Evidence of educational support outside of school

This report provides an initial analysis of the CEM YELLIS dataset and the ONS Time Usage Survey to investigate the educational support children receive outside of school

Andy Wiggins
Robert Coe
Karen Jones
Man-Yee Kan
Centre for Evaluation and Monitoring, Durham University
Department of Sociology, University of Oxford

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Introduction

The aim of this report is to bring together data from two sources, from the Centre for Evaluation and Monitoring (CEM) at Durham University and the ONS (Office for National Statistics) UK 2000 Time Use Survey, to explore the issue of the educational support children receive outside of their normal school day. We are particularly interested in how this support varies in according to parental occupation and parental educational attainment.

> The CEM data were taken from YELLIS (Year 11 Information System) and involved 23,000 students in 160 schools completing a survey at school in 2007. The ONS data was from the UK 2000 Time Use Survey completed by 1000 students and their parents in 2000. (See appendix for further information).

Key findings

We first discuss the CEM data on students reading for pleasure by parental occupational and educational levels, and then look at homework. We then examine a composite indicator which brings in a number of other variables from the YELLIS dataset. We next look at the ONS data, firstly in terms of the relationship between parental occupational and educational levels and reading, and secondly with regard to homework.

CEM Data

Reading for pleasure

Students were asked whether they read for pleasure[1], and we have reported this in tables 1 and 2 with respect to their parents' occupation and educational levels.

Table 1: Read for pleasure and parental occupation

OCCUPATIONAL LEVEL	Father	Mother
Unskilled	70%	66%
Partly-skilled	71%	70%
Skilled manual	67%	67%
Skilled non-manual	74%	72%
Managerial	76%	76%
Professional	81%	78%

[1] We have reported the inverse of those that said they never read for pleasure during weekday evenings (ie. they do some reading for pleasure).

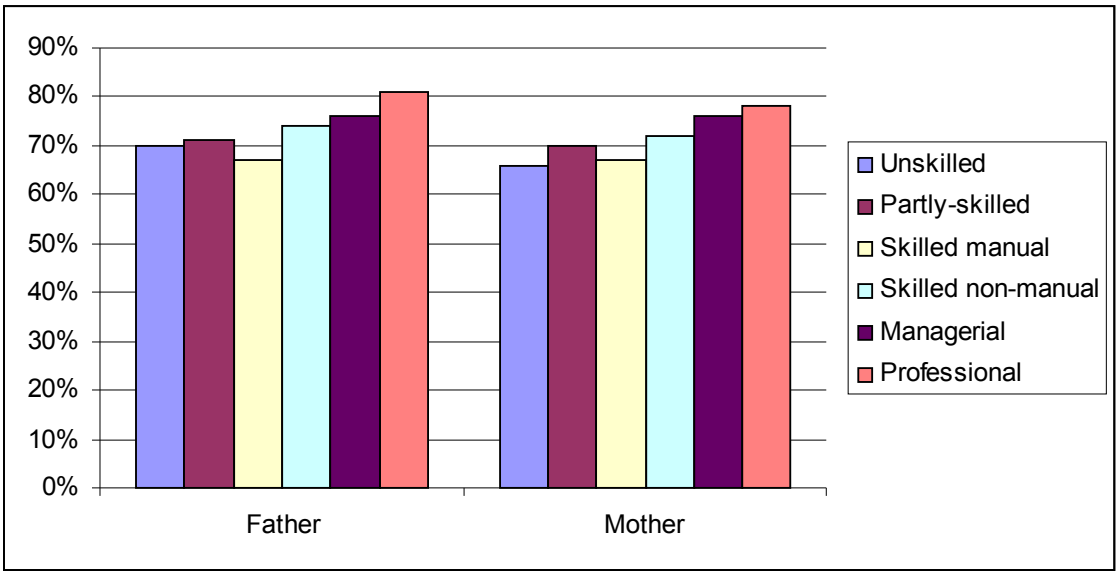
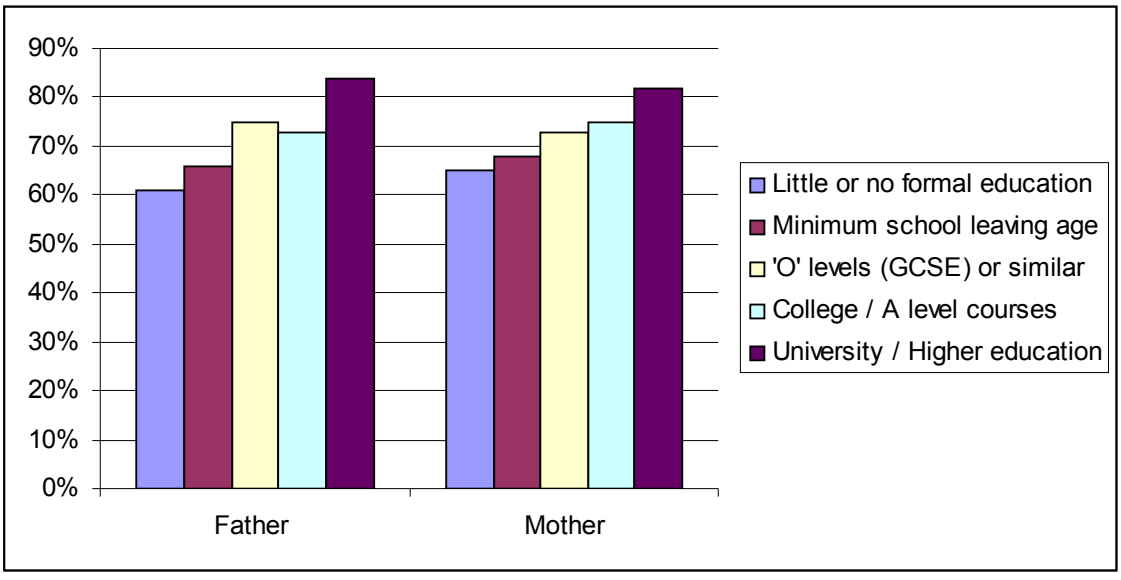


