Effectiveness and Usage Frequency of Learning Methods and Tools:

Perceptions of Hospitality Students in Hong Kong

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ABSTRACT

Several studies have examined the use or effectiveness of specific learning methods or tools. However, these studies failed to assess the usage frequency and effectiveness of a comprehensive list of learning and teaching methods and tools. An evaluation from the perception of students could provide educators with insights and implications in future pedagogy design and add empirical evidence to hospitality education literature. Data were collected from 189 hospitality students in Hong Kong to assess the usage frequency and effectiveness of 28 methods and 22 tools. A usage frequency–effectiveness matrix was used to categorize these methods and tools into four quadrants to derive suggestions for learning enhancement strategies.

Keywords: learning method, learning tool, effectiveness, usage frequency, usage frequency–effectiveness matrix

INTRODUCTION

Teaching and learning methods and tools play important roles in education. When the topics and contents of a curriculum have been set, effective methods should be adopted to achieve the teaching and learning objectives (Deale, Nichols, & Jacques, 2009). Several researchers indicated that teaching and learning methods are important factors that affect the quality of student learning (Nield, 2004), because proper methods can create a positive teaching and learning environment (Han, Ng, & Guo, 2015), stimulate students' motivation to learn (Bethell & Morgan, 2011), and improve students' final learning outcomes (Cho, Schmelzer, & McMahon, 2002). In addition, learning tools, including various audio and visual aids and some advanced technologies, are needed to satisfy the various learning styles of students, similar to the cases of auditory student learning through hearing and visual learners who learn through seeing (Spelt, Biemans, Tobi, Luning, & Mulder, 2009). Education has two essential aspects that occur simultaneously, namely, lecturers' teaching and students' learning (Crosling, Heagney, & Thomas, 2009). Thus, communication between lecturers and students is very important. Barriers to successful communication could come from lecturers, students, message content (e.g., word choices), and the channels through which messages are sent (e.g., verbal, visual, behavioral means) (Spelt et al., 2009). Effective learning methods and tools could also improve the lecturers' or students' expression and understanding and reduce the interference or potential problems related to the channels (Schroeder, Minocha, & Schneider, 2010). Therefore, effective teaching and learning methods and tools may facilitate the communication between students and lecturers and improve learning effectiveness.

Proper learning methods and tools vary with different situations. For example, learning methods that worked well many years ago should be improved with the development of new technologies and the emergence of new types of education (e.g., online learning) (Crosling et al., 2009; McDonnell, 2000). Learning methods and tools have also attracted considerable attention in tourism and hospitality education scholarship. The application and effectiveness of some methods and tools have been studied (Wong & Wong, 2009). However, limited research has been conducted on a systematic summary of the use and effectiveness of these methods and tools.

The majority of contemporary higher education practices are dominated by Western paradigm and innovation. The internationalization of hospitality education indicates the homogenization of curriculum design and pedagogies. However, for students with different cultural backgrounds,

different learning methods and tools may be more effective because of their different learning styles (Su, 2012; Barron, 2004). For example, Chinese students show different preferences in methods of teaching, learning, and assessment from UK students; these differences must be addressed to enable them to reach their full potential (Nield, 2004). To date, limited research has focused on the use and effectiveness of learning methods and tools in the context of Asian hospitality education. Thus, using Hong Kong as a context, the objectives of the study are to (1) identify students' perceived usage frequency of various learning methods and tools, (2) examine students' perceived effectiveness of various learning methods and tools, (3) analyze the relationship between usage frequency and effectiveness, and (4) investigate perception differences among demographic and study characteristic groups.

LITERATURE REVIEW

Teaching and Learning Methods

Various teaching and learning methods for tourism and hospitality education have been investigated. Among these methods, lecture or delivering course contents by speaking to students is one of the most commonly used (Deale, O'Halloran, Jacques, & Garger, 2010). This method highly relies on lecturers and is efficient in the knowledge transfer process (Ballantyne, Bain, & Packer, 1999). In many cases, guest lectures are also applied, where guest lecturers are invited as a supplement to lecturing, especially for courses that require practical experiences (Deale et al., 2009). Invited guests can also form a panel, symposium, or forum, which is regarded as one of the main content presentation methods by the American Hotel & Lodging Educational Institute (AHLEI) (2014). The panel, symposium, forum, and dialogue are viewed as variants of the lecture, although the former methods involve more speakers and more interactions than the lecture (Verner & Dickinson, 1967). In hospitality education, demonstration or experiment is also commonly used because some courses are closely related to practical experiences. For example, lecturers' demonstration of service operations in a "food and beverage management" course usually enhances students' understanding of concepts; consequently, students would be likely to meet the requirements of the industry (Okeiyi, Finley, & Postel, 1994). To test the level of students' learning and provide information for lecturers to plan subsequent teaching activities, formative quiz

(ungraded, with instant feedback) can be used, where appropriate, to enhance communication between lecturers and students (Kneill-Boxley, 2012).

Case study is also often used by tourism and hospitality educators. Case studies stimulate deep learning instead of surface learning and have the benefits of developing diagnostic skills and encouraging learners to discuss issues across subject and disciplinary boundaries (Rees & Porter, 2002). This method is suggested for use before the explanation of relevant theories (Rees & Porter, 2002). A study by Deale et al. (2009) indicates that case studies are the second most commonly used teaching method in tourism and hospitality education following lecture. Two other methods that are usually used combined with case studies are reading and discussion/brainstorming (Gilmore, 1992; Shugan, 2006). Research has shown that group discussion significantly improves the effectiveness of learning because students understand the cases and topics and appreciate the opinions of others during this process (Gilmore, 1992).

The two main modes of pedagogy are teacher-centered and student-centered approaches. The teacher-centered approach emphasizes knowledge transmission and is usually delivered through lectures, where students have limited participation (Deale et al., 2010). By contrast, students actively participate in the education process in the learner-centered approach (Taylor & Ruetzler, 2010), which is regarded as a relatively new focus and has several advantages over the teacher-centered mode (Deale et al., 2010). According to research, in student-centered education, students can determine some contents and forms of the course, set their own learning objectives, and easily realize their personal goals (Taylor & Ruetzler, 2010). Additionally, self-directed learning may lead to an improved understanding of the course (Taylor & Ruetzler, 2010). Therefore, an increasing number of scholars suggest the learner-centered mode as an effective style for university education (Meyer & Eley, 2006). In student-centered education, individual projects and student presentations are usually applied to encourage students' initiative to learn (Kim & Davies, 2014). Asking students to evaluate their own work and self-evaluate is argued as a reliable indicator of final leaning outcomes (Dimmock, Breen, & Walo, 2003; Gröschl, 2004). Other learning methods, such as reflective writing/journaling, article critique, and pre-class task, are also effective in helping students develop various skills and stimulating their creative thinking (Fleming & Martin, 2007; Gröschl, 2004). These methods comply with the notion of student-centered education and are suggested for use, especially for students in advanced levels (Fleming & Martin, 2007).

