The relation among self-efficacy, learning approaches, and academic performance: an exploratory study

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Patrick C. Lee and Zhenxing Mao

The Collins College of Hospitality Management, California State Polytechnic University, Pomona, CA, USA

ABSTRACT
Self-efficacy influences students’ activities, effort and persistence, and it can help predict their motivation and academic performance. This study attempts to investigate the relationship between self-efficacy, preferred learning methods, and academic performance under different learning methods in a unique hospitality course setting. The results indicate that hospitality management students prefer a “learn by doing” approach instead of computer-based learning and lecturing. This study concludes that self-efficacy affects the academic performance in both lecturing and practical learning in hospitality education. However, students’ preference in terms of learning methods does not influence their academic performance. Emphasizing “learn by doing” in the hospitality higher education curriculum is recommended in addition to recruiting faculty members with extensive industry experience. Conversely, it is recommended that faculty find the means to increase students’ self-efficacy when adopting different teaching approaches.

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KEYWORDS
Self-efficacy; academic performance; hospitality education; learning approaches

Introduction
Self-efficacy is defined as an individual’s belief in his or her ability to complete a task in a specific situation, which affects the choice of activities, effort, and persistence of that individual (Bandura, 1977). Schunk (1995) stated that self-efficacy can help predict motivation and performance. People prefer to avoid certain tasks if they have low self-efficacy and readily participate in such tasks if they believe they are capable (even though high self-efficacy may not guarantee competent performances if the required skills are lacking). Self-efficacy may be a factor that influences persistence. People who feel successful have been found to work harder and persist longer when faced with difficulty (Bandura, 1989). Outcome expectations are significant as people are motivated to act if they believe there are positive outcomes. The perceived value of outcomes refers to the extent to which individuals desire a certain outcome compared with other alternatives. Given adequate skills, positive outcome expectations, and personally valued outcomes, self-efficacy is perceived to influence the choice and direction of human behavior (Bandura, 1989).
The theory of self-efficacy is central to social cognitive theory. When an individual observes others performing a task or behavior, as well as its consequence, he or she adopts this experience as a reference, using it as a guide for subsequent behavior (Bandura, 1986). In short, social cognitive theory emphasizes the role of observational learning with self-efficacy developing from external experiences (Bandura, 1989). According to social cognitive theory (Bandura, 1986), self-efficacy influences goal choices, the amount of effort spent in achieving a goal, and the level of persistence when encountering difficulties. Bandura (1991) confirmed a link between social cognitive theory and motivations as well as personal attainments.

Alexander, Lynch, and Murray (2009) viewed hospitality education as a traditional model of teaching. Described as kinesthetic learners, most hospitality management majors enjoy learning by doing (Yan & Cheung, 2012). Hsu and Wolfe (2003) found that hospitality management students favor an active experimentation style of learning. These students prefer active, sensorial, visual, and sequential learning styles compared with reflective, intuitive, verbal, and global learning styles (Lee & Kamp, 2005). Because millennial college students use technology at higher rates than other generations (Berk, 2009; Junco & Mastrodicasa, 2007), computer-based learning (CBL) via the Internet is the current trend in hospitality education. Hospitality educators prepare future hospitality professionals by effectively and efficiently utilizing CBL in education (Chan & Choi, 2012). Lecturing represents the most common teaching approach in colleges/universities even though many researchers claim the method is ineffective (Lammers & Murphy, 2002).

In an academic setting, students’ beliefs in their self-efficacy with regard to learning are found to affect their perceived self-efficacy for academic achievement, which in turn influences the academic goals they set for themselves and their final academic achievement (Zimmerman, Bandura, & Martinez-Pons, 1992). Students with higher self-efficacy have higher motivation to study and consequently achieve higher academic results according to social cognitive theory (Bandura, 1994; Pajaes, 1996). Students may have different levels of self-efficacy and may perform differently according to various teaching methods. For instance, generation Y students perceive CBL as the most preferable learning method in an Asian academic setting (Chan & Choi, 2012). In contrast, hospitality management students may prefer to interact with professors in the classroom and laboratory to receive hands-on experience (Stevens, Kitterlin, & Tanner, 2012).

