Cultural literacy and student engagement: The case of technical and vocational education and training (TVET) in Hong Kong

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Cultural literacy and student engagement: The case of technical and vocational education and training (TVET) in Hong Kong

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Technical and vocational education and training (TVET) is often seen to be constraining and focused on specific skill development for specific occupations. This goal is at odds with the demands of a knowledge economy that requires more general educational outcomes for an uncertain and unpredictable labour market. For this reason, Hui (2012) has adopted a broader definition of student learning outcomes and assessed the extent to which ‘cultural literacy’ might be a preferred goal for TVET to supplement the skills training element. Cultural literacy refers to an individual’s world view, ways to interact with people, character, personal ethics, values and style. Hui’s study highlighted the need for TVET to emphasise the development of these generic outcomes, students’ comprehensive attitudes and personal qualities in particular. To achieve greater control over the quality of outcomes, this study aims to investigate the influence of students’ participation in institutional activities on their growth. Through modifying the well-known National Survey of Student Engagement (NSSE), this study examines the relationship between the five benchmarks of effective educational practice and students’ cultural literacy and their self-reported academic performance. Results of a survey study of 238 Hong Kong TVET students indicated that some of the benchmarks could predict to a strong and moderate degree these two important outcomes. It is argued that proper planning and facilitation of educationally purposive activities could enhance both their learning and development. This article will contribute to the discussion on how to advance TVET students’ learning performance.

Keywords: cultural literacy; student engagement; Hong Kong; technical and vocational education and training (TVET); outcomes of learning

Introduction

In response to the changing economic structure of Hong Kong, which is heading towards a knowledge-based economy, the early education reform document Learning through life: Reform proposals for the education system in Hong Kong (Education Commission 2000) proposed a change in the
education system to provide more diverse learning opportunities for students at the senior secondary level and beyond – self-financing post-secondary education in particular. Such a change is evident in the huge expansion of accredited, self-financing post-secondary programmes (including higher diploma, associate degree and top-up degree programmes) offered by both local and non-local TVET providers over the last decade. According to government statistics, the number of full-time students on these accredited, self-financing post-secondary programmes expanded from a total of 9,163 in 2001/02 to 84,157 in 2012/13. The curriculum intention underlying these TVET programmes, in a sentence, is to enhance the knowledge and skills of students in a specific technical and vocational context, equip them to face future work challenges and continue their studies, and learn in a lifelong manner. These programmes provide an alternate pathway for students to achieve post-secondary education other than the formal university route and with a focus on equipping them with sets of generic professional and vocational skills so that they are ready for work and further study and can contribute to society. However, such an ideal has been seriously challenged.

In its report, the University Grants Committee (2010) undertook a macro-analysis into the ability of post-secondary education in Hong Kong to meet the demographic decline in the 17–20 age group to enhance their career prospects and to develop their potential at different life stages. It questioned whether these programmes could help students develop a path to upgrade their knowledge, skills and experience for the workplace and allow them to be flexible and adaptable in order to respond to the rapid pace of change. Similar concern has been raised in many local studies alerting the public to the poor competence and personal and social qualities of Hong Kong youth in terms of future career and life development (see Hui 2012). Thereafter, the University Grants Committee (ibid, 48) recommended ‘a comprehensive review of the future provision and distribution of lifelong learning opportunities throughout the post-secondary system’.

Following the above recommendation, Hui (2012) adopted a broader definition of student learning outcomes and assessed the extent to which self-financing post-secondary students are ‘culturally literate’. The results of this survey with 214 Hong Kong TVET students indicated that, while students agreed that the different constructs of cultural literacy were important learning outcomes, they were not performing them well. One of its suggestions was to urge TVET institutes to design the curriculum in a generic way to facilitate a content-specific environment in which students can practise and perform the different sets of knowledge and skills necessary for culturally literacy. TVET is defined by UNESCO as ‘those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life’ (2001, 2). TVET in Hong Kong involves in equal
measure formal, non-formal and informal learning that takes place across a wide range of educational settings. However, uniquely in Hong Kong, TVET graduates prefer not to join the workforce but to continue their studies by enrolling on undergraduate programmes provided by local or overseas universities. According to University Grants Committee data, the percentage of full-time government-funded sub-degree programme graduates who went on to further study keeps increasing every year, from 43.0% in 2003/04 to 53.4% in 2011/12. TVET in Hong Kong is not an end in itself but a means to the end of further and lifelong learning. Thus, there needs to be a more substantial effort to assess the current situation of whether these diverse TVET settings are functioning well in supporting the goal of student learning and development.

One important research paradigm to improve student learning has focused on the efforts of teachers and administrators to create a facilitative learning environment for students (Kuh et al. 2010; Reason et al. 2006). The work associated with ‘student engagement’ in particular has drawn considerable attention, mainly because of its value in opening up academic conversations about how positive outcomes in terms of student success and development could correlate with their involvement in a subset of ‘educationally purposive activities’. Kuh (2001, 2003) demonstrates that, ‘what students bring to higher education, or where they study, matters less to their success and development than what they do during their time as a student’ (Trowler 2010, 2). Engagement involves behavioural, emotional and cognitive engagement (Fredricks et al. 2004). A student can engage either positively or negatively along each of these three dimensions; for example, he or she can attend or skip or even disrupt class, find the class interesting or boring or even redundant, and accept or reject or even question any given learning and assessment tasks. It is believed that learning is best fostered when students are engaged in a wide range of educationally purposive activities, and student engagement is therefore an important area that TVET institutes, teachers and administrators should look into more closely in order to enhance students’ learning and performance.

