Working Paper

Invaluable but invisible: An initial investigation of Chinese graduate skill development and subsequent skill use

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Abstract

Measures of impact of Higher Education have often neglected the Chinese student view, despite the importance of these students to the UK and Chinese economy. This research paper details the findings of a quantitative survey that was purposively distributed to Chinese graduates who enrolled at the University of Worcester on the Business Management degree between 2004-2011 (n=49). Analysis has been conducted on their skill development throughout their degree, their skill usage in different employment contexts, the value of their degree, and gender differences in skill development and usage. Discrepancies between skill development and usage, between males and females, and with previous research findings are discussed. Future research directions are also specified.

Key words

Chinese, Graduate, Skills, Higher Education

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1. Introduction

One of the significant recent trends in Higher Education in the UK has been a burgeoning number of international students studying in UK universities, with a year by year increase between 2010/11 and 2014/15 of students enrolling at UK universities https://www.hesa.ac.uk/sfr224).   Within this pattern of a more internationally diverse student population the country consistently sending most students to study in the UK is the People's Republic of China (PRC). In 2010/11, 24% of all international students were from the PRC with India being the next largest single contributor with 14%. This had risen to 28.6% in 2014/15 with India at 5% still the second largest contributor (https://www.hesa.ac.uk/sfr224).

Despite the growing numbers of Chinese students in British Higher Education, little is known with regard to the value of the degree they attain in their subsequent careers. We found this surprising given the emphasis on employability within the curriculum and the measurement of graduate destinations. However such measures appear to concentrate on UK and EU students and despite Chinese students being invaluable to the recruitment strategies of many universities they are invisible in terms of official evaluation of the value of skills developed when they return to their own labour market.

In order to begin to address this gap this working paper reports on a small-scale project which investigates the skills developed and then used on entry to the workplace by several cohorts of Chinese Students studying a 'top-up' degree at the University of Worcester.

The paper will set out the context of the growth in the number of Chinese students, the research methods and findings of the study before articulating further questions and research areas.

2. Measuring Higher Education Impact: Invisibility of the Chinese student view

There has been much recent debate about the role of Higher Education, and Business Management courses in particular, in preparing students for employment. The demands of Higher Education curriculum have shifted from a celebration of education for its own sake to a position where an emphasis is often placed on the applicability of learning to the world of work. This transition has been attributed to 3 interlinked developments (Mason et al 2009, Wilton 2008, 2011):

- Employer demands for Higher Education to prepare graduates for managerial roles
- A shift in the ideology of Higher Education towards one of employability
- The perceived need of Higher Education to support the drive for economic competitiveness

This changing emphasis has stimulated developments to measure the impact of Higher Education in new ways. Increasing emphasis is being accorded to qualitative measures based on student views of their course and subsequent career paths. There are at least three 'measures' used in this emerging assessment of Higher Education. First is an assessment of the skills which students feel they acquire and those which they subsequently use in their work. A key contribution here, given the extensive scope of the study, is the national project by Purcell et al (2005) which surveyed 50% of all students who graduated in 1999 from 38 UK HEIs, 4 years after graduation. Of particular significance to this paper is the work of Wilton (2008, 2011) who disaggregated the subjects studied by the respondents in the above survey and produced an analysis based solely on students studying Business Management related degrees. A second measure used to evaluate Higher Education courses is destination statistics. Each year a survey is undertaken of the employment and training outcomes for national graduates six months after the completion of their degree and this is supplemented with a biennial survey of a sample of students asking about their employment and training situations 3 years after graduation (HESA 2016). In addition, the biennial survey also asks instrumental questions concerning areas such as career satisfaction, value for money and skills used. A final measure is to evaluate student satisfaction at the end of their degree and then to incorporate these views in evaluator mechanisms as exemplified by The National Student Survey. This has become a key indicator of student satisfaction with their

experience of Higher Education and form a significant part of a university's Key Information Set. It is also likely to be integral to the forthcoming Teaching Excellence Framework.

