



Learner centered higher education in East Asia: assessing the effects on student engagement

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Abstract

Purpose – The global expansion of higher education has brought about more ambitious educational goals that require new approaches to curriculum, teaching, and learning. While higher education in East Asia is no exception to this trend, it has been observed that both teachers and learners in the region have adhered to a strong tradition of lecture-based instruction. An underlying research question concerned the responsiveness of East Asian students to learner-centered education. The purpose of this paper is to examine the extent to which learner-centered education can be implemented successfully in the East Asian higher education context.

Design/methodology/approach – This study presents a quantitative study informed by a description of the context for implementation. It adopts a quasi-experimental, multiple time series design and examines the process and effects of change in teaching and learning at a graduate school of business (GSB) in Thailand. The GSB implemented a variety of active learning methods that were explicitly designed to increase student engagement. Descriptive statistics, as well as mixed effects models, were used to analyze student course evaluation data over a several year period.

Findings – Active learning methods could be implemented in the context of an East Asian high education institution and they entailed positive change in student engagement over time.

Originality/value – The paper's results support assertions that Asian students respond positively to well-designed instructional methods that seek to foster active learning.

Keywords Thailand, Higher education, Business Schools, East Asia, Teaching, Learning, Change management, Learner-centred

Paper type Case study

The global expansion of higher education has brought about more ambitious educational goals that require new approaches to curriculum, instruction, and learning (Kehm and Stansaker, 2009). This trend is no less apparent in East Asia where higher education institutions have joined the global race for higher quality and university rankings (Altbach and Umakoshi, 2004; Kember, 2000; Mok and Cheung, 2011). This has created impetus for change in the methods of teaching and learning in a region where teacher-directed instruction has long held a central place in the instructional repertoire of university faculty (Biggs and Tang, 2007; Hallinger and Bridges, 2007; Watkins, 2000). Some proponents of teacher-directed instruction claim that teacher-directed instruction is responsive to the culturally formed motivational needs of East Asian students (Watkins, 2000).

Yet, over the past 15 years, a growing cadre of scholars has challenged this assumption, asserting that Asian students can respond enthusiastically and productively to active approaches to learning (e.g. Biggs, 1994; Hallinger and Bridges, 2007;



Hallinger and Lu, 2012; Kember, 2000; Walker *et al.*, 1996; Watkins, 2000). A decade ago, a new graduate school of business (GSB) in Thailand undertook a comprehensive effort to implement active learning methods as a means of enhancing its competitiveness. Academic leaders in the GSB believed that it should be possible to employ learner-centered approaches to education in an Asian context, even though successful examples did not exist in Thailand. This paper reports on the impact of this particular effort to employ learner-centered education in one institution of higher education in Thailand over a seven-year period of time.

The goal of this report is to examine the extent to which learner-centered education was implemented successfully in this East Asian higher education context. The research draws inspiration from scholars who have expounded on the importance of fostering greater “student engagement” in higher education, both in general (e.g. Astin, 1996; Biggs and Tang, 2007; Bransford *et al.*, 2000; Edgerton, 2001; Gragg, 1941; Hénard, 2010; Johnson *et al.*, 2000; Prince, 2004; Smith *et al.*, 2005) and more specifically in East Asia (e.g. Biggs, 1994; Hallinger and Bridges, 2007; Hallinger and Lu, 2012; Kember, 2000; Watkins, 2000). With this in mind, we selected student engagement as the dependent variable of interest for this study. The specific objectives of this report are to:

- (1) describe the implementation of learner-centered education in the context of one East Asian higher education institution; and
- (2) examine the relationship between the provision of learner-centered education and changes in levels of student engagement.

This report seeks to contribute to an evolving literature on student engagement in higher education, as well as a less developed empirical knowledge base on the use of active learning methods in East Asia. As a case study, this research has only limited generalizability, even within East Asia region. Nonetheless, it provides empirical evidence concerning both the challenges and potential efficacy of employing a range of learner-centered methods in a context where debate over preferred methods of teaching and learning continues to be contentious.

Theoretical perspective

The study’s conceptualization of student engagement proposes that higher education should involve and engage students in learning to apply theoretical knowledge to practical situations (Astin, 1996; Bok, 1989; Bransford *et al.*, 2000; Bridges, 1977; Gragg, 1941; Hallinger and Bridges, 2007; Hattie, 2009; Kolb, 1984). This reflects Astin’s (1996) conception of student involvement which proposed that “academic involvement, involvement with faculty, and involvement with student peer groups” all contribute to productive learning (p. 126).

The value of focussing on student engagement is further supported by Jarvis’s (1987) Learning Process Model. Jarvis asserted that only a small amount of learning occurs at the memorization level. Optimal learning takes place when people are actively engaged in contemplation, reflective practice, and experiential learning. Other theorists such as Kolb (1984), Carroll (2000), Bransford *et al.* (2000), and Hattie (2009) have made similar claims from a variety of complementary perspectives.

The rationale for focussing on student engagement was succinctly stated by Edgerton (2001) who claimed, “Learning ‘about’ things does not enable students to acquire the abilities and understanding they will need for the twenty-first century.