Various studies have been conducted which examine self-efficacy in different disciplines such as education and educational psychology. Becker and Gable (2009) examined the relationship of self-efficacy with grade point average (GPA), attendance, and retention rate. Lent, Brown, and Hackett (1994) investigated self-efficacy and career development. Academic motivation was reviewed in relation to self-efficacy (Pajaes, 1996) while academic motivation and academic performance were used to examine self-efficacy (Schunk, 1991, 1995). Puzziferro (2008) investigated academic performance and the effect of course satisfaction on self-efficacy. Bassi, Steca, Fave, and Caprara (2007) evaluated self-efficacy and the quality of learning experience while Chemers, Hu, and Garcia (2001), as well as Putwain, Sander, and Larkin (2013) looked at self-efficacy, academic performance, and students’ emotions such as feelings of stress and sense of well-being.

In hospitality education research, self-efficacy has been examined in relation to computer-based learning (Chan & Choi, 2012) and self-directed learning (Lema &
Agrusa, 2007), internship job satisfaction (Song & Chathoth, 2010), career choices (Chuang, Goh, Stout, & Dellmann-Jenkin, 2007; Song & Chon, 2012), and academic performance (Lane, Devonport, & Horrell, 2004; Lane, Devonport, Milton, & Williams, 2003). Hospitality research on self-efficacy focuses mainly on human resources issues in the hospitality industry such as career commitment (Niu, 2010), effect on feedback (Reynolds, 2006), recruitment and selection (Karatepe & Karadas, 2015), job satisfaction (Back, Lee, & Abbott, 2011; Jung & Yoon, 2015), motivation (Karatepe, 2015), innovation (Luoh, Tsaur, & Tang, 2014), creativity (Jaiswal & Dhar, 2015), and training (Kim, Erdem, Byun, & Jeong, 2011).

However, very few studies have examined self-efficacy with learning methods and academic performance in hospitality education. The objective of this study is to examine the relationship between self-efficacy, preferred learning approaches, and academic performance using different teaching methods (i.e., computer based, hands-on/practical, and lecturing methods). This study is unique in that self-efficacy is examined in relation to students’ preferred learning approaches and their academic performance. In addition, this research includes a quasi-experimental setting in which three different teaching methods are used in the same course with the same instructor. Notably, the approach minimizes the effects of the heterogeneity of individual respondents. This study provides a theoretical contribution on the importance of students’ self-efficacy in academic performance in hospitality education. The practical contribution of this study relates to course and curriculum design and the influence of students’ self-efficacy by the instructors.

Literature review

Social cognitive theory maintains that certain elements of an individual’s knowledge acquisition derive from observing the behavior of others. Self-efficacy, meanwhile, an important aspect of social cognitive theory, is developed from external influences, self-perception and understanding the potential outcome of repeated behavior (Bandura, 1977, 1988). Pajares (1996) asserted that social cognitive theory can be used as a framework for instructors to improve student motivation, emotional well-being, and academic skills and performance.

Social cognitive theory

Social cognitive theory is a learning theory based on the idea that people learn by referencing others. People learn by observing others, with the environment, behavior, and cognition as the key factors in influencing development in a reciprocal triadic relation. Social cognitive theory affirms an important relation among self-efficacy, outcome expectations, and goals (Bandura, 1986). Bandura (1997) explained that environment affects the behaviors of the students and, in turn, the students’ behavior affects their environment. The past behavior influences actions in the future. The researcher further explained that, when an individual observes a model performing a behavior with the consequence, the individual remembers the sequence of events and uses this information to guide his/her subsequent behavior (Bandura, 1997). In other words, individuals may choose to copy the behavior of the model if the outcome of the behavior is rewarded.
People often strive to achieve positive outcomes when outcome expectations and self-efficacy are related. However, self-efficacy and outcome expectations are occasionally confused in the literature. Bandura (1986) argued that the roles of self-efficacy and outcome expectations are often differentially powerful, with self-efficacy acting as a more influential determinant of behavior. Lent et al. (1994) explained that self-efficacy beliefs concern an individual’s capabilities, i.e., “Can I do this?”, whereas outcome expectations involve the imagined consequences of performing particular behaviors, i.e., “If I do this, what will happen?” Bandura (1989) stated that whether self-efficacy and outcome expectations uniquely affect behavior depends on the nature of a particular activity. If the performance guarantees specific outcomes, self-efficacy is perceived to be the predominant causal factor and a partial determinant of outcome expectations. However, if outcomes are only loosely connected to the quality of performance, outcome expectations may make an independent contribution to motivation and behavior.

