

## STUDENT EMPLOYMENT AND ITS EDUCATIONAL IMPACT: A SCOTTISH STUDY<sup>1</sup>

JIM MCKECHNIE, KAREN DUNLEAVY AND SANDY HOBBS

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### ABSTRACT

A questionnaire survey of over seven hundred students on four degree courses at the University of Paisley found that the majority had paid employment during term time. The average time spent at work per week was just under 15 hours. Students on the whole tended to see their employment as interfering with their studies, this being particularly the case with those who worked longest hours. On the other hand, students tended to see employment as helpful for their future careers. No relationship was found between whether students worked and their socio-economic background. There was some evidence that students working longer hours performed less well academically. This was particularly true of students in their first year of study.

### INTRODUCTION

There are substantial reasons for believing that the proportion of students in higher education who undertake paid employment during term time has increased in recent years. Incomes Data Services (1997), identifying full time students in the Labour Force Survey, found that whereas 23% of students were working in 1984, 38% were working in 1997. More recently, Canny (2002) noted a rise between 1992 and 2000 from 36% to 41%. Although in this case the analysis was confined to 16 to 19 year olds, most of whom were not in higher education, this trend is worth noting as an indication of behaviour patterns amongst young people. Studies conducted since 1996 in several universities (e.g. Barke, *et al.*, 2000; Curtis and Shani, 2002; Metcalf, 2003; Watts, 2002) suggest that term time employment is widespread and that the hours worked are frequently long.

The fact that many students have paid employment during term time is clearly a matter of some significance. Although some writers treat the phenomenon of student employment as likely to be beneficial (e.g. Harvey, Geall and Moon, 1998), it is more common for anxieties to be expressed about the situation. In particular, the possibility that working, especially working long hours, may have a detrimental effect on the students' academic performance (see, for example, Metcalf, 2003). Students surveyed typically report that their jobs have adverse effects on their academic work. However, objective evidence of such harmful effects is limited. Watts (2002) found no significant difference between workers and non-workers, although the samples were small. Barke, *et al.* (2000) found a small but significantly superior average mark for non-workers compared to workers.

Research in this field is still largely exploratory and care needs to be exerted in extrapolating from the results of empirical studies. Some samples are small, some studies concentrate on a single department or degree programme. Percentages of the target populations surveyed who actually responded are not always stated. When the response rate is stated, the sample is sometimes less than a third. When students have been asked about the impact of their jobs, they have not always been able to indicate perceived benefits as well as perceived costs.

The recent study by Metcalf (2003) undertaken in four unnamed English<sup>2</sup> universities, found considerable variations between institutions in the proportion of students undertaking term-time employment. For example, in a high status old university, 27 per cent did so, whilst in one of the new universities, the figure was 60 per cent. This suggests that it may be dangerous to generalize too readily

between institutions. Studies undertaken in Northern Ireland have found that levels of employment amongst students in post-compulsory education are lower than in England (Leonard, 1995; McVicar and McKee, 2002). If such variations exist, it is probably necessary to assess the situation in Scottish universities separate from English ones. Three Scottish studies of student employment (McKechnie, Hobbs and Lindsay, 1998; Taylor, 1998; Taylor and Smith, 1998) suggest that working is common and that students tend to see work as harming their academic studies. None of these Scottish investigations sought to relate employment to actual performance. The purpose of the present study is to provide additional evidence on the nature and extent of student employment in Scotland and its impact on academic performance. We report evidence from the University of Paisley which can be compared with earlier findings from the same institution (McKechnie, Hobbs and Lindsay, 1998). We also related patterns of work to academic performance and to indices of socio-economic status.

#### PROCEDURE

A questionnaire was administered in class to full time undergraduate students undertaking a 1st, 2nd or 4th year of study at the University of Paisley during the 1998–99 academic year. (An earlier study adopting the same procedure, methodology and similar sample had been carried out during the 1996–97 academic session.) Students surveyed were on four degree programmes, Social Science, Business, Science or Engineering, representing four different faculties of the University. Topics covered included student employment and perceived impact, both positive and negative, of their jobs on academic achievement.

A second part of the investigation focused on first year students, since problems of progression are greatest at that stage. For the 1998–99 survey information about students' academic performance, entry qualifications and socio-economic status were extracted from university records and added to our data base. For socio-economic status two indices were used. Since post codes tend to represent distinctive socio-economic conditions, each post code can be placed in a particular "deprivation category" (McLoone, 1995). For our analysis, these were divided into three categories, affluent, average and deprived. The second indicator was a six point scale of parental occupation. Academic performance was operationally defined as the mean mark, across eight modules, obtained by students at the end of the academic year. Entry qualifications were categorized according to points obtained in the Scottish Higher qualifications, overwhelmingly the most common basis for entry, and other entry qualifications such as HNC or HND qualifications.