The purpose of this study is to explore within the Hong Kong TVET context the relationship between student engagement and their learning outcomes; that is, to what extent students’ cultural literacy and self-reported academic performance can be explained by their engagement in the five benchmarks of effective educational practice. This study is pioneering as it aims to assess students’ performance in relation to the socio-political context in which the curriculum takes place, and what they should be learning in a knowledge-based economy in particular. Student engagement is not a direct measure of student learning or development. It is predicated upon the assumption that, if students report being engaged in a given institute, that institute demonstrates high quality in terms of effective educational practice. To promote quality TVET, this study will have important implications for
local TVET institutes in terms of how to enhance student learning and achieve the ideal of lifelong learning by means of effective planning and facilitation of educationally purposive activities. Based on an assessment of TVET in Hong Kong, this study will help TVET institutes to identify areas for change and improvement.

**Literature review**

*Cultural literacy: An important outcome of lifelong learning*

With the recent trend in outcome-based education, strong emphasis has been placed on what students know and are able to do, and what they value as lifelong learning. Such an assertion becomes more intricate when taking into account UNESCO’s (2010) global education reform agenda in terms of lifelong learning. In Hong Kong, the changing economic structure is the main motivating force for all-round education and lifelong learning. Hong Kong is heading up a knowledge-based economy that is characterised by high value-added and technology-intensive industries. Since the knowledge cycle of a knowledge-based economy is short and information spreads quickly, both society and the workforce require people who are equipped to continuously acquire more complex and rapidly-changing knowledge and skills. To TVET, which aims to provide an alternative pathway for students to undertake lifelong learning and, accordingly, for graduates to go on to further study, become work-ready and contribute to society, its learning outcomes should not be limited to any particular sets of knowledge and skills. In other words, a simple definition of outcomes that relates to knowledge and skills within a specific technical and vocational context will not be comprehensive enough to document what students need to know and be able to do in the future.

The concept of ‘cultural literacy’ perfectly closes the above-mentioned gap and is found to be an important outcome for youth in terms of demonstrating whether they can face future work and life challenges. Cultural literacy was first introduced by E.D. Hirsch Jr. (1987), and refers to the goal of helping students acquire the specific knowledge needed for expressing and understanding the complex ideas and references that constitute their culture. Although the term ‘culture’ is used to denote ‘what someone needs to know’, no attempt has been made to make everyone the same or to destroy democracy in education. Hirsch clarified his position thus:

>[The book] *Cultural Literacy* made the claim that literacy required cultural literacy, which is actually true, but it was very unfortunate that the term ‘culture’ happened to be used there. It would be much better if I said communication within a speech community requires unspoken shared knowledge, knowledge of conventions, knowledge of shared things. (Education Sector 2006)

Following this explanation, cultural literacy could simply be understood as a kind of knowledge that allows a person to pick up a newspaper and...
comprehend what he or she is reading. Hirsch believes that ‘all human communities are founded upon specific shared information, and the basic goal of education in a human community is acculturation – the transmission to children of the specific information shared by the adults of the group or polis’ (1987, xv–xvi). Therefore, cultural literacy refers to the basic information one needs to know to carry on a reasonable conversation and to communicate or work with most people. In brief, the more culturally literate one is, the more conversations one is able to participate in and the more base knowledge that one is able to acquire, the better able one will be to interact with others in an intelligent and rational fashion.

Based on this definition and the idea of information and communication technology (ICT) literacy (Lemke et al. 2003), Hui (2012) developed an eight-construct, 24-item scale to measure the concept. These eight constructs include: (1) multicultural literacy, (2) global awareness, (3) self-direction, (4) higher-order thinking and sound reasoning, (5) teaming and collaboration, (6) interpersonal skills, (7) personal responsibility, and (8) social and civic responsibility. Hui (2012) illustrates that these constructs are generic in terms of the demands of most work and life situations, in which individuals are required to utilise the knowledge and skills necessary to communicate (or carry on a reasonable conversation) and work with others. Also, they fall neatly into Professor Jürgen Habermas’ (1981/1984, 1981/1987) three-world model of how people experience and interact with the world – the subjective, objective and social world. Cultural literacy is an important outcome for students, through which they can demonstrate whether they have developed the attributes necessary to becoming lifelong learners – critical thinkers, self-directed learners, active investigators, and problem solvers (etools4Education 2005). Hui (2012) highlights that cultural literacy is a broader measure for TVET curriculum goals in equipping youth to face future work challenges, to continue their studies and to engage in lifelong learning. By analysing the influence of students’ participation in institutional activities on this important outcome, this study will identify the ways in which TVET institutes need to change.

**Student engagement: Benchmarking effective educational practice**

Research on student engagement as a measure of quality in higher education has been carried out in North America by the Center for Postsecondary Research at Indiana University since 2000. Modelled as the National Survey of Student Engagement (NSSE), it collects information from university and college students on an annual basis regarding their participation in different ‘educationally purposeful activities’. Student engagement has been defined as ‘participation in educationally effective practices, both inside and outside the classroom, which leads to a range of measurable outcomes’ (Harper and Quaye 2009, 2). Student engagement is considered an important indicator in
determining student learning and personal development because it indicates both the time a student spends on those productive activities and how involving an institution is for its students (Kuh et al. 2007). As summarized by Trowler:

Student engagement is concerned with the interaction between the time, effort and other relevant resources invested by both students and their institutions intended to optimize the student experience and enhance the learning outcomes and development of students and the performance, and reputation of the institution. (2010, 2)

The concept of student engagement is based on the constructivist assumption that outcomes of learning are influenced by ‘how’ a student participates in learning-related activities (Coates 2005), and the NSSE is designed to seek manifestations and to some extent outcomes of students’ ‘educationally purposeful activities’. Although research in student engagement often results in techniques for ‘engaging students’, the NSSE concerns ‘students engaging’ – the institute-generated conditions that stimulate student involvement (Bryson and Hardy 2011).

