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Patterns, drivers and challenges pertaining to postgraduate taught study: an international comparative analysis

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The global growth in postgraduate (PG) study since the mid-1990s has been attributed to the expansion in Masters by Coursework participation (Bekhradnia, B. (2005). Postgraduate education in the UK: Trends and challenges higher education policy institute. Paper presented at a conference *The future of postgraduate education supporting the students of today and tomorrow*, London, 17 March). However, unlike at undergraduate level, research into understanding PG growth has been under-researched. This paper aims to contribute to the knowledge gap by identifying and comparing the growth in PG study in Australia, Canada, the USA and the UK. It explores the possible drivers behind the growth and concludes by highlighting potential challenges facing the future of PG study across the sector.

Keywords: award; enrolment; masters by coursework; postgraduate; student experience; taught qualifications; TPO

Introduction

There has been a dramatic expansion in many western countries in the postgraduate (PG) student body in the past 20 years. Compelling evidence suggests that PG study is increasingly undertaken for career advancement rather than self-fulfilment (Anderson et al., 1998; Barber, Pollard, Millmore, & Gerova, 2004; Park & Wells, 2010; Stuart, Lido, Morgan, Solomon, & Akroyd, 2008). The dramatic expansion of PG study has been a quiet revolution and happened relatively quickly across the Higher Education (HE) sector internationally. Surprisingly, there is little international comparative research identifying where the growth has occurred and the possible reasons for it, despite the fact that PG education can be of enormous value to the individual and national economies and also plays a crucial role in driving innovation and economic growth (Smith et al., 2010). Understanding the reasons behind the expansion can be useful in aiding the development of targeted initiatives to support PG students and improve their experience, but also to plan for continued growth.

The objective of this paper is to add to the limited research in the field and contribute to the growing debate on the future of PG study. The aims are three-fold: firstly, to identify where the growth in PG study has occurred by examining and comparing the level of expansion in the PG student body in Australia, Canada, the USA and the UK. These countries have similar PG environments so the data are fairly comparable. Secondly, it attempts to identify possible drivers behind the growth by examining

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existing literature. It concludes by highlighting challenges facing the individual, institutions and the HE sector, in terms of participation in PG study.

Methodology

In the USA and Canada, students studying at this level are referred to as graduates whereas in the UK they are called PGs. Throughout this paper, they will be referred to as PGs. Obtaining an overall detailed global picture of PG-level study in terms of gender, ethnicity, social class, disability and internationalisation is more problematic than at undergraduate level due to statistics not being separately identified and recorded by any central global organisation such as UNESCO, and because each country records its PG participation statistics in different ways.

Australia, Canada, the UK and the USA were chosen for this comparative analysis as they all have an established PG sector and keep basic national government PG enrolment and awards data which is in a similar format. For Australia, information and statistics have been accessed from the Department of Education, Employment and Workplace Relations (DEEWR) and the Department of Education, Science and Training (DEST); for Canada from Statistics Canada (StatCan); for the USA from National Centre for Education Statistics (NCES) and for the UK from Higher Education Statistics Agency (HESA). In this paper, a combination of student enrolment figures and award statistics has been used to compare the type of qualification, gender and disability variables between the countries for comparability and consistency.

Where statistics are not directly available for a specific variable, statistics have been derived using a combination of data available. The percentages have been rounded to one decimal point. Where possible, statistics from the same year have been used to demonstrate any similarities or differences. The reader should note that the statistics for Australia will look slightly different to the data for the other countries as the academic year runs from January to December. When gender differences are explored, the figures provided (where possible), will compare the variable between the sexes (e.g., female and male participation in part-time study), and within each sex (e.g., proportion of females doing part-time or full-time study). The reason for this is that women's participation in HE overall is generally higher than men's participation, so analysis of data for a variable between the genders will generally tend to show female dominance.