Goal setting by students plays an important role in influencing their academic achievement. The higher the self-efficacy a student has, the higher the goals he/she will set (Bandura, 1986; Locke & Latham, 1990). Self-efficacy influences not only students’ academic goal setting but also their goal achievements; in addition, the combination of self-efficacy and goals contributes to subsequent academic attainments (Zimmerman et al., 1992). Schunk (1984, 1989) and Lent, Brown, and Larkin (1984) indicated that students with high academic self-efficacy display greater persistence, effort and interest in their academic learning and performance. Teachers play an important role in increasing students’ self-efficacy by providing feedback on their progress (Bandura & Cervone, 1983; Schunk, 1986). However, this increase in efficacy can be temporary if the individual’s efforts have a negative outcome (Schunk, 1995).

Self-efficacy

Self-efficacy is defined as an individual’s belief in his or her ability to complete a task (Gist & Mitchell, 1992; Schunk, 1995). Wood and Bandura (1989) connected self-efficacy with motivation to meet situational demands. Self-efficacy can influence choices concerning activities, effort, and achievement. Individuals join activities with different self-efficacy levels obtained from their prior experience, personal qualities, and social networks. As they complete their tasks, they know how well they are doing, which can influence their self-efficacy for continued learning (Schunk, 1995). Self-efficacy is viewed as a tool to anticipate outcomes and performance (Bandura, 1997). Schunk (1995) demonstrated that high self-efficacy does not generate effective performance if the individual lacks knowledge and skills. Furthermore, self-efficacy is correlated with other self-beliefs, motivation, academic choices, changes, and achievement, although the sizes and relations between these effects depend on how the individual’s self-efficacy and the tasks are operationalized and assessed (Pajaes, 1996). Zimmerman et al. (1992) confirmed that perceived self-efficacy impacts performance directly and indirectly by influencing the self-set goals, the level of goals set, the amount of effort individuals have exerted, and the individual’s persistence when difficulties are encountered (Bandura & Wood, 1989; Wood & Bandura, 1989).

Self-efficacy affects performance when the perceptions of self-efficacy act as a behavioral predictor. Individuals who are labeled as self-diagnostic fear and avoid situations if
their coping skills are exceeded. These individuals have low aspirations and weak commitments to the goals pursued (Bandura, 1993). In contrast, people with high self-efficacy attempt to tackle difficult tasks rather than avoid them. Labeled as task-diagnostic, these individuals set challenging goals, maintain a strong commitment to these goals, and overcome barriers. They believe that the level of difficulty is not the primary reason that they cannot achieve the goals; instead, they believe that insufficient effort or lack of knowledge is the key (Bandura, 1993).

Self-efficacy has been shown to be positively and strongly related to persistence in effort (Bandura, 1977). The stronger the belief an individual possesses, the greater and more persistent are his/her efforts (Bandura, 1989). Before individuals make decisions and act upon their choices, they tend to evaluate and integrate information regarding their own capabilities. With stronger perceived self-efficacy, higher goals can be reached, resulting in a firmer commitment (Bandura, 1992). Individuals who perceive themselves to be highly effective provide sufficient effort that, if well executed, can produce successful outcomes. Those who perceive themselves to be less capable initially tend to halt their efforts and ultimately fail in the task, losing faith in their capabilities (Stajkovic & Luthans, 1998). On the other hand, Scouller (1998) suggested that students’ preferences regarding different learning methods were associated with different extent of the academic performance.

In an academic setting, perceived self-efficacy motivates academic achievement directly and indirectly by influencing individual goals. In other words, self-efficacy and goals contribute to academic attainments (Zimmerman, 1989). Self-efficacy, which has been adopted to predict academic performance (Hackett & Lent, 1992; Multon, Brown, & Lent, 1991), is a powerful motivational construct to anticipate academic self-beliefs and performance at different academic levels (Pajaes, 1996). It is also a useful tool for assessing academic motivation (Schunk, 1991) and career choices (Brown, Lent, & Larkin, 1989; Lent, Brown, & Larkin, 1986).