We need new pedagogies of engagement that will turn out the kinds of resourceful, engaged workers and citizens [that societies need]" (p. 1). Smith *et al.* (2005) elaborated on Edgerton's conception of "pedagogies of engagement" by providing empirical support for the outcomes that accompany productive engagement in learning. Hattie's (2009) recent meta-analysis of alterable factors that impact learning lends further empirical support to scholars who have asserted the importance of student engagement as a mediator of student learning.

Engagement is a positive absorbed state that occur when a student is engrossed in a challenging but meaningful task (Seligman and Csikszentmihalyi, 2000). Empirical research has linked higher levels of student engagement with both improved student learning and social interaction (Astin, 1996; Bransford *et al.*, 2000; Hattie, 2009; Hughes and Kowk, 2006; Johnson *et al.*, 2000; Prince, 2004; Smith *et al.*, 2005). Moreover, scholars studying learning in domains of higher education spanning medicine (Barrows and Tamblyn, 1980; Bok, 1989), management (Garvin, 2003; Gragg, 1941; Hallinger and Bridges, 2007; Salas *et al.*, 2009), and engineering (Kember, 2000; Smith *et al.*, 2005), and teacher education (Bransford *et al.*, 2000; Walker *et al.*, 1996) assert that positive engagement facilitates knowledge acquisition and retention.

More specifically, for students in professional education programs, an important rationale for selecting their course of study is the desire to enhance knowledge and skills in specific domains (Bok, 1989; Bridges, 1977; Garvin., 2003; Gragg, 1941; Kember, 2000; Major and Palmer, 2001). Thus, the opportunity to connect course content to personal goals represents a potentially important source of motivation among learners. This assertion is also supported by the more general literature on adult learning which highlights the need among mature learners for scaffolding new learning on past experience (e.g. Bransford *et al.*, 2000; Kegan, 1982; Knowles, 1980; Hattie, 2009; Hunter, 1995; Knowles, 1980).

Teaching methods such as project-based learning (Thomas, 2000), problem-based learning (PBL) (Barrows and Tamblyn, 1980; Major and Palmer, 2001; O'Neill and Hung, 2010), case teaching (Christensen, 1995; Garvin, 2003; Harvard Business School, 2008), and simulation (Hallinger *et al.*, 2010; Salas *et al.*, 2009) seek to make learning meaningful by connecting it to problems and tasks that learners will encounter in their professional careers. Theorists hypothesize that grounding learning tasks in the context of meaningful problem scenarios satisfies personal learning goals, thereby enhancing learner motivation and engagement (Bransford *et al.*, 2000; Carroll, 2000; Hallinger and Bridges, 2007; Hunter, 1995; Kolb, 1984; Knowles, 1980; Salas *et al.*, 2009). Meaningful, problem-oriented tasks that are challenging yet manageable drive students to think and explore (Bransford *et al.*, 2000; Carroll, 2000; Skinner, 1995). Moreover, these features not only foster student engagement but also transfer of learning (Bransford *et al.*, 2000).

Learning in professional education and training programs is also enhanced when there is a culture of collaborative learning (Bransford *et al.*, 2000; Hattie, 2009; Johnson *et al.*, 2000; Smith *et al.*, 2005). With the exception of case teaching, all of learning methods listed earlier incorporate forms of cooperative learning (Johnson *et al.*, 2000). Moreover, in recent years even the "home" of the case teaching method, the Harvard Business School, has taken steps in a similar direction by incorporating features designed to create a more "participant-centered" learning environment (Harvard Business School, 2008).

This brief overview provides background for the research reported in this study. As we shall discuss, the GBS in Thailand sought to employ a wide range of

learner-centered approaches in its management education programs as it sought to increase student engagement and foster productive learning. In the following section, we present the methodology of this study.

Method

This study employed a quasi-experimental time series design (Campbell and Stanley, 1966; Shadish and Galindo, 2010). As described by Campbell and Stanley (1966), “The essence of the time-series design is the presence of a periodic measurement process on some group or individual and the introduction of an experimental change into this time series of measurements, the results of which are indicated by a discontinuity in the measurements recorded in the time series” (p. 37). In the current research, this design is embedded in a quantitative case study (Yin, 2008) of implementation of learner-centered education at a single institution of higher education in Thailand.

Intervention

The intervention in this study is referred to as “learner-centered education.” In contrast to a typical experimental study, we have not identified one specific method (e.g. mastery teaching, case teaching, PBL, simulation) as the intervention. Rather we focus on the GSB’s attempt to implement a broad set of learner-centered approaches to teaching and learning. These included cooperative learning (Smith *et al.*, 2005), PBL (Barrows and Tamblyn, 1980; O’Neill and Hung, 2010), case teaching (Christensen, 1995; Garvin, 2003), simulations (Salas *et al.*, 2009), and technology-enriched, learner-centered instruction (Bransford *et al.*, 2000; Hunter, 1995).

The lack of “precision” of the intervention is a potential limitation in this study. Nonetheless, this reflects the reality of the context for this field study as well as the situation of most university programs that undertake the improvement of teaching and learning. Thus, we also assert the value of examining a difficult to control, organization-wide intervention rather than a classroom-specific effort at implementing change.

