Chapter 11
Developing Assessment for Productive Learning in Confucian-Influenced Settings

Potentials and Challenges

David Carless and Ricky Lam

Abstract Competitive examinations originated in China during the Han dynasty, and have a powerful residual influence on how assessment is approached in contemporary Confucian-heritage contexts. In this chapter we review key issues in the relationship between assessment and productive student learning in examination-oriented settings. We use examples from recent data collection in Hong Kong schools to illustrate some of the potential benefits and barriers in the implementation of assessment for learning. The main aim of the chapter is to analyze the relationship between educational assessment and the sociocultural context in which it is enacted.

11.1 Introduction

Competitive examinations have a 2,000-year history, dating back to its origination in China. This long history continues to carry a powerful residual influence on how assessment is approached in contemporary Confucian-heritage contexts: China, Hong Kong, Japan, Singapore, South Korea, and Taiwan. In these settings, summative assessment dominates to such an extent that it is difficult for formative assessment to become established. This tension between summative and formative assessment also manifests in many other international contexts, and is a key issue to be addressed in attempts to promote the learning potential of assessment.

At the outset, we propose some clarifications of the terms we are using. For current purposes, we view formative assessment as denoting classroom processes that use evidence to focus on improving and developing student learning. Summative assessment is focused on summing up student achievement at a particular point in time. Teachers’ and students’ realities are that they need to engage with both summative and formative assessment, so a natural option for them is to seek to use summative assessment formatively. The formative use of testing processes involves

D. Carless (✉)
University of Hong Kong, Hong Kong, China
e-mail: dcarless@hku.hk

R. Lam
Hong Kong Baptist University, Hong Kong, China

strategies such as developing more effective methods for revision (Black et al. 2003); encouraging students to set test questions and provide answers (Foos et al. 1994); test follow-up processes, whereby students perform a written analysis of their corrected tests prior to receiving a final grade (Carter 1997); and student self-evaluation of test performance allied to setting targets for future development (Carless 2011).

This chapter explores the potential benefits and challenges in promoting a formative orientation to assessment in a context dominated by summative testing. It is framed by an analysis of selected factors affecting Confucian-influenced approaches to education, the assessment of learning, and the learning dispositions and competencies of students. We also use classroom examples from recent data collection in Hong Kong primary schools to illustrate some of the potential benefits and barriers in the implementation of practices at the interface of formative and summative assessment. The two main contributions of the chapter are as follows. First, it explores the relationship between educational assessment and the sociocultural context in which it is enacted. It discusses some of the barriers to the implementation of formative assessment in Confucian-influenced settings and how some of these challenges might be mitigated. Second, it casts light on the interaction between summative and formative assessment. The variations of formative assessment that carried most potential for implementation in the Hong Kong context were those that did not conflict with the dominant testing paradigm; for example, formative assessment strategies embedded within a cycle of test preparation, testing and test follow-up. Some arguments for and against this orientation are analyzed, and some future possibilities discussed.

11.2 Conceptual Framework

Our research experience in Hong Kong has highlighted the effects of sociocultural factors in relation to educational assessment (Carless 2005, 2010, 2011; Carless and Lam 2012; Lam 2012). Accordingly, the conceptual framework for the chapter is based on a review of selected key issues in the relationship between assessment and student learning in Confucian-influenced settings. This framework includes the interplay between three themes: the role and status of competitive examinations; the collectivist orientation of Confucian societies and their implications for testing; and student learning dispositions, such as effort, memorization, and persistence.