Definitions of PG study

PG study can be described as:

> consisting of programmes that are more advanced than undergraduate study, usually undertaken by those who already hold undergraduate degrees. It is something of an umbrella term, encompassing a diverse array of provision – from short certificate courses, to four-year PhD research projects, to professional doctorates studied largely in the workplace. (Higher Education Commission, 2012, p. 19)

However, defining what constitutes a PG qualification across international boundaries can be problematic as they do not take the same form in all countries and 'some of the differences in types of PG qualification coincide with differences in subject and study mode' (Wakeling, 2009, p. 51).

Broadly speaking, PG qualifications can be classified into two groups: those that are largely taught and those with a significant research component. Qualifications with a significant research component include Doctorates (PhD and DPhil) and Masters by research (MPhil and MRes). Qualifications that consist of a significant taught component include Masters by coursework, professional qualifications such as Master of Business Administration (MBA), Professional Doctorates and other PG qualifications which include Graduate Diplomas and Certificates (e.g., Postgraduate Certificates and Diplomas in Education).

Taught, professional and other qualifications (TPOs) may have a different duration of study, and entry qualification is dependent on the country. For example, in the UK an MBA is normally a one-year full-time course whereas in the USA, it can be two years in length. In Canada, the admissions requirement for access to a doctorate programme usually requires the completion of a master's degree in a related field but in the UK, admission can be on completion of an upper-second class undergraduate degree (often termed a 2:1) or a Master's qualification.

The European Bologna Declaration, signed in 1999 aims to work towards having comparable qualifications in terms of structure, standards and quality and that meet social and economic needs in order to avoid confusion for students and employers. The declaration is not confined to European countries and it now has 47 European and non-European countries signed up to the process but there is still some lack of clarity in this alignment.

The growth in PG taught study

Overall PG growth

PG study across Australia, Canada, the UK and the USA has continuously increased from the early 1980s onwards but it is since 2000 that there has been significant growth. Table 1 shows that between 2003/2004 and 2008/2009, participation grew in PG study in Australia, Canada, the UK and the USA. Although the increase in the UK looks relatively small in comparison with the other countries by 2008/2009, by 2009/2010 it had grown by 8.6% on the 2004 figure.

Increase in type of PG qualification

In Tables 2–5, the term 'Masters' refers to both taught and research masters unless specified, and 'Other PG Qualifications' encompasses PG diploma and certificate qualifications. Where the Research and Masters by Coursework (Taught) statistics are combined under the heading 'Masters' qualifications', it is important to note that

Table 1. Total PG enrolment figures for 2003/2004 and 2008/2009.

Country	2003/2004	2008/2009	Percentage change
Australia	257,769	307,973	+19.4
Canada	142,800	170,076	+19
UK	523,825	536,810	+2.5
USA	2,491,414	2,937,545	+18

Sources: Australia (DEEWR, 2005, 2010); Canada (StatCan, 2011a, 2011b); UK (HESA, 2004, 2009) and USA (NCES, 2011a, 2011b).

Table 2. PG awards in Australia in 2000 and 2007.

Type of qualification	2002	2007	Change in %
Masters by coursework	50%	56.3%	+6.3
Masters by research	2.3%	1.5%	−0.8
Doctorate by coursework	0.2%	0.3%	+0.1
Doctorate by research	6.2%	6.2%	–
Other PG qualifications	41.3%	35.7%	−5.6
Percentage	*100%*	*100%*	
Overall total	*68,800*	*92,559*	*+23,759*

Sources: Statistics derived from DEEWR (2008) and DEST (2003).

Table 3. PG awards in Canada in 1999/2000 and 2007/2008.

Type of qualification	1999/2000	2007/2008	Change in %
Masters qualifications	78.6%	77.8%	−0.8
Doctorate by research	12.6%	11.6%	−1.0
Graduate diplomas	8.8%	10.6%	+1.8
Percentage	*100%*	*100%*	
Overall total	*30,800*	*46,794*	*+15,994*

Sources: Statistics derived from StatCan (2002, 2011c).

Table 4. PG awards in the UK in 1994/1995, 2003/2004 and 2010/2011.

