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Chapter 3

Learning from the Confucian heritage: so size doesn't matter?

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Abstract

Students from Confucian heritage cultures (CHCs), such as China, Singapore, Hong Kong, and Japan, consistently outperform Western students in many academic subjects, under conditions, such as large class teaching, that seem counter-indicated by Western research. These results have been used to justify increases in class size on the grounds that size is irrelevant to effective teaching. Such thinking is simplistic. Children in CHCs are socialized in ways that make them amenable to work in large classes, so that management problems are minimal and teachers can focus on meaningful learning using whole-class methods. An educational system forms a working whole, each component interacting with all other components. Isolating any one component (such as class size) and transplanting it into a different system shows a deep misunderstanding of how educational systems work. © 1998 Published by Elsevier Science Ltd. All rights reserved.

1. The paradox of the Asian learner

1.1. *The bad news*

The type of teaching context prevailing in Asian countries sharing the Confucian heritage culture (CHC) such as China, Hong Kong, Singapore, Korea, Taiwan and Japan, creates a learning environment that on Western criteria is impoverished. Classes are typically large: elementary schools in Japan, China and Taiwan range from 38 to 50 (Stevenson and Stigler, 1992), while secondary school classes in China range around 45–50, but in “key” (elite) schools may even exceed 60¹. Average class

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sizes in Singapore and Hong Kong are roughly similar, at primary level ranging from 30 to 39, and at secondary, the average is just under 40, dropping to 20 pre-university.² In Singapore and China in particular, elite classes tend to be larger than normal, and smaller in rural areas in China, so that overall there is a positive but coincidental association between academic performance and class size.

These figures for class size, even those in affluent Singapore and Hong Kong, are larger than those usually prevailing in the West. In Australia, for instance, the averages for government schools are: primary, 17.8, and secondary, 12.7.³ In any event, CHC class sizes greatly exceed the optimum of around 15 suggested in Western research when taught by other than expert teachers (Finn and Achilles, 1990). One reason is that as teacher competence decreases, teachers in smaller classes are able to initiate more instructional and fewer management teacher-to-student communications; consequently, the better the learning outcomes (Bourke, 1986).

Many Westerners perceive large class teaching in CHCs as unvarying and expository, the climate highly authoritarian, and the main thrust of teaching and learning focused on preparation for external examinations that tend to address low level cognitive goals (Beeby, 1966; Biggs, 1991; Morris, 1985). These conditions too are associated in Western research with low level learning strategies and with poor learning outcomes (Biggs, 1987; Biggs and Moore, 1993; Crooks, 1988).

Western observers have also noted that Asian students use predominantly rote-based, low level cognitive strategies, both in their own culture (Murphy, 1987) and overseas (Pearson and Beasley, 1996; Samuelowicz, 1987). A Western consensus is that students from Asian countries are brought up in a restrictive teaching/learning environment, which commits them to a passive, uncritical, and reproductive mode of learning, and Western teachers of international students are advised accordingly (e.g., Ballard and Clanchy, 1997).

1.2. The good news

It is a neat picture, but it is not what the hard evidence says. Comparative studies of academic achievement show that students in CHC educational systems consistently outperform their Western counterparts, particularly in the areas of mathematics and science (International Association for the Evaluation of Educational Achievement (IEA), 1988, 1996; Medrich and Griffin, 1992; Stevenson and Stigler, 1992). These results cannot be reasonably attributed to differential sampling (Baker, 1993; Stedman, 1997). In the most recent IEA Third Mathematics and Science Study (TIMSS) (International Association for the Evaluation of Educational Achievement, 1996) Singapore, then Japan, led all other countries at the eighth grade, to be joined by Hong Kong and Korea at twelfth grade.

²Hong Kong Department of Education (1997/8). Private Communication (2/9/97). Singapore Ministry of Education (1996). Education Statistic Digest.

³1996 Schools Australia. Canberra: Australian Bureau of Statistics.

