



China and the Confucian Education Model

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Executive Summary

Confucian is here defined as traditional attitudes and practices existing in East Asian societies which ultimately are derived from the teachings of the Chinese philosopher Confucius (551-479 BCE) and his later followers. These teachings are characterised by their emphasis on ethics and statecraft, and resulted, in the case of China, in a society dominated by a secular elite recruited through a merit-based examination system. Education was the route to social status and material success, and promoted harmony based on morality and hierarchy. The status of education remains high in Confucian heritage cultures; this is reflected in the degree of parental interest in education, in pressure on children to succeed at school and in the priority it receives in family expenditure.

Following Deng Xiaoping's 'reform and opening up' policy from 1978 onwards, China re-entered the world economic system after the period of seclusion of the Cultural Revolution (1966-76). Western teachers of English started to go to China taking communicative language teaching methods and Chinese students began to travel abroad to study. Western educators who came into contact with Chinese learners found approaches to teaching and learning that contrasted markedly with current Western practice, though not necessarily with much earlier Western practice. These included teacher-centred whole class teaching, very large classes, apparent passivity on the part of learners with low levels of active learner participation, and much use of teacher-led chanting, rote-learning and mimetic methods.

Western educators however noted a paradox. According to Western pedagogic theory, such methods are typical features of a surface learning approach, and will result in a failure to achieve a deep level of understanding and in poor learning outcomes. However, this was not reflected in the actual learning outcomes of Chinese learners, many of whom showed higher achievement levels than Western learners. During the 1990s and early 2000s this led to the publication of a significant amount of research based on observation, interview and questionnaire data, much of it collaborative between Western and Chinese scholars. The conclusion was that Western educators were mistaken in their perceptions of the process of learning occurring in Chinese

classrooms. What appeared to be mindless rote-learning was in fact a process of memorisation and reflection; the absence of learner initiated verbalisation, such as spontaneous questions, masked a process of silent but effective mental engagement with the topic. We present recent data which confirm the continued high achievement levels of Chinese and other Confucian heritage learners in international comparisons.

Rising levels of Chinese government and Chinese family investment in education, coupled with China's huge size, are likely to result in the economic drift eastwards being accompanied by an educational one. The Chinese government is actively encouraging this by funding its Confucius Institute programme to promote Chinese language and education globally. The big quantitative increase in Chinese research output is likely to be followed by a qualitative one. There is a message here for Western educators and policy makers.

Introduction

Here 'Confucian' is defined as the traditional attitudes and behaviour prevalent in East Asia and associated with Confucius and the Confucian thought system. China's rise since it adopted Deng Xiaoping's reform and opening up policies in 1978 has been meteoric, though not qualitatively different from the rise of Japan in the 1960s, and of Korea and the other little tigers of East Asia in the 1990s. China's difference lies in its size and the impact this is likely to have on the rest of the globe. Educational achievement has been at the core of these successes: Confucian societies are characterised by the strong emphasis they place on education. A detailed EU report from 2010 which uses Japan and South Korea, but not China, as comparators confirms this point:

It was highlighted that in some non-EU OECD countries the share of total resources (both public and private) devoted to educational institutions by private households is exceptionally high. This is in particular the case in Japan and South Korea. In South Korea, more than one third of the total resources devoted to educational institutions came from private households whereas in Japan the share is slightly more than one quarter. In contrast in the EU, the share of total resources devoted to educational institutions from households varied from 13% in the UK to 1.6% in Portugal. (EU, 2010: 212)

and:

Value placed on education is particularly important in Japan and South Korea. The Japanese and South Koreans place a high value on education and respect the educated. This stems from the Confucist [sic] roots. (EU, 2010: 213)

There are many reasons for high private educational spending, including negative factors such as poor state provision, but there is persuasive data on the overall effectiveness of the East Asian educational system. For example, the latest (2009) PISA data comparing the academic achievements of 15 year olds in different countries, discussed in more detail below, puts 'Shanghai - China' at the top of its Reading, Mathematical and Scientific literacy scales by a significant margin. In Reading and Science Confucian heritage cultures occupy four of the five top places, and in Mathematics they occupy all five (OECD, 2011).

We may argue that Western, or perhaps more accurately Anglo-Saxon, education teaches pupils understanding in a way that is difficult to test, whereas East Asian systems teach the kind of factual knowledge that can easily be tested in comparative surveys. However, even general supporters of ideas-based education flinch at times when faced with the kind of knowledge lacunae that are now commonplace among UK schoolchildren. In a recent newspaper article Brian Viner asked if it was right that two of his children, both taking history at A level and not weak students, did not know that 1588 was the date of the Spanish armada and 1918 was the end of the First World War (the latter child was writing an A level essay on the First World War, and did not know when the war began, either). The article suggests the reason for this is: "The teaching of history in British schools is increasingly influenced by US methods of presenting the past thematically rather than chronologically." (Viner: 2012). We can be confident this situation would not occur in fact-oriented East Asian education systems. What is not clear is whether Anglo-Saxon systems are achieving superior understanding and converting this into superior research, at least as far as it relates to scientific research. Data on the research paper production of doctoral students in the US, discussed below, do not suggest that Confucian systems are inferior in teaching people to think, at least scientifically. This combination of inferior (by Western standards) educational inputs in Confucian systems but superior outputs has been called the 'China paradox' (Watkins & Briggs, 2001).

Those of us who work in Western universities, especially Anglo-Saxon ones, have come to take our superiority for granted. The US and the UK in particular perform exceptionally well in international league tables, and as a result have attracted large numbers of high fee-paying overseas postgraduate students, especially from China. 10.9% of total UK university income came from overseas student fees in 2010-11, and this is expected to rise to 11.9% in 2011-12 (HEFCE, 2012). China is likely to turn from customer to competitor as Chinese government funding for education rises and generous targeted funding for research bears fruit. Educational spending is expected to reach the long-targeted level of 4% of GDP in 2012 (Wheeler, 2012). The Chinese government also embarked on an ambitious drive to promote Chinese language and educational values overseas through a global network of Confucius Institutes and Confucius Classrooms in 2004.