Table 2:Read for pleasure and parental education

EDUCATIONAL LEVEL	Father	Mother
Little or no formal education	61%	65%
Minimum school leaving age	66%	68%
'O' levels (GCSE) or similar	75%	73%
College / A level courses	73%	75%
University / Higher education	84%	82%



The message from this data is quite clear in that both parental occupation[2] and educational level are closely associated with children's reading for pleasure, although the relationship is

[2] We have not reported any parents classified as 'unemployed' as there may be many reasons why parents might be classed unemployed which would not have a bearing on the issues considered in this paper – for example, a mother taking a career break to look after children.

more pronounced for parental education levels. Moreover there is very little difference between the relationship with the mother or father's occupation or educational level.

Homework

Students were asked a number of questions about homework for English and Maths. We found very little difference between the responses for these two subjects, and have therefore combined the scales to give a general homework scale. Students could choose from five responses: 'Almost none is set', 'I skips most or all of it', 'I do all of it', and 'I sometimes, do extra work, 'I often do extra work'. The final two responses have been combined.

Table 3: Response to homework and parental occupation

OCCUPATIONAL LEVEL	None Set	Sometimes Skip	All Done	Extra Done
Unskilled	23%	19%	49%	9%
Partly-skilled	22%	17%	52%	9%
Skilled manual	21%	19%	52%	9%
Skilled non-manual	17%	16%	58%	10%
Managerial	14%	15%	60%	11%
Professional	12%	14%	61%	13%

