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ABSTRACT

A sample of 348 secondary teachers in England and Wales kept a week's record of their work and completed a questionnaire on time usage. The survey indicated that the total mean time spent on work and work-related activities was 54.4 hours per week. Of this, teachers spent 16.9 hours on teaching, 12.9 hours on preparation, 18.1 hours in administration, 5.3 hours in professional development, and 4.1 hours on other activities. The study concluded with five general findings: (1) there are at least two, very different kinds of workload, involving management and teaching; (2) the match between teachers' academic background and their current teaching duties was determined to be poor for 18 percent of teachers based on objective definitions and for 40 percent of teachers based on teachers' evaluations of their academic background; (3) the more hours teachers thought it reasonable for them to be expected to work in nondirected time, the more time they actually spent; (4) there was no significant difference in the amount of time spent on work overall by men and women teachers; and (5) only 6 percent of teachers saw themselves as having responsibility for delivery of the national curriculum. Relevant policy issues are discussed. (Contains approximately 40 references.) (JDD)

UNIVERSITY OF WARWICK

POLICY ANALYSIS UNIT

THE USE AND MANAGEMENT OF SECONDARY TEACHERS' TIME AFTER THE EDUCATION REFORM ACT 1988

A paper prepared for the Policy Analysis Unit Seminar at the University of Warwick on FRIDAY, 26TH JUNE 1992

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THE WORK OF TEACHERS : A COMPARATIVE PERSPECTIVE

A recent report (International Labour Organisation 1991) on the work of teachers in both developing and industrialised societies, argued that teaching as work was determined largely as a function of two variables : hours of work in and out of school, and class size. A previous report (International Labour Organisation 1981) had pointed out the tendency of governments to under-estimate teachers' workload and the intensity of teaching.

The 1991 report rehearsed the changing nature of teaching as new demands are placed upon the schools. These included designing and implementing curriculum reforms, introducing new forms of assessment and engaging in In-service training for up-dating of skills. More broadly, teachers were being expected to impart understanding of, and positive attitudes towards, the world of work and other countries. New technology and new teaching methods were also required, and special programmes for multi-culturalism, integration of children of migrant workers, and mainstreaming children with special educational needs were tasks facing most contemporary teachers. There was an accelerating trend for moral and social responsibilities previously exercised by parents, churches and local communities to be transferred to schools, with consequent changes in the teachers' role.

Summarising the impact of these changes on teachers' work in over 40 countries the report noted:

> "The main trends in hours worked over the past decade are defined by a number of common features. First, though the numbers of actual teaching hours in contact with students has remained static, or even decreased slightly in most countries .... the overall workload of teachers appears to have increased. The main growth areas of work are administrative duties to conform to additional rules and regulations, and the attention devoted to unruly pupils. Secondly, work in the evenings and on weekends remains a steady, though irregular, component of teachers' working time .... Thirdly, stress and time pressures increasingly characterise the working day of most teachers."
>
> (ILO 1991, pp.84-86)

Moreover, preparation time had increased under educational reforms; administrative and clerical tasks (eg. meetings with parents, In-service training, correspondence, curriculum development meetings) were taking up an increasing proportion of teachers' work; and supervision and disciplinary tasks had taken on increased significance.

There are some methodological weaknesses in the ILO report, especially because it relied principally upon official statements about teachers' hours and conditions. However, the general picture of the changing demands upon teachers is supported by an overview of national policies on teacher professionalism (OECD 1990). Summarising the "new challenges" facing teachers in 21 OECD countries, the OECD report noted:

> "The political pressure to quicken the pace of educational reform had inevitable consequences for the demands made on teachers .... (who) are increasingly voicing concern about the sheer availability of time and about their preparedness as a body to do justice to these different challenges. It is in the interests of all that the extension of the teachers' role should constitute a source of professionalism based on expertise rather than be simply burdensome additions of ever greater numbers of new responsibilities .... From the stand-point of the classroom teacher and school principal, what matters is that they are expected to promote these strategies actively, and all at once .... Changes that are at present introduced discretely and piecemeal may call for the comprehensive review of institutional structures and classroom organisation, taking account of teachers' duties - individually and collectively - in their entirety."
>
> (OECD 1990, pp.113-114)

THE MANAGEMENT OF SECONDARY SCHOOLS

The general argument of this paper is a two-fold one. First, our evidence about secondary teachers in the U.K. in 1990/91 is in line with the international trends outlined above in respect of hours of work and the diffuse nature of teacher responsibilities. Second, our evidence seems to raise some fundamental questions for the management of secondary schools, as the last sentence in the OECD extract quoted above implies about the cross-cultural evidence.

It is not our intention comprehensively to review the literature on the management of secondary schools, which has been done elsewhere (eg. Fletcher-Campbell 1988, Earley and Fletcher-Campbell 1990, Weightman 1988). For our purposes we would draw attention to three aspects particularly germane to our research.

First, the extensiveness of secondary teachers' work, ie. the hours typically worked by teachers was first mapped out by Hilsum and Strong's (1978) study, based on 201 teachers in 72 schools in Surrey in 1974. They arrived at a figure of 46.75 hours per week. More recently, four surveys (NAS/UWT 1990, 1991; Lowe 1991; Coopers and Lybrand Deloitte 1991), with differing methodologies, provided evidence that secondary teachers were typically working between 50 and 55 hours per week in term time. They constituted a prima facie case that workloads in the U.K. had increased substantially since Hilsum and Cane's study, though unlike the latter they were not based on direct observational techniques.

Secondly, a focus on the roles of middle management had characterised much of the analysis, following Marland's (1971) pioneering book. The reasons include, according to Earley and Fletcher-Campbell (1990), the fact that about a third of teachers have formal managerial responsibilities, defined (McMahon and Bolam 1987) as "responsibility for achieving the school's goals by working through, and with other, professional teachers, which (is) separate and different from their classroom management roles". Heads of departments and faculties have been seen as crucial to the effective operation of secondary schools (DES/WO 1984, Weindling and Earley 1987), though Earley and Fletcher-Campbell (1990) point out the need to distinguish between managerial skills on one hand, and organisational/ administrative skills on the other. An interesting development, spearheaded by Knight (1989, 1990) examines alternative management of time in the school day.

The disadvantage of the focus in the literature on middle management is that it appears to have neglected the role of relatively junior teachers, despite the fact that the Teachers' Pay and Conditions Act identified the "co-ordination of the work of other teachers" as one of the responsibilities of teachers on the (then) Main Scale.

Thirdly, teacher professionalism, teacher careers and teacher supply/shortages have been a continuing concern in the literature on the politics of teaching. There has been international interest in the politics of teachers' work (eg. Connell 1985, Lawn and Grace 1987, Reyes 1990) in teacher professionalism and teacher organisations

(Hoyle 1980, Ozga and Lawn 1981, Lawn 1985, Poppleton and Riseborough 1990). A common thesis here is the "de-professionalisation", "de-skilling" or "proletarianisation" of teachers, as union influence has been eroded and central control increased.

A more generalised version of this thesis, traceable to Larsen (1980), emerged in Apple's (1986) book, Teachers and Texts, and in an analysis by Hargreaves (1991). This uses the concept of "intensification" to argue that teachers, like other 'educated labour', are experiencing increased pressure for productivity and efficiency under late capitalism, resulting in reduced collegial relations, less time for relaxation in formal breaks, and reductions in quality of the service they provide. We would want to link this thesis with the widely-quoted work of Fullan (1982, 1991) in which it is argued that under 'imposed change' teachers will feel de-skilled and lose a sense of ownership and professional autonomy in curriculum matters, whilst acquiring a sense of alienation towards the change itself.