Confucius and Education

Kong Qiu, generally known in China by the respectful appellation Kong fuzi 'Master Kong' lived from 551-479 BCE. Jesuit missionaries Latinised this to Confucius, and that of his famous follower Mengzi to Mencius, the names by which they are generally known in the West. Confucius was the first in an age of Chinese philosophers contemporary with the great philosophers of ancient Greece, but the main focus of Chinese philosophy was government and ethics rather than logic. A small group of logicians co-existed for a while but was eclipsed by Confucianism which dominated secular society from the Han dynasty (206 BCE – 229 CE) onwards until the end of the Qing dynasty in 1911. Confucius is praised in China as a great teacher, rather than a philosopher, perhaps indicating China's different value system. Confucius lived at a time of declining power of the Zhou feudal state and sought to restore the peace and stability that supposedly existed in the golden age of sagely rule at the beginning of the Zhou dynasty. This was based on three Hs: humanism, harmony and hierarchy. Humanism meant developing virtuous conduct through education. This involved practising the five virtues: benevolence (ren), righteousness (yi), wisdom (zhi), loyalty (zhong) and altruism (shu). Harmony meant avoiding strife, avoiding extremism, being willing to compromise and aiming for the middle way. Hierarchy also reflects this quest for harmony: people should know their place and behave accordingly. The key relationships are also characterised as five: ruler & subject, father & son, husband & wife, older brother & younger brother, friend & friend. Apart from the last, these are all asymmetric relationships, and the main relationships are governed by the concept of filial piety (the ruler/subject relationship is expressly presented as a form of father/son relationship). The *Classic of Filial Piety* was a key text in the early education of young people. The character 教, 'to teach', is composed of the character xiao 孝, 'filial piety', which shows an old person above a young person, plus the causative element 文; hence 'to teach' is in origin 'to cause someone to be filially pious'. Two important elements in this are ancestor worship, an extreme form of filial piety, and ritual. The high emphasis on ritual by Confucius is psychologically astute: it is emotionally satisfying and at the same time role-confirming.

Confucius put himself forward as a transmitter of ancient knowledge: "I transmit but I do not create." (*Analects* 7:1. See: Chan, 1963:18-48 for *Analects* citations). It is claimed that he edited the *Five Classics* (*Classic of Documents*, *Classic of Poetry*,

Classic of Changes, Classic of Rites and the *Spring and Autumn Annals*) that formed the core of the traditional Chinese curriculum. Apart from holding a minor governmental post for a time, Confucius spent most of his life as a teacher with a corps of students, usually referred to as his disciples. The single work which is attributed with some confidence to Confucius is *Lunyu* (*The Analects*) which takes the form of a series of aphoristic responses to questions from his disciples. This work, the eponymous work of Confucius' later follower Mencius (372-289 BCE) and two sections from the *Classic of Rites* (the *Great Learning* and the *Doctrine of the Mean*) were put together by the famous neo-Confucian scholar Zhu Xi (1130 – 1200 CE) in the Song dynasty to form the *Four Books*. These became the preliminary texts used to expound Confucian philosophy to young men as part of the civil service examination curriculum in the Ming (1368 – 1644) and Qing (1644 – 1912) dynasties. They were followed by the *Five Classics*.

Confucius set the tone for Chinese education in a number of important ways. Firstly, affirming that moral training is a key part of education and that such knowledge cannot remain academic, but must be reflected in behaviour: a good teacher must be a good moral exemplar. "Confucius taught four things: culture (*wen*), conduct, loyalty and faithfulness." (*Analects* 7:24). Secondly education should be open to all: "In education there should be no class distinction." (*Analects* 15:38) and that almost all are capable of improving themselves through education: "Only the most intelligent and the most stupid do not change." (*Analects* 17:3). Of the role of study he says: "Those who are born with knowledge are the highest type of people. Those who learn through study are next. Those who learn through hard work are next. Those who work hard and still do not learn are really the lowest type." (*Analects* 16:9). Confucius puts himself in the second group (*Analects* 7:19). Thirdly education is a serious business: "If the Superior man is not grave.....his learning will not be on a firm foundation." (*Analects* 1:8). He does not approve of the mindless rote learning, something that traditional Chinese education is sometimes criticised for: "He who learns but does not think is lost; he who thinks but does not learn is in danger." (*Analects* 2:15). He preaches the joys of a simple life but does not condemn the quest for material success, just arguing that this must not be at the expense of moral behaviour: "With coarse rice to eat, with water to drink and with a bent arm for a pillow, there is still joy. Wealth and honor obtained through unrighteousness are but floating clouds to me." (*Analects* 7:15). However, there are clearly negative aspects to traditional Confucianism from a modern perspective. "Women and servants are most difficult to deal with. If you are familiar with them they cease to be humble. If you keep a

distance from them they resent it." (*Analects* 17:25). Women were treated very unequally in traditional Confucian societies, as witnessed in the decline in the status of women after the introduction of Confucianism in, for example, Japan.