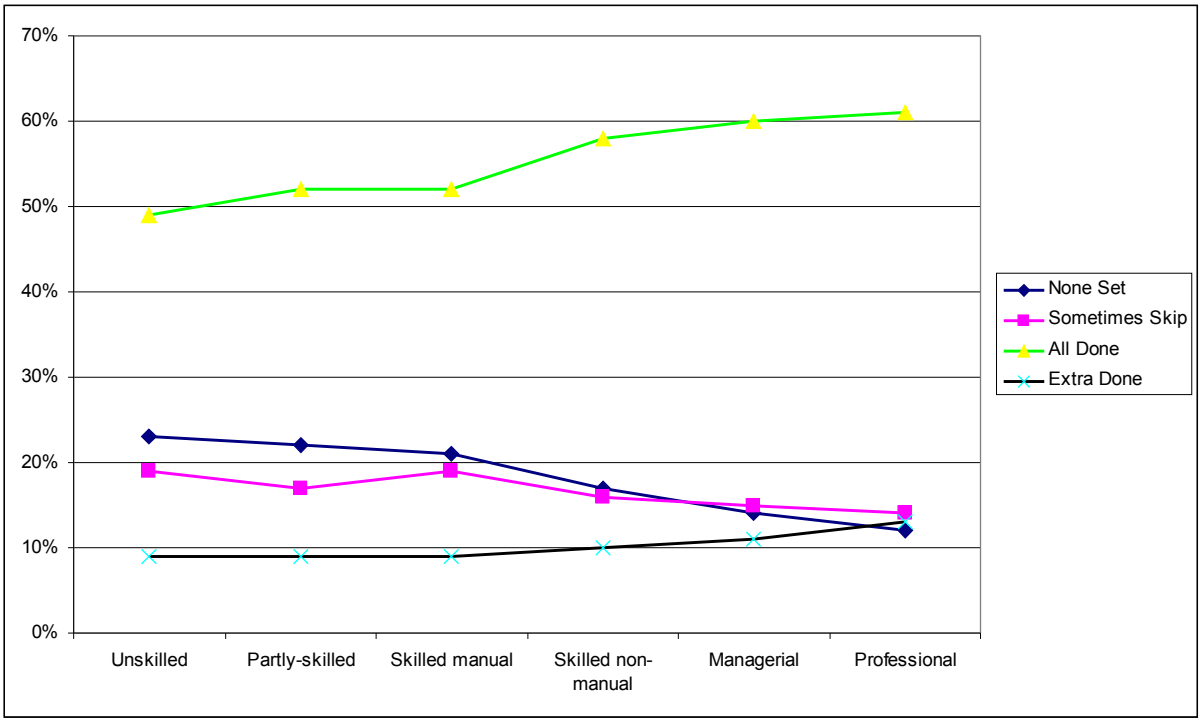
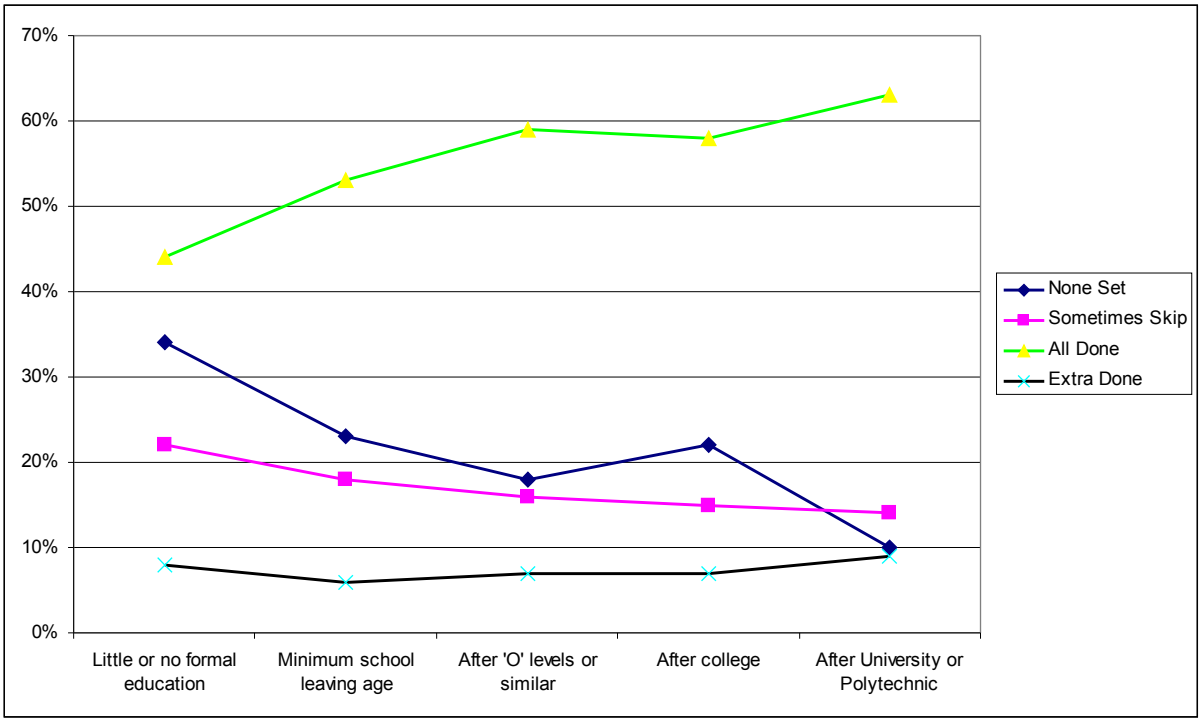


Table 4: Response to homework and parental education

EDUCATIONAL LEVEL	None Set	Sometimes Skip	All Done	Extra Done
Little or no formal education	34%	22%	44%	8%
Minimum school leaving age	23%	18%	53%	6%
'O' levels or similar	18%	16%	59%	7%
College course	22%	15%	58%	7%
University / Higher education	10%	14%	63%	9%



Again the relationships are quite clear, with the parents educational level being more closely related then occupation to the children's responses about homework. Perhaps the most striking finding is that 34% of children whose parents have little formal education claim that none or almost none is set (there is a similar although less extreme relationship when looking at occupation). Even accepting that students' reports of how much homework is set might not necessarily agree with what teachers would report, this does seem surprisingly high – ie. it would seem highly likely that they really are not getting much homework. This suggests that the children of less educated parents are much more likely to be either in classes or schools that do not set much homework.

