

The academic performance of mature and traditional-entry psychology students at Keele University: A replication study

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In this study we report the findings that we obtained when we repeated a study conducted approximately 10 years ago. In the initial study we found that mature students did as well as traditional-entry ones in first-year essays and examinations. However, they did less well initially when writing laboratory reports. In this replication study these results were reversed. This time our mature students did as well as the traditional entry-ones on their laboratory reports, better than the traditional-entry ones at essay writing, but worse on their examinations. Some possible causes for these findings are discussed, and the paper concludes by examining the final degree performance (some two years later) of these two groups of students. Here there were no significant differences between them.

IN AN EARLIER PAPER, Hartley and Trueman (1997) compared the academic performance of 56 mature and 56 traditional-entry students on four modules in the first-year of the psychology degree course at Keele University in 1994 and 1995. In this paper, we replicate this study by examining the performance of a similar group of students in 1997–2000.

Hartley and Trueman's (1997) paper was unusual in two respects: (i) it was the first to compare the academic performance of mature and traditional-entry students on individual first-year modules – modular courses were introduced into British Universities in the early 1990s; and (ii) it showed that the mature and the traditional-entry students did not differ significantly in terms of their essay and examination performance over the first-year psychology course but that they did on their laboratory work. The mature students performed significantly worse than the traditional-entry ones on their first semester laboratory reports but performed as well as the traditional-entry ones on their second semester one.

Hartley and Trueman's paper was one in a series of what Hartley and Norton (2002) called 'bottom-line' studies, i.e. those that concentrated on examination scores and

essay/project marks. Such papers can be contrasted with 'experiential' studies, where the investigators concentrate on the experiences of the students involved. Hartley and Norton (2002) summarised the results from over 20 studies in each group and remarked how little cross-referencing there was between these papers. Authors discussing mature students' experiences rarely commented on their examination performance, and authors concentrating on the bottom-line, rarely commented on the students' experiences.

Table 1 lists some additional representative studies published in each group since the Hartley and Norton (2002) paper. Of these, perhaps the most important bottom-line publication is that by Richardson and Woodley (2003). These investigators examined the final degree performance of 228,790 UK students who had graduated in 1996 before modularisation. They reported that whilst their traditional-entry students under-21 obtained the best results in terms of 'good degrees' – i.e. 1sts and 2:1s combined – mature students aged between 21 and 50 also did well. But, after this age, the performance of mature students began to decline (see Table 2). Richardson and Woodley (2003) also noted that women

Table 1: Some representative bottom-line and experiential studies of mature students.

| |
|---|
| <p><i>'Bottom-line' studies</i> Cantwell, Archer & Bourke, 2001; Richardson & Woodley, 2003; Simonite, 2003.</p> <p><i>'Experiential studies'</i> Bamber, 2005; Cantwell & Grayson, 2002; Cantwell & Scevak, 2004; Laing et al., 2005; Leder & Forgasz, 2004; Mercer, 2007; Mercer & Saunders, 2004; Merrill, 1999; Osborne, Marks & Turner, 2004; Reay, 2002; Waller, 2006.</p> <p><i>Both</i> Bingham & O'Hara, 2007; Eppler & Harju, 1997.</p> |
|---|

Table 2: Differences in the degree performance of men and women students at different ages. (Data from Table IV in Richardson & Woodley, reported here with permission of the authors.)

| Age at graduation | Gender | Degree classification (%) | | | | Good degrees (%) |
|-------------------|--------|---------------------------|------|-------|------|------------------|
| | | 1 | 2(i) | 2(ii) | 3 | |
| Under 21 years | Men | 15.3 | 45.8 | 30.3 | 8.6 | 61.1 |
| | Women | 8.3 | 55.8 | 30.8 | 5.1 | 64.1 |
| 21-25 years | Men | 8.0 | 42.3 | 42.1 | 7.6 | 50.3 |
| | Women | 5.9 | 50.9 | 39.5 | 3.7 | 56.8 |
| 26-30 years | Men | 10.4 | 43.6 | 38.2 | 7.7 | 54.1 |
| | Women | 9.5 | 49.1 | 36.5 | 4.9 | 58.6 |
| 31-40 years | Men | 11.3 | 44.7 | 36.8 | 7.3 | 56.0 |
| | Women | 10.4 | 53.5 | 32.6 | 3.5 | 63.8 |
| 41-50 years | Men | 9.2 | 43.9 | 39.9 | 7.1 | 53.0 |
| | Women | 10.1 | 51.5 | 34.2 | 4.2 | 61.6 |
| 51-60 years | Men | 8.2 | 39.7 | 40.7 | 11.3 | 47.9 |
| | Women | 9.0 | 45.9 | 38.3 | 6.9 | 54.9 |
| Over 60 years | Men | 5.3 | 37.4 | 46.6 | 10.7 | 42.7 |
| | Women | 4.1 | 39.0 | 38.1 | 18.9 | 43.1 |

mature students did better than men in all of the age groups shown in Table 2, although this varied to some extent with the subjects being studied.