Type of qualification	1994/1995	2003/2004	2010/2011	Change between 2004 and 2011 (%)
Other higher degrees (e.g., taught masters)	43.6%	52.4%	64.5%	+12.1
Doctorate	8.4%	8.4%	7.9%	−0.5
Other PG qualifications	48.0%	39.2%	27.6%	−11.6
Percentage	*100%*	*100%*	*100%*	
Overall total	*90,329*	*182,085*	*252,155*	*+70,070*

Sources: Statistics derived from HESA (1996a, 1996b, 2005, 2012b).

Table 5. PG awards in the USA 1990/1991, 2003/2004 and 2008/2009.

Type of qualification	1990/1991	2003/2004	2008/2009	Change between 2003 and 2009 (%)
Master degree	75.2%	81.0%	76.5%	−4.5
Doctorate	8.8%	7.0%	12.2%	+5.2
First professional degree	16.0%	10.0%	11.3%	+1.3
Percentage	*100%*	*100%*	*100%*	
Overall total	*448,410*	*690,359*	*816,504*	*+126,145*

Source: Statistics derived from NCES (2011c).

Masters by research numbers are very small in the statistics for all four countries. The type of qualification listed in each table is how it is recorded by each country.

When the award statistics are examined for all the countries, awards for qualifications with a significant research component such as Doctorates and Masters by research appear to have remained relatively stable. The dominant PG qualification awarded in Australia, Canada, the USA and the UK is the 'Masters' degree. In Australia and the UK, the growth in Master's awards appears to have been at the expense of other PG qualifications (Tables 2 and 4). In Canada, the proportion of PGs undertaking different types of qualifications has remained relatively stable (Table 3). In the USA, there has been a decrease in the number of Master's degrees awarded and it is the only country showing a significant increase in doctoral participation with 5.2% growth (Table 5).

Gender participation

In all countries in the study, female participation has increased and women are now overrepresented in PG awards in relation to the most recent overall population statistics produced and available by the United Nations as illustrated in Tables 6–9. It is important to note when looking at the tables, that the award statistics available and used for each country may not be of the same year as the population statistics thus there will be a slight, although minor, discrepancy. Female participation is particularly noticeable in the USA in 2008/2009 when 58.5% of PG awards were conferred on women but they accounted for 50.8% of the population (Table 9).

Gender participation and type of qualification

In Tables 10–13, the data for each country is analysed and presented by type of PG qualification awarded within each gender. The most recent statistics for each country

Table 6. Female and male PG awards in Australia in 2000 and 2007.

2002 68,800 awards		2003 United Nations population census 18,972,350		2007 92,559 awards		2010 United Nations population census 20,061,646	
Female	Male	Female	Male	Female	Male	Female	Male
50.1%	49.9%	50.7%	49.3%	52.7%	47.3%	50.7%	49.3%
34,500	34,300	9,610,329	9,362,021	48,818	43,741	10,165,146	9,896,500

Sources: Statistics derived from DEEWR (2005, 2008); DEST (2005a, 2005b) and United Nations (2006, 2012).

Table 7. Female and male PG awards in Canada in 1999/2000 and 2007/2008.

1999/2000 30,700 awards		2003 United Nations population census 30,007,095		2007/2008 46,794 awards		2010 United Nations population census 31,612,895	
Female	Male	Female	Male	Female	Male	Female	Male
51.8%	48.2%	51.0%	49.0%	53.9%	46.1%	51.0%	49.0%
15,900	14,900	15,300,245	14,706,850	25,206	21,582	16,136,930	15,475,970

Sources: Statistics derived from StatCan (2002, 2011c) and United Nations (2006, 2012).

Table 8. Female and male PG awards in the UK in 2003/2004 and 2010/2011.

2003/4 182,085 awards		2003 United Nations population census 58,789,187		2010/2011 252,715 awards		2010 United Nations population census 58,789,187	
Female	Male	Female	Male	Female	Male	Female	Male
54.4%	45.6%	51.4%	48.6%	52.8%	47.2%	51.4%	48.6%
99,080	83,005	30,209,320	28,579,867	133,330	118,825	30,209,320	28,579,867

Sources: Statistics derived from HESA (2005, 2012b) and United Nations (2006, 2012).