The traditional Chinese education system

The Confucian ideal of a universal education and the use of merit as a criterion to determine students' access to schools is the foundation on which generations of Chinese governments created a comprehensive system of education. (Lee, 2000: 12)

It is more accurate to see the system during most of dynastic China (after 200 BCE), as an examination system rather than an education system. In early dynastic China the officials who staffed the governmental administration were chosen by recommendation/nomination or examination. From the Tang dynasty onwards examinations became the standard route for official position and, as China moved away from an hereditary aristocratic system, the examination system became the route to acquiring membership of the elite group in society, the gentry. Chinese society was divided into four occupation based classes: gentry, farmers, artisans and merchants, in that theoretical status order. In practice merchants' wealth bought them higher status but the legal system made it difficult for them to protect their wealth and position. The gentry enjoyed certain legal privileges and many social ones, so the aspiration of any family was to acquire, or retain, gentry status, and, ideally, official position, through the examination success of one of its members. In the *keju* traditional state examination system there were three basic levels of qualification *shengyuan* 'licentiate', commonly called *xiuca* 'flowering talents', *juren* 'recommended man' and *jinshi* 'presented scholar' with examinations at the district city, the provincial capital and the metropolitan capital respectively. In the later period when the number of successful examinees greatly exceeded the number of official posts available, only the top degree holders were likely to be given official posts. The pass rate was extremely low, with one authority estimating 1-2% at the key *juren* provincial examination level (Elman, 2000: 143-4), and candidates would continue competing for years so that even a *juren* would typically be over 30 and possibly much older. Although access to education was to a considerable extent determined by wealth, nevertheless there was a comparatively high level of social mobility in

traditional China, largely based on the need for examination success to maintain family fortunes.

What is unique about traditional Chinese society is the extent to which the harshness of a frankly non-egalitarian and meticulously "regulated" society was mitigated by the Confucian doctrine of determination of status by merit. (Ho, 1959: 335)

Ho calculates that over 30% of the highest degree, *jinshi*, graduates came from families with no holders of degrees or office in the previous three generations, i.e. quite humble backgrounds (Ho, 1959: 344).

Although there were examinations in specialist areas, such as legal or military studies, it was the Confucian classics curriculum examinations, concentrating on government and statecraft, which were the most prestigious, producing morally-trained generalists for the civil service. In contrast to Japan, the military had low-prestige in traditional China, which was a resolutely civil society. A major criticism levelled at the system was its failure to include science and technology, resulting in China's relative weakness in these areas, particularly when faced with a rampantly militaristic West in the late dynastic period. However, as Joseph Needham showed in his *Science and Civilisation in China* series (Needham, 1954-) China was very successful in many areas of science and technology.

There are references to educational institutions from village schools to scholarly academies throughout the past 2,500 years of Chinese history. For example, the Jixia xuegong 稷下学宫 (Jixia Palace of Learning) set up by Duke Huan of Qi around 360 BCE as an institution for teaching and academic debate was said to have attracted up to 10,000 (i.e. a large number) scholars and students. (Lee, 2000: 44). Following the establishment of the civil service examination system in the Tang dynasty, and especially from the decline of the aristocracy in the Song dynasty onwards there was significant state involvement in the provision of schools. However, these were not concerned with basic literacy for the masses, but rather advanced training for intending examinees. This applied to the private *shuyuan* academies (Rawsky, 1979: 24). The salient feature of education in traditional China is that it was mainly secular, in contrast to Europe. Although there were Buddhist and Daoist temples and monasteries, most educational provision was in the hands of the Confucians and

provided by clan schools for members of the lineage or by *shuyuan* academies, financed by local gentry or merchants with government encouragement. These rose from 1,200 nationally in the Ming to 1,900 in the Qing (Elman & Woodside, 1994: 526). Women could not take the civil service examinations and as a result schooling for girls was very limited, and confined to the home. Exogamy meant schooling for females was considered a waste: "educating a girl was 'like weeding the field of some other man'" (Rawsky, 1979: 8). Women's education only began to flourish after 1895 when the Classics-based education system started to lose its rationale (Keenan, 1994: 3). One estimate is that in the 1700s only 2-3% of the population attended schools (Elman & Woodside, 1994: 529). However, depending on how literacy is defined, literacy rates for males in the late 19th to early 20th century have been estimated at around 30% (Rawsky, 1979: 18), with just 1-10% for females (ibid: 6).

Contemporary Education

One of the key aims of the communist government in 1949 was the establishment of an effective, centralised education system. Early moves were script simplification and literacy drives. During the Maoist period (Mao Zedong was leader from 1949-1976) there was a constant tension between expertise (high academic qualifications) and redness (political reliability). This reached a crisis point during the Great Proletarian Cultural Revolution (1966-1976) when education in schools was enormously disrupted and universities largely ceased to function. Since Mao's death, his attempt to transform traditional attitudes to education has spectacularly back-fired: old values have returned stronger than ever. There are several reasons for this. The Cultural Revolution generation as parents have been determined to compensate through their children for their own educational shortcomings. The one child policy dating from 1978 means that now the investment power of two parents and, increasingly, four grandparents is concentrated on a single child. The economic reforms, the so-called 'reform and opening up' policies of Deng Xiaoping, dating from the same time and culminating in China's entry into the World Trade Organisation in 2002, have seen China enjoy double-digit growth for decades, with a concomitant increase in income, especially for city dwellers. At the same time, the move from a command economy, in which school and university graduates were allocated to jobs, to a market economy in which getting a job depends on the ability to compete in the marketplace, has generated huge pressures on students and their families to gain educational success.