Self-efficacy is shown to be a predictor of academic motivation and performance. Song and Chathoth (2010) examined the self-efficacy of students (internship newcomers) in a hospitality educational setting with regard to entry-level motivation to work in the industry and subsequent general job satisfaction. They recommended that managers test newcomers’ general self-efficacy levels before socializing them. Self-efficacy was found to be strongly related to career decision while individual career choice goals were influenced by general self-efficacy, vocational interests, and person–job fit perception (Song & Chon, 2012). Chuang et al. (2007) examined whether career-decision self-efficacy (CDSE) was a strong predictor of career retention. Chuang (2010) found that the higher the level of CDSE the more likely students were to prefer not to embark on a career in the hospitality industry due to perceived barriers or negative outcomes. Apart from the taught modules, self-efficacy was found to be predictive of the academic performance of research methodology skills (Lane et al., 2004) as well as dissertation quality (Lane et al., 2003). Lane, Lane, and Cockerton (2003) also argued that there is a link between undergraduate performance and success at the postgraduate level.

Putwain et al. (2013) reported that academic self-efficacy can predict the academic performance of psychology students while self-efficacy can predict learning-related emotions via academic performance. Self-efficacy may have an indirect effect on
academic achievement and goals. Fenollar, Román, and Cuestas (2007) found that self-efficacy has a strong but indirect effect on the academic performance of business major students while academic performance may be diminished by bigger class size. A study across 49 disciplines by Trigwell, Ashwin, and Milan (2013) revealed a relationship between self-efficacy, academic motivation, academic achievement, and surface learning. However, self-efficacy was not proven to be correlated with student academic performance in all disciplines. Puzziferro (2008) concluded that time and study environment are significantly related to academic performance but not self-efficacy to online technologies. Apart from the students themselves instructors have been found to play an important role in developing students’ self-efficacy. Studies have also shown that increasing self-efficacy results in better student academic performance. Hence, instructors play an indirect role in influencing students’ GPA, attendance, and retention (Becker & Gable, 2009).

Educational programs based on social cognitive theory have proven to be effective in increasing students’ self-efficacy (van Dinther, Dochy, & Segers, 2011). Enactive mastery, vicarious experiences, and verbal persuasion have been suggested by instructors to enhance students’ self-efficacy and strengthen their academic abilities (Margolis & McCabe, 2006). Instructors may implement different instructional strategies to improve students’ self-efficacy (Siegle & McCoach, 2007) such as outlining lesson objectives, underscoring accomplishments, offering feedback and encouragement, and providing student models. The literature suggests that increased interaction in class by instructors increases the potential for students’ achievements. It is also suggested that instructor self-efficacy may influence students’ self-efficacy and academic achievements (Ross, 1992).

Learning approaches

Lecturing, which is a fact of academic life, is the commonly adopted teaching method in colleges and universities (Lammers & Murphy, 2002; McKeachie, 1994); because of its practicality, it will remain so. Dorman (2001) stated that the classroom learning environment is strongly associated with academic self-efficacy. Such a strong influence of involvement on self-efficacy suggested that instructors who provide opportunities for students to participate in peer and class discussions are likely to elevate their students’ confidence levels (Velayutham & Aldridge, 2013). Highly active students who utilize their analytical and metacognitive skills to manage this type of learning environment can achieve better learning outcomes (Chemers et al., 2001; Knight & Wood, 2005). Considerable evidence has reported that lecturing is an ineffective pedagogical tool for promoting conceptual understanding (Alexander, McDaniel, Baldwin, & Money, 2002; Knight & Wood, 2005). However, lecturing can be more conducive and effective to learning if the fundamental properties of humans as learners are identified (deWinstanley & Bjork, 2002).

Computer-based learning (CBL) has developed methods to track different levels of learning progress (Oh, 2003). CBL encourages learners to raise questions and share different ideas in online discussion forums (Dongsong & Lina, 2003). The check-in and check-out practice in Second Life (Davis, 1989) and hotel guestroom design in a virtual environment (Chan & Choi, 2012) represent examples of CBL in hospitality education.
Compeau and Higgins (1995) defined computer self-efficacy as “an individual judgment of one’s capability to use a computer,” which is important to individuals because their attitudes towards computers influence both the frequency of usage and their intensity when utilizing computer programs. Increased performance in computer learning is related to higher self-efficacy (Harrison, Kelly, & Hochwarter, 1997). Chan and Choi (2012) indicated that the design of CBL programs can enhance the perception of students towards computer self-efficacy. Chu (2010) noted that learners with higher Internet self-efficacy can gain more knowledge and perform better using CBL.