Such performance is not obtained by passive rote learning; rather, it is probably due to superior strategy use, at least in mathematics. For example, Chinese grade 1 children prefer a decomposition strategy in subtraction, which requires a “solid conceptual understanding of addition and number sets” (Geary et al., 1992, p. 183), whereas American grade 1 students use counting, not progressing to decomposition until grade 5.

Also in contradiction to expectations deriving from the perceived teaching conditions are to the stereotyping of Asian students by Westerners are the hard data on ethnic Chinese students’ approaches to learning. Hong Kong and Singapore students typically report a preference for high level, meaning-based learning strategies, both in their own culture (Biggs, 1991; Kember and Gow, 1991) and overseas in Australian institutions (Biggs, 1987; Volet and Renshaw, 1996). Such meaning-based learning strategies are associated with high quality performance (Biggs, 1979, 1987; Marton and Saljo, 1976; Watkins, 1983), which is of course in keeping with the superior academic achievement of CHC students.

In sum, there are two conflicting pictures. Western observers perceive fierce and overcrowded classrooms, filled with docile rote learners cramming for exams. The evidence is that CHC students use highly adaptive learning strategies and achieve better than most Western students in high level academic tasks.

Such is “the paradox of the Asian learner” (Biggs, 1994; Watkins and Biggs, 1996).

1.3. Solving the paradox

There are several ways to resolve this paradox.

1. *Progressive Western researchers have got it wrong. The prospect of external examinations clarifies the mind, while drill, rote learning, expository teaching, and a no-nonsense authoritarian classroom climate burnish it to a mirror-like finish.*

The findings from international comparisons such as TIMSS have been taken to mean that excellent results can be obtained from class sizes of up to 40, 50, or even 60 students; cost-benefits therefore suggest that if Western classes were greatly increased therefore would be little *educational* disadvantage. Such a conclusion comes at a heavy cost to the whole body of modern educational theory, and its empirical support. But prior to that conclusion, we need to address the question of the extent to which the practices obtaining in one educational culture *can* in fact be generalized to others. That question is the focus of this chapter.

2. *Asians outperform Western students because they are inherently more intelligent than Caucasians. Teaching conditions are irrelevant.*

Lynn (1987) and Rushton (1989) argue that since Asians were trapped throughout the whole of the Ice Age between the Himalayas and the Arctic in a bitterly cold and featureless environment, they had to be unusually smart in order to survive. While there may be some circumstantial support for this interesting hypothesis (but, see Flynn, 1992), genetic explanations have to be a last resort for educationists. Teaching is an intervention affirming what *can* be changed, not what cannot.

3. *Western perceptions about the impoverished teaching environments are wrong.*

The basic rule in cross-cultural work has surely to be: Things may not be what they seem to be. CHC students may perceive, and react to, their teaching context quite

differently from the way that might be predicted on what is seen through Western eyes. Even a simple, apparently objective, statistic such as the number of students in a class may not be what it seems to be.

2. Two common western misperceptions

Westerners misperceive, first, the approaches to learning of CHC students, in particular, their use of memorization. This then compounds the second misperception, the relation between teaching methods and students' learning processes.

2.1. *The role of repetition in learning*

Here are some typical reactions of Australian lecturers to CHC overseas students.

In my discipline they all want to rote learn material rather than think ... (Animal Science and Production)

Students from Malaysia, Singapore, Hong Kong appear to be much more inclined to rote learning. Such an approach does not help problem solving. (Dentistry) (Samuelowicz, 1987, p. 123).

Often a surface learner, employing memorization and rote learning. Seldom questions authority, sources, or works independently (Pearson and Beasley, 1996, p. 83).

These comments capture a common set of confusions. While the perception is correct that CHC students rely on memorization, it is quite incorrect to oppose memorization to understanding, and to see evidence of memorization as evidence of a "surface" approach to learning.