Looking at the other end of the scale, the parents educational level does not appear to have any effect on the relatively small percent (6-9%) of children who do extra work. And whilst there is a relationship in terms of parental occupation this is less significant. This would suggest that children can be inspired or encouraged to do extra work that might make a difference to educational outcomes, and that socioeconomic factors do not limit this.

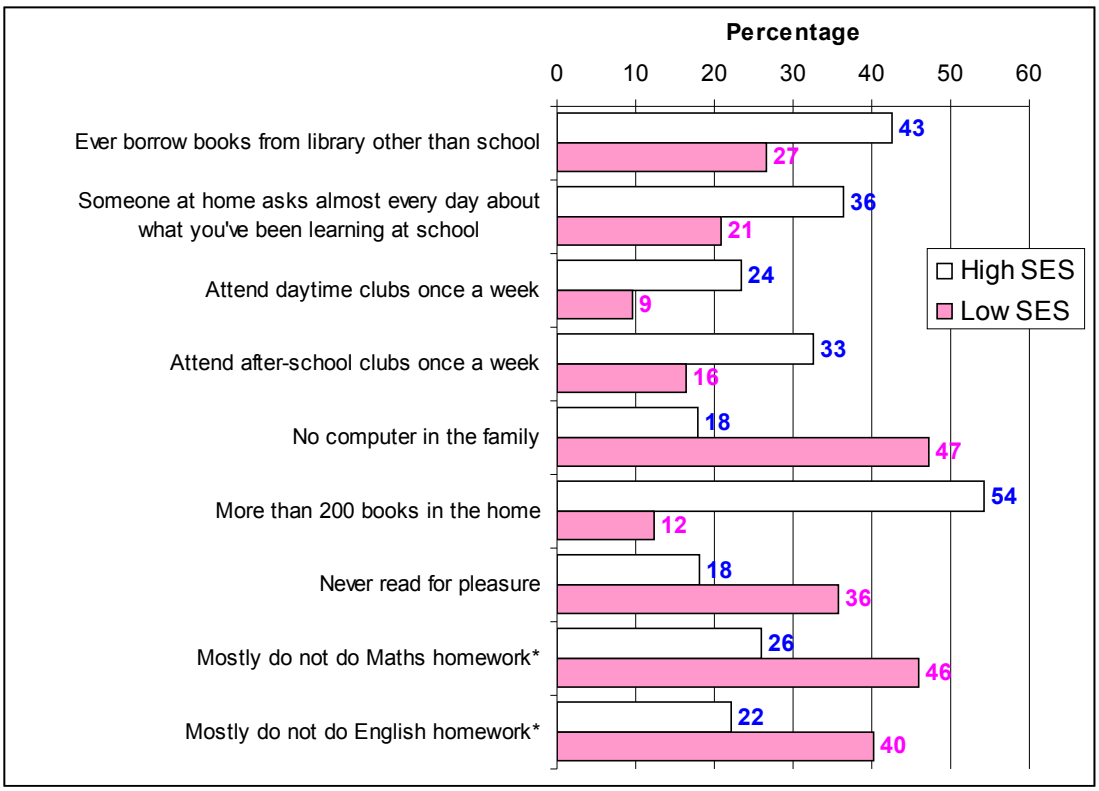
The clear overall trend that children whose parents are from higher SES groups and especially those whose parents have more formal education are more likely to complete all of their homework, and less likely to skip any of it.

Analyses using combined measure of socioeconomic status (SES)

Using the four different variables (Father's occupation, Mother's occupation, Father's education, Mother's education) to indicate socioeconomic status makes it quite difficult to summarise the relationships. In order to make patterns clearer we produced a composite measure of socioeconomic status (SES) by standardising each of the four YELLIS SES variables and calculating a mean value for each student. This aggregated measure had an

internal consistency (Cronbach's alpha) of 0.70. The top and bottom quartile of scores on this combined SES measure were identified and the percentages of each who gave particular responses on key variables were calculated. We have included a number of additional variables beyond homework and reading at this stage which help illustrate what appear to be key differences according to SES:

Figure 1: SES Composite indicator



The relationship between out of school educational activities (homework and reading) and SES is clearly evident in this analysis. The relationship between SES and the number of books in the house is not surprising. Nor is soothe relationship between SES and levels of book-borrowing from public libraries. The number of computers available is also significant, with more and more homework requiring access to computers and the internet, as well as the need to make applications (such as to university) on-line. The question that asks whether someone at home asks about school is important. The responses suggest that parents from higher social classes take more interest in their children's education.

The relationship between club attendance (both daytime and after school) and SES is evident, although perhaps not necessarily as easy to explain. As regards attendance at after-school clubs, it might be that higher SES parents are more likely to be able to arrange transport. However, this would probably not apply to daytime clubs. This raises an important question as to whether the social class difference occurs within schools, with low-SES children being less likely to attend clubs, or is it that the schools which children from lower SES backgrounds often attend provide less opportunities. Either way these are important policy level questions.

