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# Building bridges to student learning: Perceptions of the learning environment, engagement, and learning outcomes among Chinese undergraduates



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#### ABSTRACT

The study examined the relationships among students' perceptions of the learning environment, prior academic achievement, engagement, and learning outcomes (cumulative university GPA, generic skills development, and learning satisfaction) with a sample of 2616 seniors from a full-time research-oriented university in Mainland China. The results supported a model which showed that students' perceptions of the learning environment and prior academic achievement had direct effects on learning outcomes, and indirect effects via their engagement. The effects, however, varied depending on the type of the outcome in question: (1) Student engagement mediated the relationship between course experience and generic skills development, (2) cocurricular experience positively predicted learning satisfaction, (3) first semester GPA positively predicted cumulative university GPA, and (4) National College Entrance Examination scores did not correlate with any other factor. A major proportion of the variance in the three types of learning outcomes was accounted for by the model, showing its effectiveness in predicting university students' learning. Implications for improving undergraduate education in China are provided.

#### 1. Introduction

Two major perspectives have guided theory and research into student learning in higher education. The first adopts the phenomenographic perspective of learning and has been prominent in Europe, Australia, and South-East Asia. This perspective concerns students' perceptions of the learning environment or their course experience. The second is rooted in North America and has been known as the student engagement perspective. This perspective concerns college students' exposure to and participation in effective educational practices that are related to desired college outcomes.

Since Marton and Saljo first identified the concepts of deep and surface approaches to learning and established phenomenography as a research methodology to describe people's qualitatively different ways of experiencing the world in 1970s (Marton & Säljö, 1976a, 1976b), a considerable number of studies have been stimulated to examine students' perceptions of their learning environment in higher education (e.g., Biggs, Kember, & Leung, 2001; Biggs, 1987; Entwistle & Ramsden, 1983; Tait, Entwistle, & McCune, 1998). Especially, Ramsden (1991, 1992) designed the Course Experience Questionnaire (CEQ) to measure students' overall educational experience from five aspects: good teaching, clear goals and standards, appropriate workload, appropriate

assessment, and generic skills. Correlations between students' course experience and learning approach, academic achievement, and satisfaction have been reported by a number of studies (Wilson, Lizzio, & Ramsden, 1997; Watkins, 2001). In Australia, all undergraduates are required to complete a questionnaire reporting their course experience (Wilson et al., 1997). In the United Kingdom, a student questionnaire modeled on CEQ was administered to all publicly funded higher education institutions to evaluate their students' perceptions of the quality of teaching (Higher Education Funding Council for England, 2003).

With respect to the student engagement perspective, although engagement is a multifaceted concept and there is debate over its exact nature, most researchers recognize its important value in achievement and learning in higher education (Kuh, 2009; Trowler & Trowler, 2010). As Maiers (2008) argued, student engagement is a hot topic in higher education, which always connects with student success. Decades of research have consistently supported the linkage between students' engagement and their college outcomes (for reviews, see Bowen, 1977; Feldman & Newcomb, 1969; Pace, 1979; Kahu, 2013; Pascarella & Terenzini, 1991, 2005). In the U.S., the National Survey of Student Engagement (NSSE) has been widely administered to investigate U.S. college students' engagement. Over 1600 institutions and 6 million students have participated in the survey since 2000.

In China, the higher education system has seriously considered its teaching quality recently. China has experienced an extreme expansion of student enrollment and institutions in higher education since 1990s. The number of Chinese regular higher education institutions increased from 1,100 in 1990 to 2,546 in 2015, and the gross enrollment ratio increased from 3.4% in 1990 to 40% in 2015. China now has the largest student population in higher education in the world, with more than 36.47 million enrolled students (Wu, 2016). The rapid expansion of higher education has caused a series of problems, especially the concerns about the quality decline of teaching in higher education. In 2003, Chinese Ministry of Education launched an undergraduate teaching evaluation (UTE) programme to assess and monitor the quality of undergraduate teaching at the institutional level. Criticisms, however, were raised for neglecting students' voice in the UTE process of evaluating teaching quality (Guo, Yang, & Shi, 2017; Lee, Huang, & Zhong, 2012; Mohrman, Wang, & Li, 2011). Researchers have strongly suggested that undergraduates' experience and evaluation should be integrated into the assessment of teaching quality in China's higher education (Gong & Lv, 2012; Shi & Guo, 2012; Yin & Ke, 2017).

Within this context, several nationwide surveys have been conducted to investigate Chinese undergraduates' learning. In 2011, a research team at Xiamen University developed and administered the National College Student Survey (NCSS) to a sample of 92,122 Chinese undergraduates from 52 universities and colleges, to investigate their conceptions of learning, perceptions of the learning environment, approaches to learning, etc. (Guo, Yang, & Shi, 2013; Shi & Guo, 2012). Guo and Shi (2016) adapted the Chinese version of the NSSE (CCSS) and surveyed a sample of 51,800 students from 36 universities and colleges to explore student engagement in China. Besides these nationwide surveys, some small-scale surveys have also been recently conducted and facilitated the understanding of learning and teaching in Chinese universities (e.g., Price et al., 2011; Yin, Wang, & Han, 2016; Zhang, Lu, & Cheng, 2006). As Guo et al., 2017 pointed out, although the empirical research of assessing teaching quality from Chinese students' perspective is in an early stage, this topic is increasingly discussed recently in China's higher education.

