only one study conducted in the United States using the TPB to explore school leaders' salient beliefs related to green school practices (Veronese & Kensler, 2010). The participating school leaders of the study believed that going green produces benefits and most stakeholders would support green school practices. In this case, more studies of this kind are needed in terms of sustainability and school development to explain the importance of the school leader's attitudes and behaviors for the success of sustainability education initiatives (Birney & Reed, 2009). "Sustainability covers all aspects of school", so it requires "effective leadership that is at the heat of whole-school development at a strategic level" (p. 11). This study, which was conducted in China, aims

to provide a foundation for future research in relation to school leaders' salient beliefs and sustainability.

Research Methods

The TPB was adopted in this study to elicit Chinese principals' behavioral intentions in relation to sustainability and green school practices (Ajzen & Driver, 1991). Three research questions served the purpose of this 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?

A survey with nine open-ended questions, which was patterned after the TPB, solicited participants' salient beliefs toward green school practices (Downs & Hausenblas, 2005; Veronese, 2012). The salient beliefs tend to be the initial responses after respondents are asked open-ended questions (Ajzen & Fishbein, 2000; Higgins, 1996). The first three questions focused on participants' attitudes toward green school practices. The middle three examined how significant others affect participants' opinions in relation to green school practices. The last three explored the factors that might affect participants' performance in implementing green school practices.

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). In this case, a survey questionnaire was translated back into the target language by one translator and then translated back into the source language by an independent translator who was blinded to the original questionnaire. The two source-language versions were then compared. Each of the survey questions were translated into Chinese, back translated, and then sent to school principals in China. Principals responded to the survey in Chinese. After data collection, all responses were categorized according to the three components of the TPB. They were ranked from the most frequent to the least. The categorized responses were then translated into English and reviewed by two outsiders. The outsiders are Chinese speakers who are good at English speaking and translating. The translated English responses were back translated into Chinese again to ensure the accuracy between two languages.

The guidelines for elicitation studies using the TPB suggested that 25 respondents should be enough to reach saturation, the point when additional responses do not continue to contribute new information (Ajzen and Fishbein, 1980). However, the study of principals and green school practices is so new that we collected open-ended responses from nearly four times that number. The snowball method of sampling allowed us to involve more participants from school leaders across China (Noy, 2008). Respondents

included principals with or without the knowledge of green school practices, which would represent a wide range of school leader perspectives.

Results

There were ninety-four respondents to the nine open-ended questions grounded in the TPB, which solicited a total of 747 responses across the nine questions. Respondents were from six provinces of China. Approximately forty (42.55%) of them were from Shandong province, and fifty-seven (57.45%) were from other provinces, including Beijing, Shanghai, Fujian, Gansu, Guangdong, and Hubei. Figure 2 indicates the regional location of the respondents with stars, and also indicates that participants were from diverse regions of China.

Figure 2: Map of China Indicating the Participants by Location

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

As Table 1 shows, the total number of responses to each question ranged from sixty-four on the "other associated with others' views" question to ninety-four on the "advantages" question. The mean number of beliefs per person for each question ranged from 0.59 to 2.31 responses per person. A limited number of people listed five or more responses, indicating that participants were open-minded and were not constrained by the format of the questionnaire (Sutton et al., 2003).

Attitudes

Table 2 shows the coding frame for the "advantages," "disadvantages," and "others" questions, the number of responses for each category, and the percentage of participants who gave a response that fell into the category.

