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## The impact of term-time employment on higher education students' academic attainment and achievement

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Term-time employment among Britain's undergraduates is a growing phenomenon but it has received scant attention from government and policy makers. Although there are numerous studies on the subject, few have explored the impact of term-time employment on students' actual attainment and those that have are limited. This article attempts to fill that gap. Using data derived from 1000 students in six UK universities, it quantifies the impact of students' paid work on their actual marks and degree results, while controlling for their academic attainment on entry to higher education and other factors including their hours of work. It shows that irrespective of the university students attended, term-time working had a detrimental effect on both their final year marks and their degree results. The more hours students worked, the greater the negative effect. Consequently, students working the average number of hours a week were a third less likely to get a good degree than an identical non-working student. Some of the least qualified and poorest students are most adversely affected perpetuating existing inequalities in HE. The 2006/07 changes to student finances may help some of them, but term-time employment is likely to remain part of the HE landscape.

**Keywords:** higher education; students; term-time working; part-time working; student funding; student debt

### Introduction

The government and universities in the UK have been preoccupied with access to higher education (HE). They have been concerned about widening participation, getting more students through the HE door and overcoming barriers to participation, especially for non-traditional and low-income students. As a result, what happens to students once they enter the HE door tends to be ignored. Evidence from a survey commissioned by Universities UK and the Higher Education Funding Council for England reveals that students with part-time employment have very different experiences of HE compared to those without jobs. They do less well academically because of the part-time jobs they take often to support themselves while studying.

This article concentrates on the impact of term-time employment on full-time undergraduates' academic attainment, particularly on their actual marks and final degree results. By way of introduction, the article charts the growing importance of term-time work, the current government's views on working students, and existing research on term-time employment and student achievement. Next, the article reports on the main findings of the survey. It examines the extent and nature of term-time employment as well as students'

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motivations for working to identify who bears the ‘costs’ of working. Then it demonstrates how term-time employment has a detrimental effect on student attainment. Finally, the article considers some implications of the findings for policy, especially student support.

### **The growth of term-time employment among undergraduates and its significance**

Undergraduate students are not new to the labour market. What is new is that their employment is no longer ‘incidental and confined to vacation work’ (Ford, Bosworth, and Wilson 1995, 187), but is undertaken alongside their studies during term-time. The rise in term-time employment has been attributed to changes in student funding, especially the introduction of student loans in 1990 (Ford, Bosworth, and Wilson 1995; Lucas and Ralston 1997; Smith and Taylor 1999; Metcalf 2003). However, an examination of time series data, derived from the Student Income and Expenditure Surveys (SIES), reveals the most rapid growth was after the 1998 Teaching and Higher Education Act, which introduced tuition fees and abolished student grants. Just before these reforms came into effect, under a half (47%) of students had term-time jobs compared with 58% a couple of years after the reforms’ introduction (Callender and Wilkinson 2003). However, by 2004/05 the national figure fell slightly to 56% (Finch et al. 2006).

Not only are more students engaging in term-time work, but also they have become increasingly reliant on their wages. Between 1998/99 and 2004/05, students’ earnings doubled in real terms so by 2004/05, they constituted 22% of students’ total income compared with 14% in 1998/99 (Callender and Kemp 2000; Finch et al. 2006). Now students’ earnings form a much higher share of their total income, which is just one example of how their private contribution to HE has increased over time.

### **Policy context**

Despite the increase in students’ term-time employment, the government and other policy makers have remained relatively silent on the matter. The issue was unforeseen in the Dearing Report (NCIHE 1997). However, it was mentioned in both the Cubie Report on student finances in Scotland (ICIS 1999) and the Rees Report (IIG 2001) and Review (2005) on funding in Wales. Only the Cubie Report specifically recommended that students’ paid work should be limited to 10 hours a week and they should be advised about managing their paid work and studies (ICIS 1999, 76–7).

The House of Commons Education and Employment/Skills Select Committee between 2000 and 2002 touched on term-time working several times. The most comprehensive evidence, provided by Callender (2001), showed the student groups most likely to work and to believe their jobs negatively affected their academic attainment. The Committee, in their report *Higher education: Student retention* recommended:

That higher education institutions should provide guidance to their students that they should not work in paid employment for more than 12 hours a week during term time. However, the Committee recognises that ... preventing students from working longer hours, if they are doing so in order to fund their living costs, may be self-defeating unless access to financial support for less well off students were improved. (HC 124 2001, para 49)

The government’s response was as follows:

This is a matter for Higher Education Institutions and for individual students in balancing academic needs against their freedom to work and the benefits from paid work. In our view,

excessive working during term time should be discouraged. But we see difficulties in a single rule of thumb, given differences between HEIs and between courses. The Government's student support package is sufficient to meet the needs of students, with extra targeted help for those that need it most. We recognise that more needs to be done in a targeted way for groups of less well off students. (HC 385 2001, para 8)

Margaret Hodge, the Minister for Higher Education at the time, adopted a slightly different approach declaring, 'I'm not too concerned about students doing part-time work when they are studying. What we've got to ensure is that there's a proper balance in some way so that the work doesn't impinge on their study' (BBC, 28 February 2002). She went on to link students' need to work with their debts and lifestyles. 'But a lot of lifestyle choices were leading to debt. I think on average those who drank were spending £25 per week on alcohol. Now that's absolutely fine, but should the state pay for that?' (BBC, 28 February 2002).

