The impact of part time employment on students’ health and academic performance: a Scottish perspective

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The purpose of this study was to examine the relationship between part time working, mental and physical health and academic performance. Fifty per cent of the undergraduate full time respondents had part time jobs. Mean pay per hour was £4.25 and mean number of hours worked was 14 hours. When the current state of students’ health was compared to the sex- and age-related norms for the general population, it showed that seven of the eight areas of health measured were significantly poorer than those of the general population. Results also showed that being in debt and part time working both have a very slight (though significant), detrimental effect on both mental and physical health of students. Accordingly, working more hours increased the probability that a student perceived a negative effect on academic performance. In conclusion, it is recommended that several measures be implemented to help students, to organize study and part time work to best effect.

Introduction

Student finance has had a turbulent journey from initiation to the present day. Mandatory awards in higher education (HE) for maintenance and tuition fees were introduced after the Anderson (Report of the Committee Appointed by the Minister of Education and the Secretary of State for Scotland, 1960) and Robbins Committee (Department of Education and Science, 1963). The motivation behind these policies was to reduce financial barriers to HE for those from lower socio-economic groups. In the following years however, there was a steady but incremental decline in the level of financial provision. The erosion of the student grant meant that financial debt became an inevitable part of student life.

In 1990, student loans were introduced for the first time. Since the introduction of loans, take-up has risen from just 28% in 1990–1991 to 81% in 2001–2002 while the average value of the loan has increased eightfold, from £390 to £3070 during the
same time (Department for Education and Skills, 2002). Initially the student movement vigorously opposed the student loan system because of this inevitable rise in student debt and because debt was viewed as a deterrent for low-income background applicants. However, with decreasing grants the student loan system offered cheaper loans than high street banks and other high interest sources. Throughout the same period there was a rapid expansion in student numbers, which doubled between 1990 and 1996. In 1998 the first new entrants to higher education were means tested to pay tuition fees of £1000, this was subsequently followed in 1999 by the standard maintenance award being abolished and replaced with a main means tested loan of £3635 for student support over 52 weeks. The Independent Committee of Inquiry into Student Finance (The Cubie Committee, 1999) was at this point established by the Scottish Executive. The Cubie Committee concluded that a ‘mixed economy’ of tuition fee arrangements for further and higher education should be maintained. Following the publication of the Cubie report, the Scottish Executive proposed that tuition fees be abolished in Scotland and replaced with a graduate endowment scheme as part of the existing student loan scheme. Further changes have been introduced to student financial support since this time. However, none of these reforms had been introduced when the current study was conducted. The study cohort were one of the last groups to receive the maintenance grant and apply for the student loan.

During this period of time there has been increasing interest in enhancing the student experience. Students are no longer viewed as being singular entities with only academic challenges to contend with, but a more overarching view has been adopted which recognizes that students face many different challenges when deciding to enter HE and subsequently to remain within it, not least of which is finance and debt. In relation, the introduction of performance indicators by HEFCE in 1999 has brought retention issues into the spotlight and as a consequence, higher education institutions are increasingly interested in enhancing the student experience in order to influence retention rates. This entails understanding the students’ world and the many challenges they face. Only by researching these issues can they be addressed by services and faculty through targeted interventions that are underpinned by evidence. One particular area of interest is financial issues which have been shown to influence student decision-making when deciding to withdraw (Rickinson & Rutherford, 1995; Yorke, 1998, 2000) and particularly so for mature students (Ozga & Sukhnandan, 1998). Part time working has also been shown to impact on academic achievement. More recently, Curtis and Shani (2002) reported that students doing part time work reported adverse effects on study in the form of missed lectures, and students’ perceptions are that coursework grades are lower than they would have been had they not been working. Equally, many studies have attempted to look at the health impact part time working has on students. Tyrell (1992), in a study of psychology students, found that those students who had more financial problems reported greater psychological distress. With increasing financial pressure on students, many are seeking part time work to supplement income and so avoid, or cushion debt. Smith and Taylor (1999) found that 52% of students work
part time during university term. Students were noted to work an average of thirteen hours per week. This extra work has been identified as having an impact on students’ quality of life. Recent research suggests that the British student population have significantly lower levels of mental health taking them below population norms (Roberts et al., 1999). Roberts et al. reported that poorer mental health was related to working part time and working longer hours. Similarly, a report from the Heads of University Counselling Service (Association for University and College Counselling, 1999) stated that for a significant number of students the additional strain of part time working to supplement income could precipitate psychological disorders. Most recently, Unite (2005) reported that students were ‘feeling stressed’ since coming to university. Financial constraints were probably adding to this stress with little money, debt and the lack of a regular income being cited as the three worst aspects of student life.