Before proceeding, some caveats are in order. Hong Kong is a setting influenced by Confucian cultural values (Biggs 1996), although Confucianism itself has a contested and evolving identity (Wong and Wong 2002), and Chinese beliefs span a huge spectrum of differing and contradictory ideas (Ryan and Louie 2007). Following from these points, any discussion of culture and Confucian influences is likely to be fraught with risks of stereotyping and over-simplification. For example, with respect to school classrooms across Confucian-influenced societies, there is a wide diversity of experiences ranging from well-disciplined classes in which students are highly respectful of the teacher to unruly classes of disaffected students (Dimmock 2000). Despite the risks of over-simplification, we do wish to outline some conventional,
11.2.1 History of Competitive Examinations

A first relevant sociocultural dimension is the historical status of competitive examinations in China in providing a level playing field and an opportunity for social mobility (Li 2009). Competitive oral and written examinations originated in China during the Han dynasty from around 165 BP (Wright 2001). The ensuing imperial system of civil service examinations was formalized around 606 CE during the short-lived Sui dynasty (Suen and Yu 2006). These examinations placed particular emphasis on the mastery of the classics in line with the Confucian belief in the absorption of knowledge to create a superior person (Zhu 1992). Similar examination systems also spread to other Confucian-influenced countries: Japan in the eighth century, Korea in the tenth century, and Vietnam in the eleventh century (Carless 2011).

This long history of examinations in Confucian-influenced settings encouraged the belief that testing is a fair means by which to gauge achievement and select students for government service. In Chinese societies, passing examinations has come to be regarded as the main purpose of education (Cheng 1994). Preparing for these examinations is believed to cultivate a number of attributes: hard work, persistence, and determination so as to better one’s life chances (Zeng 1999). In short, we believe this 2,000-year history of competitive examinations needs to be accounted for in any discussion of contemporary assessment practices in Confucian-influenced societies.

11.2.2 Collectivism in Relation to Education

Confucian-influenced societies are predominantly collectivist in nature, in that individuals are integrated into cohesive in-groups that provide support in return for loyalty. Collectivism usually involves hierarchical relations with others, with individuals forming part of a community, such as a family or school class. In collectivist societies, the aims of schooling include developing skills to adapt to being an acceptable group member, and there is often an emphasis on developing harmonious relationships with other parties. In the classroom this may mean that cooperating effectively and respectfully with classmates is a particularly valued skill.

Of particular relevance to our framework is the relationship between competitive examinations and collectivist societies. We suggest that competitive examinations...
may be more accepted and revered in societies that have tended toward collectivism rather than individualism. Rohlen (1983) made a point in relation to Japan and we feel that it resonates with other Confucian-influenced settings:

A group-oriented society . . . can choke on its own narrow particularism if it does not have well-entrenched mechanisms that counterbalance its powerful tendencies to allocate rewards and favors on the basis of personal affiliation . . . The weight of personal obligations requires a powerful counter-mechanism. An impersonal exam system that adjudicates the selection process is just the solution. (p. 62)

Competitive examinations can thus be a guard against the collectivist trait of rewards being mainly based on personal relationships. In sum, it is our contention that in collectivist societies (even more so than in individualistic ones) a competitive examination system may be particularly trusted and valued.

11.2.3 Student Learning Dispositions

In Confucian-influenced societies, students are generally acculturated to show respect for teacher authority, with initial learning often focused on the acquisition of information and absorbing basic knowledge (Tweed and Lehmann 2002). There is also a particular emphasis on effort and diligence, with failure in student achievement usually put down to ‘laziness’ rather than a lack of ability (Biggs 1996). Memorization is often seen as the first stage in the path to deep understanding and, for example, the acquisition of East Asian ideographic and/or character-based script does, indeed, demand sustained practice and memorization. In relation to assessment, students are primed by family members to invest considerable time and effort in assessment-related preparation activities, such as memorization of material and practising on past test papers.

Confucianism emphasizes a pragmatic approach to learning rather than one in which learning for its own sake is emphasized. A consequence is that learners in Confucian-influenced societies are more likely to see education as a means to an end than Western learners (Tweed and Lehman 2002). Success in examination is a means by which to gain credentials, obtain gainful employment, and so contribute to the family or collective good. Accordingly, there is great pressure to study hard and obtain good results in tests and examinations from the first year of primary schooling onwards (Carless and Lam 2012). Students from Confucian-influenced societies do generally perform well on international tests of achievement, such as Trends in International Mathematics and Science Study and Progress International Reading Literacy Study, but despite these apparent high levels of achievement, students in Hong Kong often seem to carry perceptions of low self-efficacy (Shen and Tam 2008). There is evidence (for example, Carless 2011) that students in Hong Kong are sometimes trained to do well in tests, while only developing limited or partial understanding of what has been assessed. This phenomenon is also addressed in the influential work of Dweck (2002), in relation to the distinction between performance (good scores in tests) and mastery (deep understanding of the material).
11.2.4 Summary of Implications for Learning and Assessment

