



A critical assessment of the Higher Education For Sustainable Development from students' perspectives – a Chinese study



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ABSTRACT

The last decade has witnessed a growing public awareness of sustainability. The sustainability issue in higher education is no exception. This study was designed to investigate the awareness of students on sustainability and their perceptions on Higher Education for Sustainable Development. Particular focus was placed on university students' perceptions of factors that contribute towards the Higher Education for Sustainable Development. 1134 students from all divisions of the Shandong University were invited to participate in this study. The results showed that university students were generally aware of sustainability issues. The top priorities for Higher Education for Sustainable Development from the students' perceptions are generally environmentally oriented. However, students highlighted the importance of social aspects of sustainability by ranking security within the campus and providing access to disability people two of top 10 factors of Higher Education for Sustainable Development. Similarly, students perceived that students opportunities and conducting sustainability related researches as critical to Higher Education for Sustainable Development goal. On the contrary, sustainability curricula, the faculty and staff development, and rewards are perceived by students as less important compared to other factors. These research findings provide a useful reference to both the top management and educational authorities for their decision-making processes to further develop Higher Education for Sustainable Development.

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1. Introduction

The sustainability issues in higher educational institutions have attracted an increasingly level of attention from both public and policy makers during the last decades (Mickwitz and Melanen, 2009; Stephens and Graham, 2010). This is arguably due to the increased level of consciousness in society on sustainability issues; and the significant impacts of campus activities on both environment and communities (Alshuwaikhat and Abubakar, 2008; Lozano, 2006a). As a result, a number of studies have been undertaken on how to improve the sustainability performance within educational institutions. This is manifested in the large number of papers that have been published by the specialized journals (e.g. Journal of Cleaner Production and the International Journal of Sustainability in Higher Education on this issue since 2000 and featured in conferences (e.g. Environmental Management for Sustainable Universities, Association for the Advancement of

Sustainability in Higher Education, COPERNICUS Campus and Global University Network for Innovation) and books (e.g. Jones et al. (2010) sustainability education, Corcoran and Wals (2004) higher education and the challenge of sustainability, Blewitt and Cullingford (2004) the sustainability curriculum, Sterling et al. (2013) the sustainable university progress and prospects). A university consists of various interdependent subsystems therefore a systemic approach is required in order to make the necessary transformations to becoming a "Sustainable University" (Shriberg, 2003; Alshuwaikhat and Abubakar, 2008). It is broadly reflected into six aspects, i.e. sustainable campus operations, sustainable research, public outreach, cooperation between institutions, curricula and sustainability reporting (Wright, 2002; Fien, 2002; Lozano, 2006a; Lukman and Glavič, 2007; Lozano, 2006b). To enhance the awareness of sustainable development within higher education communities, an integrated and interdisciplinary teaching and training approach is essential (Ferreira et al., 2006).

There are a number of stakeholders to Higher Education for Sustainable Development (HESD). These include: staff, faculty, students, funding bodies, employers and community (van Weenen, 2000). The sustainability goals will not be achieved without the co-

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operation and participation from all stakeholders (Alshuwaikhat and Abubakar, 2008; Wright, 2010). Indeed, the resistance from stakeholders presents a significant barrier to incorporate sustainable development into universities (Lozano, 2006b). The support and endorsement of university administration from the top is critical to achieve HESD, which can be reflected in the sustainability related goals, visions and statements (Comm and Mathaisel, 2005; Lidgren et al., 2006; Lozano, 2006b).

The bottom-up approach also plays a critical role to raise awareness across the higher education institution and encourage interactions between various stakeholders (Wright, 2002). As one of the key stakeholders in universities, students play a role in the bottom-up approach of HESD (e.g. Christensen et al., 2009). For instance, students can contribute towards the sustainable campus operation and relevant research (e.g. Dahle and Neumayer, 2001).

As a result, previous studies have been undertaken to investigate the students' awareness and perceptions of sustainable development. For instance, Tuncer's study (2008) found that university students are generally aware of the definition of sustainable development and some 75% of respondents perceived that environmental sustainability should be given the highest priority. Emanuel and Adams (2011) surveyed more than 400 students for their perceptions of campus sustainability. Their study found that students showed willingness to support and participate in sustainable initiatives. Indeed, passions and contributions of students are "critical assets in Sustainable University projects" (Beringer and Adom̂sent, 2008). It has been well recognized that enhancing students' awareness of sustainable development plays a vital role in sustainable development in universities (see Lidgren et al., 2006; Beringer, 2007). On the contrary, most Chinese universities take top-down approach to address sustainability issues in higher education institutions where students' awareness and perceptions are not reflected in decision making (He, 2010; Geng et al., in press). This presents opportunities to transfer the experience of overseas universities into the Chinese context.