The terms "surface" and "deep" when referring to approaches to learning are intentional. When using a surface approach the student *intends* to use cognitive processes that are deliberately less than adequate for handling the task; the intention is to mislead the teacher into believing the task has been engaged properly (Biggs, 1993a). A "deep" approach is based on the intention to engage the task on optimal terms, which in most academic tasks means to understand and use knowledge appropriately. Given that, rote learning could in some circumstances be an appropriate part of a deep approach, for instance the "deep-memorizing" strategy used by deep-oriented Hong Kong students for coping with examination requirements: they learned meaningfully, then memorized the result (Tang, 1991).

It is useful to distinguish *rote* learning — "the mere exercise of memory without proper understanding" (*Shorter Oxford Dictionary*) — from *repetitive* learning, which uses repetition as a means of ensuring accurate recall. The choice to use repetitive learning strategically certainly appears to be more common in CHCs; learning the thousands of characters in common use obviously requires a good deal more repetitive learning than learning an alphabet system. However, this cannot be mindless rote learning because understanding is assuredly involved. Characters are traditionally learned by the Two Principles. The First Principle involves using the Five Organs: the

eyes to see the shape, the ears to hear the sound, the hand to write the shape, the mouth to speak the sound, the mind to think about the meaning. The Second Principle is to contextualise; each character as it is learned is formed with another into a word and each word is formed into a sentence. Repetitive certainly, but also embedded in meaning, with much use of learner activity in widely different modes.

Learning through repetition is at least complementary to understanding in CHCs (Marton et al., 1996) and may even be seen as “the route to understanding” (Hess and Azuma, 1991). Somehow, Western educators have come to see repetition as antagonistic to understanding in the classroom, but not in the concert hall, where their “understanding” of the Ninth Symphony of Beethoven increases with each repetition. However, they use their classroom, not their concert hall, context to conclude that when Chinese students learn repetitively they are rote learning rather than thinking.

2.2. *CHC classrooms*

If Westerners misperceive what students do, they also misperceive what teachers do.

A common Western stereotype is that the Asian teacher is an authoritarian purveyor of information, one who expects students to listen and memorize correct answers and procedures rather than to construct knowledge themselves. This does not describe the dozens of elementary school teachers that we have observed (Stigler and Stevenson, 1991, p. 43).

The teachers that Stigler and Stevenson observed, in China, Taiwan, and Japan, saw their task as posing provocative questions, allowing reflective wait time, varying techniques to suit individual students, carefully designing “coherent” lessons, and using error reflectively. They use the term “constructivist” to describe the commonest teaching approach they saw, an ideal espoused by progressive Western educators but realized in practice only by the expert few.

“Constructivist” is also the term used by O’Connor (1991) in his study of teachers in the People’s Republic of China, whom he found to be uniformly student-centered, frequently engaging all students collectively in problem-solving, both in the cognitive sense and in determining a course of action for a deviant student, and pushing for high cognitive level thought processes.

So what is going on? How can such distorted stereotypes of teaching in CHC classrooms arise, if all the time these teachers are at least as dedicated to student-centered teaching and meaningful learning as are Western classrooms teachers?

3. Differences in Eastern and Western classrooms

3.1. *Predispositions to learn*

Perhaps even prior to seeing what goes on in the classroom, it is instructive to see what goes on in society at large. In this regard, Hess and Azuma’s (1991) work in

Japan is illuminating. Japanese children are socialized to be obedient, to conform, and to persist; Western children are raised to be assertive, independent, curious, and to explore on their own terms. But schools the world over require obedience, conformity to group norms, and persistence in working on boring tasks of which students do not see the point (McCaslan and Good, 1993). Thus, Hess and Azuma say, Japanese children are *predisposed* to accept formal teaching before they even arrive at school, having internalized characteristics that are required in institutionalized learning. These predispositions create “a sense of diligence and receptiveness (which) fit uncomfortably into the more familiar American concepts of intrinsic and extrinsic motivation” (Hess and Azuma, 1991, P. 7)

The same continuity between socialization before schooling even begins and the subsequent requirements of schooling applies to CHC systems as a whole. Preschool Western children, on the other hand, not being predisposed to work in groups, to share both materials and adult time, or to persist in boring tasks, need to be *motivated* to do so. Classroom activities need to be made attractive, and elaborate systems of positive and negative reinforcement employed. Western classrooms are therefore highly externally controlled, compared to Japanese classrooms (Stevenson and Stigler, 1992). Management of classroom behavior is thus a far greater problem in Western schools than it is in CHCs.