Data collection

This case study relied primarily upon quantitative data to address the research questions. Qualitative data were used to construct the chronology of implementation of the treatment. Information used to construct the narrative was drawn from two sources. First, the lead author led the implementation effort[1] and maintained personal notes concurrent with implementation. Second, a variety of college documents drawn were reviewed in order to reconstruct the events that took place over time. Qualitative data were not used to assess changes in teacher behavior or student engagement. The analytical portion of the study was based solely on quantitative analysis.

The data collection tool in this study consisted of the GSB’s course evaluation questionnaire (CEQ) administered to students at the conclusion of each course. CEQ are subject to a variety of potential problems when used in academic research (Aleamoni, 1999; O’Neill and Hung, 2010; Scriven, 1988). Nonetheless, a substantial body of research supports the reliability and validity of purposively designed, systematically administered CEQ (Aleamoni, 1999; McKeachie, 1997; Marsh and Roche, 1997; Scriven, 1995).

Questionnaire design and procedures for administering and using GSB’s CEQ explicitly addressed features that can threaten the validity of these commonly used

scales (Scriven, 1988, 1995). The GSB's 17 item CEQ was designed after a review of scales used by other universities, and in consultation with psychometricians. The CEQ was administered and managed using a standard set of procedures each term by the GSB's academic support staff.

Although the CEQ contained multiple items and dimensions, in this report we focus on student engagement. Our conceptual definition of student engagement is the intensity and emotional quality of students' individual and collaborative involvement in the class (Edgerton, 2001; Skinner and Belmont, 1993; Smith *et al.*, 2005). Operationally, this was measured by two items that asked students to rate the extent to which the course encouraged them to become actively involved in their learning and learn from each other. Using Cronbach's test of internal reliability, the α coefficient for this scale was 0.95.

We employed data describing student perceptions of classes taught between the third term in the 2000-2001 academic year (i.e. January term, 2001) and the first term in the 2007-2008 academic year (i.e. June term, 2007) for a total of 21 trimesters. Term one represented the baseline term for data analysis. That is, the "intervention" on which we focus in this report began implementation during Term 2 (i.e. June) in 2001.

Sample

Table I includes the sample characteristics of all courses taught in the college between January Term in the 2000-2001 academic year and the September Term in the 2007-2008 academic year. Since the college operates in a trimester system, the period of analysis included 21 trimesters during which 201 different instructors taught 1,739 course sections. As indicated in Table I, the student response rate was > 80 percent, thereby meeting the requirements for this type of research (Lyon and Hendry, 2002; Marsh and Roche, 1997).

We note that approximately 90 percent of the students attending the GSB programs during the period of this study were Thai nationals. The remaining students were Japanese and Chinese. Although 90 percent of the students were studying part-time and 10 percent full-time, the students were mixed together in most of the courses.

Data analysis

Data analysis begins with the use of descriptive statistics to portray the trend of change in teaching and learning results over time. As suggested by Campbell and Stanley (1966), in time series designs one should seek to employ tests of significance that are capable of making use of all data points rather than relying on *t*-tests to compare the baseline against a single data point or even against pooled data points (p. 43). Thus, we sought to exploit the longitudinal features of the data through the use of mixed effects models (Heck *et al.*, 2010). Mixed effects models capture the variability

Students, instructors, and classes	All courses
Number of course sections	1,739
Number of instructors	201
Average students per section	23.40
Total number of students	40,686
Total returned questionnaires	33,896
Response rate	83%

Table I.
Summary course,
instructor, student
information (2000-2007)

in individual instructors as well as variance in the change trend year-by-year. This enabled the assessment of impact of learner-centered education by monitoring changes in levels of student engagement over time.

Limitations of the research

In this research design, the most serious threat to internal validity is the inability to control “history” (Campbell and Stanley, 1966; Shadish and Galindo, 2010). This limitation requires us to explicate the “history” of implementation during the time series. In reporting the results, we must identify other plausible “events” could have contributed to changes in the dependent variable, student engagement.

A second limitation lies in this study’s implementation of the multiple time series, quasi-experimental research design. Ideally, when using a time series design, one will have several instances of data collection (e.g. Observation 1, Observation 2, ... Intervention Program X, Observation 3, Observation 4, Observation 5, ...) before and after implementation of the intervention (Shadish and Galindo, 2010). This enables the researcher to more firmly establish the intervention as the causal factor resulting in change in the dependent variable over time. As note, however, our study only incorporated a single measurement of the dependent variable, student engagement, prior to implementation. This reduces the level of certainty concerning causal attributions arising from the pattern of change over time.

A third potential threat to validity lies in “maturation effects” (Campbell and Stanley, 1966). For example, changes in the nature or composition of learners in the college over time could account for change in the dependent variable rather than the intervention. In the current study, we suggest that this is of less concern. First, in this study data were gathered over an extended period of time from 12 different cohorts of students. Each cohort of approximately 185 students stayed in the GSB for five terms and then graduated. Thus, new students were entering and leaving the GSB every other term. While it is possible that maturation effects could be evidenced among “senior” students as they studied in the GSB, these would be balanced by groups of newly admitted students. Thus, we suggest that the long duration of the study allows for the continuous comparison of students in a system that can be viewed as being in equilibrium at any one point in time with respect to the composition of students.