The NSSE (2011) uses five benchmarks of effective educational practice: (1) level of academic challenge (LAC); (2) active and collaborative learning (ACL); (3) student–faculty interaction (SFI); (4) enrichment of educational experiences (EEE); and (5) supportive campus environment (SCE). Level of academic challenge refers to how often students engaged in challenging intellectual and creative work and how much their coursework has emphasised a high level of cognitive learning (analysing/synthesising/making judgements/applying other than memorising). Active and collaborative learning refers to how often students were actively involved in their learning and in helping each other learn and problem solve. Student–faculty interaction refers to how often students interacted with their faculty members in academic and mentorship activities. Enriching educational experiences refers to how often students participated in sets of educational activities that helped to enrich their knowledge and skills in terms of different religious, culture and work settings. Supportive campus environment refers to whether and to what degree the students’ institutes have emphasised and demonstrated a supportive environment for student growth. Table 1 provides a brief description of each of these five benchmarks. These benchmarks describe and reflect the wide range of students’ academic and non-academic interactions with their institutions; the more interactions of this kind that students experience, the higher their learning outcomes will be.

A variant on the NSSE is the Community College Survey of Student Engagement (CCSSE), established in 2001 as a Community College Leadership Program project at the University of Texas at Austin and utilised in community colleges. Similar to the NSSE, the CCSSE asks
questions that assess institutional efforts and practices and students’ behaviours as they are related to student learning and development. In contrast to the NSSE, the CCSSE does not endorse ‘enrichment of educational experiences’ and ‘supportive campus environment’ as effective educational practices; rather it affirms ‘student effort’ and ‘support for learners’ as important benchmarks for student success. There are a number of reasons for using the NSSE in benchmarking students’ experiences of their institute in this study. First, the ‘level of academic challenge’ benchmark in the NSSE is preferred because it includes items from the CSSEE’s ‘student effort’ that relate to students’ commitment to academic tasks. Second,
the other items in the CSSEE’s ‘student effort’ that relate to how frequently students engage in activities, such as peer-tutoring services and skills and computer labs, are atypical and too narrow, and thus should not be included. Third, the NSSE’s ‘supportive campus environment’ covers broadly the same areas as does the CSSEE’s ‘support for learners’. Finally, the NSSE’s ‘enrichment of educational experiences’ is an important domain in terms of supporting TVET in Hong Kong; that is, as a means to the end of further and lifelong learning.

In the development of the NSSE, Pike (2006) suggested the use of scalelets to focus on specific forms of engagement rather than evaluating the five broad constructs. The term ‘scalelet’ is derived from the concept of ‘testlet’, which refers to ‘a group of items related to a single content area that is developed as a unit and contains a fixed number of predetermined paths that an examinee may follow [in a computerized adaptive test]’ (Wainer and Kiely 1987, 190). A scalelet is ‘a set of survey questions related to a specific aspect of the educational experiences of a group of students’ (Pike 2006, 552). The 12 proposed scalelets, in sum 49 items, involved: (1) course challenge, (2) writing, (3) higher-order thinking skills, (4) active learning, (5) collaborative learning, (6) course interaction, (7) out-of-class interaction, (8) varied experiences, (9) information technology, (10) diversity, (11) support for student success, and (12) interpersonal environments. These scalelets, as Pike’s research evidence suggested, ‘give us more nuanced assessment of student engagement than NSSE benchmark scores’ (2010, 10). On the other hand, in 2007 the NSSE was adapted for use in the Chinese context. Initiated by Professor Heidi Ross of Indiana University in collaboration with Tsinghua University, the NSSE-China (Ross et al. 2011), a longitudinal research project, is now an influential measure in China. It is being introduced as the first evaluation instrument in a Chinese quality assessment framework. The NSSE-China has also introduced some new items that measure the specific educational activities and processes that stimulate Chinese students’ involvement. The NSSE-China (or the cultural adaptation of the NSSE) is considered cross-culturally reliable and valid (Luo et al. 2009). It was pre-tested with pilot surveys in six institutions in Beijing in 2007, and further tested using cognitive interviews in five institutions of various types in different regions of China in 2008.\(^4\) The NSSE-China was utilised in 27 institutions throughout China in 2009.

A huge body of literature has documented the strong positive correlation between student engagement in educationally purposeful activities and important educational outcomes (Carini et al. 2006; Kuh et al. 2008; McClenney et al. 2012; Pascarella and Terenzini 2005; Pascarella et al. 2010). Also, student engagement has found to be related to other variables that affect students’ achievement, for example retention and persistence (NSSE 2010; Shinde 2010; Stage and Hossler 2000). Some institutions have begun to use ‘student engagement’ as one of the outcome measures of
curriculum and teaching innovation (Ahlfeldt et al. 2005). However, there have also been criticisms of the use of the NSSE, including the abstractness of the term ‘student engagement’ and its insufficient diagnostic and explanatory power as related to improvement (Axelson and Flick 2011; Pike 2010). Doubt also exists regarding the psychometric properties of the five benchmarks of effective educational practice (Esquivel 2011; Lutz and Culver 2010; Porter 2011). Responses to these criticisms often direct people’s attention to the strong conceptual and empirical foundations of studies into the validity of the NSSR and the need for leaders to play a proactive role in the move towards positive change. Leaders should, for example, be committed and empathetic in encouraging reflective practitioners to establish their own improvement initiatives, and help them to identify links between practice and theory with regard to student engagement (Fullan and Scott 2009).