Table 2: Coding Frame for the "Advantages" Question and Numbers/Percentages of Participants Who Gave Responses in Each Category

	Advantages		Disadvantages		Others	
Item Codes	Response count	Response Percent	Response count	Response Percent	Response count	Response Percent
Teachers and students' awareness of environmental protection	34	36.17	28	30.43		
Physical environment within a school	33	35.11			8	10.81
Surrounding environment	18	19.15	17	18.48	9	12.16
School leaders' attention	17	18.09			3	4.05
Human capacity at school	14	14.89				
Funding	11	11.70	35	38.04	6	8.11
Curriculum system	11	11.70	3	3.26	3	4.05
Green space within a school	11	11.70	10	10.87		
Participation and support from teachers and students	10	10.64	6	6.52	13	17.57
Social activity	10	10.64	1	1.09	4	5.41
Effective school management	10	10.64				
Attention from government and relative departments and leaders	5	5.32	9	9.78	21	28.37
Effective leadership team	4	4.26			2	2.70
Students' impact	3	3.19	6	6.52		
School history and culture	3	3.19	1	1.09	1	1.35
Parents' support	3	3.19			4	5.41
Resources	2	2.13	2	2.17		
Students with management skills	1	1.06				
Professionals			16	17.39	2	2.70
Information/knowledge			15	16.30	13	17.57
Effective education methods			4	4.35		
Time			3	3.26		

Sense of creativity	2	2.17		
Impact of school scale	1	1.09		
Quality education			2	2.70
Mutual influence between schools			2	2.70
Carrying out detailed measures			2	2.70
Students' mutual impact			1	1.35
Parents' quality			1	1.35
National policy			1	1.35
Parents' literate level			1	1.35
Community support			1	1.35

As summarized in Table 2, 36.17% of respondents reported "teachers and students' awareness of environmental protection" as one advantage of leading a green school. Many respondents (35.11%) considered that "everyone at school has formed the habit of saving resources because of the local reality of harsh environment and lack of rain." 35.11% of respondents considered "physical environment within a school" as the second top advantage in leading a green school because they believed that "green plants" and "green grounds" at school would facilitate green school development.

"Surrounding environment" was seen as an advantage by 19.15% of respondents, suggesting that schools with nice natural environment would benefit developing green school practices. "School leaders' attention" became the fourth advantage according to the participants' responses because they thought school development could not be separated from school leaders' special care. Initiatives like green school implementation could be more successful and could progress much faster with enough "human capacities" at school, which was reported by 14.89% of participants.

The "funding" issue was the top disadvantage, in terms of leading a green school. 38.04% of participants reported "lack of money" or "lack of capital investment." "Teachers and students' awareness of environmental protection" was seen as the second top disadvantage by 30.43% of respondents. Due to "limited knowledge and contents about environmental protection," teachers and students are unclear of how to deal with environmental challenges.

Since "there were lots of factories around a school," 18.48% of participants reported poor "surrounding environment" as an obvious weakness of leading a green school. 17.39% of participants reported that they did not have "professionals" who could "guide them and teach them green school practices." Lack of "information/knowledge" ranked as the fifth "disadvantage" in leading a green school, as reported by 16.30% of respondents.

Subjective Norms

Table 3 shows the coding frame for the "approve," "disapprove," and "others" questions, indicating respondents' perceptions of general social pressure relative to

leading a green school. Table 3 reports the number of responses for each category of each survey question and the corresponding response percentage.

Table 3

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

Item Codes	Approve		Disapprove		Others	
	Response count	Response Percent	Response count	Response Percent	Response count	Response Percent
Parents	43	47.25	16	17.78	2	3.13
Teachers	35	38.46	4	4.44	4	4.49
Students	30	32.97	3	3.33	1	1.56
General public	15	16.48			14	21.88
Education authorities	11	12.09	1	1.11	7	10.95
People with the awareness of environmental protection	9	9.89	6	6.66	13	20.33
Leaders from education department at various levels	9	9.89	3	3.33	8	12.50
Governments at various levels	9	9.89	5	5.55	11	17.17
All staff at school	8	8.79				
School leaders	6	6.59	3	3.33	8	12.48
No one			46	51.11		
No					14	21.88
Business people			4	4.44		
People who pay attention to school development	2	2.20			6	9.37
People with the awareness of environmental crisis					4	6.24
Some individuals in society			3	3.33		
Environmental advocates	3	3.30				
Family	2	2.20			2	3.13