To sum up, examination success in Confucian-influenced societies is seen as a major purpose of education, an opportunity for social mobility and a means of ‘gaining face’ for the individual and the family. Collectivism, with its tendency to offer rewards based on personal relationships, also reinforces the need for impersonal examination systems to make judgments about student performance. Our framework has also indicated a primary focus on knowledge acquisition with the key teacher role a respected authority, and student learning dispositions of effort, memorization, and practice. Enabling factors that seem to support high student academic achievement include time spent on task, motivation to do well on tests, diligence, and persistence. Against this backdrop, we may infer that prospects for the uptake of formative assessment do not appear particularly promising as the power of summative assessment is likely to drown attempts to develop a more formative orientation. In Confucian-influenced settings, if formative assessment is not to be perceived as irrelevant to the impetus for examination success, it may need to take different forms from those generally found in the international literature.

11.3 Classroom Examples

In this section, we discuss two examples of classroom practice from the teaching of English as a second language in Hong Kong primary schools. English is one of the main subjects of the curriculum, along with Chinese and mathematics. For these three subjects, most schools in Hong Kong set a series of internal school tests. These usually involve one major test and one examination in the two semesters of a school year, and they are preceded by ‘quizzes’ or ‘mock tests’. Much classroom time is spent teaching to, preparing and revising for these internal teacher-set tests, which are taken very seriously by all stakeholders. This is not only so much because the stakes are necessarily particularly high, but also because tests are seen as representing student achievement and student progress in comparison with their peers. The processes of testing are also seen as developing test-taking strategies for lifelong use. Teaching techniques and the associated test preparation often involve teachers presenting and drilling material to the whole class, and students spending considerable out-of-class time in revision and memorization. Even though these processes are orientated mainly toward summative assessment, there are teachers who are willing to implement practices that attempt to bring some formative orientation into the testing process. We present below discussion of the practices of two such teachers, who can be seen as outliers, experimenting with practices counter to the dominant assessment culture.
11.3.1 Student Generation of Questions for a Mock Test

The first example involves a strategy, recommended in the formative assessment literature, of students’ generating their own mock test papers. Student self-generation of questions is an important means of developing understanding and enhancing self-regulation (Palincsar and Brown 1984), and is shown by intervention studies to lead to cognitive gains (Rosenshine et al. 1996). Preparation of test questions helps students to develop an overview of what is being studied, can lead to more meaningful revision processes and can deepen their thinking about the assessment process (Black et al. 2003). Generating (and answering) potential test questions while preparing for an examination is an effective technique that can lead to successful performance (Foos et al. 1994).

In this example from our most recent data collection (Lam 2012), the teacher had been exposed to this idea in a preservice teacher education course on assessment for learning taught by the second author. During his third year as a teacher, he wanted to try it out with his Year 3 students (aged eight years old). This teacher’s rationale was that generating test questions could involve students more actively in engaging with test content, in comparison with other more passive revision strategies, such as reading and re-reading of material.

The teacher first introduced to the students various types of assessment items, such as proofreading, multiple choice (MC), and filling in the blanks. By means of a slide presentation, he revised the key test content, which included grammatical aspects, such as agreements, prepositions of location, and the present continuous tense, contextualized in a textbook chapter entitled School Life. Then, he asked the class to form groups of four and construct their own mock test paper. While they were working on developing their test items, the teacher gave feedback and advice to selected groups while their work was in progress. Upon completion of their mock paper, students were asked to exchange it with another group and to fill in the answers to their classmates’ paper. Item writers were responsible for marking their peers’ mock papers and discussing answers with them. The final stage of the process involved the teacher inviting two groups to demonstrate some examples of items they had constructed. The teacher then gave feedback to the students and clarified any misunderstandings concerning the test items.