With this in mind, the purpose of this study was to undertake a preliminary examination of the relationship between part time working, mental and physical health and academic performance in an undergraduate full time university population.

Methodology

Research design

The research took the form of a cross-sectional randomised survey at an ancient Scottish university. The survey questionnaire was based on previous work completed by Smith and Taylor (1999) at the same university. Smith and Taylor (1999) were primarily interested in investigating student part time employment, conditions of employment and student hardship and did so by postal questionnaire distributed to the whole Year 3 cohort of students (n=3326, response rate=22%). The original questionnaire was modified to address the current aim of this project and according to suggestions from the Students’ Representative Council, various student support services and students’ comments. In March 2000, the questionnaire was placed on the World Wide Web by the Computing Service Department and emailed to a representative sample of Year 2 (last year group to receive grant) full time undergraduate university students (n=1600). A reminder email was sent in late March to encourage response rates.

The questionnaire recorded information about the following variables:

- Demographic information.
- Financial information.
- Health and well-being: the short form 36 (SF-36) health survey (Jenkinson et al., 1996) was used to assess physical and psychological well-being. The SF-36 has eight subscales including: physical functioning; role limitation due to physical health; bodily pain; vitality; mental health; role limitation due to mental health; social functioning; and general health.
- Employment information.
- Reasons for working.
- Perceived effects on academic performance.
Aims of the project

1. To determine the current level of student employment.
2. To determine the current level of student indebtedness.
3. To determine the current state of student physical and mental well-being.
4. To determine the ways in which indebtedness and part time work influence students’ physical and mental well-being.
5. To determine the extent to which indebtedness, part time work and the state of health affect perceived academic performance.

Demographic information

Seven hundred and fifty-six students (47%) returned questionnaires. Thirty-eight per cent were male and 62% were females. The mean ages of the respondents are 20.5 for males and 20.2 for the females (range 18 years to 59 years). Ninety-four per cent of the population were White, 1% Indian, 1% Pakistani, and the rest were divided between Black Caribbean (0.1%), Black African (0.4%), Black other (0.3%), Chinese (0.4%), Asian other (0.4%) or Other (1%). Three per cent were registered disabled. The majority of students were in the Science Faculty (32%) and Arts Faculty (28%).

Results

Aim 1. To determine the current level of student employment

Fifty per cent of the respondents had part time jobs, and of these 10% had more than one job. Thirty-seven percent of students without a job were trying to get a job. Mean number of hours worked was 14.2 hours ($sd. = 6$). A two-sample t-test showed that there was no significant difference between the average number of hours that males and females work. There was no significant difference between the average number of hours that students who live at home or away from home work.

A 95% confidence interval showed that there was no significant difference between the proportion of male and female students who work. However, the proportion of ‘home’ students who work is significantly greater than the proportion of ‘away’ students (95% CI 1.16–4.20, $p$-value=0.000).

Students were asked to indicate where they were working. Of those that responded ($n=371$), the majority worked in the traditional part time jobs in the retail and food and drink industry. A small number worked in call centres, health care and the University. See Table 1. The mean pay per hour was £4.25 (median £4.00, range £3.10–£18.50). In 1997–1999 mean pay per hour was £4.28 (£3.75 median) (Smith & Taylor, 1999).

Students were asked to assess their reasons for working, on a scale ranging from very important to very unimportant. The scale was scored from a range of $-2$ (very unimportant) to 0 (neither) to 2 (very important). Financial necessity, extra cash for
fun and experience of working, were cited as most important. Relevance of job for future career was cited least. See Table 2.

