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RESEARCH NOTE

An examination of the changing profile of sport science students and the impact on degree outcome

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Abstract

The UK government has outlined the future of higher education in the UK, which includes increasing student numbers by widening participation from non-standard entrants. The aim of this investigation was to examine changes in variables that may indicate increased widening participation in the sport science programme between two cohorts graduating before and after the government white paper (graduates from 2000 and 2006) and whether there has been a change in degree outcome during the same period. This research note explores the possible reasons for the observed changes between cohorts.

Keywords: widening participation; sport science; degree classification

Introduction

Since the publication of a government white paper outlining the future of higher education (HE) in the UK (Department for Education and Skills, 2003), there has been a substantial drive to increase the number of students in HE. In this white paper an argument was developed to increase the numbers of HE students in the UK through encouraging competition to recruit foreign students (from inside and outside the EU), and to maintain and develop high quality research. The white paper also highlighted the need for HE to provide appropriately qualified individuals to support the current economic needs of the nation. D'Andrea and Gosling (2005) suggested that opening access is motivated by social justice beliefs and that HE is part of economic policy in producing the skilled workforce needed in a "knowledge society" (p. 12). This approach intends to entice those who (a) do not hold degree education in particularly high regard, (b) have low family income, and (c) have had poor prior education through compensating entry requirements and bursary entitlements. In an attempt to compete in the growing global HE environment and to meet the demands of

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the economy, the government has set a goal of 50% participation in HE for those aged 17 to 30 years by 2010 (43% in the year 2005–06) (DfES, 2003). Although government members are eager to fulfil this target, there are some fears that the increase in student numbers and reduced entry requirements may result in lower educational standards (Leathwood & O'Connell, 2003), and will therefore fail to meet the demands outlined in the policy.

Since this government proposal on HE, it is not known whether the entry profile of students has shifted to accommodate more individuals with non-traditional entry profiles and if so whether such a shift is associated with changes in degree outcome. The aim of this investigation was therefore first to examine the changes in the entry profiles of variables between two cohorts (before and after the government proposal, in 2000 and 2006 respectively) and second to ascertain whether there has been a change in degree outcome.

Methods

Prior to the start of data collection, ethical approval was granted from St Mary's University College Ethics Committee. Data were retrieved for all single and joint honours sport and exercise science students graduating in 2000 ($n = 163$) and 2006 ($n = 172$). All students had studied full time and completed their degree within three years. The dependent variables examined in this investigation were:

- entry standard: total number of UCAS points on entry to the degree programme: students with BTEC, Scottish and Irish Highers, HND or other non-A level qualifications were given equitable points based on UCAS guidelines and those students with no qualifications and those who had direct entry to the programme at level 2 or 3 were excluded from the analysis
- qualifications: whether entrants had A levels or not
- sex: number of male and female students
- age: age of students on entry to level 1
- degree outcome: expressed as a percentage
- mature student: over 21 on entry to level 1
- degree type: single or joint honours students
- overall degree classification: overall degree classification attained between different cohorts

All data were analysed using computer-based statistical software (SPSS for Windows, v15). Analyses between years were conducted using descriptive statistics (mean and standard deviation). Inferential statistical analysis to determine differences between variables was done using an independent samples t test and Pearson's chi square test for parametric and non-parametric data respectively. Statistical significance was set at $\alpha = 0.05$ prior to analysis.

Results

Descriptive statistics are presented in Table 1. An independent samples t test showed that the degree outcome, expressed as percentage, was greater (2.6%) in the 2006 cohort than in the 2000 cohort ($t = 3.47_{(322)}$, $p < 0.001$). In addition, the entry standard was six UCAS points greater in 2006 than in 2000, although this was not shown to be significant. In terms of differences in the age of students, although there was no mean significant difference observed for age, there was a significant increase ($\chi^2 = 4.30_{(1)}$, $p = 0.038$) in the number of mature students from 2000 ($n = 15$) to 2006 ($n = 29$), demonstrating an almost 100% increase in the number of mature students participating in HE over the course of six years. In addition, mature students' degree outcome (59.4%) was better ($t = 2.18_{(332)}$, $p = 0.03$) than that of non-mature students (56.9%). The number of male and female students graduating did not change significantly. However, there was a marked decrease in the number of female students from 2000 to 2006 and a concomitant rise in the male student population.