When asked for his views on this classroom episode, the teacher expressed the judgment that the activity was interactive and motivating, in that he perceived a high degree of student participation in the class. The teacher also believed that students generating their own mock tests contributed to increased retention of knowledge and fewer grammatical errors. He reported that the students scored on average around 7 percent higher in the test that followed this revision process, compared to a similar test given the previous semester. While these improved test results were encouraging to the teacher, they are limited as research evidence in that they do not account for student differences from year to year or variation in the difficulty of the tests.

Students reported that the test-preparation technique was fun and novel, although some stated that they found it difficult to develop accurate test items owing to their
Figure 11.1 Example of student generated mock test

Proofreading
1. He is good at run.

2. She sits in front of I.

MC
3. Who is between Derek and Raymond?
   A. Karen, Wille
   B. Derek, Raymond
   C. Derek, Karen
   D. Raymond, Karen
   E. Janice, Harry Wong

Fill in the blanks
1. Karen is crying because Lilly is _____ her.
2. Cherry Wong is happy because _____ Exam is good.
   1. Shout at/talk to. 2. Her/she

limited English abilities. Some students, for example, reported that they found it quite challenging to write MC questions, since they had to construct distracters in addition to the correct answer. Another problem was variable participation within the groups of four, with some students reporting that not all members had made a significant contribution to the construction of the mock test paper.

Figure 11.1 below shows an example of a student-generated mock test. The student who was the leader of this group perceived positive elements of the process to be his heightened awareness of relevant syllabus content, which could help him anticipate and prepare for what would be included in the actual assessment. He also believed that constructing a mock paper in preparing for the assessment could help to develop ownership of the learning process. He commented, ‘I feel so proud I can set a test paper for my classmates’.

We believe that the student has quite successfully used the formats recommended by the teacher. For the proofreading exercise, the answers would be, ‘He is good at running.’ and ‘She sits in front of me.’ For the MC question the student is trying to test understanding of the preposition ‘between,’ but he seems to have confused
‘between’ and ‘next to’ in that the correct answer should be ‘Karen,’ which is not an option in his choices. For the filling in the blanks items, the format is not entirely clear because the options come below the sentences and for the first one it is necessary to change the form of the answer to ‘shouting at.’ For the second one, he has unnecessarily capitalized ‘Exam’ and strictly speaking a more idiomatic sentence might be: ‘Cherry Wong is happy because her examination result was good.’ Despite these minor limitations, our judgment is that he has made a good attempt at devising a simple test in a format congruent with what the teacher has suggested. In passing, it is worth noting that the de-contextualized nature of the items and their focus on lower-order thinking are longstanding issues in relation to testing in Hong Kong (Carless 2010).

Summing up this example, the teacher capitalized on student motivation to do well in tests by involving them in a productive revision activity whereby students generated their own test questions. This encouraged them to sample the syllabus and develop some ownership of the test-preparation process. It also seemed to be motivating, partly because it made students’ participants in, rather than just recipients of, the process of generating and answering test items.

11.3.2 Peer-Facilitated Test Follow-Up

Our second example involves peer cooperation as part of instructional follow-up after a test has been completed. Peer cooperation is at the heart of most approaches to formative assessment (see Hayward 2012, for a recent example). It enables students to learn from each other; promotes teamwork and development of skills in conflict resolution; can be more enjoyable for students; and is a step towards the important goal of enhanced self-evaluative capacities.

This example was focused on test follow-up. The conventional means of handling this post-test stage in Hong Kong is to go through and explain the answers to students, and to ask them to write corrections. Many teachers prefer to allocate a minimum amount of time to such test follow-up, as they are keen to move onto the next topic in the textbook and present further knowledge to students. The teacher whose practice we analyze here had a somewhat different orientation in that she wanted to carry out what she called ‘post-test consolidation.’ Post-test consolidation falls within the notion of using test data formatively, as discussed earlier in the chapter. This orientation focuses on using evidence from tests to move student learning forward.