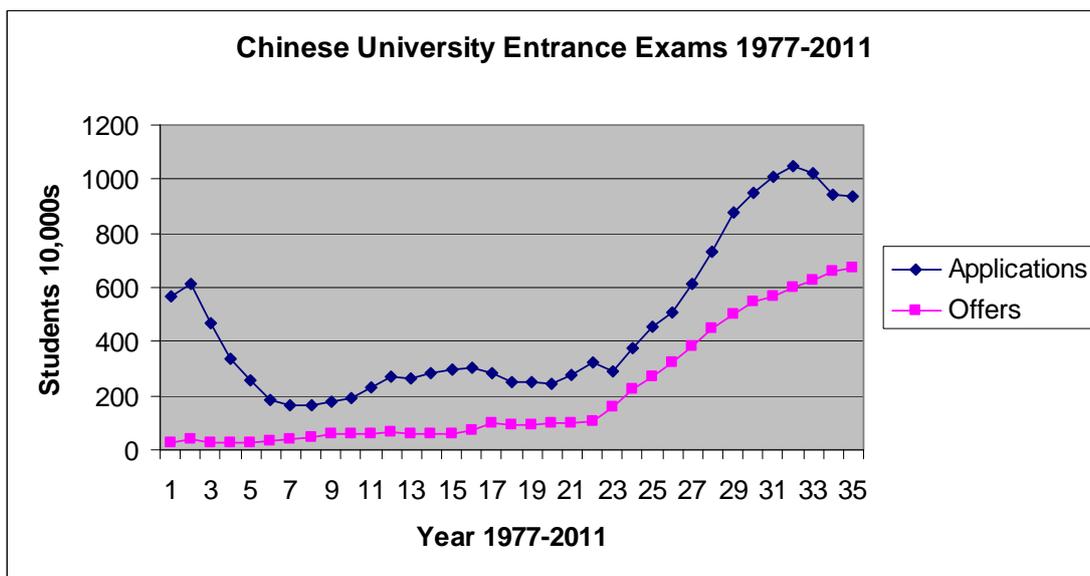
Chinese urban families spend over 30% of household income on education (Zhongguo qingnian bao, 2012) compared to 2% in the UK (ONS, 2012).

China's current system is one of voluntary kindergartens, followed by nine years of compulsory education, six of primary from 6 – 12 and three of junior high school from 12 - 15, followed by three years of senior high school from 15 – 18, which culminates in national university entrance examinations *gaokao*, followed by a four year undergraduate degree course. The system, as in traditional China, is dominated by examinations. Both the school and university systems are very hierarchical. Publicly-funded schools are divided into elite 'key' schools and ordinary schools. The key schools, accessed by either excellent examination results or lower results plus cash, have superior facilities and highly motivated students who dominate the *gaokao* 'national university entrance examinations' (Lin, 2007:52; Ding & Lehrer, 2007: 199). The universities are similarly hierarchical with an elite group of 38 universities ("985 universities") at the top of a pyramid of 642 full-time degree awarding universities and 911 other colleges. The elite 985 group was the result of decision in May 1998 'to set up a number of world class universities in order to promote modernisation'. These are much better resourced than other, but even within this group a super elite top two (Beijing and Qinghua) plus a further nine receive most of the extra funding.

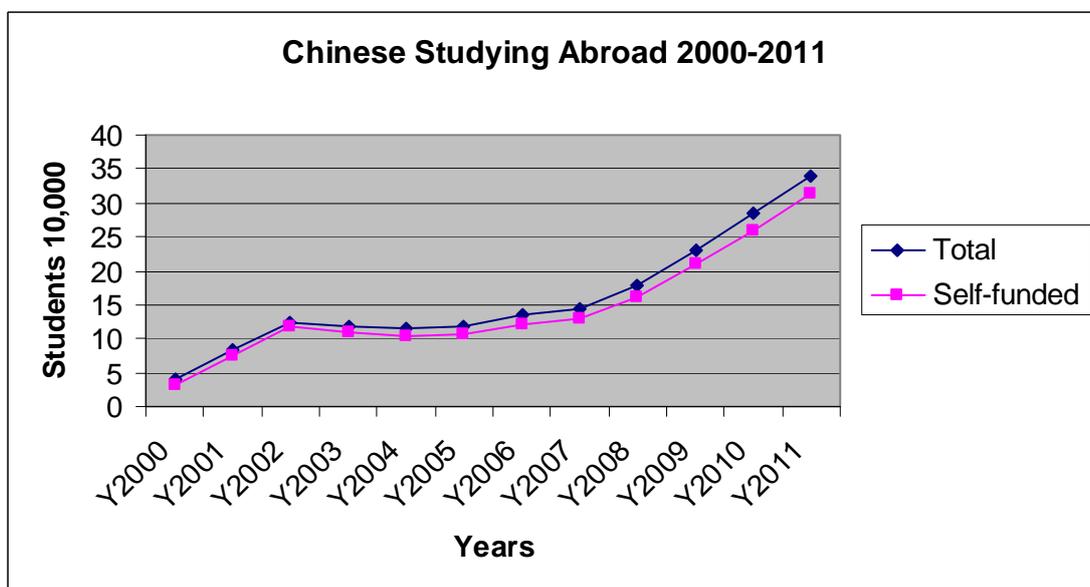
A further feature of the market economy has been the growth of private schools and colleges. The name *minban* 'people run', as opposed to *gongban* 'public run' was used in the cultural Revolution era for 'community run' schools but now these institutions are private for-profit ventures. They mainly cater for rich children who fail to pass the exams for key schools or elite universities. They include now a number of joint-ventures with foreign institutions. Hence Dulwich College and Harrow School both have Chinese affiliates, Dulwich College Beijing, Dulwich College International School Shanghai and Harrow International School Beijing. Nottingham and Liverpool universities both have joint-venture campuses in China. Additionally an increasing number of Chinese teenagers are taking 'foreign entrance examinations' to apply for undergraduate places at foreign universities. Generally these are weaker but rich students whose parents want to avoid the loss of face in sending their child to a low-grade Chinese university. This does not apply to students applying for postgraduate courses abroad, who are often high-achieving students.