Although Richardson and Woodley (2003) used a vast sample size, they pooled together the results from many different disciplines and different institutions using a variety of teaching methods and assessments, and thus – by default – could not consider these particular variables. Other, smaller 'local' studies have been reported that

consider the findings across single institutions or in one particular discipline within one institution (e.g. Hartley & Trueman, 1997; Simonite, 2003; Sutherland, 1999).

The present study was another such 'local' bottom-line study. Here we were interested in how well traditional-entry and mature students performed on each of the same four modules (at least in name if not in content) that were used in the original Hartley and Trueman (1997) study.

Method

Data were extracted from the psychology departmental records for mature students (aged over-21) who completed the first-year modules at Keele in 1997, 1998, 1999 and 2000. These students were then matched with an equal number of traditional-entry students in terms of sex and (as far as possible) subject combinations. (All students at Keele study two principal subjects: in 22 cases where an exact subject match could not be obtained, a cognate discipline was assured.)

For each participant we recorded the marks obtained on four modules. Modules 1 and 2 comprised lectures and tutorials and were both assessed by an essay and a written examination. Modules 3 and 4 comprised laboratory and statistical classes, and were both assessed by two laboratory reports.

Students completed Modules 1 and 3 in the first semester, and Modules 2 and 4 in the second.

In order to avoid distorting the overall mean scores, students who missed one piece of work, or who failed components within the modules, were given a mark of 40 for these elements in the present study (as in Hartley & Trueman, 1997). There were a total of four such adjustments for the mature students and two for the traditional-entry ones.

Results

The overall results are shown in Table 3 and a more detailed breakdown is provided in the Appendix. The data in the Appendix show (excluding those for 1997) a decline in the number of mature students studying psychology over time (from 21 in 1997 to nine in 2000).

Table 3: The overall mean scores (and standard deviations) for the matched mature and traditional-entry students for the four modules.

| | | Traditional entry (N=45) | Mature students (N=45) |
|-----------------|------|-----------------------------|---------------------------|
| Module 1 | | | |
| Essay | m | 59.7 | 59.2 |
| | s.d | 3.4 | 3.2 |
| Exam | m | 56.8 | 48.2 |
| | s.d. | 3.2 | 10.2 |
| Module 2 | | | |
| Essay | m | 58.6 | 60.4 |
| | s.d | 1.5 | 6.1 |
| Exam | m | 56.0 | 51.3 |
| | s.d. | 1.4 | 5.8 |
| Module 3 | | | |
| Lab Report 1 | m | 55.6 | 53.5 |
| | s.d | 1.7 | 4.3 |
| Lab Report 2 | m | 58.5 | 56.4 |
| | s.d. | 3.0 | 5.4 |
| Module 4 | | | |
| Lab Report 3 | m | 57.6 | 59.4 |
| | s.d | 2.3 | 2.1 |
| Lab Report 4 | m | 55.2 | 60.3 |
| | s.d. | 5.3 | 1.7 |

Initial statistical analyses of the overall data shown in the Appendix showed (as in 1994–1995) that there were no significant differences between the overall performance on the men and the women students ($F(1,86)=0.1, p>0.5$). Accordingly, in Table 3, we show only the results for the mature and the traditional-entry students for the different modules. Examination shows that, as in 1994–1995, there was a significant difference between the mean scores obtained for the essay and the examination components in each of Modules 1 and 2 (Module 1: essay $M=59.4$ vs. exam $M=54.0$. $F(1,82)=13.86, p<0.5$; Module 2: essay $M=59.5$ vs. exam $M=54.1$. $F(1,82)=16.94, p<0.5$). However, unlike in 1994–1995, in the present data there was a significant interaction between the scores of the mature and the traditional-entry students on the essay and examination components of the assessment. The mature students performed higher than the traditional-entry ones on the essay components ($M=60.3$ vs. $M=58.6$) and lower than them on the examinations ($M=52.4$ vs. $M=55.7$; $F(1,82)=4.73, p<0.5$).

For Modules 3 and 4 (unlike 1994–1995) there were no significant differences between the performance of the mature and the traditional-entry students on either component of the assessment.