What we do know for sure is that it is better for students to be engaged than unengaged and it is the responsibility of TVET institutes, teachers and administrators to create and sustain high levels of student engagement in order to enhance their learning and development.

Methods

A survey research method was used for this study (Fink 1995; Munn and Drever 1999), as it allowed access to a comparatively large sample of cases within a short period of time, the collection of information was generally anonymous and a high return rate was possible.

A research inventory was developed, which included three sets of questions. The first set was the 24-item cultural literacy scale (Hui 2012), which measures the extent to which students perform well for each of the indicators (according to a four-point Likert scale from ‘never’ to ‘very often’). The second set of questions included another 37 items that measure student engagement (following a similar four-point Likert scale from ‘never’ to ‘very often’ and ‘some’ to ‘very much’, depending on the nature of the questions). These 37 items were extracted from the NSSE (2011) benchmarks (42 items), Pike’s (2006) scalelets scores (12 scalelets and 49 items) and Ross et al.’s (2011) NSSE-China. Two major methodological considerations were involved in the development of the student engagement scale in this study: (1) items in the NSSE benchmarks were removed if they could not be generalised and/or were hard to categorise in a pre-determined way (e.g. items asking for the number of readings and reports completed by students; items asking whether students had made contact with those from different economic, social, racial or ethnic backgrounds; items asking students whether they had undertaken any foreign language coursework; items asking whether students had studied or planned to study abroad, etc.); and (2) items in Pike’s scalelet scores and the NSSE-China were included if they could enrich the benchmarks (e.g. two items under ‘writing’ in Pike’s
scalelet scores were included in LAC; the item ‘talked about life purpose and goal with a faculty member’ in the NSSE-China was included in SFI, etc.). Eventually, 37 items were extracted to form the student engagement scale in this study. In the LAC benchmark, one item was used for cross-checking the cognitive outcomes of students’ curriculum studies (memoris- ing versus analysing/synthesising/making judgements/applying). Items were then translated with reference to the work of Ross et al. (2011). The third set of questions asked students to report on their academic performance (most of the grades in this academic year) and provide personal information (year of birth, gender, programme, year of study, etc.). Tables 2 and 3 show the items in the cultural literacy and student engagement scales.

Questionnaires were distributed via a cohort of TVET teachers, who were second-year students on the part-time Postgraduate Diploma in Education (PVE) programme at the Hong Kong Institute of Education. It was a purposive sample. A total of nine teachers who were teaching self-financing post-secondary programmes took part; each was asked to distribute a total of 30 questionnaires to any one of their classes in the second semester of the academic year 2011/12. In total, 238 questionnaires were returned, representing a response rate of 88.1%.

Questionnaire data were entered into the Statistical Package for Social Sciences (SPSS) software for analysis and several different techniques were employed (Bryman and Cramer 1997; Norušis 2000). Reliability analysis was used to measure the internal consistency of the indicators in representing the concepts. Means and standard deviations were reported to show the distributions and variations within concepts and indicators. The Wilcoxon signed ranks test was used to compare differences between the non-parametric paired samples. Second-order factor analysis was used to identify the factor structure of the eight constructs within cultural literacy. The Pearson product–moment correlation coefficient was used to indicate linear dependences between variables. Stepwise regression was used to test the predictive power of a list of factors on a given variable.

Sample statistics indicated that respondents derived from nine different Hong Kong TVET institutes. There were 63.1% males and 36.9% females. Their mean year of birth was 1989, with an inter-quartile range between 1988 and 1992; the youngest respondents were born in 1995, while the oldest were born in 1973. The majority of the respondents (66.8%) were enrolled in higher diploma or diploma programmes, while the rest were enrolled in degree (20.9%), associate degree (9.5%) and higher certificate or certificate programmes (2.8%).

Results
Reliability analysis was conducted for the sets of indicators corresponding to each of the eight constructs of cultural literacy and each of the five
Table 2. The 24-item cultural literacy scale.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Corresponding indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multicultural literacy</td>
<td>• Aware of how cultural beliefs, values and sensibilities affect the way they and others think and behave.</td>
</tr>
<tr>
<td></td>
<td>• Appreciate and accept similarities and differences in beliefs, appearances and lifestyles.</td>
</tr>
<tr>
<td></td>
<td>• Sensitive to issues of bias, racism, prejudging and stereotyping.</td>
</tr>
<tr>
<td>Global awareness</td>
<td>• Knowledgeable about the connectedness of the nations of the world historically, politically, economically, technologically, socially, linguistically and ecologically.</td>
</tr>
<tr>
<td></td>
<td>• Understand the role of China and Hong Kong in international policies and international relations.</td>
</tr>
<tr>
<td></td>
<td>• Recognise, analyse and evaluate major trends in global relations and the interconnections of these trends with both their local and national communities.</td>
</tr>
<tr>
<td>Self-direction</td>
<td>• Set goals, plan strategically and believe in their abilities.</td>
</tr>
<tr>
<td></td>
<td>• Work to reach goals, focus and maintain their attention, constantly teach themselves, monitor their own performance and seek help when needed.</td>
</tr>
<tr>
<td></td>
<td>• Evaluate their work, understand that hard work and perseverance breed success, and have positive self-images of themselves as learners.</td>
</tr>
<tr>
<td>Higher-order thinking and</td>
<td>• Construct relationships between the essential elements of a problem in order to provide insight into it, and extract implications and conclusions from facts, premises or data.</td>
</tr>
<tr>
<td>sound reasoning</td>
<td>• Create and apply criteria to gauge the strengths, limitations and value of information, data and solutions in productive ways.</td>
</tr>
<tr>
<td></td>
<td>• Build new solutions through novel combinations of existing information.</td>
</tr>
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</table>
benchmarks of effective educational practice of student engagement. High Cronbach’s alpha coefficient values (ranging from 0.758 to 0.819 for the eight constructs of cultural literacy and from 0.782 to 0.877 for the five benchmarks of student engagement) suggested these indicators demonstrate high internal consistency. Mean values were computed for each set of indicators. Table 4 shows the means, standard deviations and Cronbach’s alpha coefficients for the cultural literacy scale; the TVET students in this sample could ‘sometimes’ to ‘often’ perform the eight constructs for being culturally literate. Second-order factor analysis was conducted to identify the factor structure of the eight constructs of cultural literacy (Beauducel 1997;