Hodge repeated these views to the Education and Skills Select Committee. In addition, she emphasised that it was the number of hours students worked that mattered. She believed the student support system plus paid work meant students had a good standard of living.

I do not think that working whilst you are a student in higher education need be detrimental. It depends on the number of hours worked. The Barclays Report shows that on average they are working 11 to 14 hours a week. We do not have the evidence ... to suggest that a combination of loans, working, support from parents ... means that there is not enough in the student's pocket to have a pretty good standard and quality of life whilst they are studying. (HC 455, Minutes of Evidence, question 244, 13 May 2002)

The Select Committee in their *Post-16 Student Support* report reiterated its previous recommendation that students should not undertake more than 12 hours of paid work a week in term-time. They recognised too that the experience of the workplace might bring significant benefits and enable students to limit their borrowing (HC 455, 2002, para 26). They continued by dismissing Hodges' suggestion that students were only working to finance lavish lifestyles.

The proportion of student expenditure on maintaining a lifestyle of leisure pursuits, and particularly the consumption of alcohol and tobacco, has received significant media and ministerial attention. While it would be wrong to ignore the fact that students often incur debt, or decide to work, in order to support lifestyle choices, this focus can distract us from the reality of the serious hardship encountered by a significant number of students. (HC 455, 2002, para 27)

Students' part-time employment was hardly touched upon in the 2003 White Paper the Future of Higher Education, except for one comment: 'We know that choices about lifestyle affect how much people spend, and we think that is reasonable for students to work to pay for extras' (DfES 2003, 8). Nor was it considered in any House of Commons debates during the passage of the 2004 Higher Education Act.

The only mention of part-time employment in all the Department for Education and Skills' (DfES) official documentation on student financial support can be found tucked away in guidance notes for administrators of the Access to Learning Fund when assessing student need. This is a discretionary fund for students in hardship administered by individual HE institutions.

It is expected that students will be able to supplement their income from a variety of routes, for example, part time work, vacation work, bank overdrafts (regardless of level), savings or additional parental support where appropriate. (DfES 2005, para 3.55)

Interestingly, the assessment uses an ‘assumed income’ figure (of £1500) to cover all these elements of income rather than taking into account actual income. In this way, the DfES can distance itself from any debate about term-time working. It avoids any potential link between students’ earnings and the student support system. And by implication, it avoids any suggestion that earnings form part of the student support package. This approach contrasts with Ministerial thinking encapsulated in Hodge’s remarks to the Select Committee. Underpinning this DfES official stance are two important principles: first, that students are not expected or assumed to have part-time jobs; and secondly, that income from paid work is not integral to student support, unlike student funding systems in other countries such as Canada and the USA.

However, we can discern several assumptions underpinning the Select Committee and Hodge’s pronouncements. First, that term-time employment is an acceptable activity. This effectively writes off the idea that a full-time student should be studying full-time. Secondly, that term-time work can be both harmful and beneficial but these effects are not spelt out. Thirdly, that term-time employment is only harmful if a student works an excessive number of hours. What constitutes ‘excessive hours’ varies: Cubie cites over 10 hours, the Select Committee suggests over 12 but Hodge mentions up to 14 hours. Fourthly, by implication, it is assumed that there exists a working hours threshold below which term-time employment is not detrimental. Fifthly, that students’ motivation for engaging in term-time employment is primarily to finance a particular lifestyle or ‘extras’, especially drinking and smoking (Moreau and Leathwood 2006). There is no recognition, therefore, that some students may work to pay for basic essentials such as food and rent. Finally, there is an acknowledgement of some relationship between the adequacy of the student support system and students’ labour market activity, but it remains unclear what it is, or should be. This article, calling on empirical evidence, will attempt to address these issues and assumptions.

### **The research evidence**

What is the research evidence that term-time employment affects student attainment? Several studies both in the UK and the USA have examined the consequences of part-time work for students’ studies and achievement. They indicate that students are far more likely to report the adverse rather than the positive effects. For instance, the UK studies (including the current one – Van Dyke, Little, and Callender 2005) show that students miss lectures and seminars; spend less time studying, reading or preparing their assignments; make less use of library facilities and experience increased levels of stress and tiredness – all of which are likely to affect student attainment (see Smith and Taylor 1999; Curtis and Shani 2002; Curtis and Williams 2002; Metcalf 2003; Moreau and Leathwood 2006). And, the more hours students work, the greater the likelihood of such negative effects. Most of these studies, however, are small scale and often confined to one institution.

In contrast, the US studies focus more on the effects of part-time work on student choice of courses and ‘persistence’, reflecting the greater flexibility of US HE provision, which allows and even encourages students to combine paid work with their studies on a full- or part-time basis (Johnstone and Shroff-Mehta 2001, 14). Yet, not all of the US studies differentiate between full- and part-time students, or between term-time and vacation working. Those that do, which are based on nationally representative samples, show that not working at all is associated with less ‘persistence’. Among employed students, the more hours students work, the more likely they are to switch from full- to part-time study, and the less likely they are to complete their degrees. However, there is conflicting evidence. Some studies suggest that working on-campus and a limited number of hours a week (under 10 or

15 hours) may enhance student progress and degree completion (e.g. Horn and Berkhold 1998; King 2002; Pascarella and Terenzini 2005).