Variable	Graduates of 2000	Graduates of 2006
Degree outcome (%) *	56.0 (± 6.5)	58.6 (± 7.1)
Entry standard (UCAS points)	193 (± 73)	198 (± 69)
Age (years)	18.9 (± 1.7)	19.3 (± 2.3)
Female:male ratio	70:93	58:114
A levels (% of cohort)	117 (71.8%)	115 (66.9%)
Non-standard entry (% of cohort)	46 (28.2%)	57 (33.1%)
Mature students (% of cohort) *	15 (9.2%)	29 (16.9%)
Single honours (% of cohort) *	19 (11.7%)	72 (41.9%)
Degree outcome (% of cohort): *		
First	4 (2.5%)	16 (9.3%)
Upper second	43 (26.4%)	51 (29.7%)
Lower second	87 (53.4%)	89 (51.7%)
Third	29 (17.8%)	15 (8.7%)

Table 1: Descriptive analysis for two graduate cohorts (2000 and 2006)

Values are displayed as mean (± SD), unless stated otherwise; * denotes a significant difference between the 2000 and 2006 cohorts ($p \leq 0.05$)

There was no significant difference in the number of A level or non-standard entrants between the years. However, there was a large and meaningful difference in the number of students with no recorded A levels or equitable qualifications (e.g., BTEC or Irish Highers). This figure rose from five in 2000 to 35 in the 2006 cohort – a 700% increase. There was a significant increase ($\chi^2 = 38.59_{(1)}$, $p < 0.001$) in the number of students who chose a single honours route as opposed to a joint honours programme from 2000 to 2006 (19 versus 72). The degree classification also showed a significant increase in degree class from 2000 to 2006 ($\chi^2 = 12.17_{(3)}$, $p = 0.007$). Of note, the number of first class degrees increased fourfold and the number of third class degrees reduced by half from 2000 to 2006. It would be interesting to ascertain whether similar trends are seen elsewhere in sport and exercise science programmes.

Interestingly, it has previously been suggested that females may perform better than males (Woodfield & Earl-Novell, 2002; Woodfield & Saunders, 1999). In order to quantify this, an independent samples *t* test was used to examine differences between the sexes in degree outcome and entry requirements. In 2000, females had a significantly higher degree percentage ($t = 3.34_{(161)}$, $p = 0.001$) than their male counterparts (57.9% versus 54.4%), although the entry standard was not statistically different. While significant, this is not particularly meaningful as both percentages lie within the same degree classification. However, when one examines the 2006 cohort, the story is somewhat different: the female students' degree percentage was significantly higher ($t = 4.15_{(169)}$, $p < 0.001$) than the males' percentage (61.6% versus 57.0%), which is meaningful as this difference straddled a degree classification. Although both males and females have an improving profile, it would seem that females have crossed the threshold of a degree classification, despite there being only a relatively small mean difference of 4.5% between the sexes.

Discussion

The aim of this investigation was to elucidate shifts in the entry profiles and degree outcomes of sport and exercise science students from St Mary's University College between two cohorts in the light of a government white paper's recommendations (DfES, 2003). In general, there was an increase in the number of non-standard entry students and a rise in degree classification from 2000 to 2006.

The data from this investigation demonstrated a mean increase in graduate marks of 2.5% (from 56% to 58.6%). Although this means that the overall degree classification was unchanged, there was an upward trend. For example, there was a ~400% increase in first

class degrees and a ~50% decrease in the number of third class degrees. This is not the whole story: female students not only tended to do better in their studies, but also increased their mean mark from 57.0% to 61.6% from 2000 to 2006. Although there was a marked decrease in the numbers of female students taking sport and exercise science at St Mary's, this percentage indicates a meaningful change and a superior female academic performance over males. This observation has also been reported elsewhere (Hoskins, Newstead & Dennis, 1997; Woodfield & Earl-Novell, 2002; Woodfield & Saunders, 1999), but it is not possible to ascertain the reason for this result from the data of the current investigation.

Our data show that degree outcome has increased in recent years despite the discourse, highlighted by some, of reduced academic standards (Leathwood & O'Connell, 2003). However, this investigation did not consider students who had taken longer than three years to complete their degree owing to mitigating circumstances, repeatedly failed modules, or those who had dropped out of university completely. Future investigations should perhaps consider student retention and failure rates if a more global perspective of student progression and achievement is to be ascertained.