Table 9. Female and male PG awards in the USA in 1989/1990 and 2008/2009.

1989/1990 448,410 awards		2003 United Nations population census 281,421,906		2008/2009 816,504 awards		2010 United Nations population census 308,745,538	
Female	Male	Female	Male	Female	Male	Female	Male
49.8%	50.2%	50.9%	49.1%	58.5%	41.5%	50.8%	49.2%
223,326	225,084	143,368,343	138,053,563	477,327	339,177	156,964,212	151,781,326

Sources: Statistics derived from NCES (2011c) and United Nations (2006, 2012).

Table 10. Female and male PG awards in Australia in 2002 and 2007.

	Female			Male		
Type of qualification	2002	2007	Change in %	2002	2007	Change in %
Masters by coursework	45.8%	51.2%	+5.4	53.5%	62%	+8.5
Masters by research	2.3%	1.5%	−0.8	2.3%	1.6%	−0.7
Doctorate by coursework	0.2%	0.3%	+0.1	0.1%	0.3%	+0.2
Doctorate by research	5.5%	5.7%	+0.2	7%	6.7%	−0.3
Other PG qualifications	46.2%	41.3%	−4.9	37.1%	29.4%	−7.7
Percentage	*100%*	*100%*		*100%*	*100%*	
Overall total	*34,500*	*48,818*	*+14,318*	*34,300*	*43,741*	*+9441*

Sources: Statistics derived from DEST (2003) and DEEWR (2008).

Table 11. Female and male PG awards in Canada in 1999/2000 and 2007/2008.

	Female			Male		
Type of qualification	1999/2000	2007/2008	Change in %	1999/2000	2007/2008	Change in %
Masters qualifications	80.5%	78.8%	−1.7	76.5%	76.6%	+0.1
Doctorate by research	10%	9.5%	−0.5	15.4%	14%	−1.4
Graduate diplomas	9.5%	11.7%	+2.2	8.1%	9.4%	+1.3
Percentage	*100%*	*100%*		*100%*	*100%*	
Overall total	*15,900*	*25,206*	*+9306*	*14,900*	*21,582*	*+6682*

Sources: Statistics derived from StatCan (2002, 2011c).

Table 12. Female and male PG awards in the UK in 2003/2004 and 2010/2011.

	Female			Male		
Type of qualification	2003/2004	2010/2011	Change in %	2003/2004	2010/2011	Change in %
Other higher degrees (e.g., taught masters)	48.1%	60.1%	+12.0	57.6%	69.3%	+11.7
Doctorate	6.6%	6.8%	+0.2	10.5%	9.3%	−1.2
Other PG qualifications	45.3%	33.1%	−12.2	31.9%	21.4%	−10.5
Percentage	*100%*	*100%*		*100%*	*100%*	
Overall total	*99,080*	*133,330*	*+34,250*	*83,005*	*118,825*	*+35,820*

Sources: Statistics derived from HESA (2005, 2012b).

Table 13. Female and male PG awards in the USA in 2003/2004 and 2008/2009.

	Female			Male		
Type of qualification	2003/2004	2008/2009	Change in %	2003/2004	2008/2009	Change in %
Master degree	83.7%	83.1%	−0.06	77.3%	76.1%	−1.2
Doctorate	5.9%	7.4%	+1.5	8.5%	9.6%	+1.1
First professional degree	10.4%	9.5%	−0.9	14.2%	14.3%	+0.1
Percentage	*100%*	*100%*		*100%*	*100%*	
Overall total	*393,322*	*477,327*	*+84,005*	*297,037*	*339,177*	*+42,140*

Source: Statistics derived from NCES (2011c).

show that Masters/Masters by coursework is the most popular qualification within each gender. In Canada and the USA, the percentage for each type of qualification within each gender has remained relatively static (Tables 11 and 13).

However, in Australia and the UK, more women proportionally were awarded other PG qualifications compared to men in terms of gender ratio (Tables 10 and 12). Nevertheless, it is important to observe that in recent years in these two countries, within each gender there has been an increase in 'Masters'/Master by coursework qualifications being awarded and it appears that it is at the expense of other PG qualifications. When Doctorates/Doctorates by research conferment is examined by gender, a greater percentage of men are awarded this type of qualification than women in the four countries.