Significantly, none of these UK or US studies have calculated an actual hours threshold below which term-time working is beneficial and above which it is detrimental. For instance, one much quoted study by Horn and Berkhold (1998) (and other studies too) shows that students working 1–15 hours a week do better than those who work 16–20 hours, 21–34 hours, 35+ hours, or not at all. The grouping 1–15 hours was not based on anything more than convenience. The study does not tell us if those employed, say, 5 hours a week do better than those working 15 hours a week. This is important, because it appears that the findings from this study, and others, have been interpreted *as if* there was a working hours threshold. And, as we have seen above, policy makers erroneously assume this to be the case.

These studies usefully highlight some of the consequences of term-time employment for student behaviour and illustrate students' views on its impact. But, they give no insights into the effect of their term-time jobs on academic attainment – namely, on students' actual marks and grades. In fact, few studies have attempted to quantify this outcome, with a handful of exceptions.

Lindsay and Paton-Saltzberg's (1994) study of students at Oxford Brookes University showed that term-time work affected students' academic success in three ways. First, working students failed on average more than three times as many modules as non-working students; secondly, they obtained significantly lower marks; and finally they had poorer degree results – '24.8 per cent of students holding permanent jobs during term-time would be expected to achieve a degree which was one class higher if they had not worked' (Lindsay and Palton-Saltzberg 1994, 12).

Both Barke et al. (2000) and Hunt, Lincoln, and Walker's (2004) research are also based on students at just one university – Northumbria. Barke et al. (2000) found that the mean percentage grade for students who had worked was 1.7 percentage points below that of non-working students. Hunt, Lincoln, and Walker's (2004) larger sample size allowed them to disaggregate their data by subject group, and control for differences in marking conventions between subjects. They found non-working students obtained significantly higher marks than working students in some, but not all, subject groups. The clustering of grades around the upper second class/lower second class boundary led them to conclude that the lower grades of working students would pull down their degree results. They also found that the negative effect of term-time work on marks were larger for those working longer hours, and for men. Finally, Humphrey (2006, 275) shows at Newcastle University a 'significant reduction' in the end of year average marks of employed students but is unable 'to assess accurately what these findings mean in terms of final class of degree'.

All four studies have two main limitations. First, all are based on data derived from a single university, which may not reflect the experiences of a nationally representative sample of students. Secondly, all fail to control for students' prior academic attainment as measured by, for instance, their existing academic qualifications.<sup>1</sup> This is a serious omission as many studies show good degree results are highly correlated with a student's ability, often narrowly defined and measured by their A-Level results (Gilbourn and Youdell 2000). But it may be the case that students with good A-Level results are less likely than students with poorer results to work during term-time or to work fewer hours, and so do better at university too. As we will see, this proved to be the case in our study. And as we will see, there were other significant differences between working and non-working students in any analysis exploring the relationship between term-time working and academic attainment.



These limitations are rectified in Purcell et al.'s (2005) study, which is based on a large nationally representative sample of students who graduated in 1999. After controlling for students' A-Level scores, and a variety of other factors, they conclude that 'those who worked during term-time were estimated to be approximately a third less likely to gain a "good" degree compared with those who undertook no paid work during the course of their studies' (Purcell et al. 2005, 171). However, Purcell et al., like Lindsay and Palton-Saltzberg, did not explore how the number of hours students worked affected degree results. Again, this is a serious omission given the evidence demonstrating the varied effects of working hours, and the importance policy makers attach to the number of hours students work.

In contrast, US studies quantify the influence of students' working hours on attainment but at the expense of comparing the outcomes for students who do and do not work. The author could only find one US study examining the relationship between term-time employment and students' grade point average (GPA) for a nationally representative sample of college students (Kalenkoskis and Pabilonia 2005). Unlike the many US studies based on students at a single college (e.g. R. Stinebrickner and T. Stinebrickner 2003), Kalenkoskis and Pabilonia (2005) conclude that there was no evidence that an increase in hours worked negatively affects a student's GPA. In fact, additional hours worked had a positive effect on academic performance. However, the study only focused on one measure of academic performance and included only the first term of college experience.

The limitations of the existing research prompted this new study. It explored undergraduate attitudes to debt and term-time working and their consequences for academic attainment. And significantly, unlike other studies, it quantifies the impact of students' paid work on their actual marks and degree results, while controlling for their prior academic attainment and various other factors including their hours of work. The full findings of the study are described elsewhere (Van Dyke, Little, and Callender 2005). Here we focus on the relationship between term-time working and attainment, specifically in relation to final year marks and degree results.

## Method

This article is based on a survey, conducted in spring 2002, of a random selection of 1360 full-time 'home' final year undergraduate students studying at six 'new' and 'old' UK universities. Data were collected using postal self-completion questionnaires, distributed to the students by the universities. The survey data were supplemented by information provided by the students' universities on their marks for all the units/modules they had studied during their final two years of study and their final degree results. Overall, 74% of respondents gave us permission to access their academic records, which included their marks and degree results.<sup>2</sup> The following analysis therefore is based on 1012 students. For more details of the methodology, see Van Dyke, Little, and Callender (2005).<sup>3</sup>

## The sample

The majority of the 1012 respondents fell into the following separate categories: female (66%); under the age of 25 (85%); white (89%) and childless (93%). Some 43% came from families where the main breadwinner in the household was in managerial or professional employment, 28% from families where the chief earner was in an intermediate or lower supervisory/technical occupation or was a small employer and 29% were from families where the main earner was in a semi-routine or routine profession, or had never worked, or

was in long-term unemployment.<sup>4</sup> Four in five of all respondents were living independently of their parents leaving over one in five living at home with their parents (Table 1). This sample, when compared with national data is broadly representative, except it does over-represent the proportion of women. Any response bias in the sample would tend towards an underestimation of the effects of term-time working.<sup>5</sup> Moreover, the sample's term-time working characteristics, discussed below, mirror those found among students in the nationally representative 2002/03 Student Income and Expenditure Survey (SIES).