In the present study we also collected the final degree data for these students obtained some two years later (i.e. 1999–2002). Table 4 shows the numbers of mature and traditional-entry students obtaining 1sts, 2:1s, etc. Chi-square analysis showed, despite the excellent performance of some of the mature students, that the difference between the performance of the mature and traditional-entry students in this respect was not statistically significant for the separate data (chi-square=5.97, d.f. 4, n.s.d.) nor for when the data were grouped into ‘good’ and ‘other’ degrees (chi-square=0.41, d.f. 1, n.s.d.).

Discussion

The main findings of this study show that these mature students performed as well as the traditional-entry students on most measures and sometimes better (e.g. on the essay data for Modules 1 and 2). However, they did significantly worse than the traditional-entry students on the written examinations for Modules 1 and 2. These findings, therefore, are somewhat different from those obtained in 1994–1995 where there were no differences in this respect, but some differences on their performance in Modules 3 and 4 (with mature students doing less well on Module 3 but catching up by Module 4).

Table 4: The numbers of matched mature and traditional-entry students falling into the different degree classes at the end of their studies.

| | Degree Class | | | | |
|----------------------|--------------|-----|-----|-----|------|
| | 1st | 2:1 | 2:2 | 3rd | Pass |
| Traditional students | 1 | 27 | 16 | 0 | 1 |
| Mature students | 5 | 20 | 19 | 1 | 0 |

The final degree data shown in Table 4 are of particular interest. However, we need to bear in mind that here the results from the psychology components of the degree (in the 2nd and 3rd year only) have been combined with those obtained in their second subjects – so they do not reflect performance in psychology alone. The results shown here, of course, are from students who were matched as far as possible on their second subjects, so in this sense the two groups are comparable. These data replicate, on a smaller scale, those reported for students in general at Keele in the 1980s where no significant differences were found between the degree classes awarded to over 300 matched mature and traditional-entry students (Hartley, Trueman & Lapping, 1997). So in this respect – 20 years on – mature students are still performing as well as traditional-entry ones academically.

Of course, despite the module titles being much the same, the teachers, the contents and the precise nature of the assessments

have changed over time. Of course, it is impossible to tell how far these factors have affected the results. In the present study Graduate Teaching Assistants directed a large part of the work undertaken in the laboratory modules, and they marked some of the laboratory reports as well as some of the examinations (under supervision, and with moderation from the course-leaders). In 1994–1995 postgraduate ‘Demonstrators’ did similar work, but not to the same extent. Furthermore, the experiences of the students in 1994–1995 may have been different in many respects from those in 1997–2000. So a strong case can be made for combining experiential and bottom line studies.

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References

- Bamber, J. (2005). Curriculum design: Encouraging special attention in non-traditional students. *Widening Participation in Life-Long Learning*, 7(2), 28–38.
- Bingham, R. & O'Hara, M. (2007). Widening participation on early years degrees: 'I realised I could, and would, do this – and I have!' *Journal of Further & Higher Education*, 31(4), 311–321.
- Cantwell, R.H. & Grayson, R. (2002). Individual differences among enabling students: A comparison across three enabling programmes. *Journal of Further & Higher Education*, 26(4), 293–306.
- Cantwell, R.H. & Scevak, J.J. (2004). Engaging university learning: The experiences of students entering university via recognition of prior industrial experience. *Higher Education Research & Development*, 23(2), 131–145.
- Cantwell, R.H., Archer, J. & Bourke, S. (2001). A comparison of the academic experiences and achievement of university students entering by traditional and non-traditional means. *Assessment & Evaluation in Higher Education*, 26(3), 221–234.
- Eppler, M.A. & Harju, B.L. (1997). Achievement motivation goals in relation to academic performance in traditional and non-traditional college students. *Research in Higher Education*, 38(5), 557–573.
- Hartley, J. & Norton, L. (2002). Some preliminaries to action research with mature students. *Psychology Teaching Review*, 10(1), 52–59.
- Hartley, J. & Trueman, M. (1997). What's the bottom line? How well do mature students do at university? In P. Sutherland (Ed.), *Adult learning: A reader* (pp.174–181). London: Kogan Page.
- Hartley, J., Trueman, M. & Lapping, C. (1997). The academic performance of mature and traditional-entry students: A review and case-study. *Journal of Access Studies*, 12(1), 98–112.
- Laing, C., Chao, K-M. & Robinson, A. (2005). Managing the expectations of non-traditional students: A process of negotiation. *Journal of Further & Higher Education*, 29(2), 169–179.
- Leder, G.C. & Forgasz, H. (2004). Australian and international mature students: The daily challenges. *Higher Education Research & Development*, 23(2), 183–198.
- Mercer, J. (2007). Re-negotiating the self through educational development: Mature students' experiences. *Research in Post-Compulsory Education*, 12(1), 19–32.
- Mercer, J. & Saunders, D. (2004). Accommodating change: The process of growth and development amongst a mature student population. *Research in Post-Compulsory Education*, 9(2), 283–300.
- Merrill, B. (1999). *Gender, change and identity: Mature women students in university*. Leicester: NIACE.
- Osborne, M., Marks, A. & Turner, E. (2004). Becoming a mature student: How adult applicants weigh the advantages and disadvantages of Higher Education. *Higher Education*, 48, 291–315.
- Reay, D. (2002). Class, authenticity and transition to Higher Education for mature students. *Sociological Review*, 50(3), 398–418.
- Richardson, J.T.E. & Woodley, A. (2003). Another look at the role of age, gender and subject as predictors of academic attainment in Higher Education. *Studies in Higher Education*, 28(4), 475–493.
- Simonite, V. (2003). A longitudinal study of achievement in a modular first degree course. *Studies in Higher Education*, 28(3), 293–302.
- Sutherland, P. (1999). A study of the learning of mature adult students on a professional course. *Journal of Further & Higher Education*, 23(3), 381–389.
- Waller, R. (2006). 'I don't feel like 'a student', I feel like 'me'!': The oversimplification of mature learners' experience(s). *Research in Post-Compulsory Education*, 11(1), 115–130.