These predispositions to learn arise out of a complex of Confucian heritage beliefs and values: achievement goals, attributions for success and failure, spontaneous collaboration, and adaptiveness: cue seeking.

3.1.1. *Achievement goals*

Not only are the dynamics of extrinsic and intrinsic motivation different but achievement motivation itself is differently structured in CHC students. Success in individualistic situations such as academic work and career is for Chinese students closely related to success in family and social life. In contrast, British students see individualistic and social success as quite unrelated. Because of this relatedness CHC students are under greater pressure to succeed in school (Salili, 1996).

3.1.2. *Attributions for success and failure.*

Asians attribute success to effort, and failure to lack of effort (more than to ability and lack of ability), Westerners see ability as more important than effort in accounting for success and failure (Hess and Azuma, 1991; Holloway, 1988). Hong Kong secondary students attribute academic success to, in order, effort, interest in study, study skill, mood, and lastly, ability (Hau and Salili, 1991). This pattern of attributions clearly encourages persistence after failure, while ability attributions predict a low probability of future success, and hence disengagement.

3.1.3. *Spontaneous collaboration*

Chinese students tend to work collaboratively, to seek each others' cue-perceptions and views on how to handle their learning tasks (Tang, 1993). Spontaneous collaboration is not cheating, but a collectivist attempt to share knowledge and do the best job possible. Interestingly, when Westerners collaborate, individuals put in less effort than

when working individually (“social loafing”), whereas Chinese work *harder* in groups (Gabrenya et al., 1985). This phenomenon alone would create different dynamics in large classes in CHC as in Western classrooms.

3.1.4. *Adaptiveness: cue-seeking*

Cue-seeking is especially tuned to assessment preparation strategies, which is an area where Hong Kong students are highly adept (Tang and Biggs, 1996). An outstanding characteristic of CHC students overseas is to rapidly adjust their learning and assessment strategies to what they perceive as most appropriate for their new context (Volet and Renshaw, 1996).

3.2. *Values bearing on education*

The CHCs have had a two thousand year tradition involving institutionalized learning. Chinese, including the Chinese diaspora, Japanese, and Koreans all firmly believe that “education is of paramount importance in a man’s life” (Lee, 1996, p. 28). In China, a large centralized country with vast disparities in the distribution of wealth, education became the selective mechanism whereby any (male) person could achieve wealth and status, achieved by formal learning of classical texts, and highly competitive examination. “In books there are golden houses and beautiful girls” (an old Chinese saying, Lee, 1996, p. 37) On the other hand, Confucius himself taught in almost a Socratic manner. He was keenly aware of individual differences in the needs and abilities of his students; education to him led to “the perfection of the self” (Lee, 1996, p. 33).

It is not thus easy to summarize Confucian beliefs and values about education. In the West, where ying is ying and yang is yang, the easy polarities of “formal/informal”, “extrinsic/intrinsic”, “individual/group”, “teacher-centred/student-centred”, and so on, just do not fit CHC educational constructs (“sexist/nonsexist” excepted). To further complicate matters, modified Confucian values appear today as “neo-Confucian”, “post-Confucian”, and “Confucian heritage” influences on current educational practice (Gopinathan, 1997; Scollon and Wong Scollon, 1994).

3.3. *The goals of education*

One direct consequence of the Confucian heritage is that the goals of education incorporate the good of the state, defining the potential of the individual within the needs of the state. This leads to emphasis on a common core which all students are to attempt, with the underlying belief that they will be able to succeed with persistence and effort.

Consequently, the organization of public education, curriculum, and, to an extent, teaching methods, are highly centralized.

The goal of education, we were told by a Japanese education official, “is the reduction of individual differences among children.” Most Asian educators share this view; most Americans reject it (Stevenson and Stigler, 1992, p. 134).