<table>
<thead>
<tr>
<th>Construct</th>
<th>Corresponding indicators</th>
</tr>
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| Teaming and collaboration  | • Willing and able to take on different roles and tasks within the group to accomplish shared ends.  
|                            | • Apply collaborative skills to a variety of situations.                                  
|                            | • Reflect on group interactions after collaborative activities, and use experiences to make future collaboration more productive. |
| Interpersonal skills       | • Aware of and able to manage their own behaviour and emotions during social interactions.  
|                            | • Understand and positively manage the emotions of others and be empathetic in a face-to-face environment. |
|                            | • Use effective communication strategies to constructively influence the behaviour of others and to manage conflict effectively by devising win–win solutions. |
| Personal responsibility    | • Set, prioritise and meet personal as well as civic, family and work-related goals.     
|                            | • Maintain a focus on important goals in spite of obstacles.                              
|                            | • Balance personal, civic, family and work demands.                                      |
| Social and civic responsibility | • Pursue public policy that promotes ethical behaviour.                               
|                            | • Actively engage in public discourse and raise public awareness on ethical issues.      
|                            | • Promote positive changes that advance the public good.                                |
Table 3. The 37-item student engagement scale.

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Corresponding items</th>
</tr>
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</table>
| **Level of academic challenge (LAC)** (10 items) | • Worked harder than you thought you could to meet an instructor’s standards or expectations.  
• Preparing for class (studying, reading, writing, doing homework or lab work, analysing data, rehearsing and other academic activities).  
• Spending significant amounts of time studying and on academic work.  
• Prepared two or more drafts of a paper or assignment before turning it in. *(From Pike’s scalelet)*  
• Worked on a paper or project that required integrating ideas or information from various sources. *(From Pike’s scalelet)*  
• **Memorising** facts, ideas or methods from your courses and readings so you can repeat them in pretty much the same form.  
• **Analysing** the basic elements of an idea, experience or theory, such as examining a particular case or situation in depth and considering its components.  
• **Synthesising** and organising ideas, information or experiences into new, more complex interpretations and relationships.  
• **Making judgements** about the value of information, arguments or methods, such as examining how others gathered and interpreted data and assessing the soundness of their conclusions.  
• **Applying** theories or concepts to practical problems or in new situations. |
| **Active and collaborative learning (ACL) (7 items)** | • Asked questions in class or contributed to class discussions.  
• Made a class presentation.  
• Worked with other students on projects during class.  
• Worked with classmates outside of class to prepare class assignments.  
• Tutored or taught other students.  
• Participated in a community-based project (e.g. service learning) as part of a regular course.  
• Discussed ideas from your readings or classes with others outside of class. |
Table 3. (*Continued*).

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Corresponding items</th>
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</table>
| **Student–faculty interaction (SFI) (7 items)** | - Discussed grades or assignments with an instructor.  
- Discussed ideas from your readings or classes with faculty members outside of class.  
- Talked about career plans with a faculty member.  
- Received prompt written or oral feedback from faculty on your academic performance.  
- Worked with faculty members on activities other than coursework (committees, orientation, etc.).  
- Work on a research project with a faculty member outside of course or programme requirements.  
- Talked about life purpose and goal with a faculty member. *(From NSSE-China)* |
| **Enriching educational experiences (EEE) (7 items)** | - Had serious conversations with students of a different race or ethnicity to your own.  
- Had serious conversations with students who are very different from you in terms of their religious beliefs, political opinions or personal values.  
- Participating in co-curricular activities (campus publications, student organisations, intercollegiate or intramural sports, etc.).  
- Used an electronic medium (BBS, chat group, internet, instant messaging, etc.) to discuss or complete an assignment.  
- Attended practicum or internship.  
- Attended community service or volunteer work.  
- Attended an art exhibit, drama, play, dance, music performance, etc. |
| **Supportive campus environment (SCE) (6 items)** | - Providing the support you need to help you succeed academically.  
- Helping you cope with your relationship with others and those of the opposite sex.  
- Guiding and helping you manage your future development (work, family, etc.).  
- Relationship with other students: Friendly/Supportive/Sense of belonging.  
- Relationships with faculty members: Available/Helpful/Sympathetic.  
- Relationships with administrative personnel and offices: Helpful/Considerate. |
Exploratory factor analysis (with principal component as method of extraction, followed by oblique rotation) produced a one-factor model. Confirmatory factor analysis (with maximum likelihood as method of extraction, followed by orthogonal rotation) further inferred that the model was a good fit (Chi-square = 97.804; df = 20; p = 0.000). A single score (mean of overall means) for cultural literacy was then constructed for later analysis. For self-reported academic performance, most students gained a mean grade of B or B+ in the academic year 2011/12, with an inter-quartile range between B– and A–; 23.1% of students gained an A or A+, and only 1.3% gained a C– or below. For the 37 items on student engagement, the same factor analysis procedure was used; however, it did not result in an identical factor structure, as the five benchmarks suggested. Given the strong conceptual and empirical foundations of student engagement and the strong content validity demonstrated by the present study in terms of item selection, this finding did not imply that the benchmarks were flawed. Extra techniques were thus then used and it was found that, when items within each of the five benchmarks were tested separately by consecutive exploratory and confirmatory factor analyses, good fit one-factor models were produced.