It is also possible that increased student engagement could have reflected changes in the nature of the student intake at the GSB over time. Indeed, as we shall discuss, the qualifications of students enrolling in the GSB’s MM program did improve over time. This could have led to a student population that was better prepared to engage the content of the program. We will address this point later in the report. In the following section, we present the chronology of implementation of learner-centered education at the GSB.

Chronology of implementing learner-centered education at the GSB

The GSB was started in 1998 as a management college located in a large comprehensive university that served more than 25,000 students in Bangkok, Thailand. The GSB initially offered the Master of Management degree in a variety of specializations (e.g. General Management, Entrepreneurship Management, Human Resource Management, etc.). The program was taught in English to a typical intake of about 375 students per year admitted in two cohorts. Most students took five trimesters, or 19 months, to complete the program. Over the period of this study (i.e. 2000-2007), the GSB expanded to include a Thai language Master degree program, a Thai language Bachelors degree

program, and an English language PhD program. By 2007, the GSB was serving about 1,700 students in these degree programs.

Although the GSB was located in a government university, it was launched as a semi-independent college with its own Board of Trustees. This freed the GSB from many constraints that impeded innovation in the highly bureaucratic government university system. At the same time, this also meant that GSB received no financial subsidy whatsoever, either from the university or the government. It relied on student tuition fees to fund 100 percent of its operational expenses.

Thus, the college was directly accountable for its results, not only to the university and Ministry of Education, but also to its student body. It should be noted that the GSB operated in a highly competitive environment for graduate business education in Bangkok. As a newcomer in this market, the inability to meet the expectations of students in its Master degree programs would impact student applications and threaten its continued survival. Thus, in this context, student course evaluations served not only as a means of assessing the quality of instruction in individual classes, but also student response towards the GSB's programs.

GSB vision and organization

Upon entry into this competitive business education market, the GSB needed to differentiate its service from its competitors. The GSB's stated vision was to offer a personalized, student-centered learning management education. The educational practices implied by this vision were reflected in its instructional organization and facilities. Maximum class size was set at 30 students. Classrooms were designed to foster student-to-student interaction. Moreover, from the start in 1998, all of the GSB's classrooms were equipped with movable tables and chairs, multi-media projectors, teacher computer workstations connected to the internet, and stereo sound systems. These were intended to create a state-of-the-art, classroom environment that was conducive to learner-centered education. In the GSB senior management's vision, this approach to teaching and learning would differentiate the GSB from other business schools in Thailand which relied heavily upon large class lecture and discussion.

This description conveys a seemingly receptive context for innovation in teaching and learning at the GSB. Yet, a quality audit conducted in its third year of the GSB's operation (i.e. 2000) offered a contrasting portrait:

- most instructors kept the tables and chairs in a traditional classroom seating arrangement;
- the vast majority of class time was devoted to lectures, only occasionally broken up by class discussion or group work;
- multi-media equipment was used only for electronic delivery of basic power point slides, when it was operable;
- although there was a clear curriculum structure on paper, content delivery depended entirely on the decisions of individual instructors;
- all instructors were employed on a part-time basis resulting in minimal to no collegial inter-dependence or collaboration; and
- assessment was haphazard, arbitrary, with little in the way of substantive feedback on student products (Graduate School of Business, 2000).

The gap between the GSB's vision and execution did not go unnoticed by its students. Reports of student dissatisfaction had reached the university administration on the main campus, and by 2000 the situation had become particularly urgent. The GSB's Board of Trustees was poised to change the senior management team and institute new policies unless it was presented with a defensible strategy. It was in this context that the GSB's managers and faculty deliberated on the question of how and where to begin the process of change.

Formulating a strategy for change in teaching and learning

Given the GSB's espoused vision, the team decided to explore a variety of instructional and curricular strategies that were explicitly aligned to the goal of learner-centered management education. Prospective students wanted to gain a graduate qualification from a respected university to enhance their career prospects. GSB students were career-oriented and seeking useful knowledge that could be applied to their work. These were potentially important motivators (Kember, 2000) against which the college's curricular and instructional program was assessed by its students.

Strategic change would require structural reorganization, recruitment of new instructors, curriculum redesign, development of instructor capacity, and raising academic standards. The GSB's plan for improvement began with communicating a clear vision of action-directed learning to the faculty and students through a variety of face-to-face forums. Reorganization shifted authority from specific Master degree program areas to the GSB's academic managers in several domains. Steps taken towards organizational redesign included developing central standards for admission, recruitment of curriculum design teams for core courses taken by students in different programs, and creation of a common template for course design. Selection of faculty became more centralized and a course evaluation system was designed for central administration.

Implementing change

Implementation of changes in teaching and learning methods began in Term 2 in 2001 and proceeded continuously throughout the remaining period of the study (i.e. through 2007). During Term 2, instructors in core and foundation courses were, for the first time, required to use a cooperatively developed curriculum consisting of common learning objectives, materials, and learning assessments. Project-based learning, PBL, simulations, video cases, and text cases were variously integrated into these courses. Despite their involvement in course design, there was considerable resistance to this change from many faculty members. They were particularly sensitive to measures that would require more interdependence.