Aim 2. To determine the current level of student indebtedness

Sixty-eight per cent of students had a student loan and 71% of them applied for the maximum entitlement. The percentage of students who had some other form of debt was 49%. The total percentage of students with any form of debt (which includes loans) was 79%.

There was no significant difference between the proportion of males and females with debt, or the proportion of students living at home or away with debt, as both 95% confidence intervals contained zero. A t-test of the total debt shows that students have a mean value of debt between £2131.5 and £2405.6. There was also no significant difference between the amount of debt males and females have, or the amounts of debt students with or without a part time job have.

Students were asked how worried they were about their financial situation. Seventy-nine per cent of students were slightly worried or a great deal worried about their financial situation, 20% were not at all worried. However, few had made applications for financial support. See Table 3.
Aim 3. To determine the current state of student physical and mental well-being, and to compare these with age- and sex-related norms for the general population

The SF36 health survey was used to assess the students’ physical and psychological well-being. The survey contains eight dimensions:

- Physical functioning.
- Role limitation due to physical problems.
- Role limitation due to emotional problems.
- Social function.
- Mental health.
- Energy/vitality.
- Pain.
- General health perception.

Scores on each of the dimensions are gained by summing item responses and with the use of a scoring algorithm transforming these raw scores onto a scale from 0 (for poor health) to 100 (good health). A percentage was obtained for each respondent for each of the eight dimension scores; a higher percentage score representing a better physical or psychological well-being. Z-scores for each dimension were calculated according to Jenkinson et al. (1996). The z-score is a standard score, which allows one to compare raw scores from different distributions. In z-score notation the mean is 0 and the standard deviation (SD) is 1 if the dimension scores are similar to those of the general population. Thus a z-score of 1.5 is one half of a SD above the mean, whilst a z-score of 2 is two SDs below the mean. Z-scores in this instance are used to compare the results of different groups to the population mean.

The sex- and age-matched means and standard deviations were taken from a large survey of the general population, the age categories for this survey were 18–24, 25–34, 35–44, 45–54 and 55–64 (Jenkinson et al., 1996). This allows us to compare the current student population with an age- and gender-matched population norms to investigate whether there are any differences between the populations.

Below is a list of eight 95% confidence intervals for the mean z-score for each health dimension in the student population. Each interval should contain zero unless the mean in the student population is significantly different from that in the general population. See Table 4.

Except for that of physical functioning, all the above intervals are entirely negative. This indicates that the level of student health is significantly below that of the population norm for all aspects of health except for physical functioning. Since the
95% confidence interval for the mean z-score for physical functioning in the student population is entirely positive, this indicates that the students’ average physical functioning is significantly better than that of the general population.

Age group and gender or an interaction between them was assessed to see if they had a significant effect on average z-scores using general linear models. The general linear model compares the average z-scores of the students in different age-sex categories. Only general health perception was significant (p-value=0.018). For both physical functioning and role limitation due to physical problems, the analysis showed that neither age group nor gender has a significant effect on the mean z-score.

The general linear model for role limitation due to emotional problems had a p-value of 0.004 for age group and a p-value of 0.009 for gender, therefore age group and gender are both significant. Below are Tukey 95% simultaneous confidence intervals to follow up these results (Table 5).

The interval for Age Group 2 minus Age Group 1 is entirely negative, which means that students aged between 25 and 34 have significantly more problems with role limitation due to emotional problems than students aged 18 to 24. There is no significant difference between the other age groups but there is a significant difference between males and females with females finding role limitation due to

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<th>Table 5. Simultaneous 95% confidence intervals for mean difference in z-scores</th>
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Note. Age Group 1=18–24; Age Group 2=25–34, Age Group 3=35–44, Age Group 4=45–54.
emotional problems significantly worse than males. For social functioning, mental health and energy and vitality, the general linear models showed that gender was not significant, though age group was significant: 25- to 34-year-olds seem to have more problems with social functioning, mental health and energy and vitality than 18- to 24-year-olds, though these differences are not all significant.

**Aim 4. To determine the ways in which indebtedness and part time working influence students’ physical and mental well-being**

In order to answer this aim the eight dimensions were reduced to the two summary scales, Physical Component Scale (physical functioning, role-physical, bodily pain, general health) and Mental Component Scale (vitality, social functioning, role-emotional, mental health) following guidelines from Jenkinson *et al.* (1996).