Tribe (2002) stated that the goal of hospitality education is to prepare students to fill the industry’s entry-level positions, whereas Ford and LeBruto (1995) emphasized the importance of hospitality graduates who are able to “roll up their sleeves” within a curriculum based on practical learning. Ladkin (2000) referred to practical learning in hospitality education and identified the traditional focus of hospitality programs as focusing on the development of “technical operational skills and competencies.” Students who engage with actual management decision-making, actual guests and appropriate levels of pressure can be more adequately prepared for the industry and can more effectively reflect on working in operational areas (Alexander et al., 2009). Tims, Bakker, and Derks (2014) found positive associations between self-efficacy and proactive job-crafting behaviors. The researchers stated that efficacious employees were more likely to proactively search for opportunities to learn new things. Another study showed that trainees who entered their job with a predisposition for challenging situations and hard work were more likely to exhibit increased self-efficacy during training. Based on this finding, trainers should implement more techniques that increase the trainee’s self-efficacy and skill acquisition during the beginning of the training period (Colquitt, LePine, & Noe, 2000).

Following the review of the literature and the purpose of the study, the following hypotheses are made:

H1. Academic performance is associated with the preferences of learning methods when learning self-efficacy is controlled.

H2. Academic performance is affected by learning self-efficacy and the preferences of learning methods when other variables such as gender and transfer status are controlled.

**Methodology**

All students who were in the undergraduate program in hospitality management were the target population of this study. Since the topic concerns preferred learning approaches, the target respondents had to undergo three teaching approaches (i.e., computer-based learning, practical learning and lecturing) in one subject with the same instructor in one quarter or semester in order to be constant in the learning environments and external factors.

A survey questionnaire and grade book were used to collect data from the study sample, which consisted of senior hospitality management students at a university on the west coast of the United States. The survey was completed by three separate groups...
of students who took the lodging management seminar course in three academic quarters from Fall 2014 to Spring 2015. This lodging management seminar was a four-unit course that consisted of two lectures and one laboratory every week in a 10-week quarter. This seminar was a compulsory course for hospitality management students who selected the hotel track. Three different teaching approaches (i.e., lectures in a seminar room, computer-based learning of a property management system, and hands-on practice in a lodging property) were included in this course. The total sample size was 90 students (29 students in Fall 2014, 32 students in Winter 2015 and 29 students in Spring 2015). The reason for selecting this lodging management seminar course was because students experienced three learning methods in a 10-week quarter. A new group of students took the course each quarter with the exact same teaching instructions, methods, materials and instructor. In other words, the learning environments remained constant.

The questionnaire had two sections, which were developed and adopted from Schwarzer (1992, 1993) (Appendix A). In Part A, there were 10 questions regarding self-efficacy in learning (SEL). A four-point Likert scale, which was adopted by Schwarzer (1992, 1993), was used for each question (1 = not at all true, 2 = hardly true, 3 = moderately true, and 4 = exactly true); therefore, the scores ranged from 10 to 40. Questions regarding SEL by Schwarzer (1992, 1993) were used by Becker and Gable (2009). Part B asked students about their preference for each learning approach, i.e., computer-based learning, hands-on practical learning and face-to-face lecturing. They were asked to rank three learning approaches in order of preference. In addition, certain student information, such as gender and transfer status, were on the questionnaire. The grade book recorded the scores of each participant who experienced all three teaching approaches, and the full score of each approach was 100. Examination and projects were adopted as the assessment methods of these three approaches. The questionnaires were distributed to the students in the first class in Week One, which was voluntary based, whereas all the scores were collected and recorded at the end of the quarter.

Several statistical techniques were employed to examine the relationship between learning self-efficacy, preferred learning methods, and academic performance (grade) under the three different teaching approaches. First, bivariate correlation was used to reveal the relationship between the learning self-efficacy score and the grades of the three different learning methods. Second, MANCOVA was utilized to assess whether the students’ preferred learning mode had relations with their academic performance, i.e., the test scores, providing a potential covariate of learning self-efficacy. Third, three separate regression analyses were used to examine whether learning self-efficacy and the degree of the students’ preference with respect to the specific learning mode had an effect on the grades of the three types of learning methods while the other variables such as gender and transfer status were controlled.