The Chinese government has set up ambitious goal of sustainable development that are reflected in various strategic plans, relevant regulations and international cooperation schemes (Yuan et al., 2011; Yuan and Zuo, 2011; Zhao et al., 2011a, 2011b; Wang et al., 2012). The higher educational sector plays a significant role in the realization of China's sustainability objectives. Based upon the literature review done by the authors of this paper, it is striking to note that there are few studies that focus upon sustainability issues in Chinese higher education institutions particularly from students' point of view. Therefore, the aim of this research is to contribute to fill this gap by means of a questionnaire survey with students in Shandong University (SDU), one of major universities in China. The relative significance of various factors related to HESD from students' perspective will be ranked. The comparison between these student-perceived priorities and current approach adopted by Chinese higher education institutions provides useful references to further promote HESD.

2. Higher education in China and Shandong University

Higher education in China has been growing rapidly in recent years. In 2009, the number of universities and colleges, teachers, new enrolments and total students is 2,305, 1,295,200, 6,394,900 and 21,446,600 respectively (National Bureau of Statistics of China, 2010). Fig. 1 shows a significant increase on both new enrolments and total number of students during the past two decades.

A degree system ranging from Bachelors, Masters to Doctor Degrees has been established by the Ministry of Education. Non-degree programs are offered as well. The top universities in China secure special financial support from the governments. In the mid

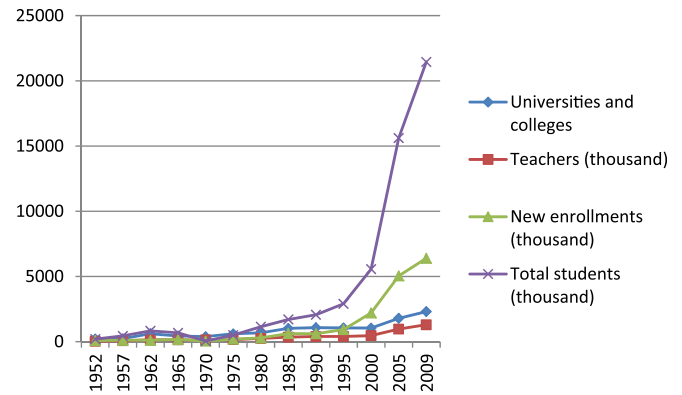


Fig. 1. Higher education development in China from 1952 to 2009. Source: National Bureau of Statistics of China (2010).

1990s, China initiated "211 Project" for higher education development. This advocated priority development of about 100 universities and colleges to enhance their ranking globally (Ministry of Education, 2005). In 1998, "985 Project" was initiated with an aim to further promote the development of the Chinese higher education system. 10 of China's leading universities were listed in the first phase of this project. 2004 saw the launch of the second phase of the "985 Project" which added another 20 universities to the list. At this moment, there are 112 and 39 universities covered in the "211 Project" and the "985 Project" respectively.

Almost all universities provide dormitory and food for students on campus. Most students live in a dormitory room with 1–7 other students, and dine in the canteens. This is somewhat different from the western universities.

Energy consumption of the universities and colleges also increased significantly as the dramatic development of higher education in China. The average energy and water consumption per college student is 4 times and 2 times of the average value of Chinese residents; the universities and colleges consumed 8% of China's total energy (Tan et al., 2010). Improving energy efficiency in universities and colleges plays a vital role for China to achieve the evolution of an environmental-friendly and energy-saving society.

Founded in 1901, SDU is located in Jinan city, the capital city of Shandong Province. SDU has two branches at Weihai city and Qingdao city. In 2001, it was listed by the Ministry of Education as one of first-class universities with funding priorities (i.e. "211 Project" and "985 Project"). SDU has 6 campuses at Jinan, which cover an area of 3849 square kilometres. The campuses are comprised of 6 divisions, 31 schools/colleges and a graduate school. Table 1 shows the components of the different schools in the 6 divisions at SDU. There are some 95,000 students studying in SDU at the time of this study.

3. Research methodology

Our research methodology is based on the Graphical Assessment of Sustainability in Universities (GASU) tool, particularly the environmental, social and educational sections. The economic dimension is not covered in this study due to the fact all public universities in China are non-for-profit. As a result, the economic performance of universities was not given high priority. Other aspects of HESD were also covered in this study such as management system, research and development, staff development and rewards, and student opportunities. GASU is designed to assess the sustainability performance in higher educational institutions (Lozano, 2006a). GASU is a modification of the Global Reporting

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