ONS UK Time Use Survey 2000

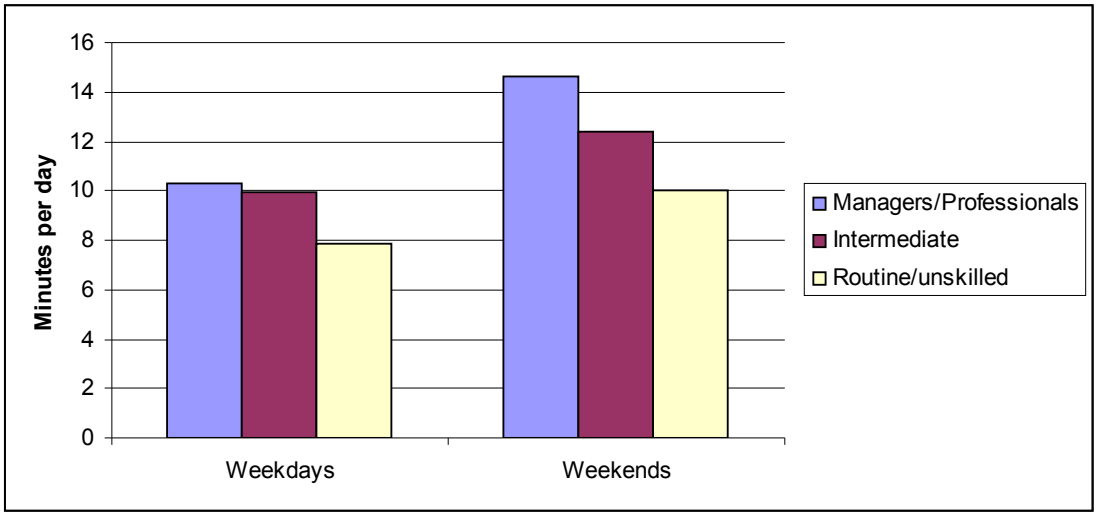
As with the CEM data we looked firstly at children's reading in terms of parental social class and educational level, and then time spent on homework, again in terms of parental social class and educational level.

For the ONS data we have reported the mean time (in minutes), standard deviations and a number of observations. A potential limitation caused by the collection methods in these data are the large standard deviations (spread) associated with each level of occupation and educational level, particularly compared to the overall standard deviation. This shows that the proportion of variation explained by these factors is relatively small and other factors will play some part.

Reading

Table 5: Reading and Parent's social class

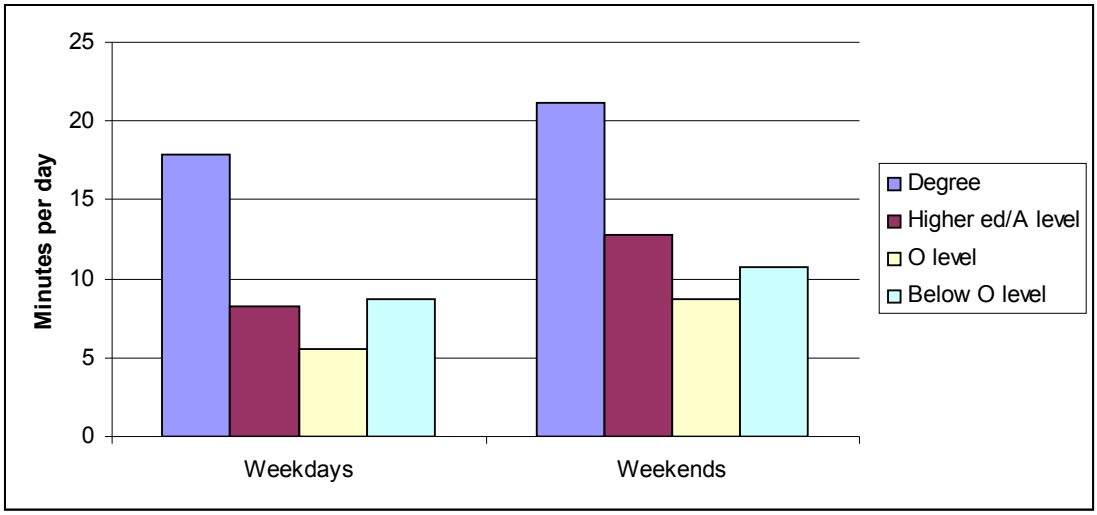
	Weekdays			*Weekends*		
Parent's social class[3]	*Mean*	*SD*	*Obs*	*Mean*	*SD*	*Obs*
Managers/Professionals	10	25	327	15	40	329
Intermediate	10	33	387	12	32	386
Routine/unskilled	8	22	322	10	34	324