Students also learn from one another; some teaching and learning methods are based on this notion. As one of these methods, cooperative learning (e.g., peer tutoring, collaborative learning) is effective in encouraging students to learn and work in a group (Cho S et al., 2002; Hassanien, 2007). This method does not only make learning more efficient, but also facilitate critical thinking because learners discuss, assess, and summarize each other's ideas in this process (Hassanien, 2007). Peer evaluation, where students evaluate each other's work, is also a moderating technique for group work assessment and is widely used in hospitality education (Knowd & Daruwalla, 2003). Peer evaluation is closely related to the characteristics of group project. For example, students tend to be generous when evaluating in a smaller group than in a large group (Knowd & Daruwalla, 2003). Some lecturers also use debate to develop the capabilities of students to apply ideas and present information (Bourner & Flowers, 1997). Debate is also related to discussion and group work, which is beneficial for the development of students' communication skill (Bourner & Flowers, 1997).

Scholars have encouraged the use of learning and teaching methods that involve interaction among students and lecturers, including some of the aforementioned methods (Deale et al., 2010; Todorina, 2011). Traditional methods (e.g., lecture) focus on knowledge transmission, place lecturers at the core, and use a one-way approach for knowledge delivery, with limited exchanges between teachers and students and little emphasis on students' reflections (Armstrong, Elliott, Ronald, & Paterson, 2009; Hora & Anderson, 2012). By contrast, interactive methods are heuristic learning with mutual exchanges between lecturers and learners (Armstrong et al., 2009; Hora & Anderson, 2012). Students are placed at the center, and their responses are acquired and researched (Armstrong et al., 2009; Todorina, 2011). Teaching and learning are not separated under interactive methods; both lecturers and students have responsibilities to learn (Armstrong et al., 2009). Given these advantages, interactive methods, such as drama/play/role play, game, in-class online search/exercise, storytelling and service learning, are employed by many lecturers to improve teaching and learning effectiveness (Armstrong et al., 2009; Deale et al., 2010; Okumus & Wong, 2004; Todorina, 2011).

Given that some courses in tourism and hospitality management are practical-oriented, a number of methods are based on practice or used outside the classroom. Problem-based learning (PBL) is one of these methods. PBL is based on realistic problem scenarios and requires students

to solve real-life problems (Duncan, Smith, & Cook, 2013). In PBL, students need to identify knowledge that they already know, investigate areas with knowledge gaps, and address solutions for the problems (Bethell & Morgan, 2011). PBL is increasingly gaining popularity because of its advantages in stimulating students' critical thinking, developing students' abilities to solve problems, and integrating theory and practice (Bethell & Morgan, 2011). PBL is usually used with experimental learning activities to engage students (Bethell & Morgan, 2011; Yan & Cheung, 2012). Another method related to experimental leaning is fieldtrip (Yan & Cheung, 2012). Research has shown that fieldtrips facilitate students' personal development and thus increase the interest of students in learning (Xie, 2004). In addition, lecturers can acquire hands-on practical experiences in fieldtrips (Yan & Cheung, 2012). For fieldtrips to be effective, factors such as lecturers' active role throughout the trip and good image of the destinations/hotels are important (Wong & Wong, 2009; Xie, 2004). Internship is another way of learning by doing and from experience commonly used in tourism and hospitality education (Petrillose & Montgomery, 1997). Besides use, the effectiveness of internship is commonly recognized as well-structured placements that could enhance students' interest in learning, interpersonal skills, and work performance (Lee, Lu, Jiao, & Yeh, 2006).

Teaching and Learning Tools

In a broad sense, teaching and learning tools include all aspects that help meet learning objectives. The commonly used tools in tourism and hospitality education include support media and different types of aids and technologies (AHLEI, 2014). Traditional low-tech tools, such as boards (dry erase or chalk) and hands-on objects, are easy to master and relatively inexpensive (AHLEI, 2014; Deale et al., 2010); however, additional research is needed on their usage and effectiveness from the perspective of students. Some studies indicate that even for chalkboard/whiteboard, knowledge and communication skills of lecturers are important to improve the interactivity, "provisionality," and capacity of the tools to deliver the sessions successfully, as well as to develop the creative abilities of students (Wood & Ashfield, 2008). Generally, using a variety of teaching tools improves the adaptability of students with different learning styles to the course delivery and the learning effectiveness via multiple stimuli (Spelt et al., 2009). In tourism and hospitality education, the concept/mind map, overhead projector (used together with a transparency), and artifact (e.g., objects, toys) should be used properly to add

variety to education and stimulate students' motivation to learn (AHLEI, 2014; Deale et al., 2010). Thus, materials that may encourage students to use their multiple senses for learning may include teaching tools, such as music and photographs (Goldenberg, Lee, & O'Bannon, 2010).

Given the advancement of technology, additional computing equipment is used to support teaching tools. At present, almost all tourism and hospitality education providers have computers to support teaching and learning; software such as Microsoft PowerPoint or other presentation software is so commonly used and have thus become the standard of educational settings, including classrooms and demonstration facilities (AHLEI, 2014). Similarly, Prezi is becoming increasingly popular to both lecturers and students because of its powerful functions of showing relationships among ideas and information and dealing with images and diagrams (Strasser, 2014). In addition, e-learning tools, such as interactive video instruction, are available to lecturers and can be an option for higher education (Deale et al., 2010; Sife, Lwoga, & Sanga, 2007). E-learning software enables lecturers to manage various sources of data conveniently and perform course assessment efficiently. Meanwhile, students have electronic access to course materials, which will improve their learning outcomes (Sife et al., 2007). Another type of software, namely, simulation software (e.g., HOTS and RevSim), is also applied in tourism and hospitality education; this software has changed teaching and learning processes (Sife et al., 2007). Furthermore, mobile devices are now universally used in people's daily life, especially by the young generation. These devices can be potentially used as learning tools for students. Higher education teaching and learning have been greatly affected by the integration of these portable devices (Gikas & Grant, 2013). Whether for online search or for real-time in-class communication between lecturer and students, mobile devices are favorable for teaching and learning if properly used (Gikas & Grant, 2013). Finally, videos/movies are recognized as potential tools; some researchers suggest purposefully adding this tool into curricular efforts (Goldenberg et al., 2010).

Various web-based platforms provide additional teaching and learning tools. Web-based communication platforms for teacher–student and student–student interactions are regarded as facilitators for the exchange between lecturers and learners and contributors to learning efficiency (Okumus & Wong, 2004; Spelt et al., 2009). Similar to the use of games as a learning method, computer game software, such as Second Life and Monopoly, has been adopted in tourism and hospitality education. Research indicates that computer game software is beneficial for the

improvement of student abilities and self-efficacy enhancement (Hsu, 2012). Numerous tourism and hospitality institutes likewise make full use of online resources, such as hyperlink to newspapers or other websites, blogs/social media, and their own course/learning management system (e.g., WebCT, Blackboard), to create a supportive environment for student learning (AHLEI, 2014). Another example of web-based teaching tool is podcast. Podcast is produced either by lecturers or students and allows students to access learning resources anytime or anywhere; the materials produced can also be reused (Cebeci & Tekdal, 2006). The web-based virtual tour is an effective learning tool, especially for tourism courses, and its value has been highlighted by many researchers (Cho, Wang, & Fesenmaier, 2002).