members of school stakeholders						
National leaders					2	3.13
Departments in charge of green project	1	1.10			2	3.13
Residents from local community	1	1.10	1	1.11	2	3.13
Some schools	1	1.10	1	1.11	2	3.13
Practitioners			1	1.11		
Architecture firms	1	1.10				
Educators	1	1.10	1	1.11		
Current principals	1	1.10				
Celebrities	1	1.10				
Vice principals	1	1.10				
Stakeholders of school board of education	1	1.10	1	1.11		
People who care student health1	1	1.10			1	1.56
Self-centered people			1	1.11		
Retired principals	1	1.10				
Modern scholars	1	1.10				
Officers facing retirement			1	1.11		
Officers not living locally			1	1.11		
The educated	1	1.10				
New school teachers graduated from colleges	1	1.10				
Workers	1	1.10				
Local Bureau of Parks and Woods	1	1.10				
Members of parent committee	1	1.10				
Fauna and flora	1	1.10				

conservative agency		
People with a sense of responsibility	1	1.56

Of the respondents, 47.25% of respondents believed that "parent" support is important regarding school construction. Approval of "teachers" (38.46% of total responses) and "students" (32.97% of total responses) were believed to be critical to the success of leading a green school. The "general public" (16.48% of total responses) was also considered as an inseparable part regarding developing green schools. Eleven participants reported that "education authorities", including those locally and nationally, would approve of green school practices.

For the "disapprove" question, more than half of the respondents believed that "no one" would disapprove of leading and managing a green school. However, several respondents reported in their comments that "some parents," "some teachers," and "several students" would disapprove of leading a green school.

Perceived Behavioral Control

Table 4 shows the coding frame for the "enable," "difficult/impossible," and "other" questions, indicating respondents' perceived control over leading a green school. This table reports the number of responses for each category of each survey question and the corresponding response percentage.

Table 4

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

	Enable		Impossible/Difficulty		Others	
Item Codes	Response Count	Response Percent	Response Count	Response Percent	Response Count	Response Percent
Social perception of green schools	40	44.95	10	11.63	20	29.84
People's awareness of environmental protection	23	25.85			6	8.96
Support and attention from senior leaders	17	19.10	11	12.79	1	1.49
Student awareness of environmental protection	12	13.48			1	1.49

Parent support	11	12.36	5	5.81	1	1.49
Teachers' support	11	12.36	7	8.14	2	2.98
Support from general public	9	10.11	3	3.49	6	8.96
Managing system at school	7	7.87	2	2.33	7	10.45
All staff participation at school	7	7.87	1	1.16		
National policy	6	6.73	1	1.16		
Funding	6	6.73	21	24.42	4	5.97
School's self-condition	6	6.73	11	12.79		
Government support	5	5.62	4	4.65	1	1.49
Student impact	5	5.62	6	6.98	2	2.98
Teachers' senses of creativity	5	5.62	1	1.16		
Community support	3	3.37	1	1.16		
Schools' mutual learning	3	3.37	1	1.16	1	1.49
Individual responsibility	3	3.37			1	1.49
Economy impact	3	3.37	3	3.49		
Surrounding environment	2	2.25	7	8.14	1	1.49
School leaders' experience	2	2.25	2	2.33	1	1.49
Propaganda work	2	2.25			3	4.48
Advanced idea	2	2.25				
Education quality	2	2.25	1	1.16	7	10.45
Exam-oriented exam	1	1.12	6	6.98		
Joint efforts between teachers and students	1	1.12	2	2.33		
No			13	15.12	7	10.45
School leaders' attention	1	1.12				
Professionals	1	1.12	2	2.33	1	1.49