Appendix: Data for the four modules from the traditional-entry and the mature students for 1997–2000. Matching numbers of males and females combined.

| | | 1997 | | 1998 | | 1999 | | 2000 | |
|----------------------------|----------|-------------|-------------|--------------|--------------|--------------|--------------|-------------|-------------|
| | | Traditional | Mature | Traditional | Mature | Traditional | Mature | Traditional | Mature |
| Equal no. of male/females* | | <i>N</i> =2 | <i>N</i> =2 | <i>N</i> =21 | <i>N</i> =21 | <i>N</i> =13 | <i>N</i> =13 | <i>N</i> =9 | <i>N</i> =9 |
| Module 1 | Essay | 64.5 | 54.5 | 58.8 | 60.2 | 58.8 | 60.5 | 56.7 | 61.6 |
| | SD | 3.5 | 2.1 | 9.1 | 10.2 | 6.3 | 9.6 | 7.2 | 7.4 |
| 101 | Exam | 61.5 | 33.0 | 56.1 | 53.6 | 54.5 | 52.5 | 55.1 | 53.8 |
| | SD | 4.9 | 26.9 | 9.2 | 12.7 | 8.8 | 13.4 | 7.0 | 9.0 |
| Module 2 | Essay | 60.5 | 53.0 | 57.8 | 61.5 | 56.9 | 59.2 | 59.0 | 67.8 |
| | SD | 7.8 | 2.8 | 8.1 | 8.0 | 7.2 | 6.7 | 5.5 | 6.0 |
| 103 | Exam | 55.0 | 44.5 | 55.8 | 54.4 | 58.0 | 48.9 | 55.3 | 57.6 |
| | SD | 1.4 | 10.6 | 6.8 | 10.0 | 5.9 | 9.4 | 4.4 | 6.7 |
| Module 3 | Report 1 | 53.5 | 49.0 | 56.5 | 55.3 | 54.6 | 51.2 | 57.2 | 58.6 |
| | SD | 2.1 | 7.1 | 6.9 | 9.4 | 6.3 | 9.2 | 6.3 | 6.0 |
| 102 | Report 2 | 62.0 | 52.0 | 57.5 | 58.0 | 55.0 | 52.3 | 59.6 | 63.3 |
| | SD | 5.7 | 5.7 | 6.5 | 8.8 | 8.5 | 8.0 | 8.9 | 3.6 |
| Module 4 | Report 3 | 60.0 | 57.5 | 59.1 | 59.6 | 56.1 | 58.3 | 55.1 | 62.2 |
| | SD | 7.1 | 4.9 | 5.4 | 8.8 | 7.6 | 8.9 | 7.6 | 7.1 |
| 104 | Report 4 | 61.0 | 60.5 | 56.2 | 58.4 | 55.5 | 59.8 | 48.1 | 62.6 |
| | SD | 1.4 | 3.5 | 8.6 | 10.3 | 6.6 | 9.2 | 7.0 | 6.2 |

*In each year the numbers of men and the numbers of women in the mature and the traditional-entry groups were matched. For example, in 1998, there were six male mature and six male traditional-entry students and 15 female mature and 15 female traditional-entry students, making 21 in each group.