Table 1. Key characteristics of students sampled (percentages).

Characteristic	All
Gender	
Male	34
Female	66
Age	
<25	85
≥25	15
Ethnic origin	
White	89
Minority ethnic	11
Social class	
Managerial/professional	43
Intermediate	28
Routine/manual/unemployed	29
Dependent children	
No	93
Yes	7
Living arrangements	
Lives with parents	20
Lives independently	80
Entry qualifications	
A-Levels	74
Scottish Highers	8
Other	18
A-Level point score	
280+ (B B C +)	36
Less than 280	64
Subject studied	
Vocational science	15
Non-vocational science	10
Vocational arts	28
Non-vocational arts	46
Base ( <i>n</i> )	1012

Note: All respondents gave permission to access records.



*Extent and nature of student term-time employment*

Just over a half (53%) students worked in term-time. This proportion was slightly lower than the national average for undergraduates of 58% reported in the 2002/03 SIES (Callender and Wilkinson 2003). Employment rates were well above this average for students living at home with their parents (72%), from the lowest socio-economic classes (60%), from minority ethnic groups (59%), students with Scottish Highers entry qualifications (73%) and other qualifications (58%), and students taking vocational arts subjects – factors that tend to be inter-related (Table 2). These findings confirm those of other nationally representative samples of students (e.g. Callender and Wilkinson 2003; Purcell et al. 2005; Finch et al. 2006) that students already disadvantaged students both materially and educationally are the most likely to engage in term-time employment.

Students' propensity to work in this survey was also linked to their financial circumstances, just like those in national surveys (Callender and Wilkinson 2003). The proportion working rose in line with the size of their debts. Only 41% of students without any debts had part-time jobs compared to 51% with debts under £1000, and 65% with debts of £1500 or more. Similarly, 49% of students who were keeping up with their bills and credit commitments without any difficulties had term-time jobs compared to 61% constantly struggling to meet their financial commitments.

Like in Metcalf's (2003) study, the incidence of term-time employment was spread unevenly between the universities, ranging from 42% to 78%. These differences were related to: variations in the composition of the student population at each university; the nature of their local labour market and potentially the employment-friendliness of a student's university (although this was not something we measured). This highlights the drawback of relying on the results of studies based on one university.

According to Ford, Bosworth, and Wilson (1995), the nature of students' work and their course influence the effects of term-time employment on their education. In our study, students' term-time jobs were unrelated to their longer term career aspirations and their studies. A high proportion (88%) was working in manual unskilled or low-skilled service sector jobs. Three out of five worked in just two occupations: sales and catering, and a further quarter in clerical/administrative jobs. These occupations appear to offer the flexible part-time work students require and the sort of labour employers need (Hakim 1998).

Given the nature of these jobs, most employed students surveyed were also very low paid, especially those working in catering and sales. They earned an average of £5.08 an hour with men earning slightly more, but 71% of students earned less than the average. Their hourly earnings were the same as the national average for undergraduates at the time of the survey, reported in the 2002/03 SIES (Callender and Wilkinson 2003). These wage rates were well below the national average for the general population. In 2002, the average gross hourly earnings for men in part-time jobs aged 18–20 was £5.24 and for those aged 21–24 it was £6.00 per hour, while for women it was £5.17 and £6.04 (New Earnings Survey 2002, tables F35 and F36).

The mean and median number of hours students worked a week was 15 hours. The mean but not the median was slightly higher than the national average of 14 hours a week, reported in the 2002/03 SIES (Callender and Wilkinson 2003). Nearly three in ten (28%) students were employed for more than 20 hours a week. Older students and those living at home with their partner, with and without dependent children, were most likely to work such long hours. Minority ethnic students did not work longer hours than white students. There were,

Table 2. Term-time employment by key characteristics of students sampled (percentages).

Characteristic	Whether worked during term-time		<i>n</i>
	Yes (%)	No (%)	
Gender			
Male	48	52	344
Female	55	45	668
Age			
<25	52	48	860
≥25	56	44	142
Ethnic origin			
White	52	48	901
Minority ethnic	59	41	111
Social class			
Managerial/professional	50	50	435
Intermediate	51	49	283
Routine/manual/unemployed	60	40	293
Dependent children			
No	54	46	941
Yes	55	45	71
Living arrangements			
Lives with parents	72	28	202
Lives independently	48	52	810
Entry qualifications			
A-Levels	50	50	749
Scottish Highers	73	27	81
Other	58	42	182
A-level point score			
280+ (B B C +)	46	54	364
Less than 280	52	48	648
Subject studied			
Vocational science	38	62	152
Non-vocational science	47	53	101
Vocational arts	60	40	283
Non-vocational arts	55	45	466
Base ( <i>n</i> )	53	47	1012

Note: All respondents gave permission to access records.

however, other significant intra-student group variations in the proportions working long hours. For instance, students who entered university without A-Levels or Scottish Highers were more likely than those with these qualifications to work over 15 hours a week (55% compared with 40%). And among students with A-Levels, those with lower grades (280 points or less) were much more likely than those with higher grades (280 points +) to

work over 15 hours (43% compared with 30%). In other words, students with lower academic attainment prior to university entry, over-represented among students from lower socio-economic groups, were far more likely to work long hours than peers with higher academic attainment prior to entry. This finding shows the importance of controlling for students' prior academic attainment when examining the impact of term-time employment on their attainment at university.