A perspective on teachers' careers (Sikes et al. 1985), and in particular gender-related opportunities (eg. Purvis 1981; De Lyon and Migniuolo 1989; Skelton 1987; Evetts 1990), has also characterised recent work, in which it is argued that women teachers are disadvantaged in career opportunities.

Insofar as all these studies have placed teaching as work into a central frame of analysis they are useful, but they have three substantive limitations.

First, there has been no attempt to build upon, extend or test the empirical baseline data established by Hilsum and his colleagues in the early and mid-1970s. This concerned mundane, but for the teachers highly significant, parameters of work, such as the amount of time spent, the balance of time across different components, both on and off school premises, and factors in their working conditions affecting both the realisation of teaching goals and teachers' personal lives. In particular, the concentration on gender-differentiated opportunities in educational careers may have helped to distract attention from factors in the workplace of all teachers, irrespective of status or gender.

Second, teacher commitment has been almost entirely neglected, with the notable exceptions of Fullan and Hargreaves' (1991) questioning of the excessive identification of Canadian teachers with their work, and the NFER study (Earley and Baker 1989) of teacher retention.

Third, the statutory intrusions upon teachers' work of the Teachers' Pay and Conditions Act 1987 and the Education Reform Act 1988 have been so pervasive, recent and immediate as to reduce the relevance of most analyses that pre-date them.

In particular, the local Management of Schools has brought into more local focus employee-employer relations, not least through the responsibility given to governing bodies for appointment and dismissal of teachers and budget management, teacher appraisal and performance-related pay. The detailed impact of such changes on the experience of teaching as work, workplace relations of teachers and their working conditions cannot be examined by means of macro-analyses of teacher careers and teacher-state relationships focused on the extra-school context.

Finally, an emerging group of studies relates to the work of teaching under the Education Reform Act. Two studies (Busher and Saran 1990; Maclure and Marr 1990) of teaching as work in the post-1987 context identified a widening definition of teaching:

> "Teachers are no longer seen purely in terms of the classroom, responsible for pupil performance. They now have many other specified duties .... including essential administration to maintain the organisation of the school, attendance at parents', curriculum development and In-service meetings, as well as preparation of their lessons and marking students' work. Well-understood pedagogical responsibilities have been widened to include administrative, and in some cases, managerial duties."
>
> (Busher and Saran, p.1)

They identified three problems which they traced to the post-1987 context : the use of teachers' time; alienation from, or reduced identification with, teaching as an occupation or a career; and widespread disaffection arising from the workloads created by obligations under the 1988 Act. All three, if confirmed in other work, will have significant implications for the management of schools.

FINDINGS FROM WARWICK RESEARCH

The Sample

348 teachers participated by keeping a week's record of their work, using a coding system (Appendix 1) and then completing a questionnaire. This is a relatively small number given that there are some 177,417 full-time secondary teachers, including teachers in middle deemed secondary schools in England in 1990 (DES Statistics of Education, Schools, 1990). To these should be added some 12,458 teachers in Wales (CIPFA Education Statistics, 1988-89, Actuals). In addition, the teachers were a self-selected group, since they were all volunteers and members of AMMA. Holders of Incentive Allowance 'D' were over-represented and Standard Scale teachers under-represented in the group as a whole. Thus we cannot claim that the 348 are self-evidently representative of secondary teachers generally.

However, three characteristics of the participating teachers as a group suggest that they are not so untypical as to bring the findings into question. First, they are spread throughout 88 LEAs (and 19 independent schools) in all the regions classified by the DES for statistical purposes. There was no substantial concentration of the teachers in one or two authorities which might result in biased results arising from untypical staffing formulae. (In order to reduce bias arising from particular staffing levels in any one school, we decided to use no more than two teachers from any one school where we could tell that several teachers from the same school had volunteered).