In addition to this curriculum change, during Term 2, a new "PBL track" was introduced in the GSB as an alternative to thesis and independent study in the Capstone portion of the MM program (Hallinger and Bridges, 2007; O'Neill and Hung, 2010). These modules were organized around important business problems drawn from the local business environment (see Hallinger and Bridges, 2007; Hallinger and Lu, 2012). In these PBL courses, students addressed business problems in cooperative teams and were required to express their solutions to the PBL scenarios through products (e.g. reorganization plan, web site, analytical presentation, simulation solution). By the end of the first year of implementation of the PBL track, more than 90 percent of the students were selecting this option (Hallinger and Lu, 2011).

Instructors taught in the PBL track on a voluntary basis. Implementation of the PBL track required new skills among the faculty in curriculum design, instructional delivery, and student assessment. While initial implementation ran into typical obstacles, over time, instructors honed new skills, and shared them with colleagues outside of the PBL track. Virtually all of the instructors in the PBL track were also teaching in core or foundation courses. Since these other courses required a high level of collaboration in course design and assessment, the skill sets of the instructors teaching in the PBL track gradually migrated across the GSB.

The mandate of a common curriculum in core and foundation courses and launch of the PBL track provided significant impetus for change in teaching and learning at the GSB. In concert with implementation of the common course content in a substantial portion of the curriculum, a video library was established on a central server that could be accessed by faculty from anywhere in the college. This contained over 1,000 video clips of management situations as well as short video cases. Faculty members were trained in how to integrate this content into their teaching, using the core courses as exemplars.

Despite these rather strict requirements in these parts of the curriculum, the GSB management did not favor any specific method of instruction. The goal was simply for faculty members to use methods that would foster student engagement and action-directed learning. Faculty capacity to use active learning methods was addressed through annual professional development, training, and mentoring. For example, in Terms 2, 3, and 4 intensive training was offered in PBL, use of video content in teaching, and cooperative learning techniques. This training was repeated periodically to ensure broad coverage among the faculty. In Term 6, training was also offered in lesson design for learner-centered, teacher-directed instruction (Hunter and Russell, 2006) as well as performance-based assessment (Costa and Kallick, 2004; Johnson and Johnson, 2004).

Change in instructors' approaches to teaching and learning requires time to take hold. Even when quality training is provided and instructors receive support for implementation, it can take a period of several years to master a new teaching method (Joyce and Showers, 2002). Thus, the longitudinal approach taken in this study was well suited to exploring the impact of a broad set of instructional innovations implemented over a substantial period of time.

Results

In this section, we examine the extent to which the introduction of new methods of teaching and learning contributed to greater student engagement at the GSB. We begin by presenting descriptive statistics that describe student engagement in learning over the seven-year period of the study (see Table II and Figure 1). In the baseline term

Dimensions	α	<i>M</i> (SD)								
		2000 ^a	2001 ^b	2002	2003	2004	2005	2006	2007 ^c	Total
Student engagement	0.95	3.58 (0.54)	3.68 (0.40)	3.86 (0.36)	3.98 (0.38)	4.05 (0.42)	4.06 (0.39)	4.07 (0.37)	4.10 (0.37)	3.94 (0.43)

Table II.
Descriptive statistics for
change in student
engagement (2001-2007)

Notes: *M*, mean; SD, standard deviation. ^aThe statistics in the columns 2000 integrated the data of one trimester in 2000. ^bThe statistics in the columns 2001-2006 integrated the data of three trimesters each year. ^cThe statistics in the column of 2007 integrated data of two trimesters in 2007

(i.e. January Term 2000-2001), the mean rating of student engagement in the college was 3.58 with a SD of 0.54. In total, 68 percent of the instructors obtained a mean rating of student engagement between 3.04 and 4.12. This suggests a high degree of variance in the capacity of instructors to engage students across courses in the GSB.

This statistical result was not, however, altogether surprising given the findings in the Quality Audit Report which had noted a heavy reliance on lectures, passive participation among students, and low faculty inter-dependence (GSB, 2000). The academic policies of the GSB had left definition of the “taught curriculum” and instructional decision making to the discretion of individual instructors. In the Thai higher education context, most instructors chose to employ the method with which they were most comfortable, lectures.

As described in the prior section, continuous implementation of new teaching approaches in the GSB began in Term 2 of the study. Figure 1 indicates that the mean for student engagement rose from a baseline of 3.58 reaching a level of 4.01 in Term 9 and remained at or above this level for the remaining 11 terms of the study. Indeed, the mean level of student engagement in the final term of the study was 4.10 with a SD of only 0.37. This represents a very substantial gain over time. Indeed, the mean level of student engagement in 2007 was almost a full standard deviation above the baseline mean. This indicates that in the final term of the study, 68 percent of the instructor’s had obtained mean student engagement ratings falling between 3.73 and 4.47. This combination of substantially higher levels of student engagement and reduced variance across courses together suggest a high magnitude of change instructional capacity over time. It indicates that not only were students, on average, more engaged in their learning, but that there were far fewer instances of classes evidencing low levels of engagement. From the perspective of academic course management, this represents an optimal scenario.