[3] The register generals six classifications as used in the CEM were grouped together to give a three point scale

Table 6: Reading and Parent's educational level

	Weekdays			*Weekends*		
Parent's educational level	*Mean*	*SD*	*Obs*	*Mean*	*SD*	*Obs*
Degree	18	45	156	21	41	156
Higher ed/A level	8	23	266	13	39	264
O level	6	19	182	9	25	183
Below O level	9	25	492	11	32	495



With the limitations of the high SD it appears that, as with the CEM data, parental educational level is more closely associated with children's reading than their social class. This finding may have important implications.

We also note that whilst looking at this issue from the perspective of social class there is, as would be expected, a gradient from high to low and the amount of reading the children do. However, when looking at parental qualifications those with 'O' levels score the lowest (as opposed to those with qualifications below O level, as might be expected). This also occurs for homework at the weekends. The reasons for this are not immediately obvious and require further investigation, although it may simply be a classification issue.

Homework

Table 7: Homework and parent's social class

	Weekdays			*Weekends*		
Parent's social class	*Mean*	*SD*	*Obs*	*Mean*	*SD*	*Obs*
Managers/Professionals	19	41	327	15	38	329
Intermediate	17	31	387	12	37	386
Routine/unskilled	15	28	322	12	32	324

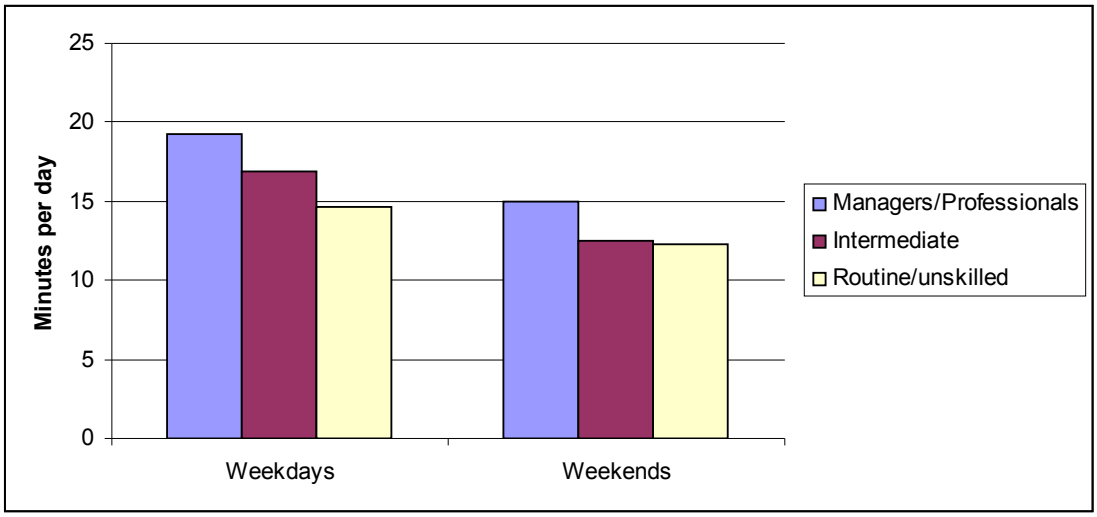
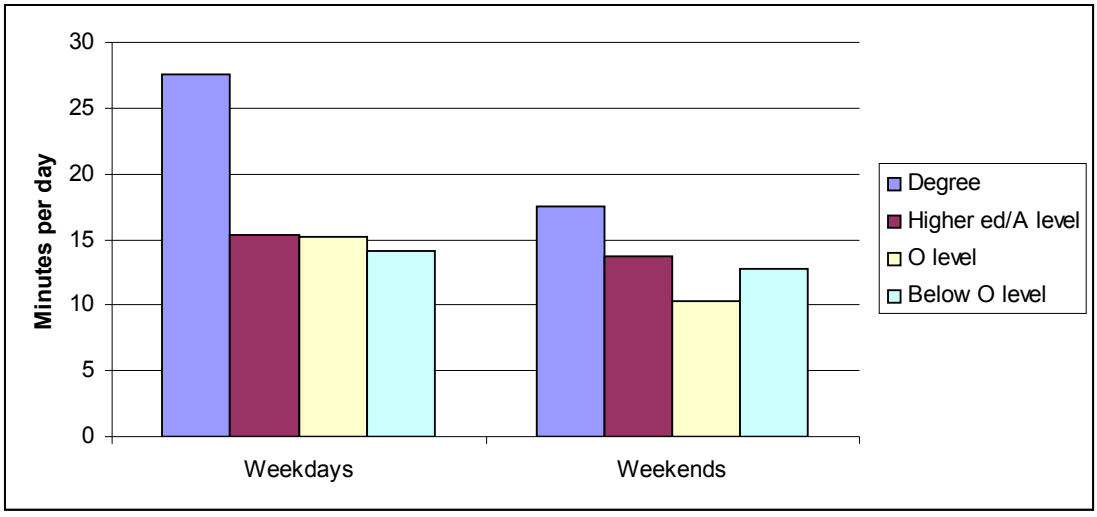