Reflecting national demand for higher education, university entrance figures have risen greatly in the period since 1977, both in terms of total numbers and acceptance

rates. In the first years after the Cultural Revolution pent-up demand and limited places meant a very low success rate. This was just 4.8% in 1977, resulting in acceptances for just 27,000 applicants from a total of 5.7 million applicants. The success rate increased year on year as universities offered more places: there was a jump of almost 50% between 1998 and 1999 as offers increased from 1.08 million to 1.6 million. By 2011 the success rate was 72.3% as universities offered more places (6.75 million) to a wider ability range. At the same time the staff: student ratio worsened from 1:7.79 in 1998 to 1:16.56 in 2009 (Fu Zhifeng, 2011)



Chinese are the largest group of overseas students in many countries, including the UK and US. So far most of these are self-funded (i.e. family funded) postgraduate students, mostly taking MA degrees.



The Paradox of the Chinese Learner

Western teachers operating in a Western cultural environment were inclined to take a rather dismissive attitude towards Confucian heritage students when they started to arrive in significant numbers. Hence there were comments such as:

“So far as Far Eastern students are concerned it is a truism that, raised in a conformist educational system, they are happier with memorising and reproducing information than with problem-oriented and more active teaching strategies. (Harris, 1995: 87 quoted by Ramburuth, 2000: n.p.)

and: “This approach of course promotes surface or reproductive learning, which is at variance...with officially encouraged teaching innovations which utilise participative methods and problem-solving strategies to ensure deep transformational learning.” (Harris, 1995: 78).

The clash of Confucian and Western learning styles became particularly acute in the area of English language teaching. The re-entry of China into the international educational scene in the 1980s marked a new level of engagement between Chinese students and Western educational practice. Chinese students began to travel abroad to study in larger numbers, but initially much of the contact was with Western staff teaching the English language on Chinese university campuses. Western, predominantly Anglo-Saxon, teachers took with them the assumption that the communicative approach was the ‘right’ way to teach a foreign language, but they found that Chinese teachers were still using a version of the old grammar-translation method. This had formerly been used in the West to teach languages but had been abandoned by the Anglo-Saxon world, though it continued to find favour in countries such as Russia, for example. The communicative method placed high emphasis on language production, particularly in oral communication, with the teacher acting as a facilitator encouraging the students to engage in peer learning through small group activities such as role play.

The development of this type of teaching was the result of a number of factors in the West. One was that increased travel placed a premium on speaking and listening skills. Another was the need to make the subject fun in order to motivate a wider ability range of students to engage with a subject area with a reputation for being difficult. In China however, students did not thrive in this communicative environment. There

were many reasons for this. They included physical limitations, such as large class sizes of fifty students or more, and little equipment. I recall one of my graduates in the 1980s being asked to teach English conversation at a university in Beijing. She was taken to a classroom with two hundred students sitting there. She phoned her mother in a panic and the mother airmailed a selection of songs which she proceeded to teach to the students through whole class singing together, an inspired method that reflected traditional Chinese practice and offered a workable solution.

Apart from such physical limitations there were deeper cultural factors. These emerged in questionnaires and interviews as Western scholars in the 1990s began to look at the culture of learning. They found that the changes that had occurred in the West after the Second World War had not taken place in China. These changes can be characterised as student-centred learning, peer-learning, the development of a more informal and 'democratic' classroom atmosphere, with higher education students at least encouraged to see teachers as 'colleagues' or 'friends' and operate on a first name basis. Teachers became facilitators rather than purveyors of knowledge. The lack of success of generations of pupils in 'difficult' subjects such as mathematics would be remedied by replacing a teacher-centred culture of knowledge based on the mindless memorisation and application of formulae by a learner-centred culture of understanding based on personal discovery. Failures in language-learning were put down to motivational issues: language learning should be practical, emphasising communication, not academic study rooted in grammatical analysis. Underlying much of this was the need, in the UK, to teach 'academic' subjects to a wider ability range following the abandonment of selection at the age of eleven. The earlier selection system had resulted in the consignment of 75% of the age cohort to ostensibly 'vocational' secondary modern schools, which only the top 25% went on to the 'academic' grammar schools.

Western teachers in China and other Confucian heritage cultures discovered considerable resistance to communicative teaching methods. They viewed Chinese students as 'passive' learners addicted to rote learning who were unwilling to engage with peer learning group activities and unwilling to initiate debate with the teacher, two staples of the Western learning system.

Watkins and Biggs (2001) termed this situation the paradox of the Chinese learner as they explored the reasons why Chinese learners seem, to Western critics, to face

inferior inputs yet produce superior results. Specifically they explained the paradox as follows:

1. Students from Confucian-heritage cultures (CHC) such as China, Hong Kong, Taiwan, Singapore, Korea and Japan, are taught in classroom conditions that in terms of Western Standards cannot be conducive to good learning: large classes, expository methods, relentless norm-referenced assessment, and harsh classroom climate. Yet, CHC students outperform Western students, at least in science and mathematics, and have deeper, meaning-oriented, approaches to learning.
2. A particular aspect of this paradox is the relationship between memorising and understanding. CHC students are perceived as passive rote learners, yet show high levels of understanding. (Watkins & Biggs, 2001: 3)

A number of studies around this time sought to investigate this paradox through teaching observation, interviews and questionnaires, including Watkins & Biggs, 1996 & 2001, Cortazzi & Jin 1996a, 1996b, 1998 & 2001, Ramburuth 2000, Hu 2002. They found significant differences in the perceptions of the role of teachers, the role of students, study methods, and the culture of learning.