Time allocations are given topic by topic throughout each week, so that the quality of education is homogenized over even large systems. One result is that although there are mean differences between the performance of CHC and American students, what is most striking are the differences in *variance*, those in CHCs being much smaller (Stevenson and Stigler, 1992). Teaching is doing what is required, reducing differences among students. A leading Singaporean educator sees it this way:

The emphasis on early mastery of literacy, numeracy and science enabled a strong foundation to be laid in primary schools; a common curriculum was emphasised and this is important in Singapore, given the history of separate language schools. ... There is an insistence on performance which has led to high and consistent effort being required of students. Regular homework emphasises the assumption that mastery and understanding of content is incremental in nature. It also forces on parents the responsibility to ensure that homework is done on a daily basis ... the great importance that parents place on academic achievement and the extraordinary lengths they go to ensure their children do well ...

The essentially conservative pedagogy sketched above has enabled schools in Singapore both to perform well in international comparisons ... All this was achieved with educational expenditure kept to below 4% of GNP. (Gopinathan, 1997, pp. 7–8).

The system, parents, students: all focus on doing well. But what about teachers? What is going on in classrooms to achieve these outstanding results?

3.4. *Authoritarianism*

Authoritarianism is basic to the matter of class size, but it works differently in CHC than in Western classrooms. Westerners tend to play down the authority they have, in part not to interfere with students' self-expression, "which leaves Asians confused as to just who is in charge" (Scollon and Wong Scollon, 1994, p. 22). In contrast, Chinese teachers see their role as guiding in the correct ways and do not hesitate to make their authority quite clear. CHC teacher–student interaction is not lubricated with the democratic oil of warmth and first names, but with the oil of respect, which is a more effective lubricant in a hierarchical, collectivistic culture.

It also makes it much easier to handle large numbers of children in the class. This does not mean, however, that classrooms are teacher-centered as *opposed* to student centered, or that the students are terrified into submission. They are not because they do not have to be. The teacher is firmly in charge and what goes on is for the good of the students. When punishment is necessary, it is carried out caringly. Hong Kong teachers believe that wrong-doing should always be punished; the Skinnerian notion of extinguishing misbehavior by ignoring it is incomprehensible to them (as it is to many Western teachers). The idea of punishment, however, is not vengeful or even to focus on an individual miscreant, but to send a message to all: "This behavior is not acceptable to us." A common punishment thus is public

shaming, which causes loss of face but also a determination not to be egregious in future.⁴

3.5. *Teaching methods*

Whole class teaching is universal in CHC classrooms, but that again does not mean what it does in the West. Whereas Western teachers identify whole class teaching with lecturing, Asian teachers do not spend large amounts of time lecturing. They present interesting problems; they pose provocative questions; they probe and guide. The students work hard, generating multiple approaches to a solution, explaining the rationale behind their methods, and making good use of wrong answers (Stevenson and Stigler, 1992, p. 147).

One of their “most striking findings” was that despite classes of 50 students or even more, Chinese and Japanese elementary teachers find time to interact one-to-one in their classroom rounds more frequently than do Western teachers, spending rather more time with each student (Stevenson and Stigler, 1992).

The picture is modified in secondary school, particularly when external examinations loom. Gao (1996) videotaped 17 physics classrooms in Guangzhou and found that these teachers lectured 65% of class time, engaged in question–answer and discussion 23%, monitored students reading or solving pencil-and-paper problems 11%, and in observed experiments or group discussion only 1%. On the other hand, teachers saw that such a style could be student-centered, as one of them remarked:

It is the students' attitude which is most important. If the students are interested in the content and the way you present it, if you challenge your students every now and then, if students think actively in the direction which you show in the lecture, in a word, if the students do not passively accept what you say and just imitate what you do, then I don't think this is the so-called “teacher centred style” (Gao, 1996, pp. 6–7).