#### RESULTS

##### *Sample sizes*

A total of 749 students responded (see Table 1). As percentages of the target populations, the samples vary between 51% and 69%. These compare favorably with those reported in other recent studies, including that of Metcalf (2003) whose data was collected in the academic session 1999–2000, a year later than the present investigation.

##### *Extent of employment*

Table 1 provides a breakdown of the term-time employment levels of students. Around two thirds of first and second year students were found to be currently working. Just over half of fourth year students were. Average weekly time devoted to paid employment was around 14 or 15 hours. When compared with data collected two years earlier (McKechnie, Hobbs and Lindsay, 1998) it was found that first year students were reporting weekly working of about two hours more, a significant

Table 1: Extent of Working

	Class total	Responding	Working Currently	Hours per week Mean s.d.	
Year 1	413	285 (69%)	188 (66%)	15.0	7.0
Year 2	509	259 (51%)	175 (67%)	14.8	6.5
Year 4	309	205 (66%)	108 (53%)	14.5	6.6
<b>Total</b>	<b>1231</b>	<b>749</b>			

increase [ $t(338) = -2.51, p < 0.02$ ]. Students were employed predominantly in the service sector (hotel and catering, bar work and shop work or sales). Few students were employed in jobs that were related to their degrees.

#### *Perceived impact of jobs on study*

Students were asked to indicate on a four step scale the perceived impact of employment. They were also asked to indicate if they had missed classes to accommodate their jobs.

At all stages of the degree programmes students tended to perceive that employment had a negative effect on their coursework, exam performance and private study. Extracurricular activities were similarly perceived to suffer as a result of employment.

Employed students were categorised in terms of hours per week worked: up to ten hours, eleven to fifteen hours and sixteen or over hours. Those working ten or fewer hours per week were less likely to perceive employment as interfering with academic and extracurricular activities, whilst students working sixteen hours or more per week were more likely to do so. Across all levels, students working in excess of 16 hours per week were more likely to miss classes due to their work. There was almost no relationship between hours worked and beliefs about possible benefits to be gained from employment.

As Table 3 shows, most students tended to believe that employment does not contribute to their academic knowledge. On the whole, students did not see work as contributing to academic motivation, although second level students were almost equally divided on this issue. Students are slightly more likely to see their work as aiding their career development. With respect to the more specific issue of future employment prospects, only around a third of students believe that their employment prospects are not aided to some extent by their work experience. This belief was strongest amongst the second and fourth year students.

#### *Hours worked and exam performance*

Initial analysis showed that students with paid employment as a group performed less well academically than their non-employed classmates only amongst first year Science students. No significant differences were found between workers and non-workers in any other cohort of students. Accordingly we concentrated on employed students and their weekly hours spent at their jobs. Since data was collected on employment in the second semester, hours worked reported by the students were compared with their results in that semester as well as with overall performance for the whole academic year. Table 4 summarizes the results from this analysis.

Table 2: Perceived Impact of Employment related to Hours per Week Worked

	First Year	Second Year	Fourth Year
<b>Harmed:</b>			
Attendance at classes	NS	***	**
Coursework	***	***	***
Examination performance	**	*	***
Extracurricular activities	***	**	*
Private study	***	**	**
<b>Helped:</b>			
Academic knowledge	NS	NS	NS
Academic motivation	NS	*	NS
Career development	NS	NS	NS
Employment prospects	NS	NS	NS

Differences refer to impact being perceived as greater by those working longer hours.

NS: not significant

Significance levels: \* p<0.05; \*\* p<0.01; \*\*\* p<0.001

Table 3: Perceived Helpful Impact of Employment by Year of Study

	Year	Severe (%)	Moderate (%)	Somewhat (%)	Not at all (%)
Academic Skills	1	2	13	26	59
	2	2	14	27	57
	4	4	12	26	58
Academic Motivation	1	2	15	24	60
	2	4	21	25	50
	4	3	16	25	56
Career Development	1	6	17	25	52
	2	6	21	29	44
	4	7	22	34	37
Employment Prospects	1	8	26	30	36
	2	8	36	27	30
	4	9	30	34	27

Table 4: Relationship between Hours Worked per Week and Academic Performance

	<b>n</b>	<b>Semester 2 Average Marks</b>	<b>Overall Average Marks</b>
<b>Year 1</b>	<b>186</b>	<b>-.295***</b>	<b>-.281***</b>
Social Science	81	-.394***	-.365***
Business	31	-.194	-.216
Science	61	-.167	-.124
Engineering	13	-.449	-.475
<b>Year 2</b>	<b>173</b>	<b>-.002</b>	<b>-.029</b>
Social Science	67	-.194	-.240
Business	27	-.260	-.305
Science	63	+.107	+.101
Engineering	16	+.288	+.198
<b>Year 4</b>	<b>102</b>	<b>-.112</b>	<b>-.187</b>
Social Science	48	-.163	-.251
Business	19	+.150	+.065
Science	27	+.008	-.024
Engineering	10	-.286	-.296

Hours worked per week refers to semester 2.  
Significance levels: \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$

Overwhelmingly correlations between hours worked and academic performance are negative, i.e. those working longer hours tend to do less well in their university work. However, this tendency is statistically significant for first level students only. When individual faculties were considered, the only significant correlation was for Social Science students. The failure to find significant relationships in some cases may be attributable to small sample size.