Second, the number of working days of teachers, over 2400 days in total, is considerable by comparison with Hilsum and Strong's (1978) study, which involved 201 teachers in 74 secondary schools in Surrey in 1974; the 201 teachers were observed for one school day, and in addition completed a record of work done out of school on the same day, on one weekend, and on one day in the holidays. Hilsum and Strong's data therefore were derived from about 800 days, though based on detailed observation and recording in school.

Third, the teachers worked in approximately 330 schools, about 8% of the secondary schools in England and Wales, (CIPFA Education Statistics, 1990-91, Estimates).

Of the sample, 151 were women, 187 men - 6% were under 30 years of age and most (70%) were between 31 and 50 - 24%

were over 50. Few (15%) had less than 10 years experience of secondary school teaching, whilst 43% had more than 20 years experience. The majority worked in comprehensive schools (73%) with small numbers working in grammar, secondary modern, sixth form or other tertiary colleges and independent schools.

MAIN FINDINGS

1. TIME ON WORK OVERALL

Table 1.1 shows the time spent by teachers on work and work-related activities during the recorded weeks. It includes work on and off school premises, during the school day and in the evenings and at weekends. It gives the time in hours per week:

Table 1.1

	Hours per Week
Mean time on work at school	39.8
Mean time on work away from school	14.6
Total mean time on work	**54.4**

NB: i) Of the total time, 48.3 hours were spent during weekdays; 6.2 hours during the weekends.

NB: ii) The mean figures disguise considerable variation, the minimum and maximum figures being 34.4 hours and 92.2 hours respectively.

NB: iii) There was no difference in time on work overall between men and women.

2. TIME ON MAIN CATEGORIES OF WORK

Table 2.1 gives the weekly hours for the main categories of time. The total of these time on work is less than the sum of the separate categories since for some of the time the teachers were engaged in more than one activity at once:

Table 2.1

Teaching	16.9 hours
Preparation	12.9 hours
Administration	18.1 hours
Professional Development	5.3 hours
Other Activities	4.1 hours
Total Time on Work	**54.4 hours**

A more detailed breakdown is given in Appendix 2.

The most striking finding here is that Teaching, in the sense of giving instruction in subjects during lessons, constituted less than one third of the teachers' working time, being just over 30% of all the work that teachers carried out. If we add to the figure for Teaching the time spent daily on registration, supervision and assembly, some 30 minutes in all, the proportion of time spent in contact with pupils in this broader sense rises to just over 37%. The low proportion of time on Teaching is, to a significant extent, explained by the relatively high amounts of time spent on Administration and on Preparation. Even on the broader definition, almost two-thirds of our teachers' time was taken up with activities away from pupils. This contrasts with the picture from the NAS/UWT survey (1991) where 41.4% of time was spent on teaching.

We think that the most likely explanation, in addition to our different methodology, for the (relatively small) differences between our figures and those of the NAS/UWT is that our sample is different, especially in respect of the proportion of teachers who were on deputy headships or on 'D' and 'E' allowances with major administrative responsibilities, (145 out of the 348 fell into these categories), though the NAS/UWT data are presented in a way that does not permit direct comparison on salary status. As can be seen from Table 2.2 below, the higher the salary status, the less the teaching.

2a. Breakdown Within Categories

(i) Teaching

The factor most closely related to the amount of teaching done per day is the salary status of the teacher (which is itself closely related to experience and age). Table 2.2 shows the reducing amounts of teaching carried out according to the level of the salary. The statistical relationship is highly significant (linear trend $p<.001$):

Table 2.2

Salary Status	Mean Minutes Teaching per Weekday
Standard Scale	220
A	219
B	215
C	218
D	196
E	180
Dep.Head	105
Mean Total	201

Although the trend is linear there is a threshold or break point between Incentive Allowances 'C' and 'D'. For all practical purposes there was little difference in the amounts of teaching carried out by teachers on Standard Scale, or 'A', 'B' and 'C' allowances; beyond that level the high allowances were associated with lower teaching loads.