A closer examination of Figure 1 reveals, however, that this change did not take place all at once. Rather the growth trend was gradual, with a predictable “implementation dip” in the fifth term (Fullan, 2002). Then growth continued again before stabilizing at a higher level. This growth pattern was consistent with implementation in a field setting where multiple “interventions” were not introduced at the same time (see Hallinger and Lu, 2011). For example, additional PBL courses were introduced gradually over the years and more instructors became involved in this portion of the curriculum. However, at no time were more than 35 percent of the GSB’s 65 instructors were employing PBL in even one of their classes. Similarly, although computer simulations were gradually introduced into several courses, at no time were

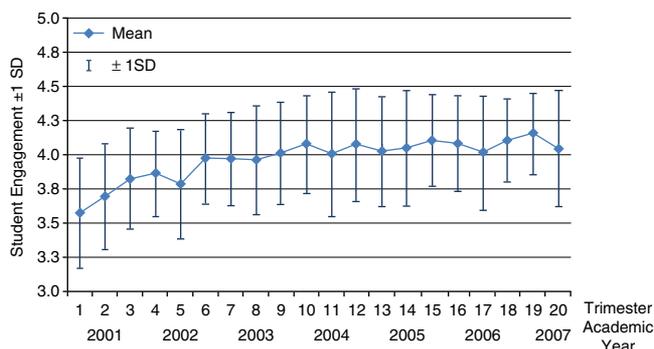


Figure 1.
Mean and standard
deviation for student
engagement (2001-2007)

more than 15 instructors using simulations in classes (Lu *et al.*, in press). Faculty turnover and voluntary uptake of different teaching methods in different parts of the curriculum meant that instructors were in a continuous state of skill development. Indeed, in this setting a reasonable level of “fidelity” of implementation was only achieved after a period of several years.

We also note that during the first year of implementation, term-on-term instructor turnover was very high (i.e. over 25 percent per term). However, it leveled off at below 10 percent by the start of the third year of implementation. For a teaching faculty of 65-75 instructors in which many were employed on a part-time basis, this level of turnover was rather low. This factor also became significant in that low turnover enabled the GCB to capitalize on its investment in training and curriculum redesign. The reader will recall that a substantial portion of course sections taught in the college (i.e. ~65 percent) were redesigned around common objectives and assessments. Stable teaching teams were essential to the success of this strategy. Undoubtedly, successful course redesign both contributed to higher levels of engagement and lower variance across courses and instructors.

These descriptive analyses portray trends of improvement in student engagement in the GSB. Yet, interpreting the extent of change also requires inferential analysis. As noted by Campbell and Stanley (1966), *t*-tests can give a distorted assessment of change in a time series design. Therefore, we exploited the longitudinal data set by examining the statistical significance of this growth trend using mixed effects models. This was done by fitting higher order polynomials to the measure of student engagement over time. Three terms were included in the models, presenting linear, quadratic (U-shaped), and cubic (S-shaped) relationships between time and student engagement, respectively. Instructors taught for varying lengths of time in the college and taught a varying number of courses each trimester. The repeated measure was a product of time and course sections taught by individual instructors each trimester. The 21 trimesters were coded from 1 to 20, and individual instructors were included in each mixed effects model as a random factor.

The results of the estimates of intercepts and three shape terms for student engagement are presented in Table III. The growth trends for linear, quadratic, and cubic terms were all statistically significant ($p < 0.001$). Significant results with the quadratic and cubic terms would suggest that the rate of growth or decline had changed or fluctuated in a substantial fashion over time. However, a closer examination of estimates reveals that the magnitude of estimates with the quadratic and cubic terms was trivial (≤ 0.02). Therefore, the significant findings for the quadratic and cubic growth trends could have resulted from the large sample size.

Shape trends	Estimate	Student engagement	
		SE	Significance
Intercept	3.30	0.03	***
Time (linear)	0.20	0.01	***
Time (quadratic)	-0.02	0.00	***
Time (cubic)	0.00	0.00	***

Notes: SE, standard error. *** $p < 0.001$

Table III.
Results of testing the
shape of trend for student
engagement

In contrast, the results for the linear term suggest both statistical significance and substantial magnitude of growth in student engagement over the seven-year period. This reinforces trends derived from the earlier descriptive analyses and *t*-test. We, therefore, conclude that the growth trend was linear confirming that growth in student engagement was indeed steady, substantial and statistically significant over time.

Discussion

This study sought to examine the extent to which adoption of learner-centered methods of teaching and learning was associated with positive change in levels of student engagement at a business school in Thailand. The case study addressed this goal through a quasi-experimental research design that drew upon a substantial longitudinal dataset comprised of student course evaluations. The results support assertions that learner-centered education can positively impact student engagement. More specifically, data drawn from 33,000 student evaluations suggested that as faculty at the GSB implemented learner-centered methods, students perceived themselves as more strongly and consistently engaged in their learning. In this section of the paper, we will discuss limitations of these research findings, place them in context, and offer recommendations for research and practice.