METHODOLOGY

The survey instrument for teaching and learning methods and tools was developed based on previous literature and a qualitative study. The employment of methods and tools in hospitality education and in higher education was discussed in the Literature Review section. Based on those studies, 25 types of methods and 19 types of tools commonly used in higher education were derived and listed in Table 1. Among these tools, the application and effectiveness of fieldtrip can be easily influenced by distance and time (Wong & Wong, 2009). Thus, considering the situation of Hong Kong, this method was divided into two, namely, "fieldtrip in Hong Kong" and "fieldtrip outside of Hong Kong." Similarly, podcast may be provided by lecturers or students. Thus, this teaching and learning tool was assessed based on these types. Meanwhile, mobile devices include devices for online search and other devices for real-time in-class communication between lecturer and students. Thus, this learning tool was measured by two items in the study.

To confirm the applicability of these methods and tools in Hong Kong, focus groups were formed. Using the focus group guidelines of Catterall and Maclaran (2006), the researchers recruited lecturers and students from the hospitality program and conducted four focus groups. The first focus group involves 8 lecturers, and the three other focus groups include 5 to 7 students each, for a total of 18 students. Focus group members discussed their experiences of using various teaching and learning methods and tools. The sessions ranged from 60 minutes to 90 minutes. The discussions were audio-recorded and the recordings were transcribed into English text for data analysis. According to the data, some of the teaching methods and tools in Table 1 were frequently

referred to by the participants, such as discussion, student presentation, and course management system (e.g., Blackboard). Meanwhile, two learning methods not included in Table 1 were also mentioned by the participants. These methods are "In class online search/exercise" and "Pre-class task."

Some focus group participants also mentioned other tools that may be applicable for hospitality education in the future. These teaching tools are generally technology-based and they develop quickly (Sife et al., 2007), including wearable technology and virtual reality. Thus, the item "others" was added to the list for students to provide a description of tools not included in the prescribed list. The draft questionnaire was subsequently designed based on previous literature and focus group findings. The questionnaire was then reviewed by six hospitality educators to help clarify wording, suggest additional items, and ensure content validity of the measurement. To further test the clarity of the questionnaire design and item wording, a pilot study was conducted with 21 students who completed the questionnaire and commented on the ease of understanding of the items. Minor revisions related to the layout of the questionnaire were made based on pilot data. Some examples were added for terminologies (e.g., learning management system, artifact) that may be unfamiliar to the students.

The final questionnaire included three sections. Section I included 28 learning methods and Section II included 22 learning tools. Each section started out with a general statement explaining the nature of the items. Section I was described as follows: Evaluation of Teaching/Learning Methods (referring to the ways/techniques by which knowledge is delivered/gained). Section II has the following introduction: Evaluation of Teaching/Learning Tools (referring to the media/instruments with which knowledge is delivered/gained). Section III collected demographic information from respondents. Two five-point Likert-type scales were utilized for both sections of the questionnaire to measure the use and effectiveness of the methods and tools from students' perspectives. Frequency of use was measured from "never used" (1) to "almost always used" (5). The following instruction was included in the questionnaire: Please indicate the frequency of which the listed methods/tools are used in general based on courses you have taken so far. The effectiveness of the methods/tools was measured from "not at all effective" (1) to "extremely effective" (5). The following instruction was included in the questionnaire: Please indicate the effectiveness of the listed methods/tools in helping you to learn.

Undergraduate students majoring in hotel management at the largest university in Hong Kong were selected as participants for the study. The selection was based on student population. Of the two government-funded bachelor's degree hospitality programs and several private hospitality education providers at various levels, the data collection program has the largest number of students enrolled. One compulsory course at each year of the four-year hotel management curriculum was selected as the data collection venue to capture all students enrolled in the program. Once the instructor of each course agreed to allocate 15 minutes of class time for the study, the research team visited the classroom to explain the purpose of the study and encouraged students to complete the questionnaire on a voluntary basis. No incentive or extra credit was given to the participants. To assess the adequacy of the sample size, a 5:1 ratio of sample size to the number of free parameters was adopted (Anderson, Sweeney, & Williams, 2011). Thus, the minimum sample size was about 140 (=28*5). This study attempts to conduct group comparisons. Thus, additional cases are needed to avoid the situation, where some groups may have insufficient sample sizes for comparison. Given that 200 is one of the most frequently adopted sizes (Anderson et al., 2011), it serves as the benchmark for assessing the sample size of this study.

Descriptive statistics were first examined to provide a respondent profile. The means and standard deviations were calculated for learning methods and tools to achieve objectives 1 and 2. Correlation coefficients and usage-effectiveness analysis were employed to attain objective 3. Finally, t-tests and ANOVAs were utilized to accomplish objective 4.

RESULTS AND DISCUSSION

Descriptive Statistics

Four classes were visited in March 2015 to solicit student participation. The four courses were offered to hotel management students in four different years of study, but some students enrolled in more than one of these courses because of scheduling and other reasons. Some students in the classes were tourism management majors or from other programs. Thus, during the introduction, students in the hotel management major were recruited and were asked not to participate in the survey again if they had completed the questionnaire in another class. With a combined enrollment of 494 students in the four courses, 251 questionnaires were collected. Questionnaires with

response patterns or missing values were excluded. A total of 189 responses were deemed complete and usable.

Among the 189 respondents, 82.5% of them are females (n=156), a percentage similar to the student population with 80% female and 20% male students (Academic Secretariat, personal communication, 18 December, 2015). Students in different years of study were well-represented, with 55 (29.1%), 59 (31.2%), 51 (27.0%) of first-year, second-year, and third-year students, respectively. Year 4 students had the lowest representation, with a sample size of 24 (12.7%). Most of the students are from Hong Kong (78.8%), followed by Mainland China (12.7%), and other Asian (2.1%) and non-Asian (6.3%) countries. More than half of the participants reported a GPA between 3.00 and 3.49 (54.5%), followed by above 3.50 (22.2%), 2.50–2.99 (20.1%), and below 2.50 (3.2%).