Findings
Table 1 describes information regarding student gender, transfer status, and learning method preference. As shown, the students were predominantly female, with more transfers than first-time freshmen, and favored practical learning instruction.
Table 2 reports information on the test scores under different learning methods and the total score of individual learning self-efficacy, collected from the student’s gradebook and the self-efficacy in learning survey, respectively. It appears that, as referred to in Table 2, students had the highest performance in the practical learning test, followed by the computer-based learning test and lecturing test. In addition, the Pearson correlation coefficients among all test scores and total self-efficacy score were calculated. Although there was no relation between self-efficacy and the computer-based learning score, self-efficacy was statistically significantly correlated with both the lecturing and practical learning scores.

Multivariate analysis of covariance (MANCOVA) was conducted to examine the difference of learning method preference on test scores under different learning methods (i.e., lecturing, practical learning, and computer-based learning) while controlling the effect of learning self-efficacy. Table 3 presents the results. No significant main effect was found ($\lambda = 0.920$, $F_{(6,168)} = 1.189$, $p < 0.05$, $\eta_p^2 = 0.041$), although the covariate (learning self-efficacy) was statistically significantly related to the combined test scores of face-to-face, hands-on, and computer-based tests. No test score was significantly associated with the preference of learning methods when the effect of learning self-efficacy was factored out. Therefore, H1, Academic performance is associated with the preferences of learning methods when learning self-efficacy is controlled, was not supported.
Table 4 presents the summarized results of three regression analyses. Each test score under a different learning method was separately regressed against student gender (in dummy coding), transfer status (in dummy coding), learning method preference (in dummy coding) and learning self-efficacy. Self-efficacy did not statistically significantly impact on the computer-based learning test score but did impact on lecturing and practical learning test scores. The results also echoed the findings from Table 3 that preferred learning methods appeared to have no significant difference regarding students’ test scores. Therefore, H2, Academic performance is affected by learning self-efficacy, and the preferences of learning methods when other factors such as gender and transfer status are controlled, was partially supported for both face-to-face and hands-on learning methods.

Discussion

Practical learning is a preferred learning approach, from the opinions of hospitality management students. Lecturing is their second priority, and CBL is the least preferable learning approach. These findings confirm the fact that students in the hospitality management programs are kinesthetic learners (Stevens et al., 2012). Yan and Cheung (2012) found the importance of experiential learning in the hotel schools for preparing students with practical skills while the authors also emphasized the recognition from hospitality educators on the adoption of experiential learning. Hospitality management students prefer active and sensing learning styles (Su, 2012) and they favor active experimentation (Hsu & Wolfe, 2003). They have a preference for active learning versus reflective learning (Green & Sammons, 2014). However, this preference is different from what Moskal, Dziuban, Upchurch, Hartman, and Truman (2006) as well as Oh and Reeves (2013) discovered, which was that generation Y students perceive CBL as the most preferable learning method.

Although there is no relation between self-efficacy and CBL scores, self-efficacy statistically significantly affected both lecturing and practical learning scores. This finding readdresses the issue that self-efficacy of technology was not correlated with student academic performance (Puzziferro, 2008). On the other hand, students who possess higher self-efficacy in lecturing and practical learning can perform better and achieve higher academic performance. This also reaffirms the social cognitive theory regarding the relation among self-efficacy, outcome expectations, and goals (Bandura, 1986). Therefore, self-efficacy influences the students’ academic performance relative to lecturing (Dorman, 2001) and practical learning (Tims et al., 2014). This supports the

<table>
<thead>
<tr>
<th></th>
<th>Face-to-face test score B (S.E.)</th>
<th>Hands-on test score B (S.E.)</th>
<th>Computer test score B (S.E.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>3.636 (1.987)</td>
<td>−2.218 (1.990)</td>
<td>6.553 (3.843)</td>
</tr>
<tr>
<td>Transfer status</td>
<td>−4.522* (1.918)</td>
<td>−0.792 (1.921)</td>
<td>2.733 (3.709)</td>
</tr>
<tr>
<td>Face-to-face dummy</td>
<td>2.799 (3.893)</td>
<td>−7.338 (3.898)</td>
<td>2.397 (7.527)</td>
</tr>
<tr>
<td>Hands-on dummy</td>
<td>2.627 (3.744)</td>
<td>−4.207 (3.749)</td>
<td>4.675 (7.239)</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>0.918** (0.229)</td>
<td>0.636** (0.229)</td>
<td>0.064 (0.443)</td>
</tr>
<tr>
<td>Adj-R²</td>
<td>0.218</td>
<td>0.086</td>
<td>−0.014</td>
</tr>
<tr>
<td>F(5,84)</td>
<td>5.976**</td>
<td>2.667*</td>
<td>0.759</td>
</tr>
</tbody>
</table>

Note: **p < 0.01; *p < 0.05.
findings that self-efficacy can help predict and impact academic performance (Bandura, 1994, 1997; Schunk, 1995). However, the preference of learning methods appeared to have no significant difference in terms of the students’ test scores when the impact of self-efficacy was considered.