The teacher concerned had 4 years of teaching experience, had taken a preservice teacher education course on assessment for learning taught by the first author and, as in the previous example, she was teaching a Year 3 class. She wanted to involve students actively in post-test follow-up and to exploit the possibilities of peer learning. This teacher believed that teacher-fronted remediation of points of difficulty in the test was limited in potential to advance student learning because it was too similar to the teacher input that had been presented prior to the test. Instead, she used a number of strategies for peer-facilitated test follow-up (see also Carless 2011: Chapters 6 and 7), and here we discuss two of them.
The first of these, student explanation of test-taking strategies, occurred during teacher-fronted classroom interaction and involved high-achieving students describing to the class how they worked out or thought through some correct answers to test questions. For example, one student explained how she made choices between different options for MC questions. Another student emphasized the importance of checking answers at the end of a test, and she reported that she tried particularly to check for mistakes that she had made previously in her class work or homework.

The teacher judged this sharing as being relatively successful because most of the students seemed to be interested in the strategies adopted by their peers and perceived that they could learn from those who had done well in the test. Only a minority of students expressed satisfaction with their previous test-taking strategies and did not perceive any need to add new ones. The teacher reported that desire to obtain high marks was a facilitating factor in encouraging student interest in their classmates’ test-taking strategies.

The second strategy involved a group activity in which students tried to develop collaboratively a ‘perfect correction sheet’ for the test; in other words, a completed test paper with all the questions answered correctly. Instead of going through the answers to the test in the usual way, the teacher simply returned to students their graded test papers, upon which she indicated items they had answered correctly or incorrectly. Groups of four students then collaborated to develop a team correction sheet. Given that students had answered different questions correctly, this process encouraged them to pool their ideas. Students found it particularly interesting for certain challenging items that many of them had found difficult.

The teacher reported that these processes particularly allowed for peer support from the higher-achieving students to the lower-achieving ones, and seemed to be most effective when students took time to discuss correct answers and work out the reasoning behind them. The teacher did, however, acknowledge a limitation of minimal participation from less-confident students who sometimes were only peripherally involved if a high-achieving student dominated the process. Overall, students reported that they liked doing this activity because they generally enjoyed working together and it was less boring than doing corrections on their own.

The common theme in the test follow-up practices of our second teacher was peer cooperation, and this was part of the ethos of the primary school in which she worked. Collaborating with peers has potential to develop positive relationships between classmates, facilitate peer learning and reduce some of the stress and anxiety underlying testing processes. A further advantage of peer cooperation is that it involves students more actively in the assessment process than when they are listening to teacher input or explanation. It does seem to us that peer cooperative learning processes are particularly promising in Confucian-influenced settings. It appears that the collectivist orientation of the students may be as strong as, or stronger than, the more individualistic perspective of examinations as competition. Students seem to be able to work together in test preparation and follow-up, while also being aware that comparisons of student achievement are frequently being made by teachers and parents.
11.4 Implications

In schooling in Confucian-influenced societies, testing is a dominant force and examination success is often a key aim of education. As we suggested in the framework for the chapter, these contextual factors do not provide a particularly promising backdrop for the establishment of formative assessment. Our position is that in Confucian-heritage settings there are two main ways of developing more of an enabling potential for assessment. The first would be to challenge the status quo and argue for a more emancipatory form of education: to question the Confucian underpinnings of education, as it were. While this kind of orientation is not without merits, it seeks to overturn centuries of culturally assimilated practices, so is probably unlikely to gain traction on a large scale. The second approach, which we favor, is a more pragmatic one of accepting the dominance of testing but trying to promote some formative elements within it. It acknowledges that in Confucian-influenced settings frequent testing, teaching to the test and emphasis on numerical scores are going to occur. In such settings, educators need to find ways of developing some positive synergies between summative and formative assessment, or at a minimum reducing some of the unwanted consequences of a dominance of testing by stimulating student cognitive engagement.