Examinations had a very high salience with these secondary teachers, several teachers reporting their “central focus in teaching” was that all students “get good marks in the national university entrance examination” (Gao, 1996, p. 8). They do this by “pushing them into ‘the sea of items’” (p. 9), a popular phrase used by teachers to refer to drilling in item types. This is also a driving feature of Hong Kong's and Singapore's systems.

Yet Guangzhou students, in large classes with “student-centered” expository teaching, and under huge exam pressure, responded to the Learning Process Questionnaire (Biggs, 1992), as strongly achievement oriented, as would be expected, but high “deep,” and low “surface,” as compared to Australian students. Hong Kong students fell in between, but were closer to Guangzhou than to Australia (Gao, 1996).

⁴Ho, I. T. (ongoing). Teacher thinking about problem behaviours and management strategies: A comparative study of Australian and Hong Kong teachers. Ph. D. Dissertation, University of Sydney.

Another example of the apparently curious mixture of authoritarianism and student-centeredness in whole class teaching is Hess and Azuma's (1991) description of a teaching strategy they call "sticky probing", used by Japanese teachers. A single problem is discussed for hours by students, with teacher adjudicating, until a consensus acceptable to teacher and students is reached. The focus of the probing could be an error in mathematics made by a particular student, which the teacher believes would be instructive to publicly unpack and reconstruct, with the student the focus of public correction. A Western student would be mortified to be in the corrective spotlight for such a long and public time, but Japanese students do not see it as a punishment for making a mistake, but as an opportunity for everyone to learn: a collectivist as opposed to an individualistic perception. Stevenson and Stigler (1992) also comment on the practice of using errors effectively by CHC teachers in general.

Japanese and Chinese teachers have much lighter teaching loads than their Western counterparts, precisely to enable them to prepare their work more carefully and to interact with students out of class hours, while students, for their part, are taught skills and routines to make transitions in class move smoothly (Stevenson and Stigler, 1992). With a laid-out centralized curriculum, plenty of preparation time, lessons well prepared in advance and coherent, it is simply much easier to keep lessons moving and whole class questioning and discussion on track.

It might seem that Western teachers are inept compared to their Asian colleagues. However, it is not so much a matter of incompetence as of values. Western educators prefer to emphasize self-determination, school-based management, diversity, and individual differences, all of which makes the job that much more complex. For one thing, it manufactures management problems, so that coping with even dream-sized classes can become a disciplinary and organizational nightmare, with effects the opposite of what is intended.

"An ideological faith in mass production ... has splintered the U.S. curriculum into many small topical building blocks. ... (so that) "our curricula, textbooks, and teaching all are a mile wide and an inch deep" (Stedman, 1997, pp. 10, quoting Schmidt et al., 1996). Teaching is dominated by "tell and show", which simply encourages rote learning (Stedman, 1997). Whole class questioning in the West is characterized by Hess and Azuma (1991) as "quick and snappy": "You. Yes, *you!* ... Too slow. Think, boy, *think!* Sally, you tell him." This is of course a managerial technique, its purpose to assert necessary dominance; educationally, it is absurd. Such short wait time shatters any chances of high order cognitive engagement; "thinking" is out of the question (Tobin, 1987). It is interesting that American school students, watching a videotape of a Japanese mathematics lesson, "perceive unbearable slowness" — a pace that Stevenson and Stigler describe as allowing "time to think" (1992; p. 194). Western students evidently want it quick and snappy rather than to think — but that stereotype has not yet been in circulation. Perhaps it is only a matter of time.

At any rate, the paradox of the Asian learner disappears, at least in comparison to US classrooms, where the structure of the curriculum, teaching methods, and classroom climate all support surface rather than deep approaches to learning. The actual teaching methods and techniques that are used in whole class teaching in CHC

systems appear to reconcile top–down expository teaching with student centeredness, another strange mix to Westerners. But they have evolved within Confucian heritage culture and have their own ecological validity, suggesting that generalizations about the effectiveness of those methods in Western contexts would be extremely precarious.