Based on mean values (see Table 2), the three most frequently used teaching and learning methods are group project (M=4.53), lecture (M=4.53), and student presentation (M=4.14); these are categorized by AHLEI (2014) as traditional methods. Discussion/brainstorming (M=3.83), guest lecture (M=3.77), and individual project (M=3.76) are also frequently used. The four methods that received the lowest ratings of frequency were fieldtrip outside of Hong Kong (M=1.48), fieldtrip in Hong Kong (M=1.90), debate (M=2.11), and drama/play/role play (M=2.23). The school has a large number of local site visits and overseas fieldtrips every semester. Students participating in multiple site visits and fieldtrips each semester are not uncommon. However, the mean values reflected students' perception, which was probably influenced by their preferences and expectations. The most often used tools (see Table 3) are Microsoft PowerPoint (M=4.45) and course/learning management system (e.g., WebCT, Blackboard) (M=4.20). The three least frequently applied teaching tools are computer game software (e.g., Second Life, Monopoly) (M=2.06), music (M=2.18), and artifact (e.g., objects, toys) (M=2.19).

(Insert Tables 2 and 3 here)

For effectiveness, three learning methods are regarded as the most effective by respondents, namely, internship (M=3.99), case study (M=3.66), and individual project (M=3.66), followed by

lecture (M=3.56) and problem-based learning (M=3.51). However, drama/play/role play (M=2.58) and debate (M=2.66) are regarded as ineffective. For the effectiveness of learning tools, PowerPoint (M=4.00) and course/learning management system (M=3.81) are viewed as the most effective. The tools regarded as the least effective are podcast produced by students (M=2.56), simulation software (e.g., HOTS, RevSim) (M=2.63), and podcast provided by teachers (M=2.65).

Usage–Effectiveness Matrix Analysis

Based on the different ratings of usage frequency and effectiveness, four quadrants are set to categorize methods and tools: (I) high frequency-high effectiveness, (II) low frequency-high effectiveness, (III) low frequency-low effectiveness, and (IV) high frequency-low effectiveness. The methods and tools that lie in the first quadrant should be kept at the high frequency of use category. The methods and tools in Quadrant II can be used more often because of the high perceived effectiveness by the learners. Lecturers may consider reducing the use or explicitly explaining to students the rationale of using the methods and tools in Quadrant IV. The methods and tools that lie in Quadrant III could be considered based on unique circumstances, such as class size, composition, and nature of learning content. If the increase of use of a method or tool could enhance learners' perception of its effectiveness, this method or tool could be explored and used to facilitate learning. Otherwise, it could remain as seldom used.

The means of frequency (3.06) and effectiveness (3.19) of all learning methods were set as reference lines, which were adopted from the common practice in importance–performance analysis (Baloglu & Love, 2003). Nine teaching methods belong to the first quadrant (Figure 1), including individual project, case study, lecture, and group project. These methods are well-received by the students and could be continued in their frequent use. Problem-based learning is perceived as one of the effective learning methods; this finding is supported by Knight and Wood (2005), who suggested that active learners can achieve better learning outcomes through the use of analytical and meta-cognitive skills.

Internship is perceived by students as highly effective yet not often used. Students in the hotel management program have to complete a six-month full-time internship or 960 hours of cumulative part-time work experience in hospitality organizations. Given the limited curriculum space and tight scheduling of courses for students to complete all credit requirements within a

four-year period, additional formal internship requirements may not be possible. However, students should be encouraged to take up additional part-time employment to gain further industry experience and learning opportunities. Other methods not frequently used but perceived as effective are fieldtrips in and out of Hong Kong. Although these methods have been used every semester, students believe that the use of these methods could be improved because they found these methods quite effective. More lecturers could consider taking students on fieldtrips if time and funding are available. However, fieldtrips could often be quite disruptive to other lecturers when the class schedules of students are packed. If not all students can afford to participate in fieldtrips because of financial or other difficulties, alternative activities should be arranged so that these students are not disadvantaged in terms of their learning experiences and assessment performance.

(Insert Figure 1 here)

Some teaching and learning methods are frequently used, but they have low effectiveness. These methods include peer evaluation, reflective writing/journaling, in-class online search/exercise, reading, and article critique. The perception of students could be shaped by several possibilities. First, the methods were used without proper implementation or evaluation by lecturers. For example, students were asked to perform online exercises in class without monitoring their progress and engagement, which could result in students browsing online for other purposes. Second, students were not sufficiently informed of the purpose or proper way of using the method. For example, students were asked to conduct peer evaluation without knowing the consequences of evaluation or criteria to be used in such evaluation. Third, the purpose of or learning gains from the method is unclear to the students. For example, students were asked to critique articles without knowing how the activity contributes to their learning or how it helps them achieve intended learning outcomes. Measures should be taken to improve effectiveness, or lecturers should explain how the methods work and how they are tied into the students' learning process.

Methods in Quadrant III are not often used and are also perceived as ineffective. These methods include debate and drama/play/role play. The use of these methods requires skills from lecturers who need to engage students actively to build their enthusiasm. The lack of such skills

would result in students perceiving the methods as ineffective. Service learning, which is also in Quadrant III, is now a compulsory component of the four-year curriculum at the data collection institution. Additional efforts should be placed in the design of service learning activities, alignment of teaching methods and intended learning outcomes, and instructor training to carry out service learning effectively.

For teaching tools, the mean of usage frequency (2.89) and effectiveness (3.14) are used as reference lines. However, the mean of frequency is far from the median (3.25) because of the dominance of PowerPoint and the course/learning management system (Figure 2). This finding is not unique to Hong Kong because PowerPoint has become the standard of educational settings (AHLEI, 2014). The distribution of tools compared with that of methods appears concentrated in Quadrants I and III. Given that most of the tools are technology-based and change frequently, lecturers should not only master the tools before they can use them confidently in the classroom, but they also need to update their knowledge of the new tools introduced. The realization of time commitment may have encouraged many lecturers to use tools that have been "proven" effective in student learning. PowerPoint and course/learning management system stood out as the most often used and most effective tools. Both lecturers and students rely heavily on these computer tools in teaching and learning activities. Prezi lies in Quadrant II, which means that it is not frequently used, but students perceive it as potentially effective. Thus, Prezi could be used more often as an alternative to PowerPoint to add diversity to the learning experience of students. However, this method requires skill development and additional time commitment from lecturers.

(Insert Figure 2 here)

Most tools in Quadrant III are technology-based, such as podcast, virtual tour, computer game software, web-based communication platform, and simulation software (e.g., HOTS, RevSim). For the young generation, computers and mobile phones are not only products of information technology, but they have become indispensable parts of life (Oblinger, 2003). Moskal, Dziuban, Upchurch, Hartman, and Truman (2006) and Oh and Reeves (2013) suggest that generation Y students perceive computer-based learning as the most preferable learning method. Thus, students may expect lecturers to adopt more of these tools. However, the frequent use and effectiveness of these tools require technology know-how on the part of lecturers. Mobile devices (for online search)

in Quadrant IV are used in moderate frequency (M=3.06), whereas the effectiveness of this tool could be improved (M=3.14). Although the use of mobile devices in classrooms is intended to facilitate learning, in reality, students use these devices mainly for hedonic purposes, which sometimes distract them from class contents (Pardue & Morgan, 2008). A recent study suggests that students are increasingly receptive to the idea of using mobile devices for academic purposes, but, at the same time, they need encouragement from educators and guidance on how to best use the devices as facilitating tools (Dahlstrom, Walker, & Dziuban, 2012).