Limitations of the study

In discussing the methodology of this research, we identified several limitations that bear upon the interpretation of our findings. First, student course evaluations represent a high inference tool for assessing student engagement. Lower inference measures such as classroom observations (Good and Brophy, 2003) could offer potentially stronger evidence than student surveys. Even so, highly respected scholars who have studied this issue extensively conclude that student ratings offer one valid and important perspective on the classroom experiences of students (Aleamoni, 1999; Marsh and Roche, 1997; Scriven, 1988). Moreover, we draw attention to the large size of the dataset and consistency in implementation of measurement procedures employed in this study as additional counterpoints to this limitation.

A second limitation lies in the broad specification and lack of a measure of fidelity of the intervention (i.e. learner-centered education) in this study. When compared with a carefully controlled, time-limited, experimental study of the effect of a specific teaching method (e.g. PBL, mastery teaching, etc.), this study of “learner-centered education” appears to lack precision. However, this tradeoff is often found in naturally occurring field studies of institutional change. We suggest that this limitation is offset, to some degree, by the substantial sample size (i.e. 33,000 + surveys), extended period of the study (seven years), and large number of data points (20 trimesters). Nonetheless, the results of this attempt to assess the impact of learner-centered education on student engagement should be interpreted cautiously. The findings represent a positive indicator of the possibilities of implementing learner-centered practices in a context such as Thailand where commentary suggests both hope and skepticism.

A related limitation concerns the possibility that other plausible “events” which took place during the time series could have contributed to the change in levels of student engagement. Thus, for example, the GSB implemented new human resource policies during this seven-year period. These included new standards and practices for faculty recruitment, selection, evaluation, and professional development. This reshaped the composition of the faculty and the culture of the organization (Hallinger and Lu, 2011). Although we acknowledge the importance of these concurrent changes,

we prefer to view them as complementary factors that supported the implementation of learner-centered education at the GSB.

These limitations reprise the fact that despite the study's reliance on quantitative analysis, it was fundamentally a case study of organizational change in a single institution. The findings are, therefore, subject to the strengths and weaknesses of case study research (e.g. Yin, 2008). With this in mind, the statistical significance of the findings should not be interpreted as definitive proof either of the extent of change in teaching and learning methods or their impact on student engagement.

Interpretation of the findings

This paper opened with assertions that East Asian students could respond productively to active learning methods (e.g. Biggs, 1994; Kember, 2000; Watkins, 2000). Our findings support this assertion. Data presented in the report indicate that this entailed a major change in the attitudes and behaviors of instructors and students. Moreover, the data suggest evidence of an institutional change that emerged from the new vision and strategy initiated in the GSB in 2001. We wish to reflect further on a specific feature of this change.

In the highly competitive business education market of Bangkok, quality of teaching and learning had never featured as an important feature differentiating graduate programs. More typically, business school programs in this market emphasized the university's reputation, track record of the program, placement of graduates, and qualifications of faculty members in order to convey the program's strengths to prospective students and other stakeholders. Anecdotal examples illustrate these differences. For example, whereas the GSB emphasized small classes and quality of teaching, the marketing displays of its competitors highlighted lecture held in large auditoriums.

An incident that further highlights this contrast occurred in 2006 when the Thai language Master degree programs offered by the GSB were placed, for the first time, under the management of the Academic Director of the "International Programs" (i.e. the programs analyzed in this paper). When the Academic Director received student course evaluations after the first term following this change, the comparatively lower course evaluations obtained by instructors in the Thai language Master degree programs stood out. When the former Academic Director of the Thai language programs was consulted about this, he responded:

Well if you want higher course evaluations, I advise you change some of the instructors. They never score particularly well on the evaluation, but frankly that was never our objective. What we guaranteed to prospective students was that all of their instructors had graduated from a top ten international university and that our part-time faculty worked at famous Thai or international companies (Personal Communication, October 2006).

This suggests that the GSB's strategy entailed some risk. It was predicated on two assumptions. First, the strategy assumed that the GSB could develop the capacity to deliver a type of quality teaching and learning that was seldom seen in the graduate education environment in Bangkok. The results of this study suggest that the GSB succeeded in this respect. The strategy further assumed the Asian students whom it was seeking to attract would care enough about the quality of teaching and learning to take a chance on this new management program and to put in the extra work required during their studies. We note that data collected by the GSB on student applications (not tabled) found that both the quality and number of student applications increased

steadily and substantially over time, concurrent with changes in teaching and learning (see also Hallinger and Lu, 2011). These observations contextualize our findings and offer further insights into the challenges entailed in seeking to implement learner-centered education in this particular environment.

With this in mind, we wish to highlight several features of learner-centered education that stand out as contributing to the capacity of the GSB's instructors to increase student engagement. First, active learning methods tended to emphasize team-based, cooperative learning (Johnson *et al.*, 2000). Whether using project-based learning, PBL, computer simulations, or cases instructors increasingly adopted team learning approaches through which students would learn with and from each other. This capitalized upon the collectivist cultural background of the East Asian students (Kember, 2000; Walker *et al.*, 1996). In the context of a management degree program, this approach was especially suitable given the fact that managers must obtain results through other people (Bridges, 1977). Notably, however, the faculty did not assume that students from collectivist cultures necessarily come to school capable of learning in teams. Instead, faculty redesigned the curriculum in order to prepare students to work and learn effectively through a problem-oriented, team-based approach (see Hallinger and Bridges, 2007 for detail).