Table 5 shows the means, standard deviations and Cronbach’s alpha coefficients for the cultural literacy scale.

<table>
<thead>
<tr>
<th>Cultural literacy</th>
<th>Mean (SD)</th>
<th>Cronbach’s alpha coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multicultural literacy</td>
<td>2.37 (0.59)*</td>
<td>0.789</td>
</tr>
<tr>
<td>Global awareness</td>
<td>2.21 (0.61)*</td>
<td>0.819</td>
</tr>
<tr>
<td>Self-direction</td>
<td>2.49 (0.56)*</td>
<td>0.767</td>
</tr>
<tr>
<td>Higher-order thinking and sound reasoning</td>
<td>2.40 (0.56)*</td>
<td>0.789</td>
</tr>
<tr>
<td>Teaming and collaboration</td>
<td>2.48 (0.58)*</td>
<td>0.801</td>
</tr>
<tr>
<td>Interpersonal skills</td>
<td>2.45 (0.60)*</td>
<td>0.809</td>
</tr>
<tr>
<td>Personal responsibility</td>
<td>2.45 (0.56)*</td>
<td>0.758</td>
</tr>
<tr>
<td>Social and civic responsibility</td>
<td>2.27 (0.62)*</td>
<td>0.817</td>
</tr>
<tr>
<td>Total</td>
<td>2.39 (0.46)*</td>
<td>0.945</td>
</tr>
</tbody>
</table>

*When computing the mean, 1 = Never, 2 = Sometimes, 3 = Often, 4 = Very Often.

outcomes of students’ curriculum studies. Results indicated that students found that their curriculum tended to emphasise ‘analysing’, ‘synthesising’, ‘making judgements’ and ‘applying’ rather than ‘memorising’ ($Z > 3.166; p = 0.000$).

Table 5 shows the correlation between the five benchmarks of effective educational practice and students’ cultural literacy and their self-reported academic performance. These benchmarks correlated weakly to students’ self-reported academic performance ($r^2 < 0.1$) but correlated moderately to their cultural literacy ($0.1 < r^2 < 0.4$). However, the correlation between students’ cultural literacy and their self-reported academic performance was weak ($r = 0.274$).

Tables 7 and 8 show the summary results of the stepwise regression model’s effect on students’ cultural literacy and their self-reported academic performance, using the five benchmarks as predictors. Cultural literacy could be explained strongly ($r^2 = 0.411, F = 49.172, p = 0.000$) by ‘level of academic challenge (LAC)’, ‘enriching educational experiences (EEE)’ and ‘active and collaborative learning (ACL)’ (with standardized beta

<table>
<thead>
<tr>
<th>Student engagement</th>
<th>Cultural literacy</th>
<th>Self-reported academic performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of academic challenge (LAC)</td>
<td>0.548**</td>
<td>0.334**</td>
</tr>
<tr>
<td>Active and collaborative learning (ACL)</td>
<td>0.536**</td>
<td>0.233**</td>
</tr>
<tr>
<td>Student–faculty interaction (SFI)</td>
<td>0.387**</td>
<td>0.232**</td>
</tr>
<tr>
<td>Enriching educational experiences (EEE)</td>
<td>0.403**</td>
<td>0.193**</td>
</tr>
<tr>
<td>Supportive campus environment (SCE)</td>
<td>0.410**</td>
<td>0.304**</td>
</tr>
</tbody>
</table>

**$p < 0.01$.**
weights of 0.376, 0.256 and 0.179, respectively). On the other hand, students’ self-reported academic performance could be explained moderately ($r^2 = 0.138$, $F = 16.918$, $p = 0.000$) by ‘level of academic challenge (LAC)’ and ‘supportive campus environment (SCE)’ (with standardised beta weights of 0.249 and 0.188, respectively).

**Discussion**

In the light of increasing provision of quality TVET in Hong Kong that meets the global education reform agenda of lifelong learning (Medel-Añonuevo et al. 2001; UNESCO 2010), discussions are already taking place regarding what students should be learning and how TVET institutes can maximise such learning. Apart from what are valued as professional and job-specific knowledge and skills, there are also attitudinal and personal qualities which help students to face an increasingly challenging world. Cultural literacy, as a comprehensive measure of these attitude and personal qualities, could reveal more information on whether students are being prepared for future work and life situations and lifelong learning.