Most of the methods and tools in Quadrants I and III, as shown in Figures 1 and 2, indicate possible positive relationships between frequency and effectiveness. Thus, correlations were analyzed using SPSS 23.0. Except for fieldtrip in Hong Kong, results show that the frequency and effectiveness of methods and tools are positively correlated (Tables 2 and 3). Positive correlations even existed for methods and tools in Quadrants II and IV. For example, the correlation coefficient between frequency of use and effectiveness is "very high" ($\alpha > 0.4$) for in-class online search/exercise and "not low" ($\alpha > 0.2$) for reflective writing/journaling (Hair et al., 2009). The correlation coefficients between frequency and effectiveness of all tools are higher than .3, with p values lower than 0.01. This finding suggests that the perceived effectiveness of these tools increases as students increasingly use them and gain skills from using them. Alternatively, lecturers are likely to adopt methods and tools with known effectiveness.

Mean Comparison of Teaching Effectiveness

T-tests were conducted to identify perception differences regarding the effectiveness of the 28 methods and 22 tools between gender (male vs. female) and place of origin (Hong Kong local vs. non-local) groups. Students from outside of Hong Kong were grouped into one category because of their small numbers. ANOVAs were conducted to examine differences between year of study and GPA groups. Among the learning methods, female respondents rated individual project, peer evaluation, and storytelling as more effective methods. They also rated concept/mind map as a more effective learning tool (Table 4).

(Insert Table 4 here)

The effectiveness of methods and tools also varied based on the participants' place of origin. Hong Kong students perceived the effectiveness of seven learning methods, including article critique, cooperative learning, drama/play/role play, game, group project, guest lecture, and student presentation, as less effective than did the non-local participants. However, for learning tools, blog/social media, computer game software, presentation software, and video/movie were rated as more effective by local students. Although the means of the two groups are quite close in some cases, significant differences were found because of two possible reasons. First, the sample size of the two groups varied greatly, with 149 local students and 40 non-local students. Second, the standard deviations of non-local participants' ratings are high because of the heterogeneous background of this group. Nevertheless, these results show an interesting pattern, wherein non-local students rated many of the interactive and collaborative learning methods as more effective. Research has reported mixed results regarding the learning preferences of Asian students, such as the finding that Hong Kong students' memorization and elaborative learning strategies were similar to those of students from OECD nations (Ho, 2009); however, the results of the present study, to a certain extent, reflects the typically held perception that Chinese students are passive learners (Ballard, 1989).

The study by Hsu (2015) showed Hong Kong students prefer the use of videos, simulation, and presentation software, and many students report the use of group chats and social media in class. Thus, the finding that local students rated these tools as effective is reasonable; this result supports the suggestion to prepare visually appealing handouts and employ interactive media that include images and sound (Kipnis & Childs, 2004; Mestre, 2010).

For the different GPA groups, significant differences were found on only one method and one tool (Table 5). The effectiveness of lecture varies among GPA groups. Students with GPA above 3.5 reported the highest effectiveness, whereas students with GPA below 2.50 reported the lowest mean. This finding suggests that students who can learn effectively via lecture perform best in assessment. The effectiveness of music is also rated differently by students of various GPAs. Students with high GPA report lower levels of effectiveness. Several significant differences were found based on the year of study. Freshmen rated most of these methods and tool as more effective, whereas seniors reported the lowest means. The two exceptions are internship and article critique,

which were rated as more effective by upper classmen and juniors respectively. Students in the freshmen class appear to be highly motivated. This group rated the various learning methods as effective in helping them acquire the knowledge and skills for their chosen major. However, the lower classmen may not yet possess the necessary disciplinary knowledge to critique articles effectively.

The low means among seniors could generally be a reflection of their state of mind during the data collection period, which was conducted a few weeks before their graduation. Given that they were about to embark on their hospitality careers, they rated internship as extremely effective in helping them learn. The low ratings of other methods and tool, and the fact that fewer seniors bothered to participate in this study, may have demonstrated their overall lack of commitment to formal learning and school activities. The challenge for educators is to sustain the passion of freshman students toward learning throughout their college career.

(Insert Table 5 here)

CONCLUSION

The current study examined the perception of hospitality students toward the usage frequency and effectiveness of various learning methods and tools. Results indicated that all methods and tools generated based on a comprehensive review of literature are actually used in the data collection institution to some extent. Based on the perceptions of students, the results of this study may provide hospitality educators with insights into and implications in future teaching and learning pedagogy design. This study also adds empirical evidence to hospitality education literature on teaching and learning methods.

Traditional pedagogical methods and tools dominated the respondents' learning experience. Lecture, group project, and discussion are most frequently used, whereas interactive methods, such as debate and drama/play/role play, are the least frequently applied. Some studies reported that interactive teaching methods greatly improve teaching effectiveness (Todorina, 2011); however, the present study found that compared with interactive methods, traditional methods were rated as more effective by students. However, given the students' short-term goal orientation and

engagement in surface learning (Hsu, 2015), they may have used their examination scores as indication of effectiveness.

The usage frequency and effectiveness of all methods and tools showed significant positive correlations, except for fieldtrip in Hong Kong. However, the exact relationship between these two variables was not revealed. For example, does the use of methods and tools influence learning effectiveness? Does learning effectiveness determine the use of these methods and tools? Are use and effectiveness influenced by other factors? These questions could be further investigated in future research. The views of hospitality educators could also be solicited to reveal these relationships.

The use of Microsoft PowerPoint and a course/learning management system, such as Blackboard, has become common practice and is deemed effective by students. However, newer web-based teaching tools (e.g., podcast and computer game software) are used relatively less often and rated with low effectiveness. As suggested by Moskal et al. (2006) and Oh and Reeves (2013), generation Y students prefer computer-based learning. Thus, the results of the current study may suggest a skill gap among faculty members. These educators could attend professional development programs to update their technology knowledge and learn how to effectively use current technologies in teaching and learning situations.

This study applied usage-effectiveness analysis to categorize learning methods and tools and to derive implications for improvement. The methods and tools that lie in Quadrant I of the matrix should be continued. These methods include some traditional approaches, such as case study, individual project, lecture and group project, and some technology-based tools, such as course/learning management system and Microsoft PowerPoint. Experiential learning methods (including fieldtrips in and out of Hong Kong, and internship) and Prezi lie in Quadrant II. These tools should be used often because of their perceived effectiveness. For methods and tools in Quadrants III (e.g., debate, service learning, and podcast) and IV (e.g., peer evaluation, reflective writing/journaling, and use of mobile devices for in-class online exercise), teaching and learning effectiveness could be enhanced through improved preparation and communication on the part of instructors.