International participation

The level of student participation by those defined as 'International' studying in Australia, Canada and the UK has been substantially increasing in the past 10 years. When the type of qualification awarded is examined in each country (using their definitions of domiciled status), Masters by coursework qualifications in all four countries is the primary qualification conferred on 'overseas' students compared to other types of PG courses. Tables 14–16 illustrate the domiciled status participation for each qualification in each country.

Table 14. Type of HE qualifications awarded in Australia 2010 by domiciled status.

Qualification	Domestic domiciled (%)	Overseas domiciled (%)
Doctorate	7.4	3.5
Other higher degree (e.g., taught masters)	44.6	83.2
Other PG qualifications (e.g., certificates and diplomas)	48.0	13.3
Percentage	*100*	*100*
Overall total	*62,650*	*48,143*

Source: Statistics derived from DEEWR (2011).

Table 15. Type of HE qualifications awarded in the UK in 2010/2011by domiciled status.

Qualification	UK domiciled (%)	EU domiciled (%)	Overseas/non-EU domiciled (%)
Doctorate	7.9	12 0.0	6.9
Other higher degree (e.g., taught masters)	49.3	77.2	84.7
Other PG qualifications (e.g., certificates and diplomas)	42.8	10.8	8.4
Percentage	*100*	*100*	*100*
Overall total	*138,705*	*24,425*	*89,025*

Sources: Statistics derived from HESA (2005, 2012b).

Table 16. Type of HE qualifications awarded in the USA in 2009/2010 by domiciled status.

Qualification	USA domiciled (%)	Non-resident aliens (%)
Doctorate	18.7	18.2
Other higher degree (e.g., taught masters)	81.3	81.8
Percentage	*100*	*100*
Overall total	*752,198,000*	*99,385,000*

Sources: Statistics derived from NCES (2011c).

Australia

In Australia, an overseas student is categorised as someone who is not included in the domestic definition: that is, who has a temporary entry permit; is a diplomat or a dependent of a diplomat residing in Australia at the time of study; or not domestic and resides outside of Australia during the period of study (DEST, 2005c, p. 287).

In 2000, overseas student numbers accounted for 27% of the PG awards in that year (DEST, 2003). By 2003, they represented 37.8% but by 2010 they accounted for 43.5% (DEEWR, 2011; DEST, 2005a, 2005b). When the type of qualification is examined by domiciled status, overseas students are primarily conferred awards in the Other Higher Degree category whereas domestic students are split between Other higher degrees and Other postgraduate qualifications (Table 14).

UK

In the UK, a student whose permanent residence is in the UK is considered to be 'UK domiciled'. A student whose permanent residence is outside of the UK but within the European Union holds 'Other EU' domiciled status. A student whose permanent residence is outside of the UK and EU is domiciled 'Overseas'.

In 2003/2004, PG awards to students studying in the UK were conferred on 24.3% of students classified as Overseas (HESA, 2005) but by 2010/2011, this figure had risen to 35.3% (HESA, 2012b). When you examine the type of qualification awarded by domiciled status in 2010/2011, 'Other Higher Degrees' such as Taught Masters qualifications are the primary qualification for Overseas and EU-domiciled students (Table 15).

USA

In the USA, foreign or international students are categorised as 'non-resident aliens' and US citizens cannot be differentiated from the 'resident aliens'. When you examine the conferment of awards statistics for US resident/resident aliens and non-resident aliens, they are similar (Table 16).

Full-time versus part-time study

PG study can be undertaken in either full- or part-time mode, and for some students, circumstances necessitate a mixed mode of study. In Canada and the USA, full-time study is the most popular mode of study (Table 17) and national statistics show that this has been the case for a while. In Canada, part-time study only represents one quarter of all students studying at PG level.

Table 17. Full-time and part-time study in Canada, the USA and the UK.