Compared with satisfactory self-reported academic performance, TVET students in this sample have not performed well in relation to the eight cultural literacy constructs (mean values between 2.21 and 2.49). Being culturally literate is important in terms of graduates not only recognising
but also coping with the knowledge economy’s influence on different aspects of human life. They need to be able to work collaboratively with people from diverse backgrounds, analyse the opportunities and threats presented by a globalised market in terms of economic and social development, be competent in executing their life plans, exercising their rights and acknowledging their responsibilities, and have the capacity to continuously learn and solve complex work and life problems. The consequences for young people of not being culturally literate can be reliably foreseen; educational institutions must therefore rise to this challenge. All eight constructs of cultural literacy should be addressed, but TVET institutes may set priorities according to their own assessment of students’ performance. To develop students’ social and civic responsibility, for example, as Hui suggested, TVET institutes ‘should ensure their curriculum can facilitate an environment for students to promote the public good and protect society, the environment, and democratic ideals’ (2012, 20).

Correlation between cultural literacy and academic performance is low ($r = 0.274$), confirming that cultural literacy amounts to more than cognitive skills and functions across multiple learning domains. Put it this way, if education emphasises outcomes, then the ‘desired results of education’ (Killen 2000) in the Hong Kong TVET context will be both satisfactory academic performance and high levels of cultural literacy. The focus on generic outcomes is not new. Rooted in competency based-education and training (Tuxworth 1989), TVET’s outcome measures have long been focused on establishing criteria and specifications relating to employment and practice rather than education for education’s sake. The OECD’s (2010) Assessment of Higher Education Learning Outcomes (AHELO) also focused on assessing different discipline-related outcomes. A similar trend was found in Hong Kong. For example, the 2008 Qualifications Framework set out different criteria – ‘knowledge and intellectual skills’, ‘processes’, ‘application, autonomy and accountability’ and ‘communication, IT and numeracy’ – for judging the quality of TVET and higher education. Although these measures are claimed to be ‘generic’, they are still bounded within the cognitive domain and/or are job and knowledge specific. As Hui (2012) highlighted, TVET institutes thus need to address this quality enhancement issue to demonstrate their continuous commitment to meeting the lifelong learning needs of students, their cultural literacy and personal qualities in particular.

Student engagement, as a tool for assessing the quality of educational provision, not only strongly correlates with but also explains the variance in this sample’s cultural literacy and academic performance ($r^2 = 0.411$ and 0.138, respectively). Level of academic challenge (LAC) appears to be critical to the two learning outcomes (standardised beta weights of 0.376 and 0.249, respectively). As suggested in the definition of LAC, challenging intellectual and creative work is central to student learning. The impact of
academic challenge on student learning is well-evidenced in the literature, which affirms a significant correlation between teachers’ setting of specific and challenging tasks for students and their engagement and improved achievement (Hattie 2003; Pascarella and Terenzini 2005). Use of motivational strategies and students’ motivation to learn are key here. As achievement goal theory highlights, ‘students’ academic motivation can be understood as attempts to achieve goals’ (Seifert 2004, 142). Challenging goals and high expectations encourage students to use higher cognitive processes. TVET institutes should establish appropriate and challenging curriculum tasks for students and emphasise the importance of effort in achieving them. Students would then be motivated to self-regulate their use of performance-orientated learning strategies while at the same time developing a strong intention to learn and an active interest in learning (Biggs 2003).

According to the results on the academic challenge (LAC) items, students who scored highly can be considered hardworking; they spend more time and effort on their studies than other students and seem to enjoy challenging themselves. TVET teachers should consider strategies to motivate their students to challenge themselves academically, for example they can be autonomy-supportive teachers. Reeve et al. (1999) discussed the fact that autonomy-supportive teachers are more inclined to teach and motivate students according to students’ interests. These teachers value and support students’ interests when they teach. Applying this concept to teaching at TVET, teachers could allow students to undertake assignments that hold personal interest for them and thereby harness their intrinsic motivation. When students are motivated intrinsically, they are more likely to strive to overcome challenges they encounter in their assignments and studies.

Self-efficacy and enjoyment are other important factors impacting on the learning outcomes deriving from personal attitudes and qualities. Bowers (2006) suggested that TVET curriculum design has to be flexible so as to create an environment in which students are empowered to think for themselves. Such a design should not be limited to any pre-set curriculum goal or academic and non-academic performance outcomes but, rather, should be extended to the practice of teaching/learning and assessment. In this regard, any teaching and learning activities and assessment tasks conducive to the development of cultural literacy should emphasise the quality of instruction. High-quality instruction has to be appropriate in terms of student ability but also extend their prior knowledge; it must also create opportunities for students to think, analyse and feed back to guide their thinking and performance.

Enriching students’ educational experiences (EEE) and an active and collaborative mode of learning (ACL) also help in the development of cultural literacy (standardised beta weights of 0.256 and 0.179, respectively). Educational experiences make learning more meaningful and more useful because what students know becomes a part of who they are, and they learn more when they are intensely involved in their education and are asked to think
about and apply what they are learning in different settings. These two benchmarks highlighted, on one hand, the importance of TVET institutes ensuring students are offered the necessary educational experiences to succeed throughout their studies, and, on the other hand, the value of students being actively and collaboratively involved. Learning is ‘experiential’ in nature, especially when the outcomes of learning relate to one’s attitudes and personal qualities (Kolb 1984). TVET institutes might consider alternative, non-traditional strategies for creating a learning environment for students in which they can actively experiment and reflect on their own attitudes and personal qualities. Learning is not exclusively classroom-based. Although what constitutes ‘learning’ has been subject to discussion for decades, and the circumstances under which it best occurs are still unknown, learning from and through experience can be highly meaningful (Keeling 2004). Accordingly, a variety of ‘new’ learning paradigms has thus emerged, including co-curricular learning, service learning, project-based learning and work-based learning. In general, these paradigms all focus on creating an environment ‘that involves students in doing things [actively and collaboratively] and thinking about the things they are doing’ (Bonwell and Eison 1991, 2). It is important to highlight that we do not intend to promote a particular type of ‘core curriculum’ or common values of any kind. The essence of all learning paradigms is to motivate students to participate autonomously, without coercion, irrational agreement or miscommunication of the underlying curriculum aims. Teachers are central to students’ active and collaborative learning (both inside and outside the classroom), and TVET teacher training should ensure that learning paradigms and strategies are student-centred and development-orientated.