Table 8: Homework and parent's educational level

	Weekdays			*Weekends*		
Parent's educational level	*Mean*	*SD*	*Obs*	*Mean*	*SD*	*Obs*
Degree	28	49	156	17	43	156
Higher ed/A level	15	31	266	14	37	264
O level	15	31	182	10	31	183
Below O level	14	28	492	13	35	495



Again the relationship between parental education and time spent on homework is stronger than the relationship with occupation, and as such this agrees with the CEM data. As a general point the ONS data shows that the relationships largely remain when comparing weekdays and weekends. Moreover, children appear to do more of their homework during the week rather than at the weekends, when they do more reading (albeit not a great deal in absolute terms) for pleasure.

Overall, children with graduate parents report that they spend almost twice as much time on homework than children whose parents are less well educated. This is a very substantial

difference, though we must remember that it is affected by the high level of variation (SD) within the groups.

Summary and some other perspectives

The key overall messages are quite clear, namely that parental education is closely linked to the amount of reading children do, as well as their attitudes to homework. Whilst we would accept that a causal link with reading may exist (ie. parents who have benefitted from higher education are more likely to encourage their children to read for pleasure), the relationship with homework is less clear, in that this would seem to be much more to do with the types of schools the children from each SES group attend.

The somewhat stark finding that a third of children whose parents have had little formal education hardly get any homework does raise questions about what is happening in some of our schools. Indeed, this finding was largely evident for all children except those with university educated parents where 'only' 10% claimed they were not generally set homework. Interestingly looking at those children who did some extra homework[4] we found no difference in terms of parental education with about 8% across all groups claiming to do more than set. This does perhaps demonstrate what some schools can do, possibly through offering encouragement and support to all of the students.

These findings are largely consistent with forthcoming research[5] based on data collected under the Longitudinal Study of Young People in England (LSYPE) and the Avon Longitudinal Study of Parents and Children (ALSPAC). Of particular note from these datasets are the very significant differences in terms of private tuition between the highest and lowest SES groups. This is very much in line with an Ipsos MORI Poll in 2009 commissioned by the Sutton Trust on 11-16 year old students in state schools which found that the proportion of students receiving private tuition has increased in five years from 18% to 22% nationally. Pupils with two working parents were found to be more likely to have private/home tuition than those whose parents are not working (22% compared with 15%).[6] Clearly, extra tuition to support school work can make a significant difference to all children, and particularly so for children from more disadvantaged backgrounds who may need to 'catch-up' with their peers - for whom it is of course less available.

Overall, our finding suggest that children with more highly educated parents spend more time doing educational activities (both in and outside of school), and there is evidence that this increased time will lead to better outcomes for those children. For example, Alexander et al (2001) conclude that the social class attainment gap 'can be traced mainly to the out-of-school environment (i.e. influences situated in home and community)'[7]. Meanwhile, other major reviews have concluded that there is evidence for homework having a positive

[4] We are not though making the case here for more homework per se as a means of raising attainment

[5] Goodman, A and Gregg, P (2010) Forthcoming

[6] See: http://www.suttontrust.com/reports/Mori080609.pdf

[7] Schools, Achievement, and Inequality: A Seasonal Perspective, Karl L. Alexander, Doris R. Entwisle and Linda S. Olson in Educational Evaluation and Policy Analysis, Vol. 23, No. 2, 171-191 (2001) at: http://epa.sagepub.com/cgi/content/short/23/2/171

influence on student achievement, and that reducing long summer breaks is associated with higher achievement for economically disadvantaged students in particular.[8]

Potential policy implications

With respect to educational policy, two messages in particular arise from this review. Firstly, it is the level of parental education that appears to be the main driver of children's attitudes and approaches to learning and education; and secondly, there may be a cycle of - low parental attainment leading to low pupil attainment – and so on. We do recognise that current policies[9] (eg. narrowing the gap, raising attainment for all, and targeting support) are at least in part aimed at addressing these issues, and more specific interventions such as Sure Start and Full Service Extended Schools (FSES) may help. However, in the case of FSES for example, whilst there have been some benefits[10], regrettably, there has not been any impact on student outcomes[11] which may help break the long term cycle (besides helping the students in the short term).