In short, a considerable number of studies have shown that students' perceptions of the learning environment and their engagement are important predictor variables of learning. These studies, however, have been conducted independently by separate communities of researchers. Surprisingly little is known about the joint effects of these two important predictors on learning. There is a need to build bridges between variables from these two perspectives in order to investigate their relative importance as predictors of student learning. Moreover, given the fact that there is a paucity of empirical research on student learning in Chinese universities, the present study is a first attempt to examine the relationships among Chinese undergraduates' perceptions of the learning environment, engagement, and three types of learning outcomes (cumulative university GPA, generic skills development, and learning satisfaction).

## 1.1. Student engagement and learning

Student engagement is a popular buzz phrase in higher education (Kahu, 2013; Maiers, 2008). Despite its benefits found in the literature, researchers have different understandings of student engagement. As McCormick, Kinzie, and Gonyea (2013) pointed out, student engagement is not a unitary construct but a family of constructs related to time on task, quality of effort, involvement, academic and social integration, as well as principles of good practice in undergraduate education. Zepke (2014) described student engagement as an uncritically accepted academic orthodoxy which tries to include all things in teaching and learning.

Among different views of student engagement, the behavioral perspective is most widely accepted in the higher education literature which focuses on students' behavior, effort, and activities (Kahu, 2013; Zusho, 2017). Essential work on the development of student

engagement has been undertaken by scholars such as Astin (1970; 1984); Kuh (2001; 2009); Pace (1980, 1998); Pascarella (1985) and Tinto (1975, 1993). Central to this perspective is the assertion that the more a student invests time and effort in educationally purposeful tasks, the more he/she will gain from his/her college experience (Pace, 1998). These tasks include active learning, student-faculty interaction, asking questions, discussion, collaborative learning, applying what they learn to other contexts, etc. Over recent decades, a considerable number of studies have shown the positive relationship between students' engagement and their learning, including persistence (Kuh, 2008), critical thinking development (Loes, Pascarella, & Umbach, 2012), grades and Graduate Record Examination scores (Carini, Kuh, & Klein, 2006), and moral reasoning development (Nelson Laird, Seifert, Pascarella, Mayhew, & Blaich, 2014).

Adopting the behavioral perspective of engagement, the National Survey of Student Engagement (NSSE) is an ongoing research campaign in the USA used to measure college students' engagement and to further understand the benefits of attending college. According to the NSSE website, NSSE has been used by over 1,600 U.S. and Canadian institutions of higher learning since 2000. Five benchmarks of effective educational practice were created from the original survey, including level of academic challenge, active and collaborative learning, student interactions with faculty members, enriching educational experiences, and supportive campus environment (Kuh, 2001). Later in 2013, these benchmarks were organized into four engagement themes (i.e., academic challenge, learning with peers, experiences with faculty, and campus environment), and high-impact practices.

Despite being the mainstream of student engagement research, the behavioral perspective of student engagement has been criticized for its narrowness (Hagel, Carr, & Devlin, 2011; Kahu, 2013). As Kahu (2013) pointed out, the behavioral approach does not incorporate the psychological state of engagement, which is another important dimension of engagement, such as student motivation, expectation, and emotions. Engagement should be considered a combination of various dimensions. Fredricks, Blumenfeld, and Paris (2004) suggested considering student engagement from three dimensions of behavior, cognition, and affect. Behavioral engagement refers to positive conduct, involvement in learning, and participation in extracurricular activities, such as attending class, following classroom rules, asking questions, concentrating, and taking part in student organizations. Cognitive engagement points to students' use of deep learning strategies, motivation, and expectations. Affective engagement is about enjoyment, interest in the task, reactions to and relationships with teachers, classmates and administrators that encourage a love of learning. As Zepke (2014) argued, "the fusion of behavioural, emotional and cognitive engagement indicators with multiple facilitators of engagement offers a useful framework for thinking about student engagement" (p. 698).

Kahu (2013) identified four relatively distinct approaches to understand engagement in the literature: the behavioral perspective, the psychological perspective, the socio-cultural perspective, and the holistic perspective. She further proposed an overarching conceptual framework trying to integrate all those approaches to facilitate a richer and deeper understanding of student engagement. Although consensus about the conceptualization and operationalization of student engagement has not been achieved, there is a tendency to understand this construct in a more comprehensive way (Zusho, 2017). Moreover, Zusho (2017) reviewed the theory and research on self-regulated learning, approaches to learning, and student engagement, and compared the similarities and differences among the three approaches in terms of the nature of learning, the personal and contextual influences, the interaction between cognition and motivation, as well as measurement. As a result, Zusho (2017) concluded that there is a considerable amount of overlap across these three approaches and "these models of student learning should be linked, both theoretically and practically" (p. 317).

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