Our classroom examples show prospects for injecting some formative orientation into test preparation and test follow-up processes. In the first example this was achieved through students in groups setting their own test papers as part of their revision strategies. In the second, it involved a variety of peer cooperative test follow-up strategies. While the processes were focused on test preparation or test follow-up, they sought to involve students in active revision of test content, developing some ownership of test processes, working out test-taking strategies, or reflecting on answers to test items. We believe that these processes represented productive synergies between summative and formative assessment. They provided messages to students that tests do not have to be focused only on scores and performance, but that they can also develop enhanced learning from pre-test revision and post-test reflections. A further potential repercussion is to broaden students’ learning strategies from memorization and practice to deeper, metacognitive processes. The affective benefits of working in groups also help to alleviate some of the pressure and anxiety that lower primary school students in Hong Kong experience in relation to their experience of heavy doses of testing (Carless and Lam 2012).

This kind of convergence between summative and formative assessment is not without its limitations. A key disadvantage in integrating summative and formative assessment is the danger that students mainly focus on marks rather than how their learning can be improved (Brookhart 2010). Formative use of test data is limited in scope if it focuses on micro-teaching of ways in which higher marks can be achieved (Stobart 2008). A further important variable is the quality of the test: if a test mainly assesses low-level recall of memorized information rather than the development of higher-order thinking skills, then its potential to develop student learning may be minimal. Despite our positive perceptions of what we observed in our examples, we do not claim that they are immune from these challenges.
As we suggested in our framework, formative assessment in Confucian-influenced settings probably needs to take different forms than those found in the international literature. This type of formative assessment can be described as a ‘restricted,’ contextually grounded version of formative assessment (Carless 2011), building enabling strategies around the dominant summative paradigm. Restricted formative assessment is focused mainly on using test preparation or test follow-up processes to support continuous student learning. ‘Restricted’ variations of formative assessment carry potential to render formative assessment more accessible to practitioners in test-dominated settings in that they acknowledge the powerful role of summative assessment in teachers’ professional lives. This can form a starting point for engagement with formative assessment when contextual and cultural factors are not conducive to a more ‘extended’ version of formative assessment in which valuable goals, such as learning to learn and the development of student autonomy, are evident (see, for example, Willis 2011). Extended formative assessment encourages students to take greater control of their learning than is evident in more restricted forms.

In settings that are largely dominated by examinations, a further means by which formative assessment can be made more attractive to stakeholders is if it is shown to lead to enhanced performance in tests. A relevant way forward is to advance the argument and provide the evidence from a variety of settings that well-implemented formative assessment plays a role in good performance in summative assessment. There are reports in the literature from Pittsburgh in the United States of primary-age students (Meisels et al. 2003) and in England of secondary school students (Wiliam et al. 2004) that enhanced implementation of formative assessment does lead to improved student achievement in local or externally mandated tests. Further evidence from different contexts and age groups would be valuable in reinforcing these promising results.

11.5 Conclusion and Future Directions

This chapter has discussed some enabling potential of testing processes, despite the barriers discussed in our framework of sociocultural factors affecting assessment in Confucian-influenced settings. Several future directions emerge. We have suggested that the formative use of tests has potential as a productive method for developing positive synergies between summative and formative assessment. How a cycle of test preparation, test-taking, and test follow-up could be engineered to promote a deep learning experience for students is worthy of further investigation. What are effective means of test preparation that promote both short-term performance and longer-term mastery of material? What are effective ways of following up after tests? How might formative assessment effectively establish itself when summative assessment dominates?

The strategy of students setting mock tests also seems ripe for further investigation. Although, one assumes that it has probably been tried out quite often in practice, we were surprised not to be able to identify more accounts of recent research in this area.
in relation to schooling. There are already plenty of reports of its implementation with university students (see Papinczak et al. 2012 for a recent example). Further analyses of its implementation, benefits, and challenges with school-age students would be valuable. How effective is it with school-age students? What are effective ways of preparing students for this activity? What are the main benefits to students that might accrue? These issues underscore the need for further research to probe the response of school-age students to teaching strategies at the interface of summative and formative assessment.

Acknowledgment The research upon which this chapter is based was supported by a General Research Fund grant from the Research Grants Council of Hong Kong: HKU740609H.

References