What is interesting in all three measures is the invisibility of the many Chinese students who on graduation return to the PRC. The 'Class of 99' (Purcell et al 2005) project did not include international students, the destination figures only apply to UK and E U domiciled students and the NSS survey is not applied to 'top-up' students which is a route taken by Chinese students at Worcester and other universities (Burnapp and Zhao 2011).

This invisibility is in stark contrast to the burgeoning numbers of Chinese students in British Higher Education and the importance of these students to both the UK and the Chinese economy. With reference to the UK, it has been estimated that the value of international (non-EU) contribution to the UK economy is 7 billion pounds (Universities UK n.d.). The importance of international students has been recognised by a number of government initiatives such as the five year plan in 2006 which set a target of attracting an additional 70,000 non-UK students into UK Higher Education (Huang 2008), although recent concerns have been expressed concerning the impact of government visa restrictions (Universities UK 2014). The growth of international students has also been stimulated by recruitment strategies of British universities aimed at targeting these potential applicants. Reports indicate that in the year 2010/11, £57 million was paid by more than 100 UK HEIs British universities to recruitment agents to attract international students (Raimo et al n.d.). Interestingly while the numbers of international (non-EU) students fell between 2011 and 2013, demand from China has continued to surge (Universities UK 2014).

This expansion has also been supported by the Chinese government as a perquisite of economic development. The re-orientation of government policies since the late 1970s towards a more 'open door' relationship with the West, the modernization of industry and commerce and the move towards a more 'market-orientated' economic system have stimulated the expansion of Higher Education (Ren et al 2011). A more skilled and qualified workforce is seen as a prerequisite for China's economic development. This prerequisite was heightened by China's entry into the WTO in

2001(Ding et al 2009) which increased both the competitive pressures and international opportunities available to Chinese companies.

The increasing significance of Chinese students as part-of the UK university population and a growing emphasis on employability raises questions concerning outcomes of this group of students which current measures are not designed to capture. Little is known of extent to which Chinese students feel they are prepared for employment and their subsequent post-degree opportunities. This has, however, becoming an important question over the past few years as the Chinese economy slows down. Graduates are experiencing growing difficulty in finding appropriate employment (Di 2011, Zhou and Lin 2009) and the sobriquet 'seaweed' has been coined to characterise students from abroad who return to China and are unable to find work (Xin 2005). The employment situation of graduates returning from overseas has been exacerbated by the huge growth in Higher Education within China. Commenting on the employment situation of graduates in China, Ren et al observe that "in 2011, around 6.5 million college and university graduates will seek to enter the labour market; less than three in four will find work straightaway" (2011, p.3430).

It is the juxtaposition of these contexts of invisibility of Chinese students from measures of 'success' during and after graduation and the importance of these students to the UK and Chinese economy that stimulated this research project and as experienced academics made us reflect and question the extent to which a UK degree in Business Management matches the requirements of non UK based labour markets.

3. Research Objectives

1. To identify the perceived skill development and skill usage of Chinese Business Management graduates
2. To compare the differences between skill development and skill usage of Chinese Business Management graduates
3. To assess the current job situation, and whether a degree was required for the current job, of Chinese Business Management graduates
4. To compare differences in overall skill usage between Chinese Business Management graduates in different employment situations

5. To compare differences in skill development and skill usage between male and female Chinese Business Management graduates

4. Research design

A positivist philosophy and deductive approach was adopted for this research, whereby a quantitative questionnaire was designed based on pre-existing measures and dimensions.

4.1 Participants

A purposive sampling approach was taken, whereby only the Chinese University of Worcester Business graduates who enrolled from the years 2004-2011 were contacted and asked to complete the questionnaire. Of the 325 contacted, 49 of the graduates completed the questionnaire; a response rate of 15%. While this is a relatively modest response this is unsurprising given the time away from University of most of the students. Of the 49, 21 were male, 26 were female and 2 were undisclosed. All were between the ages of 21 and 29. 3 had achieved a First-class degree, 21 had achieved a 2:1, 20 had achieved a 2:2 and 3 had achieved a Third.