We also found, as might be expected, that the higher the salary status the less teaching was done at Key Stage 3 (linear trend $p<.001$). At Key Stage 4 the same effect was observable but the statistical relationship was weaker (linear trend $p<.05$). There was a relationship between salary status and 6th form teaching, with teachers on 'D' and 'E' allowances (though not deputy heads) doing more 6th form teaching in absolute terms. Given that 'D' and 'E' allowance holders did less teaching anyway, the proportion of their teaching carried out with 6th formers was relatively very great. Thirty-one per cent of 'D' and 'E' holders' teaching was to 6th form groups.

i.a) Main subject teaching

The teachers spent by far the most time teaching their main subject, some 14 hours per week out of the 16.9 hours weekly total. Teachers in small schools spent more time than others teaching subjects other than their main subject, ($p<.001$), which is to be expected. All teachers spent on average 2.45 hours per week teaching subjects other than their main subject. The remaining time on teaching was taken up with Testing (10 minutes per day) and National Curriculum assessment (3 minutes per day). These latter two activities could be combined with the former two, or be discrete. The amount of time on teacher assessment for National Curriculum carried out whilst teaching was minuscule, about 1½ minutes a day on average for those teaching at Key Stage 3.

i.b) Class Size and Key Stage

We were able to analyse the size of teaching groups according to the Key Stage of the teaching. For this purpose we divided the 11-18 age range into three Key Stages, viz. KS.3 (Years 7-9), KS.4 (Years 10-11) and the post-statutory age range, which we called 6th Form. Table 2.3 shows the mean size of actual teaching groups by the three stages:

Table 2.3

Key Stage	Mean group size
KS3	22
KS4	18
6th	11
All	**18**

These means, although they do not allow direct comparison, are in line with the national picture provided in 1990 DES statistics and suggest that, even though our sample of teachers is skewed, the sample of lessons is representative in terms of size of teaching group.

We were also able to compute a measure of "teaching output" by Key Stage. Output was defined in the limited sense of the number of pupils taught per teacher,

multiplied by the amount of time they were taught, at each Key Stage. We were not in any sense measuring the quality of instruction, which might improve as the size of teaching group reduces. Output, in our limited sense, reduces as the age of the pupils increases. This is shown in Table 2.4:

Table 2.4

Key Stage	Pupil/mins. taught per day
KS3	1,956
KS4	1,586
6th	883

i.c) Salary status and class size

We were also able to analyse the relationship between salary status and the size of class taught. Again there was a strong positive statistical relationship, with teachers higher up the salary status categories teaching smaller groups (linear trend $p<.001$). This finding should be read alongside that reported on Page 10, that 6th form teaching (which has small groups) was significantly related to salary status.

(ii) Preparation

Preparation included three sub-categories, namely Planning/Preparing lessons; Marking and Recording results; and Organising resources and visits. Where possible teachers were asked to relate the Preparation to particular Key Stages. Details broken down by sub-category are given in Table 2.5, which shows mean time per week on Preparation. The total is less than the sum of the three sub-categories because some teachers did two kinds of Preparation in the same session:

Table 2.5

Planning/preparation	5.9 hours
Marking/recording	6.8 hours
Organising	1.1 hours
Total Preparation	**12.9 hours**

Of the total time spent on Preparation, 46 minutes per day were spent on school premises, while 64 minutes per day (7.5 hours per week) were spent at home, presumably in non-directed time.