For first year students, there was no significant association between having a part-time job and socio-economic status as presently defined. There was also no significant relationship between socio-economic status and hours worked. Linear regression analysis was chosen to investigate the contribution a range of independent variables, including hours worked, made to performance.

As an initial step individual regression analyses were carried out for each of the independent variables, gender, work status, entry qualifications, socio-economic status as indicated by postcode (depcat) and hours worked. Table 5 summarises the results and shows that entry qualifications and hours worked are the only significant variables. The adjusted  $R^2$  values for the significant variables were .057 and .026, respectively, indicating that entry qualifications accounted for approximately 6% of the variance in performance and hours worked approximately 3%.

Table 5: Regression results for impact on Year 1 performance

Independent Variables	Individual Regressions	
	$\beta$ s <sup>a</sup>	p-value
Gender	.109	.096
Depcat <sup>b</sup>		
Average	.047	.523
Affluent	.094	.198
Entry Qualifications <sup>c</sup>		
5–6 points	.171*	.028
7 + points	.300***	.0001
HNC/D	.054	.460
Hours worked	-.173**	.008
Work status	-.076	.251

a. Standardised  $\beta$  coefficient

b. Reference category for Dep Cat is 'Deprived'

c. Reference category for Entry Qualification is 'Less than 4 points'

\* p< 0.05; \*\* p<0.01; \*\*\* p<0.001

A multiple regression was carried out to ascertain the contribution of all variables to Year 1 performance. Using the enter method a significant model emerged ( $F(4,223) = 4.20, p < 0.001$ ) with an adjusted  $R^2 = .100$ . The significant variables within this model were entry qualifications and hours worked.

Gender, socio-economic status as indicated by postcode and work status were not significant. Greater success in "Highers" was a predictor of performance and longer hours worked per week was a negative predictor of performance. Based on these results a final multiple regression analysis was carried out to test the most parsimonious model, the model containing entry qualifications and hours worked. A significant model emerged ( $F(4,231) = 6.81, p < 0.001$ ) with an adjusted  $R^2 = .091$ .

Table 6: Multiple regression results for impact on Year 1 performance

Independent Variables	Multiple Regression	
	$\beta$ s <sup>a</sup>	p-value
Gender	.108	.089
Depcat <sup>b</sup>		
Average	.016	.822
Affluent	.090	.203
Entry Qualifications <sup>c</sup>		
5-6 points	.171*	.026
7 + points	.305***	.0001
HNC/D	.041	.572
Hours worked	-.282**	.008
Work status	.094	.305

a. Standardised  $\beta$  coefficient

b. Reference category for Dep Cat is 'Deprived'

c. Reference category for Entry Qualification is 'Less than 4 points'

\* p< 0.05; \*\* p<0.01; \*\*\* p<0.001

Table 7: Multiple regression results for impact on Year 1 performance:  
Entry qualifications and hours worked

Independent Variables	Multiple Regression	
	$\beta$ s <sup>a</sup>	p-value
Entry Qualifications <sup>b</sup>		
5-6 points	.180*	.019
7 + points	.316***	.0001
HNC/D	.054	.460
Hours worked	-.196**	.002

a. Standardised  $\beta$  coefficient

b. Reference category for Entry Qualification is 'Less than 4 points'

\* p< 0.05; \*\* p<0.01; \*\*\* p<0.001

The model reinforces the predictive value of entry qualifications and hours worked for first year student performance. However, given that the model accounts for 9% of the variation in students' performance, other factors are clearly important.

## DISCUSSION

The findings indicate that term time working is widespread and apparently tending to grow. Percentages working are higher than in a previous study conducted in the same university (McKechnie, Hobbs and Lindsay, 1998). As in other studies mentioned in the introduction, students tend to see the impact of their jobs as predominantly negative. However, only amongst first year Science students did we find that employed students were performing academically less well than their non-working classmates. This suggests that degree specific effects should be considered in future studies. For example, working may have a greater impact on certain types of courses where timetables are less flexible. Similarly, when numbers of hours worked were taken into account, only amongst first year Social Science students did longer hours relate significantly to poorer performance. As noted in the introduction, objective evidence to support the perceived view that working tends to harm academic performance is limited. We have added some more evidence on the issue but it too is limited. It may be that as one passes through university one acquires greater coping skills. Perhaps the decision to work, and the amount of time worked, in year four is partly based on an assessment of one's own ability to cope based on experience.