4.2 Procedure

The questionnaire was designed in Excel and emailed to participants as opposed to using our first choice which would have been an online questionnaire tool. This is because due to national firewalls, participants expressed difficulty in accessing the online questionnaire tool.

4.3 Measures

The questionnaire contained a mixture of categorical and continuous questions. Categorical questions were used to measure demographic variables (age, gender), and degree classification, current job situation, and whether a degree was required for current job.

4.4 Skill development and usage

Participants were asked to rate how the course had helped them develop skills, and the extent to which their current job required usage of those skills based on the skills list reported by Wilton (2008). Continuous questions were asked, using a 5 point Likert-scale (1=strongly disagree, 5=strongly agree).

5. Findings

5.1 Skills Developed

The Chinese graduates were asked to rate their perception of skill development during their degree course (Table 1).

Table 1. Perception of skill development during degree course

Rank	Skill	% agree/strongly agree to skill development
1	Language skills	90
2	Written communication	88
3	Research skills	87
4	Subject knowledge	84
5	Teamwork	80
6	Problem solving skills	79
7	Spoken communication	77
8	Management skills	76
9	Creativity	67
9=	Entrepreneurial skill	67
11	Leadership skills	65
12	Basic computer literacy	63
13	Numeracy skills	49
14	Advanced IT skills	41

The results show a considerable divergence within the skills developed. Of particular interest is the difference between the various forms of communication skills, all of which are rated quite highly and the IT and numeracy skills which are at the bottom of the table. This might reflect three factors. It could be a function of the nature of the course and the modules selected. Certainly within the diet of modules available to international top-up students there would be few opportunities to develop advanced IT skills. The numeracy and basic computer literacy may again reflect modules selected, but their low rating must be a case for institutional concern. A second factor

is that the ranking might reflect the nature of the student cohort. Given that the students are studying in their second language it is not, perhaps surprising that the process of immersion at a British University has increased their communication skills. A third factor could reflect the allocation of institutional resources, significant support is offered by student services to help international students with their written skills, interestingly, however, there is no similar provision for numeracy and IT skills.

The perceived ratings of skill development were then rank-ordered and compared to the rankings of skill development by Wilton's National Sample of Business and Management Student from the Class of 99 survey (Table 2).

Table 2. Chinese graduates' ranking of skills developed while studying at the University of Worcester compared to Wilton (2008)

Chinese Business Management Graduates from the University of Worcester		Class of 99 Business Management students (Wilton 2008)	
Ranking of skill development	Skill	Ranking of skill development	Skill
1	Written communication	1	Written communication
2	Research skills	2	Research skills
3	Teamwork	3	Teamwork
4	Problem solving	4	Basic computer literacy
5	Spoken communication	5	Spoken communication
6	Management skills	6	Management skills
7	Creativity	7	Problem solving skills
7=	Entrepreneurial skills	8	Numeracy skills
9	Leadership skills	9	Leadership skills

10	Basic computer literacy	10	Creativity
11	Numeracy skills	11	Advanced IT skills
12	Advanced IT skills	12	Entrepreneurial skills

Note: (Language skills and subject knowledge have been omitted from the Worcester rankings as no equivalent was used in Wilton's survey).

In the main, there is a strong element of commonality between the rankings suggesting the ordering of skills developed by Worcester graduates are consistent with those of Business Management students more generally. However, there are also some interesting inconsistencies between the rankings from the Worcester graduates and the national survey. Perhaps most concerning with reference to Worcester graduates is the relatively low comparative position of numeracy and basic IT skills. This is especially so given that numeracy and IT skills are two of the four key skills identified in the Dearing Report (Murphy 2011).

5.2 Skills developed and skills used

The discrepancy between skills developed and skills used was analysed (Table 3).