Entry standard also increased between cohorts. This is probably a manifestation of the ever increasing number of passes and overall grades at A level, although there was not a significant rise in these with our data. Interestingly, the required entry standard has stayed the same for a number of years (160 UCAS points or two Cs at A level). However, the entry requirement has recently increased (to 180 points at A level for the 2008–09 cohort), which is probably a reflection of the course popularity at St Mary's and the growing entry standard of A level students. St Mary's has a strong sporting reputation within UK universities. It offers an increasing number of scholarships to elite and talented athletes who may consequently be accepted on athletic rather than academic ability, which may help to explain some of the increase in non-standard entrants between cohorts. Sports scholarships are relatively common in many universities, but we must be cautious about setting students up for failure by providing opportunities to those who are not sufficiently prepared or qualified to undertake HE.

St Mary's has always offered a variety of joint honours programmes, but there has been a marked shift from joint honours students to single honours (~12% in 2000 to ~42% in 2006). It is possible that this shift in degree outcome has helped to strengthen students' knowledge in a single focused subject area of science rather than fostering a more dilute and broad knowledge over two topics. The potential dilution may be especially evident when one considers that topics such as theology, media studies and drama can be taken in conjunction with sport and exercise science.

The age of students showed a non-significant increase over the two cohorts. The increase in mature student numbers (~100%) between cohorts lends more evidence to the suggestion from the government of a non-significant trend towards an increase in mature learners in HE (DfES, 2003). These data clearly demonstrate a large and highly significant increase in the numbers of mature learners. From the standpoint of an academic member of staff, mature students are a very welcome inclusion, as they often demonstrate qualities that are conducive to high achievement in HE, such as subject interest, focused study, determination, good time management and, perhaps above all, motivation. These attributes can also help to provide direction and set good examples to non-mature students. Mature learners often strive to achieve a higher classification of degree in order to maximise the potential opportunities to follow a pre-determined career path following graduation. However, for some, the process of graduating, regardless of degree classification, can and should be the measure of achievement.

Although the data presented here show an increase in non-standard entry and mature students, which could be attributed to widening participation policy, we must be mindful of the limitations and other possible influences within this investigation. First, the government has placed great emphasis on the inclusion of potential students from ethnic minority communities and those who show promise and ability from lower socio-economic backgrounds. These extremely important pieces of information were not available for

analysis and are consequently not factored into the analysis, and they should be considered in future analyses. There are likely to be some exceptionally talented individuals who do not have the opportunity or inclination to engage in HE, perhaps because of financial constraints or because they have traditionally held HE in low regard (D'Andrea & Gosling, 2005). There are already a number of projects that attempt to widen participation in under-represented populations. However, a more targeted approach to identify talented would-be students would make a handsome addition to existing programmes.

Second, there are other factors that may affect academic performance such as personal circumstances (e.g., dependants, work commitments) and motivation, amongst others. However, it was not possible to quantify these variables, and perhaps future investigations that follow a similar theme may wish to consider their inclusion. Perhaps a more qualitative approach to examining student success would highlight some of the pressures that current students face whilst studying. Understanding these pressures and potential barriers would help HE tailor degree programmes to meet the demands of the current student cohorts. There is evidence of an increasing number of part-time and distance-learning courses that are likely to help facilitate participation for individuals unable to attend traditional degree programmes. Finally, it might be easy to attribute the shift in entry profile to changes in widening participation policy. However, improved degree outcome is less straightforward to explain. Perhaps the general trend observed here is simply a result of the application of more effective pedagogy. We speculate that improvements are likely to be ascribed to the approach to teaching and learning and improved teaching quality. In recent years we have attempted to provide more vocational courses and use fewer traditional methods (where possible) to deliver and assess student progression, which is core to the St Mary's philosophy and mission regarding pedagogy.

Conclusions

In conclusion, through its white paper, the government set out recommendations to increase widening participation in HE (DfES, 2003). This investigation focused on two cohorts of sport science students (before and after the white paper) in order to examine changes in entry profile and degree outcome. There was an increase in non-standard entrants and mature students entering the system, and degree outcome showed a marked improvement throughout the classification system. These data suggest the sport science programme at St Mary's University College has become more inclusive and, despite fears from some corners of academia about falling standards, the degree results have improved, which may be attributable to improved teaching quality.

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