We were able to show the amounts of time spent on all Preparation at weekends and during weekdays. The mean time per day for each is given in Table 2.6:

Table 2.6

	Weekends	Weekdays
Planning/preparing	43 mins	53 mins
Marking/recording	57 mins	61 mins
Organising	6 mins	11 mins
Total Preparation	**1.6 hours**	**1.95 hours**

Finally we were able to show the time spent on Preparation according to the Key Stage for which the Preparation was being done. The figures are given below in Table 2.7:

Table 2.8

Key Stage 3	32 mins
Key Stage 4	36 mins
6th Form	23 mins

It was possible to calculate the mean Preparation time per pupil for the Key Stages shown above by dividing the mean Preparation time by the size of teaching group. This gave mean Preparation time per pupil for KS.3, KS.4 and 6th form respectively as 1.5 minutes, 2.0 minutes and 2.1 minutes per pupil. In terms of Preparation per pupil KS.3 is the most economical, KS.4 the next, and 6th form the least economical. If we link these data and those in Table 2.7 with the indices of class size and teaching output produced above, (Tables 2.3 and 2.4), we can see that not only does teaching at 6th form level produce less "output" but it also appears to involve more time per pupil on marking and preparing lessons.

iii) Administration

The teachers spent more time on Administration than any other category of activity. The broad category was broken down into 12 sub-categories, fuller details of which are given in Appendix 1. Shorthand terms are used in Table 2.8, which gives means in minutes per day over 7 days:

Table 2.8

	Mins. per day
Department/School administration	49
Examination administration	14
Pastoral/discipline	13
Parental consultation	10
Displays	02
Supervision	07
Liaison	06
Assembly	05
Breaks (free of work)	21
Breaks (not free of work)	20
Non-Contact time (free of work)	03
Registration/dinner money/transition	10
Total Administration	155

One general point that has emerged from the detailed analysis is that nearly all this administrative time was spent during the weekdays, not at the weekends. This is understandable, of course, in respect of the sub-categories such as Assembly, Breaks or Pastoral, which, by definition, have to occur on the school premises. But it was equally true for school/departmental administration and examination administration, which account for 63 minutes a day and do not necessarily need to be done at school. We assume that the explanation is that for these two major responsibilities teachers perceive themselves as having been given time free of teaching in the school day and thus see it as part of their school day "directed time". In addition significant parts of school administration, for example organising cover, by their nature force themselves into the weekday.

A second point is that the teachers did not generally use non-contact time as "free" or "rest" periods. The majority of them had over three hours per week non-contact time

officially allocated to them, but recorded only 21 minutes per week of that time in which they did no work.

Thirdly, the combined figure for breaks seems puzzling. It is equivalent to 56 minutes per weekday, and since it combines both breaks free of work and breaks in which school work was done, the figure, which includes morning coffee break and lunch time, should be more like 75 minutes per day. One explanation for this may be that teachers with heavy administrative responsibilities actually allocate themselves less time in breaks than the "official" school break times, or have recorded them as the category of the work done in break. Deputy heads, for example, had significantly less time in breaks free of work than other teachers ($p<.05$). Deputies recorded only 15 minutes per day in breaks free of work and only 46 minutes per day on breaks, whether free of work or not. Also, some schools may have reduced the lunchtime break below the "normal" hour.

(iv) Professional Development

The teachers spent 46 minutes per day on all Professional Development as defined by the coding system. There were five sub-categories, viz. organised conferences/courses; travel to courses; non-pupil days; meetings, both formal and informal, with colleagues; and reading of professional journals, national curriculum documents, etc. Where it was possible to do so, teachers were asked to identify In-service activity designed to train them for Key Stage 3. The time, in minutes per day, spent on the five sub-categories is given in Table 2.9:

Table 2.9

	Mins. per day
Courses/conferences	10
Travel	06
Non-pupil days	02
Meetings	22
Reading	8

Hardly any of the training courses, about 2 minutes per day on average, was directed at Key Stage 3. A second point is that Meetings, including staff meetings, took up almost half of all Professional Development time.

Thirdly, the amount of time spent on Professional Development activities was divided equally between time on school premises and time away from them (23 minutes each). Senior staff, especially deputy heads and 'E' postholders spent significantly more time than others in meetings in school ($p<.001$). Whether this time should be included under Professional Development or Administration is problematic.