Again, like Metcalf (2003), the intensity of term-time work varied by the university students attended with the proportion working over 15 hours per week ranging from 33% to 62%.

### *Student motives for taking term-time jobs*

Students' motivations for working and their decisions to work were influenced by a variety of factors such as finances, their values and attitudes, and the 'costs' of engaging in paid work. Like other studies, we found financial concerns were the driving force. Over four in five students worked because they 'need the money for basic essentials', and the same proportion because they 'can't manage just on my student loan', but especially those reporting financial difficulties. For example, twice as many students claiming serious financial problems as those reporting no financial difficulties cited the latter reason (92% compared with 43%).

Of course, it could be that some of these students could not manage on their loans because they were financing an 'expensive' lifestyle. This raises issues about what constitutes a reasonable standard of living which goes beyond economic indicators to include material and social well-being – an approach used in official poverty measures (e.g. Family Resource Survey) that incorporate consumption-based measures such as standards in housing, clothing, food, transportation and social entertainment.<sup>6</sup> It demands judgements about what is, and is not, essential or necessary expenditure, and relating this to items and activities that are common to everyday student life. For instance, the vast majority of students own mobile telephones, but are they an essential or necessary item of expenditure, or indicative of an 'expensive' lifestyle?

Returning to the survey, more than half the students had jobs because their families could not support them but this was the case for twice as many students from the lowest social classes as those from the highest social classes (77% compared with 38%). This finding accords with 2002/03 SIES data showing that working students receive less money from their parents than non-working students (Callender and Wilkinson 2003;<sup>7</sup> Finch et al. 2006), and qualitative research illustrating how the levels of parental contributions are a strong determinant of whether students work, and whether earnings are spent on essentials, or to finance a particular lifestyle (Christie, Munro, and Rettig 2001).

A large minority of students (28%) in this study, worked 'to reduce the amount I borrow from the Student Loans Company', especially nearly half the minority ethnic students (compared with a quarter of non-whites) and a half living at home with their parents (compared with a fifth living independently). A further one in six worked to avoid taking out a student loan altogether. These findings bring into question some of the assumptions underpinning government policy and thinking on students working, issues we will return to in the conclusion.

These financial issues aside, students recognised the advantages of part-time work in terms of enhancing their employability and transferable skills. Nearly two in five students had jobs to gain work experience while a quarter hoped their work would help them get a job on graduation.

### **The impact of term-time employment on student attainment**

Regression modelling techniques, which controlled for a number of factors, were used to explore the overall relationship between term-time employment and firstly, students' marks, and secondly their degree results (for full discussion of statistical analyses and the assumptions underpinning all the models, see Van Dyke, Little, and Callender 2005). The aim was to assess whether the average hours students worked in term-time, from zero hours upwards, were associated with their achieved marks and their achieved degree results. A number of the students' personal characteristics were included in the regression models as was the university the student attended to assess any institutional effects, in the light of our earlier findings on the variations in the propensity of students to work at different universities and the variations in the average hours worked. The first set of models examined students' final year marks using a continuous logistic model while the second set used a binary variable of a good or bad degree result which each examining whether or not students engaged in term-time employment. Furthermore, the HEIs had diverse marking schemes and ways of computing degree classifications, so statistical techniques were used to standardise the students' marks and degree class across the sample.

### **The impact of term-time employment on student final year marks**

#### *Standardisation of final year marks*

The first step, before exploring the effects of term-time work on student attainment, was to standardise students' marks. This was because the six universities from which the students were drawn had different marking schemes and scales for their degree courses which meant the scores had to be standardised. In addition, it cannot be assumed that the standard was the same within each institution, particularly as we have seen, the proportions of students working during term-time varied by institution.

Two approaches to the standardisation of marks were adopted. In the first, we assumed a constant variability of scores, as measured by the standard deviation, within each institution. In the second approach, this assumption was relaxed. This allowed institutions to have differing levels and different variation of student achievements. Thus, here, we assumed that there was an institutional dependent function that converts a student's institutional mark into what they would have to be awarded if all students had been marked using the same standards and rules.

#### *Factors affecting students' final year marks*

The second step, prior to examining the links between term-time work and student achievement, was to establish which of the various factors might have an effect on student attainment, as measured by their final year marks. The variables used in the modelling are listed in Appendix 1.<sup>8</sup> Model I in Table 3 uses the first approach to standardising student marks to model final year student marks.<sup>9</sup> It shows that the university students attended, their qualifications on entry to HE, their gender, the subject they studied and their age on entry,<sup>10</sup> all had an effect on achievement. Students' entry qualifications had the strongest relationship with students' final year marks, which highlight the importance of including this factor in any such analysis. There was a linear increasing relationship between the score and his/her final year marks: the higher their A-Level score, the better the student did. Both gender and age also had strong effects. Men tended to achieve lower marks than women (other things being equal) while older students tended to achieve better marks than similar younger

Table 3. The effects of specific factors on students' final year marks (fixed effect regression model) ( $n = 1012$ ).