The Chinese culture of learning, sometimes referred to as vernacular Confucianism, denotes the attitudes of parents, society in general and the conditioning of young children. Children in China normally attend full-time kindergarten from the age of two to the age of six when they begin elementary school. Kindergartens have a teaching syllabus that includes learning to read and write Chinese characters, arithmetic and general knowledge together with music, art and games. More prestigious, and expensive, kindergartens include classical poetry and English in their curricula, while some are even bilingual Chinese and English. Since the one child policy was adopted in 1978, in the absence of siblings kindergartens have become the socialisation training ground for these 'little emperor' children, characterised as spoilt and badly-behaved. It is the kindergartens that begin to train children in the classroom learning skills that characterise Confucian learning environments: respect for the teacher, self-discipline in learning and respect for fellow students. One of the key features of the Confucian learning approach, memorisation, also begins in the kindergarten. The nature of Chinese characters means that they have to be memorised individually, a process that goes on and is tested throughout the compulsory education period, so that by the age of 13 children should know 2,600 different characters (Cortazzi & Jin,

1996a, 177). The traditional writing tool for Chinese characters, the writing brush, requires a high degree of manual dexterity and the use of that, and chopsticks to eat, help co-ordination training.

Starting from kindergarten the system employs whole-class teaching, with the teacher reading out the text several times, then asking the children to read in chorus, and finally asking individual children to read or answer questions. Other children are often asked to evaluate the answers by clapping if the answer is correct. This participation helps to encourage concentration in whole-class teaching. Children are given group tasks where they are encouraged to help each other, but they are all given the same tasks with the aim of ensuring that all proceed at the same pace. The intention is to develop "memory and group co-ordination (Cortazzi & Jin, 1996a, 175). The activities are carefully planned and orchestrated by the teacher who initiates them all and remains the focus of the children's attention throughout. This kindergarten practice is how children are turned into typically 'docile' Confucian learners who will concentrate for long periods in the classroom and remain actively engaged. Western children by contrast are raised to be "assertive, independent, curious and to explore on their own terms" (Hess & Azuma quoted by Biggs, 1996: 58) However, classrooms, both East Asian and Western "require obedience, conformity to group norms, persistence in the absence of feedback at essentially boring tasks" (ibid).

There are three Confucian principles underlying this: education is serious; progress is achieved through hard work; everyone can succeed if they work hard enough. The last of these marks an important Confucian concept about individual perfectibility. Failure to learn is seen as the result of lack of application rather than lack of ability. Some people are slower than others, and they can be helped by the teacher or fellow students outside class if necessary, but all can succeed in the end. This contrasts with the Western idea of a fixed IQ preventing a student from progressing further, so failure is not the child's fault, nor can it be overcome. The Chinese approach is inherently more positive and encouraging, but can lead to disasters, such as child suicides, when children find themselves working hard yet still unable to cope.

Western teachers interpreted this docility, manifested as an inability, or unwillingness, to participate actively in a communicative language learning environment, as passivity, as rote-learning with no creative or imaginative processing of the information leading to poor learning outcomes. They were relying on Western cultural prompts, such as 'questions = attentiveness', to evaluate students' learning outcomes based on their

verbalisations, a normal Western pattern. However, if the contrast between a Western and a Chinese classroom is characterised as 'verbal activeness vs. mental activeness' (Hu, 2002: 102) the evaluative balance shifts. Watkins & Biggs characterise the situation in the following terms:

1. CHC (Confucian heritage culture) classrooms should be conducive to low quality outcomes: rote learning and low achievement;
2. CHC students are perceived as using low-level, rote-based strategies;
3. CHC students have significantly higher levels of achievement than those of Western students; and
4. CHC students report a preference for high-level, meaning based learning strategies. (Watkins & Biggs, 1996: 49).

Assertions 1. & 2., based on Western observations and interpretations, are clearly incompatible with 3. & 4., and the simplest explanation is that those "Western interpretations and observations are simply wrong" (ibid: 50). They are wrong essentially because they have misinterpreted active memorisation as mindless rote-learning, and have failed to perceive the silent cognitive processing of this memorised data that occurs in Confucian systems. As evidence for the way this misinterpretation occurs Watkins & Biggs cite Gardner's (1989) comparative study of Chinese and American education systems, where the latter observes Chinese teaching of art and initially characterises it as 'mimetic' in its copying of a limited number of models. However, he is later forced to re-evaluate it as 'transformative' when he discovers that Chinese children are able to apply the basic skills learnt in copying to produce competent drawings of items they have never drawn before. Gardner then proposes an education system of three 7 year phases: 0-7 and 14-21 as 'creative phases' and 7-14 as a 'basic skills phase', to incorporate the best of the US and Chinese practice (Gardner, 1989).

Chinese perceptions of the role of the teacher and student

Cortazzi & Jin (1996a: 187) carried out a survey of Chinese university students using interviews and open-ended questionnaires to gauge what qualities they looked for in a good teacher. These were markedly different from Western expectations. The first quality, cited by two thirds of respondents, was knowledge; the next group of qualities all involved the teacher's personal qualities and attitudes (patient, humorous, good

moral example, friendly) and were all cited by 20% or more of respondents. 'Using effective teaching methods' was ranked ninth (16%) out of eleven, and 'explaining things clearly' came bottom, with a lowly 6.7% of respondents citing this. In this situation Western teachers often find themselves playing to their weaknesses. Their pedagogical skills are not appreciated, they are unwilling, or unable, to play the *in loco parentis* moral example and mentor role Chinese teachers are happy to adopt, they are not keen to answer questions and give guidance out of class, and their knowledge of the rules of English grammar is often inferior to that of their Chinese colleagues.