Second, during the period of the study, the GSB completely revamped its approach to student assessment. Prior to 2001, student assessment was conducted primarily for the purpose of obtaining a summative grade for students. Feedback to students was characterized as cursory and infrequent (GSB, 2000). There was also no accountability among faculty for the grades they conferred on students (Hallinger and Lu, 2011).

In 2002, the assessment philosophy changed as a matter of policy. The new policies emphasized "assessment for learning." Faculty members were trained in the use of analytical rubrics (Johnson and Johnson, 2004) and encouraged to provide substantive feedback to students for both individual and group work. Moreover, in courses employing a "common curriculum" (e.g. core and foundation courses), instructors were expected to use common assessments and cross-check the application of rubrics in order to ensure a common standard across class sections.

Third, early classroom observations suggested that instructors were mistaking the goal of "active learning" with student activity. With this in mind, the GSB faculty emphasized the importance of setting clear learning goals. In many cases the curriculum also required tangible learning outcomes in the form of "products" that demonstrated students' solutions to problems (see Hallinger and Bridges, 2007).

In sum, this case study offers promise to scholars who have advocated the use of learner-centered methods of education either globally (Edgerton, 2001; Johnson *et al.*, 2000; Smith *et al.*, 2005), or in institutions of higher education located in Asia (e.g. Biggs and Tang, 2007; Hallinger and Bridges, 2007; Kember, 2000). Findings from case studies are, however, limited in terms of generalizability. Indeed, the context of the GSB was admittedly unique even among higher education institutions in Thailand. Nonetheless, the findings, at a minimum, appear to support the belief that the instructors and students in this particular Thai college were able to adapt to and benefit from the change to learner-centered education.

Recommendations for research and practice

In closing, we wish to offer several recommendations based on this study. First, despite its limitations, the study suggests that the goal of implementing learner-centered

approaches to teaching and learning worth striving to achieve, even in East Asia (see also Hallinger and Bridges, 2007; Hallinger and Lu, 2011; Walker *et al.*, 1996). Initial skepticism among Asian (e.g. Thai, Chinese, Japanese, Korean) instructors gradually eroded in the face of student enthusiasm and success. Over time, students became the engine for sustaining the change and giving encouragement to the instructors. Notably, several years into the period of this study, the composition of the GSB faculty was 65 percent Asian and 35 percent “western.” This suggests that successful use of the new approaches to teaching, learning, and assessment was not the province of any particular cultural group.

Second, we note that the learner-centered approaches employed by the GSB faculty did not necessarily appeal to all instructors and students. Although the GSB’s requirement did not mandate a specific instructional approach, only active learning, some instructors simply did not see the change as “worth their effort.” Over time, those instructors left the college. Similarly, we found an “interaction effect” between instructors and students during the period of adoption. For example, after merger of the International and Thai language Master degree programs took place in 2006, instructors in the Thai language program reported student dissatisfaction with the tables and chairs in their rooms being organized in workshop style (i.e. the default configuration in the International program) rather than classroom style (i.e. the traditional configuration in their own program). Apparently some students were complaining of having “stiff necks” from facing the front of the room for long periods while seated at awkward angles. This unobtrusive indicator suggested that the instructors in the Thai language programs were continuing to rely on teacher-centered lectures. It also highlighted the fact that the GSB’s academic managers had not paid sufficient attention to preparing these faculty and students for the change. Thus, following Kotter (1996), we affirm that when implementing change it is important not to declare victory too soon, or assuming the perspectives of all students and instructors would be similar.

This observation leads directly to the next implication which concerns the relationship between change in teacher practice and the human resource policies of the GSB (see Hallinger and Lu, 2011). Here we wish to stress the degree to which the changes towards learner-centered education were approached as a “systemic change” rather than as a discrete change implementation (Fullan, 2002). Changes in faculty evaluation procedures and tools, as well as reward structures were explicitly linked to the goal of fostering learner-centered education. Indeed, it should also be noted that during the early years of this change, teaching, and learning results were given explicitly higher weighting over research in the performance evaluations of full-time faculty members. The ability to create and maintain a common focus on a unitary goal is not, however, necessarily possible (or desirable) to achieve in all higher education institutions. Thus, this stands as an additional contextual limitation of this research.

Finally, we close with an observation concerning the utility of the utility of the longitudinal analysis employed in this study for both institutional decision-making and academic research. The database used in this study evolved out of the GSB management’s desire to inform academic decision making with data from students. The data presented in this study were, therefore, used first and foremost for practical purposes. It was only after a period of several years that the utility of the data for research became apparent. Thus our final recommendation centers on functionality of collecting and analyzing institutional data in order to gain

a medium-term to long-term perspective on organizational change for the dual purposes of research and practice. Higher education
in East Asia

Note

1. The author was initially a consultant hired to conduct the quality audit. Subsequently, she/he assumed the roles of executive director and chief academic officer of the GSB during the seven-year period of this study.

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