	Canada 2008/2009	UK 2008/2009	USA 2008/2009
Full-time	75.0%	49.9%	54.5%
Part-time	25.0%	50.1%	45.5%
Percentage	*100%*	*100%*	*100%*
Overall total	*170,031*	*536,810*	*2,737,076*

Sources: Statistics derived from HESA (2012a); NCES (2009) and StatCan (2011b).

Table 18. Full- and part-time female and male PG enrolments in Canada, the USA and the UK.

	Canada 2008/2009		UK 2008/2009		USA 2008/2009	
Mode of study	Female	Male	Female	Male	Female	Male
Full-time	72.3%	78.2%	45.7%	54.8%	51.8%	58.5%
Part-time	27.7%	21.8%	54.3%	45.2%	48.2%	41.5%
Percentage	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*
Gender total	*91,098*	*78,933*	*288,443*	*248,365*	*1,614,804*	*1,122,272*
Overall total	*170,031*		*536,810*		*2,737,076*	

Sources: Statistics derived from HESA (2012a); NCES (2009) and StatCan (2011a, 2011b).

In the UK in 2000/2001, three-fifths of all enrolments at PG level were by students in part-time study but by 2008/2009 the enrolments were almost equal. However, by 2010/2011 full-time study became the most popular mode, accounting for just over half of all enrolments.

When full- and part-time enrolment statistics are examined within each gender, females in Canada, the UK and the USA are more likely to undertake part-time study compared to men (Table 18). This may be related to a higher percentage of women participating in diploma and certificate qualifications, which are often delivered on a part-time basis.

Summary of PG growth

In all four countries, there has been growth in home and international student numbers at PG level in the past 15 years and there are a number of noticeable similarities. The most popular type of PG course in terms of enrolments and conferments are the Masters/Masters by coursework (Taught) qualification. There is a proportionally higher level of participation by women compared to men in qualifications such as diplomas and certificates.

For overseas domiciled students, Masters/Masters by coursework (Taught) is the primary qualification obtained. For Australia and the UK, overseas students have substantially contributed to PG growth. The full-time study mode is the most popular mode and has been in three of the four countries for many years. It only became the dominant mode of study in the UK in 2010. Within each gender, women participate in part-time study significantly more than men. The proportion of students participating in qualifications with a significant research component has remained stable in all countries. The findings confirm that PG growth is an international phenomenon and not restricted to a particular country but are there generic drivers that can explain the expansion?

Possible drivers for growth

When the literature available is examined, a number of contributing drivers to explain the growth are offered but as the evidence does not span all the countries, it is not possible to provide generic explanations even though they may make intuitive sense. Some of these drivers will now be discussed.

Firstly, an important contributing factor in the growth of students deciding to pursue PG study may be that, 'as the bachelor's degree becomes ubiquitous, its relative advantage in the labour market is diminishing' (Wakeling 2005, p. 506); first-degree graduates are deciding to obtain further qualifications that help them stand out from the crowd. Factors cited for undertaking PG study include wishing to improve employment prospects and to progress in their current career path (Morgan & Jones, 2012; Park & Wells, 2010). Careers for TPO graduates are both broad and specific and include management, education, business, health and social and welfare professions (Gilleard, 2011).

The most obvious benefit for the TPO graduate is potential financial gain through their career as they can obtain higher salaries than graduates with first degrees. A report for the Sutton Trust by the Centre for Economic Performance in the UK used Higher Education Statistic Agency's destination data to show that the average starting salary for those with a PG qualification in 2008 was £24,000 compared to £19,500 for someone with an undergraduate qualification (Machin & Murphy, 2010). The report also calculated that a PG with a Master's degree in 2009 would earn on average

£1.75 million over their lifetime compared to a first-degree graduate who would earn £1.5 million (Machin & Murphy, 2010). However, the report also found that those completing other PG qualifications could, in fact, earn less over a lifetime than an average graduate with earnings of £1.45 million (Machin & Murphy, 2010).