4. The meaning of an educational system

In their preliminary report of the IEA Third Mathematics and Science Study (TIMSS), Schmidt et al. (1996) refer to “a pedagogical flow” that is characteristic of the teaching in each country. The nature of that “flow” springs of course from socialization practices, cultural values about education, and so on. Teaching practices thus have a contextual validity within that culture; they are part of the culture’s eco-system. Large class size, apparent authoritarianism, and exam-orientation exist, but the context of student expectations and perceptions transform, and may even reverse, their impact.

A classroom is a *system*, like an ecosystem, in which all the components have a mutual effect on each other (Biggs, 1993b). If any one component is changed, the system changes. Thus, the system that is created involving teacher and class is different from that between the same teacher and another class; all teachers must have wondered at that. But the class is also a component of the larger system of the school, which itself is a component in a wider system, comprising community and culture (Biggs, 1993b). Thus, a very complex, multi-layered equilibrium is set up, with the culture over-riding. In the classroom, this creates the characteristic “pedagogical flow” of a country’s schools.

In this flow, based on mutual interaction between all components, one factor, such as class size, cannot be isolated from the other components and be expected to work in a different system the same way as it works in its own. Achievement differences found in TIMSS cannot be attributed “*solely* to school factors or to a *single* organizational or instructional factor” (Stedman, 1997, p. 9). What is true of the cuddly English bunny when transported to Australia, where it wreaked havoc, applies to educational ecosystems.

Yet it would be a mistake to characterize CHC educational systems as operating in a completely different way from Western ones. Many, such as Hong Kong and Singapore, are structurally designed on Western models, and incorporate “Western” innovations. The question is: How far, and at what level, can we extrapolate across systems, specifically with regard to this question of class size?

5. Generalizability and the ladder of abstraction

This question raises the “emic–etic” issue, familiar to cross-cultural researchers (Triandis, 1971). The *emic* approach is represented by Hamilton and Wang (1992): “There are ... no universal social patterns and no universally valid principles by which all societies are held together”, and therefore “Western concepts did not work

well” in studying China (p. 12). This is the view that appears to be emerging in the present discussion; CHC classrooms *work differently* from Western ones so that one cannot conclude that what works in one can be generalized to the other.

In the *etic* approach, on the other hand, the focus is on universals that may be compared across cultures. Schooling, for example, might be seen as just such a universal, in that all cultures have some means of passing on the accumulated wisdom of that culture to the young. Then there is the *pseudo-etic* approach, where one culture’s (usually Western) concepts are imposed on other (nonWestern) cultures with “pretentious claims to universality” (Poortinga, 1996, p. 59). An example of this is the stereotyping mentioned above. When Westerners memorize they are rote learning rather than thinking. Chinese memorize a lot. Therefore, the Chinese rote learn rather than think.

The question is: Is class size an *etic*, an *emic*, or a *pseudo-etic* factor? How do we decide what may be generalized across cultures and what may not? Nathan (1993) suggests that:

“A culture’s uniqueness ... is not a characteristic of the culture itself, but of the way its attributes are conceptualised. As an attribute is abstracted to be measured crossculturally, it loses the uniqueness it possessed when it was located lower down the ladder of abstraction, where it was described in a more complex, specific form. It now becomes by definition an attribute that all cultures possess” (p. 931).

The ladder of abstraction translated into the educational domain provides a model of educational development that is particularly helpful cross-culturally (Biggs, 1997). It was first developed to show how expatriate teachers may adapt to teaching in their new context (Biggs, 1998), but applies more generally, and actually describes stages in the development towards teaching expertise (Table 1).