The effectiveness of learning methods and tools vary based on the characteristics of students, including gender, origin, year of study, and academic performance. Lecturers of classes with diverse student backgrounds should be aware of the different needs and preferences. These

lecturers should adopt different approaches or accommodate these differences as much as possible to provide students with opportunities to use the methods and tools that are most effective for them.

This study only surveyed students in one university in Hong Kong because of time and budget constraints. The method limits sample size and representativeness. Thus, conclusions and recommendations may not be generalized. This study provides initial results from one part of the world. Documenting current practices in terms of usage of various methods and tools worldwide could be valuable in enabling individual programs to benchmark their pedagogies with international practices. The list of methods and tools compiled by the authors could be considered comprehensive. Future researchers could add to this list as new technologies and pedagogies become available. Given the presence of culture differences, future research could include tourism and hospitality students from multiple programs and locations.

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TABLE 1

Items of Methods and Tools Derived from Previous Studies

Teaching and Learning Methods	**Sources**
Traditional/teacher-centered methods	
• Lecture (lecturer delivers course content by talking)	Ballantyne et al., 1999; Okumus & Wong, 2004
• Formative quiz (ungraded, with instant feedback)	Gröschl, 2004
• Guest lecture	Deale et al., 2009
• Panel/symposium/forum of invited guests	Deale et al., 2010; Okeiyi et al., 1994
• Demonstration/experiment	Deale et al., 2009; Okeiyi et al., 1994
Peer learning methods	
• Discussion/brainstorming	Gilmore, 1992; Okeiyi et al., 1994
• Peer evaluation (Student evaluation of other's work)	Knowd & Daruwalla, 2003
• Cooperative learning (e.g., peer tutoring, collaborative learning)	Ballantyne et al., 1999; Cho, Schmelzer, & McMahon, 2002
• Debate	Ballantyne et al., 1999
• Group project	Deale et al., 2009
Self-learning methods	
• Individual project	Deale et al., 2009
• Self-evaluation (Student evaluation of his/her own work)	Dimmock et al., 2003; Gröschl, 2004
• Reading	Okumus & Wong, 2004
• Article critique	Okumus & Wong, 2004
• Reflective writing/journaling	Fleming & Martin, 2007
Experiential learning methods	
• Problem-based learning (asked to provide solutions to a real-life problem)	Duncan et al., 2013; Bethell & Morgan, 2011
• Fieldtrip	Wong & Wong, 2009; Yan & Cheung, 2012
• Internship	Lee et al., 2006; Petrillose & Montgomery, 1997
• Case study	Deale et al., 2010; Okumus & Wong, 2004
• Service learning (as part of a class)	Deale et al., 2009
Interactive methods	
• Drama/play/role play	Ballantyne et al., 1999; Okeiyi et al., 1994
• Game	Deale et al., 2010; Okumus & Wong, 2004
• Storytelling (e.g., giving real-life examples)	Okumus & Wong, 2004
• Student presentation	Deale et al., 2009
• Student-centered teaching (e.g., selection of course topics by students)	Kim & Davies, 2014; Taylor & Ruetzler, 2010
Teaching and Learning Tools	**Sources**
Traditional low-tech tools	
• Chalkboard/whiteboard	AHLEI, 2014; Deale et al., 2010
• Artifact (e.g., objects, toys)	Deale et al., 2010
• Concept/mind map	AHLEI, 2014
• Video/movie	Goldenberg et al., 2010

• Overhead projector (used together with a transparency)	Deale et al., 2010
• Music	Goldenberg et a., 2010
• Photographs	Goldenberg et a., 2010
High-tech tools	
• Presentation software	AHLEI, 2014
• Microsoft PowerPoint	AHLEI, 2014
• Prezi	Strasser, 2014
• E-learning software (e.g., interactive video instruction)	Deale et al., 2010; Sife et al., 2007
• Simulation software (e.g., HOTS, RevSim)	Sife et al., 2007
• Mobile devices	Gikas & Grant, 2013
• Web-based communication platform (for teacher-student and student-student interactions)	Okumus & Wong, 2004
• Computer game software (e.g., Second Life, Monopoly)	Hsu, 2012
• Course/learning management system (e.g., WebCT, Blackboard)	AHLEI, 2014
• Online resources (e.g., hyperlink to newspaper, other websites)	AHLEI, 2014
• Podcast	Cebeci & Tekdal, 2006
• Virtual tour	Cho Y et al., 2002

TABLE 2

Participants' Perceptions of Usage Frequency and Effectiveness of Learning Methods

Teaching method	Usage Frequency		Effectiveness		Correlations (frequency/ effectiveness)
	Mean[a]	SD	Mean[b]	SD	
Group project	4.53	.76	3.45	.94	.179*
Lecture (lecturer delivers course content by talking)	4.53	.79	3.56	.85	.270**
Student presentation	4.14	.92	3.34	.85	.266**
Discussion/brainstorming	3.83	.84	3.39	.94	.365**
Guest lecture	3.77	.86	3.31	1.00	.400**
Individual project	3.76	.88	3.66	.83	.267**
Reading	3.58	.94	3.12	.83	.169*
Case study	3.51	.86	3.66	.86	.442**
Reflective writing/journaling	3.30	.94	2.85	.96	.327**
Peer evaluation (Student evaluation of other's work)	3.21	.94	2.91	.98	.292**
Article critique	3.19	.88	3.12	.84	.209**
Cooperative learning (e.g., peer tutoring, collaborative learning)	3.11	.95	3.24	.86	.453**
Problem-based learning (asked to provide solutions to a real-life problem)	3.10	.88	3.51	.89	.486**
In class online search/exercise	3.06	.97	3.09	.84	.491**
Internship	3.04	1.33	3.99	1.11	.389**
Self evaluation (Student evaluation of his/her own work)	2.90	.94	2.81	.92	.443**
Pre-class task	2.83	.87	2.86	.85	.354**
Game	2.80	1.00	3.08	1.03	.407**
Formative quiz (ungraded, with instant feedback)	2.77	.92	3.15	.83	.274**
Student-centered teaching (e.g., selection of course topics by students)	2.70	1.12	3.17	.99	.355**
Storytelling (e.g., giving real-life examples)	2.65	1.09	3.14	1.09	.647**
Panel/symposium/forum of invited guests	2.64	.96	2.99	.84	.467**
Service learning (as part of a class)	2.56	1.05	2.79	1.02	.548**
Demonstration/experiment	2.47	.98	3.18	1.00	.512**
Drama/play/role play	2.23	.99	2.58	1.05	.352**
Debate	2.11	.86	2.66	.96	.440**
Fieldtrip in Hong Kong	1.90	.89	3.36	1.12	.077
Fieldtrip outside of Hong Kong	1.48	.84	3.46	1.27	.154*