It would be dangerous to take too sanguine a view of these processes, however. It is important to keep in mind that most failures and drop-outs occur in the first year of study. Those who have the greatest difficulty coping in the first year are most likely to drop out, being lost to higher education and, of course, themselves losing the benefits to be gained from higher education. Thus, although it is "only" in the first year that the negative impact of working can be seen as substantial, this has important implications for policy makers because failure to progress from first year is so significant.

Why should only first year students be affected by working or by working longer hours? One explanation is that students as they progress through university learn to cope with the combined needs of work and study. Some selection processes may also be at work. First year students who fail to find a way of balancing work and education may not proceed beyond first level, leaving a higher proportion of students who have devised strategies for dealing with the work-study combination. Note too that students with jobs are now working an average of around 15 hours per week during term time, a figure which is approaching half of what is considered a normal full time job. It must be remembered too that since first year students are working on average 15 hours per week, substantial numbers of them are working above that figure.

The ability to "work in two worlds", to employ a phrase proposed by Taylor and Smith (1998), may also be related to characteristics of the student. Difficulties in sample size precluded us from comparing mature and non-mature students. When we considered the age distribution of our sample as a whole we found that the percentage of mature students in each year varied. The percentage of students over 22 years of age in second and fourth level, 26% and 61% respectively, was greater than that for level one, 14%. This may reflect the drop off in mature applicants entering university. However, it is conceivable that mature students are more practiced at juggling competing demands.

If around two thirds of students have jobs, this represents a clear increase from most estimates of the extent of student employment from earlier in the decade such as Hakim's (1998) study based on the 1991 census and the review by Harvey, Geall and Moon (1998). Metcalf (2003) found considerable variations between English universities in the extent of term time employment. However, care must be taken in comparing the current figures with those in Metcalf's study as it included only year three students.

Hakim, finding no substantial social differences between working and non-working students, concluded that working or non-working must arise from "attitudes to work, money, and education which are not reflected in census data" (1998: 165). She

particularly noted that working students are no more likely than their non-working colleagues to come from poorer families. Our analysis also failed to establish any significant difference between the socio-economic backgrounds of working and non-working students. Of course, this does not mean that economic factors are entirely irrelevant to an understanding of why students work. Students from backgrounds which are relatively affluent may nevertheless feel the need to work because of their perceived needs. Some young people from particularly deprived backgrounds may be deterred from entering university because of what they see as the economic burden carried by students. What may be said with confidence however is that student employment cannot be seen as merely a result of economic disadvantage.

Various other circumstances, not examined in the present study, may be relevant to whether students work. For example, Metcalf (2003) found gender, ethnicity and family experience of higher education, measured by whether the student's father had a degree, to be relevant variables.

Hakim (1998: 173) argued that "work experience can be both beneficial and detrimental to students". This is a commonly expressed standpoint and one with which we see no reason in our results to disagree. It may be that the Balance Model developed to cover the effects of employment on school children (Hobbs and McKechnie, 1997) may be applicable to university students. The model allows for the possibility that there may be both positive and negative effects of being employed. However, the question of the balance between costs and benefits is crucial. If more students are working than in the past and some are likely to work long hours, these trends might tip the balance from benefits to detriments.

We gave our working students the opportunity to express their own judgements on the impact of their jobs. It is clear that they tend to see costs more readily than benefits. The detrimental effects of working are much clearer to students working long hours. Students see attendance and performance both suffering because of their paid employment. On the other hand, many students do envisage a pay-off from working which is beneficial to their future careers and employment. The fact that this is how the student workers themselves see their jobs is worthy of attention, although it would be dangerous to rely to heavily on these subjective impressions.

Does student employment constitute a substantial problem? Our regression analysis suggests that working long hours has a negative predictive value in the context of performance roughly equivalent to the positive predictive value of entry qualifications. In both cases the impact appears to be real but not overwhelming. There are probably many other factors, less easy to specify, affecting student success and failure. However, we suggest that just as universities pay attention to entry qualifications so they should also pay attention to their students' jobs. Some already do so, insofar as they have on-campus job shops. We suggest that universities should monitor student employment closely, particularly with respect to the hours worked and particularly with respect to first year students.

Finally, we propose that, since Metcalf (2003) has found differences between conditions in different English universities, it would be advisable for all Scottish universities to carefully monitor student employment and its academic impact.

#### NOTE

- 1 The authors would like to thank the University of Paisley for its support throughout this project.
- 2 Metcalf (2003) describes the four universities as "British"; however in a personal communication (18 May 2004) Metcalf helpfully informed us that all four were English.

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