The qualities students valued in themselves were in many ways a mirror image of what they valued in teachers. The first quality was hard work, cited by 43% of respondents. The second was being sociable, leaning from and with others at 18.5%. The following four were all classroom attitude items: respecting, co-operating with and paying attention to the teacher. Next came independent study with 11.1%, but asking questions in class came last with 6.6% (Cortazzi & Jin 1996a: 189). Asking questions is seen as having a number of potentially negative results. It may lead to loss of face if the question is too simple or irrelevant; it may be seen as implied criticism of the teacher, who should have pre-empted any relevant questions if s/he had prepared the lesson properly; it may be seen as wasting the valuable class time of fellow students. The preferred strategy is to puzzle it out oneself, but if unable to do so to seek the teacher out of class time, where potential negative consequences are minimised in a one to one situation. Chinese students collaborate naturally and spontaneously out of class, but are not comfortable with group work in class, where they feel work should be mediated through the teacher, who knows what is right, and where there is great potential for loss of face making errors in a formal setting in front of the group.

International Comparisons

Here we consider some data on the quality of Chinese university graduates, of 15 year old middle school pupils and of ethnic Chinese 16 year olds in the U K educational system. The variables affecting the measured outputs of educational systems are so complex and varied, but they do offer some insights.

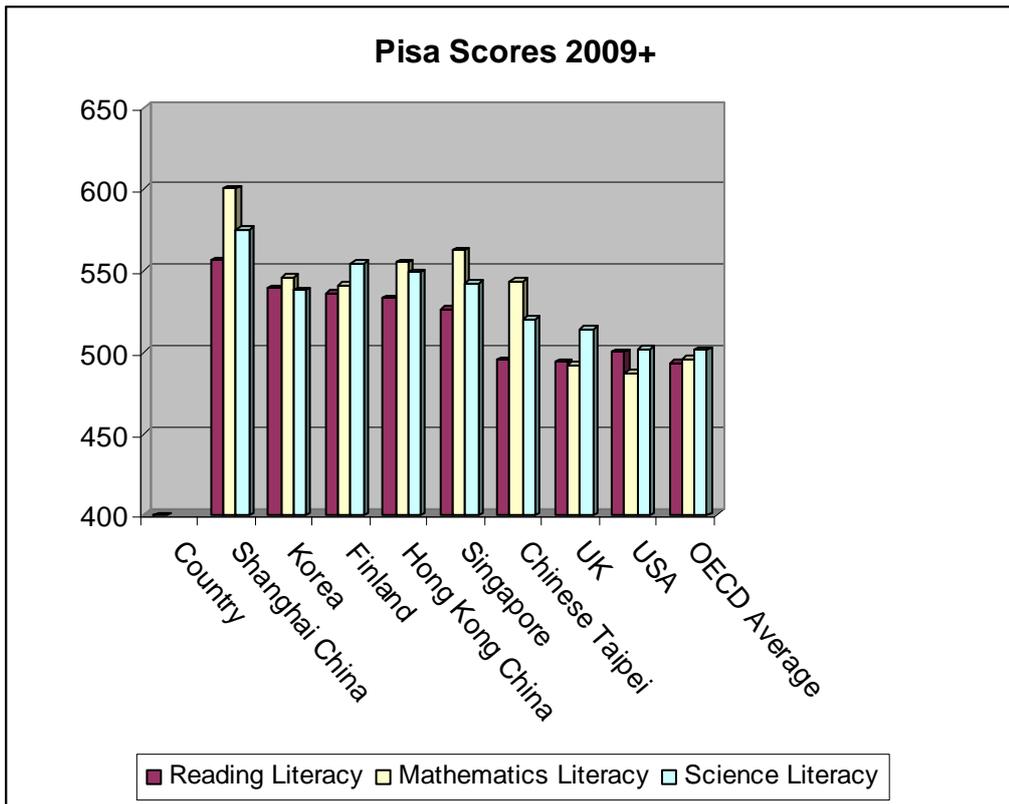
As we have seen one assumption is that, compared to graduates of Western universities, Chinese and other Confucian culture graduates are less academically sophisticated and original as a result of their more knowledge-based learning methods and use of rote-learning, in contrast to the more conceptual learning of the West. There may be some justification for this view, as a result of linguistic and cultural factors, in the Art and Humanities field, however, the data for Chinese science research students in the US do not support this assumption. Research by Gaulé & Piacentini (2010) based on a large dataset of 16,000 doctoral graduates from 161 US university Chemistry departments showed that Chinese PhD graduates performed at a rate 25-30% higher than the average for all students, and at an equivalent level to National Science Fellowship awardees. The NSF is a highly selective programme which only makes awards to the best of US graduates in science and engineering. The main conclusion that Gaulé & Piacentini reach to explain this is 'selection effect': the Chinese graduates concerned were selected from a tiny slice at the very top of the ability range, whereas US graduates came from a wider ability pool (Gaulé & Piacentini, 2010: 9). The assumptions here are that IQ and motivation are the main factors determining research output quality; the impact, positive or negative, of educational background is not an issue in this paper.

The data on the origins of science and engineering doctoral graduates at US universities show, very surprisingly, that the two biggest feeder universities were by a considerable margin Qinghua (Tsinghua) and Beijing universities (providing close to the total of the next five universities put together). Of the top 25 institutions, Chinese universities (including Taiwan) provided 45% of the doctoral graduates; and over 50% came from Confucian backgrounds if Seoul National is included.