Category	Factor	Model I			Model II		
		Without term-time working			With term-time working		
		Estimate	SD	<i>p</i> -value	Estimate	SD	<i>p</i> -value
HEI effects	Intercept	-2.093	0.28	0.000	-1.915	0.28	0.000
	University C	-0.499	0.13	0.000	-0.535	0.13	0.000
	University D	-0.044	0.11	0.696	-0.076	0.11	0.497
	University F	-0.016	0.15	0.916	0.038	0.15	0.797
	University G	-0.147	0.14	0.280	-0.127	0.14	0.348
	University E	-0.083	0.14	0.540	-0.118	0.14	0.384
	BTEC, GCSE, GNVQ	1.048	0.20	0.000	0.999	0.19	0.000
Qualification on entry	Access, degree, other	1.289	0.23	0.000	1.247	0.22	0.000
	HNC/D, Scottish Highers	1.359	0.20	0.000	1.314	0.20	0.000
	A-level score effect	0.006	0.00	0.000	0.006	0.00	0.000
	Male	-0.196	0.07	0.008	-0.188	0.07	0.010
	Age effect	0.035	0.01	0.000	0.034	0.01	0.000
Subject area	Business	-0.013	0.11	0.906	-0.042	0.11	0.709
	Humanities	0.149	0.11	0.170	0.124	0.11	0.252
	Law	0.028	0.16	0.858	0.017	0.16	0.915
	Physical sciences	0.256	0.16	0.114	0.244	0.16	0.129
	Combined studies	0.175	0.15	0.256	0.157	0.15	0.306
	Maths	0.522	0.19	0.006	0.481	0.19	0.011
	Creative arts	-0.027	0.18	0.878	-0.058	0.18	0.742
	Medicine	0.170	0.14	0.228	0.146	0.14	0.298
	Education	-0.002	0.20	0.991	-0.013	0.20	0.950
	Mass communication	-0.018	0.18	0.921	-0.021	0.18	0.905
	Engineering	0.827	0.21	0.000	0.803	0.21	0.000
	Hours worked in final year	N/A	N/A	N/A	-0.014	0.00	0.000

students. Additionally, there were some institutional and subject area effects. However, in these data students' social class, ethnicity and their living arrangements had no detectable or significant effect on student attainment, and consequently, were excluded from subsequent models.

These results do not account for the effects of students' term-time employment. So, the above exercise was repeated but term-time working was included as an additional factor in the regression model using a simple logistic model (Model II).

The results in Model II (Table 3) confirmed that there was a negative term-time working effect on final year marks, which was highly significant ( $p$ -value of less than 0.001) and that term-time work helped account for the variation in students' final year marks. Furthermore, the modelling revealed that the more hours students worked during their final year, the lower the mark achieved.

The policy discourse on term-time working suggests that a limited number of hours may have beneficial effects on student attainment while an excessive number detrimental effects. Therefore, we tested to see if there was a non-linear relationship between HE achievement and the number of hours worked during term-time. First, we tested whether there was a positive effect for low levels of working (i.e. five hours or less) compared to not working at all. This was found not to be significant compared to a simple monotonically decreasing linear relationship. Secondly, we tested whether very high levels of term-time working (i.e. 20 hours or more) had a greater effect on HE achievement than expected from a linear model but this too was not statistically significant.

In the standard linear regression models described in Model II, the effect of term-time working was assumed to be constant regardless of which institution the student attended. However, the effects of term-time working may result from the different institutional effects. To control for this, we fitted random effects and coefficients to allow the data to express any institutional variation. Yet, this did not dramatically change the estimate of the effect of term-time working. In other words, irrespective of the type of university students attended, term-time working was linked to poorer marks.

Thus, taking into account a number of other factors (institution, qualification on entry to HE, gender, age, subject area of study) students' term-time working and their achievement (as measured by average final year marks) were negatively associated i.e. the more term-time working, the greater was the decrease in achievement. And, this negative effect was consistent across all the institutions in our sample.

### **The impact of term-time employment on student degree results**

Next, we explored the relationship between term-time employment and degree results using the same methods employed for analysing the relationship between term-time work and final year marks. Although recent studies suggest that the standards of degrees at different HE institutions are similar (HEFCE 2003), we did not make this assumption in our analysis. Instead, we used a combination of various explanatory variables (including student's HE institution) which in theory could 'allow' the standard required by each institution for the award of a 'good degree' to vary.

In modelling degree class we characterised HE achievement with the binary outcome: 'good degree' and 'other', with a 'good degree' defined as a first or upper second.<sup>11</sup> With the binary characterisation of HE achievement, with the assumptions of the logistic regression modelling used, the issue of the variability in achievement does not arise, since the estimation of the variance is a direct consequence of estimating the mean. The parameters of the degree classification models are shown in Table 4.



The statistical models showed that the relationship between term-time working and the probability of achieving a 'good degree' was linear and negative ( $p$ -value less than 0.001) (Model III, Table 4).