[a] Scale: 5=almost always used and 1=never used

[b] Scale: 5 = extremely effective and 1 = not at all effective

* $p < 0.05$, ** $p < 0.01$

TABLE 3

Participants' Perceptions of Usage Frequency and Effectiveness of Learning Tools

Teaching methods	Usage Frequency		Effectiveness		Correlations (frequency/ effectiveness)
	Mean[a]	SD	Mean[b]	SD	
Microsoft PowerPoint	4.45	.84	4.00	.88	.441**
Course/learning management system (e.g., WebCT, Blackboard)	4.20	.95	3.81	.79	.500**
Presentation software	3.56	1.14	3.51	.95	.516**
Online resources (e.g., hyperlink to newspaper, other websites)	3.33	.97	3.30	.86	.407**
Overhead projector (used together with a transparency)	3.32	1.15	3.27	1.00	.608**
Video/movie	3.28	.93	3.59	.87	.395**
Photograph	3.20	1.05	3.33	.97	.552**
E-learning software (e.g., interactive video instruction)	3.19	.96	3.24	.83	.409**
Mobile devices (for online search)	3.06	1.07	3.14	.87	.539**
Chalkboard/whiteboard	2.91	1.09	3.15	.91	.515**
Concept/mind map	2.90	1.06	3.33	.97	.396**
Blog/social media	2.78	1.11	3.14	.93	.495**
Prezi	2.73	1.15	3.20	1.13	.593**
Web-based communication platform (for teacher-student and student-student interactions)	2.65	1.11	2.93	.99	.499**
Mobile devices (for real-time in-class communication between lecturer and students)	2.64	1.00	3.02	.95	.453**
Podcast (provided by teachers)	2.29	1.02	2.65	.94	.649**
Virtual tour	2.28	1.09	2.97	1.11	.370**
Podcast (produced by students)	2.24	1.02	2.56	.95	.696**
Simulation software (e.g., HOTS, RevSim)	2.21	1.06	2.63	1.04	.549**
Artifact (e.g., objects, toys)	2.19	.95	2.82	.90	.518**
Music	2.18	.99	2.69	1.09	.527**
Computer game software (e.g., Second Life, Monopoly)	2.06	1.05	2.79	1.10	.435**

[a] Scale: 5=almost always used and 1=never used

[b] Scale: 5 = extremely effective and 1 = not at all effective

* $p < 0.05$, ** $p < 0.01$

TABLE 4

Differences of Effectiveness based on Gender and Origin

Method/Tool	Male			Female			T-value
	N	Mean[a]	SD	N	Mean	SD	
Method							
Individual project	33	3.48	0.972	156	3.70	0.790	4.557**
Peer evaluation (Student evaluation of other's work)	33	2.79	1.166	156	2.94	0.941	5.079**
Storytelling (e.g., giving real-life examples)	33	3.03	1.380	156	3.16	1.019	6.789**
Tool							
Concept/mind map	33	3.32	0.916	156	3.36	1.194	6.715**
	Local			**Non-local**			
	N	Mean	SD	N	Mean	SD	
Method							
Article critique	149	3.10	0.760	40	3.18	1.083	10.838**
Cooperative learning	149	3.17	0.800	40	3.53	1.012	7.012**
Drama/play/role play	149	2.50	0.956	40	2.88	1.305	5.551*
Game	149	3.03	0.969	40	3.28	1.219	8.614**
Group project	149	3.45	0.873	40	3.45	1.254	4.945*
Guest lecture	149	3.28	0.943	40	3.43	1.174	6.472*
Student presentation	149	3.30	0.758	40	3.50	1.109	13.336***
Tool							
Blog/social media	149	3.23	0.857	40	2.80	1.114	-6.715**
Computer game software	149	2.81	1.036	40	2.70	1.324	-7.774**
Presentation software	149	3.56	0.880	40	3.30	1.181	-6.075*
Video/movie	149	3.64	0.902	40	3.48	1.265	-5.065*

[a]Scale: 5 = extremely effective and 1 = not at all effective

*** $p < 0.001$. ** $p < 0.01$. *$p < 0.05$

TABLE 5

Differences of Effectiveness based on GPA and Year of Study

Method/tool	Mean[a]				F-value
	Above 3.50	3.00–3.49	2.50–2.99	Below 2.50	
Method					
Lecture	3.86[b,c]	3.46[b]	3.61	3.00[c]	3.270*
Tool					
Music	2.36[b]	2.63[d]	3.18[b,d]	2.83	4.230**
	Year 1	Year 2	Year 3	Year 4	
Method					
Article critique	3.02[c]	2.95[e]	3.35[c,e]	3.25	2.674*
Debate	2.87[b]	2.56	2.76[c]	2.21[b,c]	3.177*
Internship	3.56[b,c,d]	3.98[c,e]	4.24[b]	4.50[e,d]	5.625**
Reflective writing/journaling	3.11[c,e]	2.73[c]	2.86	2.50[e]	2.770*
Self evaluation	2.98[b]	2.86[d]	2.84[f]	2.25[b,d,f]	3.826*
Student-centered teaching	3.13	3.42[b]	3.10	2.79[b]	2.678*
Tool					
Music	2.96[g]	2.76[b]	2.63[c]	2.00[b,c,g]	4.748**