(v) Other Activities

Teachers were asked to record under the heading of Other Activities the time spent on three sub-categories, viz. Governing Bodies' Meetings, Sports, Clubs, Orchestras, Drama and Field Trips, and other activities that they could not fit into the coding system. The time distribution in minutes per day is shown in Table 2.10:

Table 2.10

	Mins. per day
Governors	02
Sports etc.	12
Other	21
Total	35

3) THE PATTERNING OF WORKLOADS ACCORDING TO THE SALARY STATUS OF TEACHERS

A pattern of workload differentiated according to salary status emerged from the data. The general picture is provided in Table 3.1, which shows mean hours per week on the five main categories of work, broken down by salary status:

Table 3.1

ACTIVITY:	SALARY STATUS							
	Stand:	A	B	C	D	E	DH	All
Teaching:	18.4	18.3	17.9	18.2	16.3	15.0	8.8	16.9
Preparation/ Marking:	13.1	14.6	13.2	11.9	13.8	12.6	6.5	12.9
In-Service Training:	3.7	4.0	4.9	5.5	5.8	6.9	9.5	5.3
Administration:	15.1	14.7	15.8	19.0	18.7	18.3	31.4	18.1
Other Activities:	4.0	4.6	2.8	5.3	4.1	3.9	4.5	4.1
TOTAL TIME:	52.3	53.2	52.2	57.6	55.1	54.8	58.0	54.4

4. FIVE GENERAL FINDINGS

4.i) Managers and Teachers

A major finding coming out of the statistics is not a surprising one, but is very clear. There is no such thing as a typical teacher's workload in secondary schools. There are at least two, very different, kinds of workload, defined by the balance of activities across work overall. We call these the "Managers" and the "Teachers".

"Managers" are on the top three salary status levels, are older, usually male, more experienced, do relatively less teaching, mostly to smaller groups, and spend much of their working time in Administration and Meetings. "Teachers" are younger, more often female, less experienced, on the lower of the salary status levels, and some are on fixed term contracts. They spend relatively large amounts of time on Teaching, which is to larger groups, and engage in more Preparation and Marking.

The two groups are not clearly distinguished by the amount of time overall that they spend on work, (although deputy heads work the longest hours of all teachers), but by the balance of their activities within the overall time. This

differentiation by balance of workload may reflect a split in the organisation and culture of the school as a workplace. Some teachers, promoted to Incentive 'D' and above, carry out much of their work as administrators for the school, whilst others carry proportionately more of the teaching in the school, especially if account is taken of teaching output as we have defined it. We have been able to demonstrate the existence of such a split by the emergence of the "Managers" factor in the factor analysis in Appendix III, and through the multiple regression analysis.

The multiple regression analysis showed that salary status was the factor most clearly predicting the amount of time that a teacher spent on all Administration. The association was highly significant statistically ($p<.001$). There was even greater significance ($p<.001$) when the code AA alone (School Administration) was examined in relation to salary status. Conversely, the multiple regression analysis showed that the amount of time spent teaching was most strongly predicted by the salary status of the teacher - the lower the status the more teaching ($p<.001$). In addition the best predictor of time spent in meetings on school premises is salary status ($p<.001$).

Our data do not allow us to distinguish clearly between managerial and administrative activities. 'D' and 'E' allowance holders and deputy heads average 1.8 hours per day on administration, while Standard Scale and 'A' and 'B' allowance holders average 46 minutes per day. At the extremes, deputy heads spend 20.6 hours per week on such administration, while Standard Scale teachers spend 4.0 hours per week.

4.ii) Subject Matter

A second important finding concerns the match of teachers' academic background to their current teaching duties. We were able to generate both objective and subjective definitions of match. The objective definition came from the questionnaire, where teachers were asked what were their major subjects (= subjects studied in higher education for at least two years) and how much time they spent teaching these major subjects.