Further, just like in our analysis of the relationship between term-time work and final year marks, we controlled for institutional effects using logistic regression with random effects (Model IV, Table 4). As with the analysis of marks, there was no evidence that there were variable effects depending on the institution students' attended, i.e. the term-time working effect was consistent across the institutions in the sample (Model IV, Table 4). In other words, term-time working was associated with lower degree classifications and the more hours students worked, the greater the likelihood of getting a poorer degree, irrespective of the HE institution a student attended. Moreover, this relationship was stronger when compared with the relationship between term-time employment and end of year marks.

Table 4. The effects of specific factors on students' final degree classifications ( $n = 1012$ ).

Category	Factor	Model III			Model Simple		
		IV logistic			Random coefficient		
		Estimate	SD	$p$ -value	Estimate	SD	$p$ -value
HEI effects	Intercept	-2.316	0.76	0.002	-2.111	0.77	0.006
	University B	0.000	N/A	N/A	-0.092	0.21	0.657
	University C	0.116	0.32	0.716	-0.053	0.22	0.812
	University D	-0.015	0.26	0.953	-0.039	0.24	0.870
	University F	0.096	0.34	0.777	-0.129	0.22	0.552
	University G	0.764	0.32	0.018	0.278	0.24	0.243
	University E	0.278	0.30	0.356	0.031	0.22	0.886
Qualification on entry	BTEC, GCSE, GNVQ	1.543	0.47	0.001	1.585	0.47	0.001
	Access, Degree, Other	2.922	0.56	0.000	3.138	0.57	0.000
	HNC/D, Scottish Highers	2.347	0.49	0.000	2.555	0.48	0.000
	A-level score effect	0.012	0.00	0.000	0.013	0.00	0.000
Gender	Male	-2.372	0.95	0.013	-2.778	0.99	0.005
Age	Age effect	0.024	0.02	0.313	0.018	0.02	0.453
Interaction	Male and Age effect	0.089	0.04	0.025	0.107	0.04	0.009
Subject area	Business	-0.452	0.26	0.086	-0.427	0.27	0.111
	Humanities	0.227	0.28	0.416	0.223	0.28	0.421
	Law	-0.420	0.39	0.279	-0.466	0.39	0.233
	Physical sciences	0.134	0.39	0.733	0.190	0.40	0.636
	Combined studies	-0.541	0.36	0.134	-0.510	0.36	0.160
	Maths	-0.027	0.42	0.948	0.017	0.42	0.967
	Creative arts	0.113	0.41	0.783	0.092	0.42	0.826
	Medicine	-0.682	0.33	0.038	-0.679	0.33	0.041
	Education	-0.567	0.46	0.216	-0.509	0.46	0.263
	Mass communication	0.235	0.43	0.583	0.289	0.44	0.509
	Engineering	-0.136	0.49	0.781	-0.145	0.50	0.771
Term-time working	Hours worked in final year				No institutional variation		
		-0.033	0.01	0.000	-0.032	0.01	0.014

All the statistical models and all the outcomes gave consistent results of the negative relationship between term-time working and achievement, even after controlling for other factors, including the students' prior academic attainment. There was, however, no evidence from these data of an additional negative effect from very high levels of term-time working or a positive effect of low levels of term-time working. Just engaging in term-time employment is likely to depress students' degree results. Thus, for a student working 16 hours a week the odds of getting a good degree to not getting a good degree are about 60% of the odds for an identical non-working student.<sup>12</sup> Put another way, students working the average number of hours a week (15 hours) were a third less like to get a good degree than an identical non-working student.

### Discussion and conclusion

Our study indicates that term-time work has become an important strategy to help meet the costs of HE and to minimise the accumulation of debt. In turn, this is associated with the inadequacies of the student funding system at the time of this survey and especially the limitations of student loans. Three problems with student loans help, in part, to explain the increasing propensity for students to engage in term-time employment. These are their inadequate level, their regressive nature and fear of debt. Together they bring into question the assumptions underpinning government thinking on student term-time employment and the role of student earnings.

As we have seen, the majority of students relied on term-time work to supplement their student loans, which failed to meet their needs and cover basic essentials. This could be improved with more generous student loans, or other grant aid. Secondly, more than half the students worked because their families could not help them out financially, especially those from the lowest social classes. Students' earnings, therefore, compensated for their lack of family support. At the time of the survey, student support arrangements were insufficiently progressive to offset poorer students' low family contributions compared with wealthier students' higher family contributions. Instead, the system channelled money, in the form of student loans, to students from high-income families who also received generous parental assistance.<sup>13</sup> This was partly a consequence of the abolition of means-tested student grants and their replacement with partially means-tested student loans in 1998. Although this particularly regressive feature of student support will be remedied partially by the re-introduction of the grants in 2006, other regressive features remain. Specifically, student loans which are heavily subsidised by the government are available to all students irrespective of their family's income.

The final drawback with student loans, which contributes to students' term-time employment, is related to fear of debt and debt avoidance. Our study confirms that students worked to reduce the amount of money they borrowed from the Student Loans Company and to avoid taking out a student loan altogether. In turn, this reflects the variable take-up of student loans. Specifically, the students in our study most likely to claim they were working to avoid debt are the same student groups who nationally are least likely to take out a student loan (Callender and Kemp 2000; Finch et al. 2006). Their reasons for working illustrate the links between the student financial support system and term-time working, and how in these cases earnings were a substitute for borrowing, often because of fear of debt.