Table 3. Percentage of graduates answering agree/strongly agree for skills developed and skills used

Skill	Skill development	Skill usage	Difference
Subject knowledge	84	55	+29
Language skills	90	66	+24
Entrepreneurial skills	67	48	+19
Research skills	87	69	+18
Written communication	88	78	+10
Creativity	68	59	+9
Advanced IT skills	41	39	+2
Problem solving skills	79	81	-2
Teamwork	80	82	-2

Management skills	76	79	-3
Spoken communication	77	81	-4
Leadership skills	65	70	-5
Basic computer literacy	63	73	-10
Numeracy skills	49	64	-15

There is a clear disparity between skills developed and skills used in a number of areas. In 7 of the 14 skill areas there is a gap of 10 or more percentage points between skills developed and those used. In general this supports Wilton's (2008) findings amongst national undergraduate students that there is a mismatch between skills developed on a Business Management degree and those used in employment. The mismatch, however, seems to be in skills being developed and not subsequently used rather than graduates lacking key skills that they need in the workplace. Of the 7 skills with a percentage gap of 10 points or more, 5 of these skills were perceived to be more developed than they were used. Moreover, some of these skills such as research and written communication are often considered integral to the undergraduate curriculum. Thus whilst there is a mismatch this seems to be one of over rather than under preparation. However it does indicate a need to develop more numeracy skills and place increasing emphasis on basic computer literacy.

5.3 Value of degree

In addition to asking respondents to rate the skill development and usage, a number of general questions were asked about their opinions concerning the use and value of their degree (Table 4).

Table 4. Perceptions of value of studying at the University of Worcester

	% Agree/ Strongly Agree
My degree has been useful in my subsequent employment and/or training	64
Having a degree gives me an advantage in the job market over a non-graduate	78
A degree from Worcester is better than from a Chinese University	73

Taken as a whole these ratings suggest that students feel that a degree gives them a significant advantage in the labour market on a number of criteria It is useful at a general level in subsequent employment and training and that it confers a tangible benefit over both non-graduates and graduates from Chinese universities. The latter finding is significant given the explosion of degree courses in China and the expense of studying in the UK. In short, the graduate's views are that a British degree remains of value despite the vagaries of the Chinese labour market. It might, however, be the case that these views are misplaced and based on some outdated optimism of previous cohorts who entered a more buoyant labour market. This was explored by asking whether a degree was required for their current post (Table 5). Again, the results support the perceived value of a degree in practice.

Table 5. Requirement for degree in current employment

	% of graduates
Yes	79
No, but it was desirable	9
No	6
Don't know	6

The data in Table 5 are also interesting in the context of recent debates concerning graduate under-employment (Scurry and Blenkinsop 2011). Given that over three quarters of respondents currently in work said that a degree was required for their post and a further 9 percent that it was desirable, there is a strong indication that Chinese graduates from Worcester University are employed at a level commensurate with their qualifications.

5.4 Overall skill usage in employment

Each graduate in current employment was asked to rate the extent they used each skill from 1 to 5, with 1 being the least and 5 the highest. An overall skill usage score was then calculated and applied to different employment statuses (Table 6).

Table 6. Overall skill usage by current employment status

Employment status	N	Mean score overall skill usage
I am a full-time employee in a job related to my long-term career plans	19	3.94
I am a full-time employee but not in a job related to my long-term career plan	9	3.80
I am self employed	5	3.49

Perhaps unsurprisingly those respondents in their preferred occupation have higher overall mean scores than the other two groups. What is noteworthy, however, is that even when graduates have not achieved an occupation related to their long-term career plans, they still claim to make use of skills to an important extent.

5.3 Skills and gender

Skill development and usage were compared between males and females (Table 7).