The general linear model for both Mental Component Scale (MCS) and Physical Component Scale (PCS) shows that indebtedness and part time working were significant (\(p\)-value=0.000) and therefore both have a very slight (though significant) detrimental effect on both mental and physical health.

**Aim 5. To determine the extent to which indebtedness, part time working and the state of health affect perceived academic performance**

When the respondents were asked if they felt part time working had affected their academic performance, 214 said yes and 149 said no. Figure 1 is a boxplot of the hours students worked per week and if they felt it affected their academic performance. Box plots are used to provide a pictorial representation of the distribution of data. The plots show where the middle value or median is, how this...
relates to the middle 50% of the data or inter-quartile range, and the highest and lowest values.

From the plot above, it appears that students who feel that part time working has affected their academic performance generally work more hours. When a proportion test was carried out it showed that the majority of students felt that part time working has affected their academic performance (95% CI 0.36–0.46). This interval does not contain 0.5, which suggests that the majority of students feel that part time working has affected their academic performance.

Binary logistic regression models were used to see if age, gender and age, gender interaction, indebtedness, part time working and MCS and PCS affect perceived academic performance. Only part time working ($p$-value $= 0.000$), and MCS ($p$-value $= 0.019$) were significant. Therefore, working more hours increases the probability that a student perceives an effect on studying. On the other hand, whatever the number of hours worked, increased MCS (better mental health) reduces the probability of affect on academic performance. This seems quite important—it suggests that a student who is in a good mental state feels more able to cope with more work than a student who is not in a good mental state. Of course, this is just the student’s perception.

**Discussion**

Since Smith and Taylor completed the original study in 1998, there has been little change in the proportion of students working part time, the number of hours worked, rate of pay per hour or the type of work students do. Almost half of the respondents have a part time job and the mean number of hours that students spend working per week is 14.2 hours. Recommendations published by the Scottish Executive (2000) propose that students work no more than a term-time maximum of 10 hours per week. This is seen as a reasonable balance between the need or wish of students to supplement their basic income and the interests of their studies. Students in this study are clearly working more than this recommendation. However, apart from difficulties in implementing or policing such a recommendation, this research has shown that it would seem more important to educate students how to manage time, to help balance both their studies and part time work. Working fewer hours is not necessarily more beneficial for the student; it is the way in which their working time is managed, to help them experience the best aspects of university and working life, which seems more important. This requirement for balance needs to be acknowledged by both students and university. Students would also see this as an acceptance by HE that working part time is an inevitable part of student life and rather than working hand in glove to support one activity over the other, HE can contribute to enhancing the student experience by addressing part time work challenges.

There was no significant difference in the number of males (48%) or females (52%) that have a job and there was no significant difference in the average number of hours they work. There was however, a significant difference in the number of
students living at home who had a job (65%) compared to those living away from home (38%). Perhaps one possible reason for this finding is that students who live at home have longstanding part time jobs that have been continued as they have made the transition to university, whilst those living away from home struggle to find and maintain a job during university terms. This is only an assumption and worthy of further investigation. However, we do know from subsequent institutional student experience research that students who live at home find it harder to integrate into university life (Carney & McNeish, 2002, 2003). This could be influenced and possibly exacerbated by the fact that more home students work and therefore have reduced time to socialize with university peers. Retention of students depends on the social and academic integration of students; therefore, recognition of the differences between those living at home and those not should be taken into account when organizing interaction activities.

The mean pay per hour was £4.25 (median £4.00, range £3.10–£18.50). In 1997–1998 the findings showed the mean pay to be £4.28 (£3.75 median), thus showing little difference. The small numbers of students who are earning larger sums of money are employed in skilled jobs such as nursing, computing, journalism. Reasons for working are similar to the Smith and Taylor (1999) report with financial necessity, extra cash for fun and experience of working being cited as most important; these are similar to findings reported recently by Unite (2005). With increasing emphasis on the employability aspects of graduates—where increasingly employers are looking for evidence of relevant experience when recruiting a graduate—it is interesting that students value the experience of working, and similar to Unite they feel they are gaining valuable experience for the future.