Conclusions and implications
This research provides additional evidence that students’ preferences of learning methods do not appear to influence their academic performance. Hospitality management students continue to prefer “learn by doing” as their learning approach and, although they are generation Y, CBL is not their preferred approach. This study finds that students’ preference of learning methods does not influence their academic performance. However, in hospitality education, self-efficacy does affect the academic performance, specifically in lecturing and practical learning. According to social cognitive theory (Lent et al., 1994), self-efficacy can be used as a predictor and a motivator of hospitality students. In this study, it has emphasized the importance of self-efficacy on the academic performance of both lecturing and practical learning.

A couple of practical implications for hospitality education can be derived from this study. On one hand, significantly emphasizing “learn by doing” in the curriculum is recommended. Although Chan and Choi (2012) suggested utilizing CBL to prepare future hospitality leaders, because of students’ preference and natural “hospitality,” sufficient opportunity for practical learning within the college (Ladkin, 2000) and collaboration with industry partners for internships and/or hands-on experience should be the top priority. On the other hand, recruiting faculty members with extensive experience in the hospitality industry and learning in well-established training facilities such as training restaurants and hotels can help hospitality management students learn and perform better (Alexander et al., 2009).

In addition, faculty plays an important role in increasing students’ self-efficacy, particularly in lecturing and practical learning. Providing feedback and participating in peer and class discussions can help increase self-efficacy (Velayutham & Aldridge, 2013). Margolis and McCabe (2006) recommended that enactive mastery, vicarious experiences and verbal persuasion be adopted by the instructors in the class to strengthen the self-efficacy of the students. On the other hand, instructors can change their instructional strategies to improve students’ self-efficacy (Siegle & McCoach, 2007). Faculty also must establish methods to explore the self-efficacy of students in different learning methods to design the courses and to improve students’ learning outcomes in hospitality education. For example, faculty can adopt a questionnaire concerning general self-efficacy or self-efficacy on a specific learning approach to examine students’ self-efficacy. It would be beneficial to conduct this survey on the first day of the class to examine the self-efficacy of students in different learning methods.

There are several limitations associated with this research. The comparatively small sample size, i.e., 90 students from one university, involved in this survey is the first limitation. Including more students from more courses and from more universities to ensure that the results are more representative, generalizable and reliable is suggested. Second, the demographic of the students is homogeneous.
Exploring the differences in race, age, ethnicity as well as hotel industry experience is recommended for other control variables. In addition, the learning self-efficacy questionnaire may not work well using computer-based instructions. A new self-efficacy questionnaire based on computer-based instructions (or online learning) should be developed in the future. In addition, there is a lot of research in the area of learning styles of the students, which has not been investigated with the respondents in this study. The learning styles of the students may affect their self-efficacy, academic motivation and academic performance. This is an interesting aspect to be explored in the future. Finally, the classroom environment created by the instructors (van Dinther et al., 2011) and even some personal factors of the instructors such as the passion for teaching and the preference of teaching methods can affect the self-efficacy of the students, which again can be explored in future.

Disclosure statement

No potential conflict of interest was reported by the authors.

References


Appendix

Appendix A. Questions on self-efficacy in learning

Please indicate the amount of your agreement with the following ten statements.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Not At All True (1)</th>
<th>Hardly True (2)</th>
<th>Moderately True (3)</th>
<th>Exactly True (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I am certain I can manage the problems in my life so I can focus on my studies.</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>2. I am certain I can obtain financial aid to pay tuition.</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>3. I am certain I can find the time to do all my homework.</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>4. I am certain my family and friends want me to succeed in college.</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>5. I am certain I can control the stress in my life so I can do well in school.</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>6. I will choose school over work if schedules conflict.</td>
<td>*</td>
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<td>7. I will always find a way to get to class.</td>
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<td>8. I am positive I can earn enough money to keep attending.</td>
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<td>9. I know I will get a good position when I graduate if I do well.</td>
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<td>10. I will take care of my health so I can achieve better grades.</td>
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</table>