Clear plan	1	1.12	6	6.98	6	8.96
School board support			1	1.16		
School development	1	1.12			5	7.46
Food safety	1	1.12				
Manager's policy implementation	1	1.12	2	2.33		
Principal's self-belief	1	1.12				
Life quality	1	1.12			1	1.49
Rights and power	1	1.12				
Pressures			1	1.16		
National literate level			1	1.16	1	1.49
Implementing practical activities					4	5.97
Improvement of curriculum system					3	4.48
School's scale					2	2.99
Teaching materials					2	2.99
Constant test					2	2.99
Teaching methods					1	1.49
Timing					1	1.49
Professional training					1	1.49
Evaluation system					1	1.49

Assessment of Table 4 shows that "social perception of green schools" was considered to be the top one enabler in leading a green school by 44.95% of participants. This item includes responses like "people's general perception of a green school" and "schools' abilities of building green schools." "People's awareness of environmental protection" ranked second in the "enable" question by 25.85% of participants. One representative response is: "the more people are aware of green school, the better to implement this new project." "Support and attention from senior leaders" and "student awareness of environmental protection" were reported respectively by 19.10% and 13.48% of participants, as two other important enablers in leading a green school. According to the responses, senior leaders have more power and can largely impact school development. The participants believed that students' awareness of environmental

protection should be developed at their early age. "Parent support" was considered to be crucial in implementing green school practices.

In terms of the difficulties of leading a green school, 24.42% of participants reported "funding" issue as a primary reason of making it difficult to implement green school practices. 15.12% of the respondents reported "no" circumstance would make it difficult or impossible to implement green school practices. "School's self-condition" and "support and attention from senior leaders" were seen as the fourth and fifth difficulties in leading a green school by 25.58% of participants. Some respondents reported that their schools were located at very remote places where they had few resources, and some reported that their schools were small compared to the large student population, which made it difficult to implement green school practices. "Social perception of green schools" was reported by 11.63% of participants as the fifth difficulty of leading a green school.

DISCUSSION

A diverse group of ninety-four Chinese school principals varying in gender, age, type of school, community type, with and without knowledge of sustainability and green school practices participated in this study. The responses of the study are relevant to school principals' attitudes, subjective norms, and perceived behavioral control.

Attitudes

Tables 2 displayed the attitudes of school principals, relating to sustainable practices. This data revealed several advantages based on the salient beliefs of the respondents related to the implementation of green school practices: teachers and students' strong awareness of environmental protection, physical environment within a school, surrounding environment, school leaders' attention, and human capacity at school.

The 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. Meanwhile, enhanced awareness of environmental protection will advance green school practices. This is why thirty-four out of the ninety-four respondents in Table 2 reported "teachers and students' strong awareness of environmental protection" as the top advantage of leading 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).

"Nice physical environment" at school was considered as an advantage in leading a green school by the respondents. Schools with a "sick" internal physical environment were believed to have an adverse effect on student learning and teacher performance (Clayton, 2012). Comparatively, both teachers and students would perform better with a nice physical environment, which would promote the awareness of environmental protection. In this case, green schools with high performance facilities and healthier environments may become a better choice for both teachers and students (Gordon, 2010).

The "surrounding environment" was reported as the third top advantage in leading a green school. Seen in this light, green schools will be built without too many geographic

barriers, such as factory pollution. On the other hand, green school grounds will contribute to the physical and social well-being of students (Bell & Dyment, 2008).

Seventeen respondents reported "school leaders' attention" 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 et al., 2009).

"Human capacity at school" was also seen as an advantage in leading a green school in the responses. 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.

There are also several barriers of leading a green school according to Table 3: funding, teachers and students' weak awareness of environmental protection, a poor surrounding environment, a lack of professionals, and a lack of information/knowledge. Some barriers of going green are real and some may reflect misconceptions. For example, 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 in the United States is $100,000 less per year than a conventional school. The savings could be utilized to purchase useful textbooks and hire more teachers and professionals.

Of the respondents, about one-third of the respondents reported "teachers and students' weak awareness of environmental protection" as a disadvantage in leading a green school, which corresponds with the number one "advantage" in leading a green school. This reflects school principals' collective view on the importance of teachers and students in terms of environmental protection. A "poor surrounding environment" was seen as another disadvantage of leading a green school. Whereas students' natural senses may come alive through a positive environment, and the environment may enable children to focus and create (Louv, 2008), a poor surrounding environment could affect students' senses of learning and understanding of green school construction.