At the lowest level, Level 1, the focus is on specific concrete attributes, such as student characteristics, or particular features of the classroom, such as class size. This level is nongeneralisable and usually results in deficit model thinking. For example,

Table 1
Focus and generalizability in cross-cultural teaching

	Teacher focus	Generalizability
Level 3:	On <i>student learning</i> , attempting to engage high level cognitive processes; the cultural variation is as to how.	<i>Etic</i> : universals, such as learning processes. Abstract, the focus is based on theory, and is generalizable.
Level 2:	On teaching technique, what teachers are supposed to do	<i>Emic</i> : culturally evolved techniques and practices, generalizable within the given system
Level 1:	On <i>student differences</i> , and local specifics that are system components at Level 2 Western Educational System	<i>Pseudo-etic</i> : specific components that are non-generalizable. CHC Educational System

beginning teachers are struck with student differences and tend to attribute failure in teaching to low ability, poor motivation, a bad attitude ... any characteristic that resides in the student. Such attributions incidentally absolve the teacher from any responsibility. Similarly, a physical feature such as class size is seen as an absolute.

At Level 2, higher up the ladder of abstraction, the focus is more abstract; it is on relationships that work within the present *system*, which has evolved precisely using the concrete components and characteristics at Level 1. The Level 2 focus is on what teachers do — what works with these students, under these conditions — the pedagogical flow of the particular system. Generalizability is restricted to the system itself and others like it.

At Level 3, we are dealing with abstract universals: the function of schooling itself. The focus for teachers is on student learning, getting students to engage the cognitive processes appropriate to handling the learning tasks. Clearly, CHC teachers seem to be getting students to think at higher cognitive levels than American teachers are able to do (Stedman, 1997). Japanese and American teachers may both be concerned with teaching meaning, the means of doing do are quite different and are interlocked with other cultural values and resources.

This analysis might suggest that the emic view should prevail, but if this were so, importing innovations from one culture to another would be ineffectual. We know this is not so. For example, problem-based learning originated in Canada, is widely used in professional education in Australia, and is now being adopted very successfully in at least two Hong Kong universities in several different academic areas (e.g. McKay and Kember, 1997). When I tried to use portfolio assessment, I was warned that it would not work with Chinese; it did, to a highly generalizable extent (Biggs, 1996b).

These cross-cultural innovations work because the focus is on engaging the appropriate level of learning process, not on importing the technique *per se*. Thus, *how* the targeted learning processes are engaged may well show cultural variation. My Chinese students were much happier with the portfolio, for example, when it was suggested they work in partnerships. They found it much easier, and more fun, to deal with the novel problem of selecting and reflecting on examples of their own learning collaboratively rather than individually (Biggs, 1996a).

Thus, where students are already predisposed to being taught, the exogenous factors that loom so large in determining poor outcomes in Western classrooms — low expenditure, large class size, whole-class teaching, emphasis on formal examinations — become either less relevant as these endogenous predispositions take over, or their effect may actually be reversed.

6. Conclusions

The fact that the academic performance of students in CHC cultures is generally speaking superior to that of Western students offers an interesting challenge to Western conventional wisdom about what are good teaching and learning environments. A great deal may be learned from these comparisons, the first being that easy extrapolations about what is good practice cannot be made. In this chapter,

a framework is suggested that helps us decide what may be generalized from the educational system of one culture to that of another.

The second finding that emerges is that Westerners have tended to misperceive what is going in CHC classrooms. They mistake repetitive learning for a surface approach, and the assumed methods of whole class teaching used in CHC classrooms as rigid and expository. The organization of curriculum and teaching practice in CHC classes has evolved out of beliefs and values that link with socialization practices from early childhood, so that the levels of cognitive processes appropriate for set learning tasks are in fact engaged more effectively than they are in the West, where it is becoming clearer, especially from the TIMSS data, that at least American classes are more geared for surface than for deep learning.

The attributes of an educational system can be treated at various levels of abstraction, and the problem with these misperceptions is that observers have tried to generalize from data too low on the “ladder of abstraction”. Three levels of abstraction may be distinguished: Level 1, comprising the concrete components; Level 2 marks the system these components create; and Level 3 comprises the universals the system is geared to address.

Level 1 components cannot be interchanged from one system to another; their meaning derives from how they function within their given system. Systems themselves can be compared by the extent to which they are effective in eliciting the kind of learning their rhetoric addresses. In that context, CHC systems are evidently more effective than many Western ones. When viewed in this way, attempted generalizations about class size, in isolation from other systemic factors, are totally misguided.

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