This we feel supports the need for more research to better understand complex relationships between parental education (as well as other SES factors) and children's attitudes to learning and their eventual educational outcomes. Further analyses of the two datasets used in this report would be useful as would other CEM datasets. This would include those that look at younger children. Importantly CEM data is collected on a whole cohort basis, so would provide useful information on the school perspective – which is an essential part of any further research in this area. In addition detailed analyses of the various cohort datasets, both ALSPAC and LSYPE, as well as the Millennium Cohort Study (MCS) would provide very useful perspectives, in particular on parent and child interactions.

Finally a number of carefully designed intervention studies could be carried out which would allow various hypotheses (including those generated from the above research) to be tested. In practice a number of different interventions could be applied in a variety of school and social settings, and through a monitoring process the impact on the children could be assessed and their progress through school and beyond tracked.

[8]See: Cooper, H., Robinson, J. C., & Patall, E .A. (2006). Does homework improve academic achievement? A synthesis of research, 1987-2003. Review of Educational Research, 76, 1-62. at http://rer.sagepub.com/cgi/content/short/76/1/1; and Cooper, H., Valentine, J. C., Charleton, K., & Barnett, A. (2003). The effects of modified school calendars on student achievement and school community attitudes: A research synthesis. Review of Educational Research, 73, 1-52, at http://rer.sagepub.com/cgi/content/abstract/73/1/1

[9] Eg Departmental Strategic Object 4 (Close the gap in educational achievement for children from disadvantaged backgrounds) DCSF, Analysis and Evidence Strategy 2009-10

[10] Cummings, C. etal, (2007), Evaluation of the Full Service Extended Schools Initiative: Final Report. DCSF

[11] As measured by Key Stage outcomes using the National Pupil Database (P 133)

Appendix – Datasets used in this review

YELLIS (Year 11 Information System)[12] is a value-added monitoring system that provides a range of performance indicators and attitudinal measures for students in the last two years of compulsory schooling (i.e. aged 14-16)[13]. It is part of the family of information systems offered by CEM which starts in pre-school settings (3yrs) and continue through to the end of compulsory education (19yrs). YELLIS has collected data from a nationally representative sample[14] of over 100,000 candidates in more than 800 centres in each of the last five years. A subset of these candidates complete Extended YELLIS, an attitudinal questionnaire produced by CEM in order to help schools find out more about the attitudes of their students. The data includes student self-reported attitudes to main subjects, teachers and institutions, aspirations, participation in a range of activities and home background information, with the latter two being relevant for this study. This present study has made use of Extended YELLIS data from 23,000 students in over 160 schools who sat their GCSEs in 2007.

The UK 2000 Time Use Survey[15] was designed to achieve a representative sample of the UK population. Selected household heads or their partners completed a household questionnaire. All individuals aged 8 or over were asked to complete individual questionnaires, two one-day diaries and a one week work and education time sheet. The diaries record activities as well as information on the respondent's location, and who they were with at the time. The one week worksheet recorded time spent in work and full time education over the week the diaries were completed in. The data for this study was taken from the two one day diaries that were completed by 8 to 13 year olds. Each minute charted in the diaries has been coded for location (whether at home or at school) and by type of activity. Data from over 1000 students were analysed. Again, there were two measures of socio-economic status. The first relates to the parent's educational level (in the case of two-parent households, the parent's characteristics refer to the higher income parents), with levels categorised as either 'degree', 'higher education/A-level', 'O-level' or 'below O-level'. The second relates to parental occupation (again the higher income parent in the case of two-parent families), with parental occupation classified as 'managers/professionals', 'intermediate' or 'routine/unskilled'[16]. A number of measures relating to time spent studying and reading were included in the data analysis. Firstly there was a general measure of time spent on study (in minutes per day), including both time at school and free time study. The general measure of study includes time spent at school, as well as free time study, time spent on homework and time spent reading. The data for the relevant sub-categories were also used, namely time spent on homework and time spent on reading, all reported in minutes per day.

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[12] www.yellisproject.com

[13] Years 10 and 11 in England and Wales, Years 11 and 12 in Northern Ireland, S3 and S4 in Scotland

[14] See for example, Telhaj, S., Hutton, D., Davies, P., Adnett, N., and Coe, R. (2004) 'Competition Within Schools: Representativeness of Yellis Sample Schools in a Study of Subject Enrolment of 14-16 Year Olds'. Institute for Education Policy Research, Staffordshire University, Working paper 2004/11 http://www.staffs.ac.uk/schools/business/iepr/docs/Working-paper11.doc.

[15] Information taken from, and for more information see http://www.statistics.gov.uk/TimeUse/default.asp

[16] The register generals six classifications were grouped together to give a three point scale