Participants reported that a "lack of professionals" was a disadvantage in leading a green school. This is why many schools require teachers to receive further education relative to green school development. The early literature also indicates that principals develop the professional capacity of classroom teachers to integrate environmental education into the curriculum (Ballantyne & Packer, 2008). A "lack of information/knowledge" was viewed as a barrier by the respondents in leading a green school, which was reflected in the early literature. For example, Wheeler and Bijur (2000) mentioned that people may want to respond to environmental challenges, but they may lack sufficient knowledge.

Subjective Norms

Table 3 reported the social pressures of school leaders, relative to implementing green school practices. In this table, the respondents indicated that some parents, some teachers, and some students would strongly approve of implementing green school practices. General public and education authorities were believed to be supporters of leading a green school.

The 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 a moderate level of pressure would significantly impact human performance in a positive way (Devi, 2012). 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, and education authorities for the implementation of green school practices, which creates a social norm or peer pressure for school principals to be confidently leading and managing green schools.

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 others are willing to participate in green school practices. This does suggest that there is growing social group that considers "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

Table 4 shows the participants' perceived control over leading a green school, indicating what would enable or make it difficult for the implementation of green school practices. "Social perception of green schools," "people's awareness of environmental protection," "support and attention from senior leaders," "student awareness of environmental protection," and "parent support" were considered to be the top five enablers in leading a green school, as reported by forty percent of participants. As stated by Edward (2005), sustainability can become more powerful when combined with education, which helps people overcome obstacles to understanding the global dilemma. This also can explain why more than one-seventh of participants reported that students' awareness of environmental protection can be important in leading a green school. They all indicate the importance of knowledge, which would further shape individuals' perceptions and awareness. Thus, it is necessary 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 with green school implementation. Without adequate education and related learning opportunities, the lack of knowledge can be seen as an obstacle in leading a green school. In the early literature, senior leaders not only exercise formal authority, but also have different roles in impactint others' behaviors (Leithwood & Riehl, 2005).

The "funding" issue was considered the top barrier of leading a green school. Based on the early literature, China's government has contributed strong financial support to

green school establishment (Zhiyan & Hongying, 2004). However, the educational budget is still limited, in comparison to the large class sizes and school population in some districts in China. In this case, leading and managing a green school becomes more difficult for Chinese school principals. About one-sixth of participants believed there were no obstacles in leading a green school. This indicates they were confident and felt control in leading and managing a green school.

RECOMMENDATIONS

Globally, school leaders are engaging in sustainable movement, but people do not know school leaders' perspectives of implementing green school practices. This study elicited responses from China's school principals regarding their attitudes, subjective norms, and perceived behavioral control in relation to green school practices. The following recommendations for future research are based on the review of literature in the related field along with the results of this study:

1. There are few research studies relevant to school leadership and sustainability in China. Researchers in these areas should conduct more meaningful research, allowing school leaders to understand their roles in the sustainability movement with respect to China's special condition and the global development.

2. Based on the geographic differences of this study, future research should explore the potential impact from the geographic location of the respondents, relative to the behavioral intentions of school leaders. People from different locations of China possess distinct incomes, customs, and cultures, which will lead to different perspectives and intentions of the implementation of green school practices.

3. As an elicitation study, this study cannot be generalized to the whole nation. However, the study laid the foundation for developing close-ended quantitative research studies. More participants can be utilized to measure the effectiveness of the TPB.

4. Future comparative studies can be conducted, in order to compare the results between this study and the above mentioned quantitative research studies.

5. 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 school stakeholders will be involved in the green school movement.

CONCLUSIONS

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 in 1996, and many schools since joined the movement of sustainability. However, 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 of China's school principals are willing to participate in implementing green school practices, and to what degree. This study is the first of its 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, it is necessary to 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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