Secondly, HE supports the economy through employment and students fees. In recent years, governments' policies and strategies have been aimed at improving their industrial competitive global position (Department of Trade and Industry, 1998) through their position in the global market of HE (Department of Education and Skills, 2003). This has been undertaken by widening participation at all levels of study which means enabling non-traditional groups to participate, developing lifelong learning strategies and linking educational progression to continuing and professional development (Stuart et al., 2008). In the UK, higher education institutions (HEIs) are said to 'generate almost £45 billion of output a year. HEIs are a larger part of the economy than either the UK pharmaceutical and aircraft industries' (Universities UK, 2007, p. 1). In 2008/2009, approximately £2.75 billion in fees were paid by full- and part-time students studying on PG courses in the UK and of this amount, £1.5 billion was paid by students domiciled in Europe and in countries outside of Europe (Overseas) (Machin & Murphy, 2010). In Australia in 2009, the international student market within Australia (excluding income generated in other countries) had a total added value to the economy of $9.3 billion Australian dollars (Phillimore & Koshy, 2010). Students on PG courses also contribute to the economy in terms of living costs. In 2008/2009 in the UK, it was estimated that this figure alone was around £2.5 billion (Machin & Murphy, 2010).

Thirdly, with the expansion of a knowledge economy and knowledge-intensive industries, graduates with TPO qualifications are in high demand internationally. A UK Government report suggests that the growth in TPOs is due to a genuine demand by employers in the UK (and internationally) for higher qualified graduates rather than them merely having greater choice from a well-qualified pool of graduates (Higher Education Commission, 2012).

Fourthly, when there is a downturn in the economy, demand for HE generally goes up as 'individuals who lose their jobs, or fear low prospects for employment in declining economies, see a university or college degree as a means to better employment prospects' (Douglass, 2010, p. 4). However, there is also the argument that when the graduate job market is weak, the barriers, which have reduced in enabling people to study at undergraduate level, are passed up to PG level. John Denham in 2009, the former Secretary of State for Innovation, Universities and Skills, commented:

> as taught masters increasingly become an additional pre-employment qualification, there is concern that the gap we are closing as we widen participation for first degrees may open again if the best employment is only open to those who can fund their MSc or MA. (cited in Wakeling, 2009, p. 22)

The generic examples above do provide an insight into PG growth but examining and understanding the drivers within each country is essential in order to effectively shape future PG growth and developments.

Potential challenges facing PG study

As has been observed and well documented at undergraduate level, diversified growth creates numerous challenges for all participants in HE. The national statistics in the four

countries within this study show that there is diversity at PG level. As with Undergraduates, PG s are also likely not to be an homogenous group. Whereas there is an extensive body of research looking at supporting research students, this is not the case for TPOs. A recent UK Government report suggests that: 'Postgraduate education is a forgotten part of the sector' (Higher Education Commission, 2012, p. 17).

For the student

The two main challenges facing many PG applicants is the affordability of undertaking PG study due to the burden of existing undergraduate debt, and obtaining funding. In many countries, student debt accrued from undergraduate study as a result of fee and living costs is relatively high. In 2012, a UK government report stated that the average debt of a graduate leaving university was £17,200 (equal approximately to $28,000 US and Canadian dollars; and $27,000 Australian dollars) (Bolton, 2012). In the USA in 2011, two-thirds of college seniors who graduated were said to have had an average student loan debt of $26,600 per borrower (equal approximately to £16,500 GB pounds and $25,000 Australian dollars) (Reed & Cochrane, 2012). In Canada, the average debt for a graduate in 2009 was $ 26,000 Canadian dollars (equal approximately to £16,000 GB pounds; $26,000 US dollars and $25,000 Australian dollars) (StatCan, 2012).

In England (not in Scotland or Wales which have devolved HE systems) due to the new differential fee structure introduced in September 2012, the cost of fees across most English institutions rose by approximately 150%. Students graduating in 2015 having undertaken a standard three-year degree and in receipt of the maintenance grant will graduate with a debt of up to £42,000 (approximately $68,000 US dollars and $65,000 Australian dollars). Whether the debt is paid via a loan or through the taxation system what is not clear, due to the lack of research across all four countries, is how the level of undergraduate debt impacts on attitudes and ability to financially participate at PG level.