The percentage of students with some form of debt, which includes student loans, was 79%, with overall mean value of debt between £2131.5 and £2405.6. There was no significant difference in the average amount of debt that males and females had, and there was no significant difference in the average amount of debt that students with or without a part time job had. A recent estimate from the National Union of Students (1999) suggested that the average debt for final year students was approximately £4500. It seems that students in this study are on target to reach that estimate. Recent estimates (Unite, 2005) suggest that average student debt was now standing at £5285, a 59% increase over the previous five years. Seventy-nine per cent of students were slightly worried, or a great deal worried, about their financial situation, and 20% were not at all worried. Despite this sizeable percentage, few students had made applications for financial support from the University financial support system—i.e., Student Hardship Fund, Student Hardship Loan, Access funds, Crisis loan. This is an area for further investigation, for it is obviously a service that is underused. Is it perhaps that students are largely unaware of these financial support networks? It may also be worthwhile reviewing how such information can most effectively be accessed.

What this study has highlighted is the worrying state of the students’ health as a result of trying to combine working part time and a full time undergraduate degree study. When the current state of students’ health was compared to the sex- and
age-related norms for the general population, it showed that except for physical functioning the other seven areas of health were significantly poorer than those of the general population. This means that students on the whole, apart from physical functioning, rate themselves lower in terms of physical and mental health compared to general population age and sex normative values. This is similar to findings reported by Roberts et al. (1999). Other universities have had similar results. The University of Hertfordshire Counselling Service (1995–1996) found that more than three quarters of students consulting the service in one three-month period were considered at psychological risk. Mathers et al. (1993) found a relatively high level of psychiatric morbidity in students presenting to counselling services at Sheffield University and almost half of the clients had been troubled by their problem for more than one year. What is more worrying about the present research findings is that the population was a random sample of Year 2 students, not only those who had consulted the University’s various support services. This suggests that the general poor state of students’ mental health is more widespread and not just limited to those presenting themselves at support services.

The structure and culture of universities may have considerable impact on the mental health of students. It can be argued that student life itself imposes unique pressures. Our findings noted that being in debt and part time working both have a very slight (though significant) detrimental effect on both mental and physical health of students. Working more hours increases the probability that a student perceives a negative effect on academic performance. Alternatively, whatever the number of hours worked, increased mental health scores (better mental health) reduces the probability of affect on academic performance. This seems quite important—it suggests that a student who is in a good mental state feels more able to cope with more work than a student who is not in a good mental state. Of course, this conclusion is drawn from student perception and from this one study alone and so it would be important to further establish this relationship in a future study.

When the term ‘student’ is used, it is easy to forget the non-traditional student. In this study students in the age group 25–34 seem in general to have more problems with emotions, social functioning, mental health and energy/vitality than students in the younger age group. This is a worrying finding, as more and more mature students are becoming part of the university learning community. Students over 25 years old will generally have established homes and increased financial commitments, which continue to exist while in full time education. These additional costs are numerous and varied but include: mortgages; insurance policies; endowment policies; existing loans; existing hire purchase agreements and pensions (NUS, 1999). It is recommended that this segment of the student population be targeted by the University support services to address these challenges.

In conclusion, given that 79% of current Year 2 (1999–2000) undergraduate students have some form of debt and 50% work part time in order to supplement financial income, recognition of the detrimental impact on student quality of life has to be acknowledged. It is recommended that several measures be implemented to help students, particularly mature students (aged 25–34), to organize study and part
time work to best effect. In order for this to be successful it must not demand further time sacrifices on behalf of the student. Where possible, the university itself should seek ways of delivering flexible, accessible and targeted support to students. Increasing awareness of mental and physical health issues could also be delivered to students prior to attending HE and throughout their student lives to enhance the student experience. In addition, outlining the realistic financial implications of attending HE will help prepare students for the inevitability of part time work. This needs to be supported by training in time management skills, and will show recognition that students live dual lives trying to achieve academically and survive financially.

Finally, it must be remembered that results from this study are based on 756 Year 2 students and must be viewed with some caution given the diverse population of the university population. Further investigation is needed to conclusively establish whether the relationships between part time working, debt and health and well-being exist in the wider university population.

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