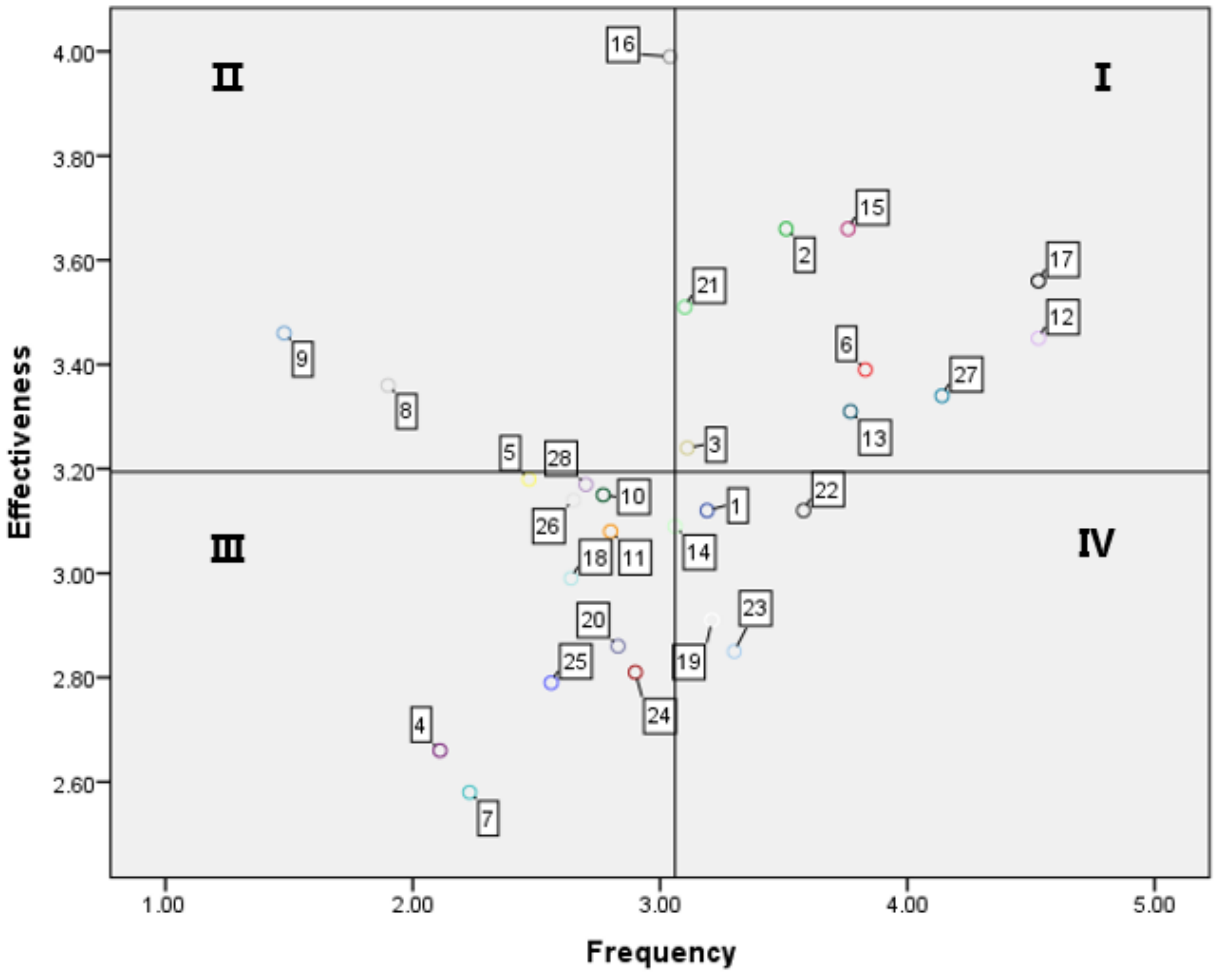
[a]Scale: 5= extremely effective and 1= not at all effective

[b,d,f] Means in the same row followed by the same superscript are significantly different at $p < .01$

[c,e] Means in the same row followed by the same superscript are significantly different at $p < .05$

[g] Means in the same row followed by the same superscript are significantly different at $p < .001$

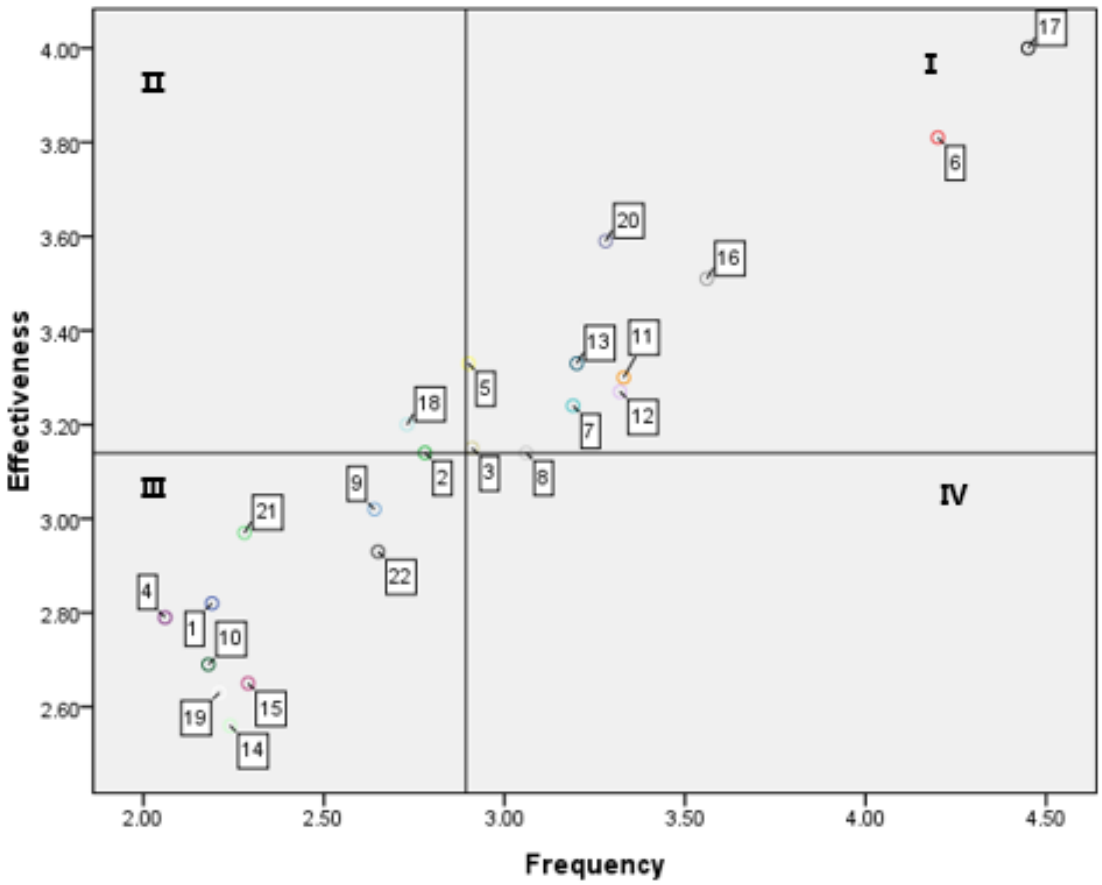
* $p < .05$, ** $p < .01$



1. Article critique
2. Case study
3. Cooperative learning
4. Debate
5. Demonstration/experiment
6. Discussion/brainstorming
7. Drama/play/role play
8. Fieldtrip in Hong Kong
9. Fieldtrip outside of Hong Kong
10. Formative quiz
11. Game
12. Group project
13. Guest lecture
14. In-class online search/exercise
15. Individual project
16. Internship
17. Lecture
18. Panel/symposium/forum of invited guests
19. Peer evaluation
20. Pre-class task
21. Problem-based learning
22. Reading
23. Reflective writing/journaling
24. Self-evaluation
25. Service learning
26. Storytelling
27. Student presentation
28. Student-centered teaching

FIGURE 1

Frequency-Effectiveness Matrix of Learning Methods



1. Artifact
2. Blog/social media
3. Chalkboard/whiteboard
4. Computer game software
5. Concept/mind map
6. Course/learning management System
7. E-learning software
8. Mobile devices (for online search)
9. Mobile devices (for real-time in-class communication between lecturer and students)
10. Music
11. Online resources
12. Overhead projector
13. Photograph
14. Podcast (produced by students)
15. Podcast (provided by teachers)
16. Presentation software
17. Microsoft PowerPoint
18. Prezi
19. Simulation software
20. Video/movie
21. Virtual tour
22. Web-based communication platform

FIGURE 2

Frequency-Effectiveness Matrix of Learning Tools