Table 7. Agree/strongly agree ratings and ranking of skill development and skill usage for males and females

	Skill development (Male)	Skill development (Female)	Skill usage (Male)	Skill usage (Female)
Spoken communication	85 = 7	69 =8	87=3	76=1
Basic computer literacy	57 =13	65 =9	81 = 6	62=9
Teamwork	86 =5	77 =4	88 =2	75 =2
Written communication	95 =1	81=2	87=3	69 =3
Problem solving skills	86 =5	72 =7	93 =1	67 =6
Management skills	76 =8	77 =4	88 =2	69 =3
Leadership skills	71=10	62 =11	81 = 6	56 =10

Numeracy skills	62 =12	38 =14	86 = 5	50 =11
Creativity	71=10	65 =9	60 = 10	63=7
Advanced IT skills	38 =14	42 =13	50 = 13	31 =13
Research skills	95 = 1	81=2	67 = 10	69=3
Entrepreneurial skills	76 =8	58 =12	50 =13	50 =11
Language skills	95 =1	88 =1	67 = 10	63=7
Subject knowledge	90 =4	77 =4	69= 8	44 =12

Note: **In each cell, the percentage of agree/strongly agree rating is presented equal to how this rating is ranked**

When the data is viewed by gender contrasting patterns begin to emerge. It shows that males reported higher skill development in 11 of the 14 categories. This is in contrast to the national business management sample where "female Business & Management graduates reported marginally greater overall employability development on their undergraduate degrees than their male peers" (Wilton, 2011, p.91). If, however, rankings are analysed it shows that in the main there is a match between the order in which males and females stated the skills were developed, therefore it appears that both developed the same range of skills but the extent of development was lower in females than males. The questions as to why this might be and why these results are out of kilter with the national survey are interesting areas for future debate.

Table 7 also illustrates skills used on the basis of gender. An analysis between the two groups was undertaken by calculating the differences in percentages between skills used and skills developed in all categories for males and females and the sum total was then divided by the number of skills to give an overall mean 'mismatch' score. The mean score for males was 15.3 percent compared to 10.4 percent for females. This suggests that there is a greater mismatch between the skills developed and those used for males than there is for females. Again this might be an area warranting further research.

6. Conclusion

The context of this small study is that in an environment of growing debates about the employability value of a degree, British-educated Chinese students have largely

been ignored, despite their increasing importance to the Higher Education 'market'. This study has sought to start to rectify this omission by gathering data on the skills and employment of Chinese top-up students at Worcester University. The findings suggest something of a mismatch between skills developed and skills used, with, in the main, a stronger skill development than usage. An optimistic interpretation of this is that as students' progress in their careers more of the skills developed will actually be used; the imbalance seems to be positive in this sense. What is, however, concerning is the reported under development in the skill areas of numeracy and IT. When the skills are disaggregated on the basis of gender the ranking of skills is similar but males report a higher level of skill development in most areas, although they also show a greater extent of mismatch between skills developed and used – these are points of interest for future research. At a broader level the evidence suggests that the respondents feel they benefit from a British degree as they see this as giving them an advantage in the labour market and it facilitates entry into graduate occupations.

The implications for future research also need to be considered at an institutional level. Important questions concern who should be involved in any future research, what will it aim to find out and when might it be undertaken. The diagram (Figure 1) below indicates some of the possibilities.
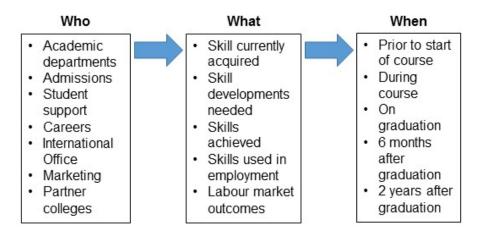
Figure 1. Future research directions

Who	What	When
• Academic departments • Admissions • Student support • Careers • International Office • Marketing • Partner colleges	• Skill currently acquired • Skill developments needed • Skills achieved • Skills used in employment • Labour market outcomes	• Prior to start of course • During course • On graduation • 6 months after graduation • 2 years after graduation

Different institutional stakeholders might have varying needs and inputs. For a marketing department labour market outcomes may be a key concern, while for

academic departments skills currently acquired and skills developed may be more significant factors. What needs to occur at an institutional level are decisions to be taken concerning the nature of the data required, methods of collection and response to findings. This should go some way to making Chinese students both visible and valuable.

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