Since this study was conducted, student funding in England has been reformed. These reforms, introduced in 2006–7 include: the introduction of variable tuition fees of up to £3000 per year for most undergraduates repaid via an optional student loan; a new means-tested grant of up to £2700 for low-income students; larger student loans for some students

from wealthier backgrounds; and bursaries financed by HE institutions. From 2008, full-time students from families with incomes of up to £25,000 will be entitled to the maximum grant, compared to the 2006/07 threshold of £17,500. In addition, students from families with incomes of up to £60,000 will also now be entitled to a partial grant. According to the government, a third of students from 2008/09 onwards will receive a full grant (worth £2825 a year) and a further third of students will receive a partial grant (DIUS 2007).

It is difficult to predict the impact of these changes in England on students' propensity for undertaking paid term-time employment in the future. The reforms should help ameliorate some of the student support systems' shortcomings outlined above. Some may reduce very low-income students' need to work. But there is little evidence for this from DfES research specifically exploring the effects of grants on term-time working (Emmerson et al. 2005). Student loan debt will continue to rise following the introduction of variable fees and so students who are debt averse will have to continue to work if they can not get any other financial help. This makes the determination of what the findings of this research mean for the future somewhat uncertain. However, it seems likely that term-time work will remain part of the HE landscape.

Term-time employment and its growth is just one example of how individual students are shouldering a larger share of the costs of going to university. However, this contribution tends to be greater for students who are already at a disadvantage compared to their more highly qualified and often more affluent peers. Some of the least qualified and poorest students are most adversely affected by term-time employment. Their everyday university experiences were very different from the minority who did not need to work, or who could confine their jobs to the vacations. Put starkly, these students worked for a short-term cash benefit and emerged from university with large debts, a history of working in bars and shops, and poorer degree results. Their more affluent and successful peers worked for a longer term career benefit and emerged with lower debt, interesting CVs, and good degree results.

Research by Purcell et al. (2005) demonstrates the longer term consequences of term-time working for graduates. They showed that students' poorer degree results led to lower paid jobs on graduation and harmed their careers, especially those from the lowest social classes. So, paid term-time work potentially perpetuates existing disadvantages among both students and graduates. It may also contribute towards a polarisation in students' experience of university and beyond, along class and ethnic lines.

There may well be other unintended consequences of the government's desire to contain public expenditure on HE by shifting more of the costs onto students, their families and universities. This suggests that the government's planned review of the first three years of the new funding arrangements will need to include an assessment of their impact on the student experience and student achievement following entry to HE.

The current HE policy focus on inequalities in access should not obscure other more subtle or hidden inequalities encountered by disadvantaged students as revealed in our study. We need to embrace a more inclusive notion of widening participation – one that encompasses not only extended access to HE, but also the experience of HE, and achievement within HE. We need policies that consider the nature and quality of students' experience including how well they do at university, just as much as policies that improve access.

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## Notes

1. Lindsay and Palton-Saltzberg argue that the difference in marks for second and final year students was unlikely 'to result from intrinsic ability differences between the two groups, because it did not manifest itself in first year course marks' (1994, 12). Hunt, Lincoln, and Walker (2004, 11) claim that 'by comparing the performance of students in the same subject group ... the variation in prior attainment between students is sufficiently reduced to make meaningful comparisons'. However, both these assertions are empirical questions in their own right.
2. Tests for response bias showed that there were no differences between students who did and did not give their permission for their marks to be released.
3. In addition, for a more in-depth understanding of students' reasons for working and their perceptions of its impact on their academic experience, seven focus groups with students were conducted. A further four focus group discussions were undertaken with academic staff to elicit their views on how term-time working impacted on the student experience and the ways in which their institutions accommodated term-time working. The findings from this qualitative work are discussed in the main report (Van Dyke, Little, and Callender 2005).
4. The measure of social class was derived from a variant of the UK's Office of National Statistics' Social Economic Class schema.
5. As we will see, the sample over-represents students who, irrespective of whether or not they work, tend to get higher marks, namely female students.
6. The focus is on an imposed lack of lifestyle items usually measured by tallying those items households both lack and are unable to afford.
7. For example, working students from the lowest social classes receive less than half the parental support of similar non-working students (£631 compared with £1269) (Callender and Wilkinson 2003).
8. It is acknowledged that student motivation and the employment friendliness of a students' university may have an impact on student attainment but we had no measures for these in our study.
9. University B is used as the baseline university and so its HEI effect parameter was set to zero. For subject effect, social study was the baseline subject area.
10. The age on entry is treated as a continuous variable in the modelling. In all cases, its relationship with HE achievement is assumed to be linear. Non-linear relationships were tested for but found to be insignificant.
11. A number of other binary outcome variables have been considered and they give similar results to those described.
12. Figure derived from the random coefficient degree class model using the parameter estimate for term-time working:  $p/(1-p) = \exp(16*(-0.032 \pm 1.96*0.013)) = (40\%, 90\%)$ , where  $p$  = probability of a good degree.
13. The 2004/05 SIES shows that students from the highest social classes received an average of £2764 from their family and friends, over two-and-a-half times more money than the amount received by student from the lowest social classes (Finch et al. 2006, 48).

## Notes on contributor

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## Appendix 1. Variables used in the analysis

- Age
- HEI attended
- Gender
- Mark achieved in second year
- Mark achieved in third year
- Term-time hours worked in second year
- Term-time hours worked in third year
- Tariff points for A-level students
- Degree classification achieved
- Entry qualifications
- Subject of study
- Living arrangements
  - With family
  - Independent of family
- Ethnicity
- Social class