There is no dedicated PG loan or tax system to support and encourage students to engage in this level of study in any of the four countries. The majority of PG students appear to rely on funding their studies through personal loans, overdrafts, savings, employers, scholarships and parent contributions (Boorman & Ramsden, 2009; Morgan & Jones, 2012; Stuart et al., 2008).

Due to concerns about debt levels and an inability to easily access funds for higher level study, students may question the value of investing in PG qualification and whether it adds value to their careers. It may also be that the domination of students studying full-time at PG level will be reversed and the part-time mode will dominate as students attempt to make higher levels of study financially viable.

For the institution

All the countries in this study recruit international students but Australia and the UK have come to rely on international students to increase TPO numbers. However, instability in overseas economies and political and social environments in other countries can easily impact on recruitment. The challenge for HEIs wishing to increase the provision of PG study is to protect their international markets while guarding against relying on them by actively creating new ones targeted at home-domiciled

students. With increasing costs, students are likely to expect courses to be delivered in ways that are sympathetic to their requirements such as personal flexible timetables and access to support outside of office working hours, especially if they are distance or work-based learners.

Effectively understanding and supporting the academic and non-academic requirements of TPO students is going to be even more of a critical activity for HEIs, although those facing reduced funding are going to have to make hard decisions about what academic and non-academic support they want or can fund. If institutions know more about the characteristics and motivations for undertaking PG study, and the support requirements of their specific TPO student body, this knowledge should enable HEIs to target support and effectively manage the expectations of their students. Supporting and bridging any skills gap between the undergraduate and PG levels should help the student succeed, as well as supporting the transition to TPO study for each student depending on their background.

For the sector

The sector faces a number of challenges which will impact on its sustainability. Firstly, public funding for PG study in all four countries has been affected due to the difficult current financial recession. Reduced public funding generally leads to an increase in fee level. All the countries in the study have variable PG fees for home and overseas students and, importantly, have a decreasing 18–20-year-old population thus potentially reducing the pool of qualified undergraduates from which to recruit potential PGs. As a result, institutions may decide to rethink their traditional entry qualifications for TPO study and recognise other forms of experience such as accredited prior learning if they wish to widen and sustain their market. Parts of the sector may decide to withdraw from offering any, or certain types of, PG courses and to streamline the range of subjects they teach in an attempt to create a sustainable environment based on their strengths. There is growing concern that some subjects will suffer in this new age of academic austerity with science, technology, engineering and mathematics that are costly to deliver being reduced in number, and perhaps humanities being principally taught online via Massive Open Online Course (MOOC). However, this all requires forward planning in an uncertain environment.

The sector needs to record reliable data on application and enrolment levels to provide a comprehensive understanding of student demand for PG-level study. The requirements of business and industry also need to be taken into consideration.

A UK government report by Smith stated that research and evidence from industry showed that employers struggled to recruit appropriately skilled PGs and the danger was that UK employers would seek employees from abroad (Higher Education Commission, 2012). Jackson (2009, p. 30) argues that for HEIs to avoid developing competencies not prioritised by employers (thus leading to the graduate skills gap), it requires ‘a systematic unpacking of the components of graduate employability and what businesses require of the modern graduate’.

If the sector actively works towards global alignment of PG qualifications with business and industry, this may assist HEIs to develop the competencies skills, thus demonstrating their credibility and the currency of their offerings as well as enabling student global transferability.

Conclusion

This study has highlighted patterns, drivers and challenges pertaining to PG taught study. Arguably, three main challenges for the sustainability of PG-level study in these four countries are the impact of debt on participation in TPO study, the reduction in public funding and the creation of new markets. What is unclear and uncertain is the level of future TPO growth opportunities in Australia, Canada, the UK and the USA, and whether it is sustainable especially in its current form due to the changed landscape at undergraduate and PG level. How each stakeholder navigates around the impact of national and international economic challenges, changing political environments and attitudes to TPO study is likely to determine the sustainability of PG study. However, to shape and help sustain the future of PG study requires further research and exploration of international data examining student demand and expectations across academic and non-academic areas.

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