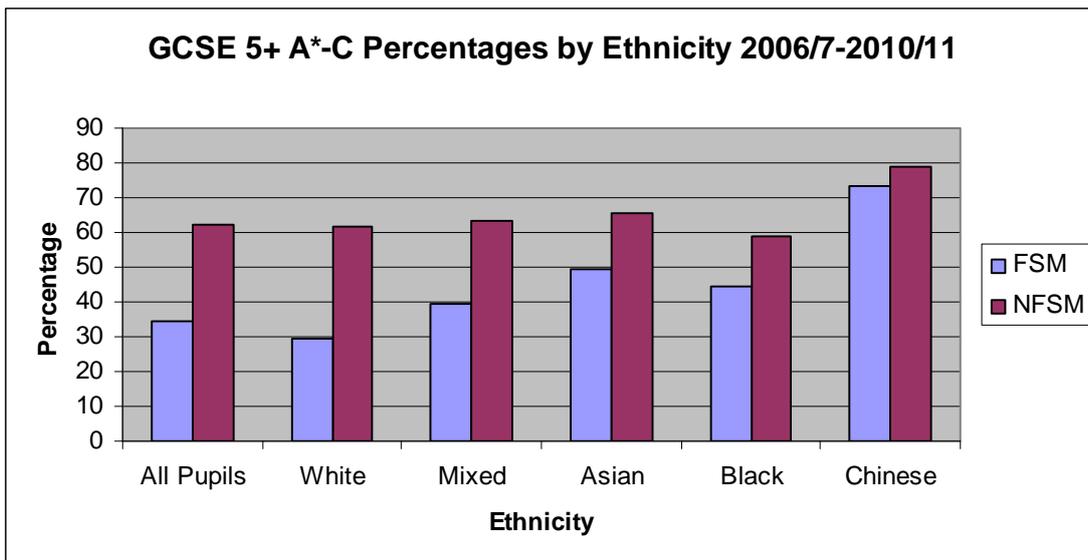
Table 1: Top 10 baccalaureate-origin institutions for PhD graduates in Science & Engineering from US Universities 2008 figures (Source: Gaulé & Piacentini, 2010: 16)

Origin University	Country	Rank	Total S/E graduates	Life sciences	Physical Sciences	Engineering
Tsinghua Univ	China	1	542	17	104	421
Beijing Univ	China	2	435	139	221	75
Seoul National Univ	Korea	3	239	56	76	107
Cornell Univ	USA	4	210	108	58	44
California-Berkeley Univ	USA	5	207	92	59	56
National Taiwan Univ	Taiwan	6	176	64	49	63
Massachusetts Inst of Tech	USA	7	171	44	64	63
Univ of Sci & Tech China	China	8	157	20	87	50
Univ of Illinois	USA	9	153	70	27	56
Fudan Univ	China	10	140	49	65	26

Secondly we look at the PISA (Programme for International Student Assessment) Scores. This Organisation for Economic Development and Co-operation (OECD) programme "is an international study which began in the year 2000. It aims to evaluate education systems worldwide by testing the skills and knowledge of 15-year-old students in participating countries/economies." (OECD 2011). We give here the top five scores in each of the three categories measured (reading, mathematics and science) plus the figures for the US and UK, plus the OECD average. For comparative purposes the lowest scores in each category were 314 for reading, 331 for mathematics and 325 for science. The scores indicate very clearly the success of Confucian heritage cultures, at least in preparing pupils for this kind of test. One may question the kind of ability that is being measured in these tests, but the presence of Finland among the top five is very reassuring in this respect. It has an education system that is very different from Confucian heritage systems, and is widely acknowledged to be one of the best in Europe.



In the UK national data is available on the performance of different ethnic groups in the national examinations sat by 16 year olds, the General Certificate of Secondary Education. The benchmark standard is 5 passes, including English and Mathematics, at grades A* - C. The following bar chart gives the data for the five major ethnic groups plus an overall average. The original data is divided into two main groups, pupils eligible for free schools meals (FSM) and pupils not eligible (or not known to be eligible) for free school meals (NFSM). Chinese children perform significantly better than all other ethnic groups, but a further notable feature is the much smaller difference in attainment between FSM and NFSM Chinese children than for other ethnic groups. It is tempting to see this as evidence of the pervasiveness of respect for education throughout Chinese society.



Source: Department for Education DfE

Conclusion

A key factor in scholastic achievement is parental involvement. East Asian parents, especially mothers, are deeply involved in this process: they do not leave it to the schools but monitor and supplement school teaching. Education is the second largest item of household expenditure after housing for urban families in China. In the UK it is 11th out of 12 categories, accounting for around 2% of total household expenditure. The education of the very young in China involves a high degree of behavioural training in attitudes towards teachers, fellow pupils and learning. The character-based nature of Chinese (and Japanese) means a systematic character memorisation process is built into the learning system, and the non-phonetic nature of the script means each character has to be learnt individually: there is no phonetic key to the whole script, as in the case of alphabetic scripts. The hierarchy and harmony aspects of Confucianism mean respect is shown to teachers, and pupils do not disrupt classes, even with the sort of 'disruptions', such as questions, that Western teachers welcome as a sign of interest and feedback. Confucianism's third H, humanism, set Chinese society on a fundamentally different path compared to societies dominated by Abrahamic religions. This is reflected in the Confucian debate about human nature. Confucius' view on this was not made clear, but the paradigmatic citation from the Analects is: "By nature human beings are much the same; it is only through practice that they diverge." (*Analects* 17.2). Even this implicitly emphasises the role of education in character formation. Confucius' followers Mencius and Xunzi took diametrically opposed views over the goodness of human nature; the former affirmed

that human nature was good, the latter that it was evil, but both agreed over the key role of education in character development. Song Neo-Confucianism, which dominated intellectual life for the last six hundred years of Chinese dynastic history, provided a definitive answer. Our individual natures are one with the nature of the universe, which is essentially a force for good. The aim of education was to achieve sagehood, a state of oneness with the mind of the universe, evidenced by wisdom and morality. We all possess this mind and are all capable of achieving this state through personal effort. This contrasts with the Abrahamic view of human beings as conceived in original sin, inferior in every way to an all-powerful God. This view of nature perhaps helps explain the Western teacher's willingness to accept pupils' inborn limitations, and contrasts with the Chinese teacher's belief that in every pupil's mind is the mind of the universe, if only they will develop it.

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