Cultural literacy learning outcomes have to be assessed. Assessment, as a process of documenting and judging evidence of student learning, demands that teachers take a cautious stand on the learning context and the kind of information that it collects. This process rests on the assumption that elements of an individual’s performance can be accurately identified and assessed (Gottfredson 2009). The issue is what counts as learning, and how assessment can extract what students have learned in a personal cognitive domain and how well they can apply it in a public performative domain. According to Gardner (1993), the essence of understanding is that it is performative; therefore, in order to demonstrate to others that he or she has learned, an individual has to perform that learning in terms of participation and in response to set assessment tasks. Hui (2014) suggested the use of authentic assessment, which is characterised by ‘realistic activity or context’ (Frey et al. 2012). If an assessment task does not involve realistic activity/context and does not reflect what students do and treasure in their real life, then it cannot provide valid information for teachers to use in judging whether students have learned. TVET teacher training must involve effective use of authentic assessment strategies to judge student learning.
A supportive campus environment (SCE) has been found to help students excel in academic performance (standardised beta weight of 0.188). Students perform better at, and are more satisfied with, colleges that are committed to their success and cultivate positive working and social relations among different groups on campus. According to Plucker (1998), when students view their school as supportive, they have higher academic aspirations. Aspiration level is positively related to ambition, self-monitoring, self-confidence and excitement. All these positive characteristics can lead students to put more time and effort into studying and encourage intrinsic motivation and greater persistence in terms of overcoming challenges. Their cultural literacy can also be enhanced. TVET institutes therefore have to demonstrate their continuous commitment to planning and implementing different support services for students in order to meet their diverse learning needs. As TVET leaders should apply the 3Ls: ‘listen, link and lead’ (Fullan and Scott 2009). When proposing change, they should be decisive, committed and empathetic to stimulate reflective practitioners to think about their own context, about the nature of the innovations being considered, and about how data from practice fits with theory and associated concepts.

**Conclusion**

This article attempts to explore the relationship between student engagement and two important student learning outcomes – cultural literacy and academic performance – in the Hong Kong technical and vocational education and training (TVET) context. Assessment results from 238 TVET students indicated: (1) less satisfactory cultural literacy performance (when compared with self-reported academic performance); and (2) the high explanatory power of different educationally purposive activities in relation to these two outcomes. Although only data on self-reported academic performance was collected, this study is methodical in assessing the current situation and in offering diagnosis and improvement actions. Proposals were suggested for each perspective. At the institution and teacher level, we suggested: (1) setting up appropriate and challenging curriculum tasks that provide students with the opportunity to develop critical thinking and analytical skills; (2) using different learning paradigms to engage students in actively and collaboratively experimenting and reflecting on their attitudes and personal qualities; and (3) cultivating a positive and supportive campus (learning) environment conducive to student success. Ultimately, teacher training should encourage teachers to meet the lifelong learning needs of students. Although generalisation was not the main purpose of this study, these proposals should encourage academic discussion on the quality of TVET and the effect of engagement on students’ learning outcomes.

‘A college is an institution that exists to produce learning’ (Barr and Tagg 1995, 13). TVET institutes must assess whether they have achieved
their intended curriculum goal of equipping Hong Kong youth for future work and life challenges. The concepts of cultural literacy and student engagement, as well as an understanding and methodical explanation of the relationship between them, are critical in terms of the ability of institutes, teachers and administrators to offer high-quality TVET and meet students’ lifelong learning needs.

Notes
1. An earlier version of this article was presented by Sammy King Fai Hui at the Lifelong Learning International Conference 2012 (3LInC’12), 19–21 November, Bangkok, Thailand.
3. The University Grants Committee (UGC) is a non-statutory advisory body appointed by the Chief Executive of the Government of the Hong Kong Special Administrative Region to advise on the development and funding of higher education and to administer public grants to the eight higher education institutions. It also plays a major role in quality assurance and promoting research, and comprises local and non-local academics, professionals and community leaders. For details, go to http://www.ugc.edu.hk/eng/ugc/index.htm.
4. Cognitive interview is a technique for assessing whether students are interpreting survey items consistently and whether their responses accurately represent the behaviours or perceptions the survey authors intend to capture. It is often used to test whether there are differences in interpretation and response decision between students in different racial/ethnic categories. For details, go to http://nsse.iub.edu/pdf/psychometric_portfolio/Validity_CognitiveInterviews.pdf.
5. Information about this two-year part-time Postgraduate Diploma in Education (Professional and Vocational Education) programme can be retrieved from http://www.ied.edu.hk/acadprog/pgde/PVE.htm.
6. Open University of Hong Kong; Hong Kong Community College, Hong Kong Polytechnic University; School of Professional Education and Executive Development, Hong Kong Polytechnic University; Clothing Industry Training Authority; Hong Kong Institute of Vocational Education (Morrison Hill), Vocational Training Council; Hong Kong Institute of Vocational Education (Haking Wong), Vocational Training Council; Hong Kong Institute of Vocational Education (Tsing Yi), Vocational Training Council; Hong Kong Institute of Vocational Education (Tuen Mun), Vocational Training Council; and Hong Kong Universal Education.

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