Subjective definition of match was obtained by asking the teachers how far they considered that their academic background was well matched to their current teaching, and if they taught foundation subjects up to Year 11, how far they considered their academic background had prepared them for such teaching.

Table 4.1 summarises more detailed data in our final report. Poor match is defined as:

Column (a) - less than 10 hours of all teaching

Column (b) - less than half of all teaching

Column (c) - not adequately prepared by academic background.

Table 4.1

Teachers	MATCH AS MEASURED:		
	a)Objectively (All Teaching)	b)Subjectively (All Teaching)	c)Subjectively (For Years 7-11)
% with poor match	18%	40%	Between 3%-44%

In respect of foundation subjects up to Year 11, Column (c) above indicates considerable variation according to the subject. The proportion of teachers who were teaching foundation subjects but did not feel adequately prepared by their academic background or by later re-training is as follows. The percentages are created from the numbers of teachers teaching a subject, and numbers reporting that they perceived themselves as adequately prepared:

Table 4.2

	Numbers teaching	Numbers reporting	% Poorly Matched
Technology	36	20	44%
Art	10	6	40%
P.E.	16	11	31%
Geography	40	33	18%
English	44	38	14%
Music	7	6	14%
Modern Languages	37	32	14%
Science	79	69	13%
Mathematics	79	71	10%
History	38	37	3%

Thus, we obtained a different measure of match according to whether we asked for objective or subjective definitions and it varied by subject in Years 7-11. The subjective definitions suggest greater mis-match than the objective. This has implications for management on identifying the degree of match in the school's teaching force, for the measurement of the extent of teacher shortages, and for In-service needs in relation to the curriculum.

4.iii) The "Conscientiousness" Factor

We asked the teachers to say what amount of time they thought it was reasonable for them to be expected to spend on work in non-directed time. We refer to this as the "conscientiousness" factor partly to indicate teacher commitment and partly to imply that teachers may be "over-conscientious" - conscientious to a fault. With the secondary teachers this factor was a critical one. There was a highly significant statistical relationship ($p<.001$) between "conscientiousness" and hours on work. The more hours teachers thought it reasonable for them to be expected to work in non-directed time the more time they actually spent. This was especially true of time on work off school premises. There was a statistically significant association between "conscientiousness" and long hours on Preparation and Professional Development combined.

Thus, despite very great differences in the nature, patterning and working contexts, this indicates something about the teachers' motivation. They are driven by their perception of the time it is reasonable for them to be expected to spend on work in their 'own' time, rather than, or in addition to, their salary status. Motivation is "personal" rather than "positional".

4.iv) Gender and Work

The first finding to emphasise here is that there was no significant difference in the amount of time on work overall by men and women teachers, on school premises or off, during weekdays or at weekends. Within overall time there was no difference between men and women in the time spent on Preparation or Teaching, or Professional Development.

However, there were three principal sex differences in the patterning of work.

First, women spent significantly less time than men on Administration overall ($p<.01$), and especially on School Administration ($p<.001$), but they spent more time on Pastoral aspects ($p<.05$).

Second, women taught Key Stage 3 pupils more ($p<.01$) and 6th formers less ($p<.05$) than men did.

Third, although there was no difference in time overall on Professional Development, we found that women spent more ($p<.05$) time on In-service courses at weekends. This may be partly explained by the ability of women to meet In-service commitments more easily at weekends than in 'twilight' hours or in weekdays after school. This explanation is supported by the fact that women recorded more travel to In-Service courses at weekends.

Our conclusions here are complex since the interaction of gender and workplace is not straightforward.

First, women do not "put in less time" than men. There is no evidence to support the idea that women, for reasons to do with demands on their time in the domestic setting, are able to commit themselves less to work than men. Second, and related to the first point, women teachers were paid less than men because fewer were on the higher incentive allowances. The differences in salary status were highly significant statistically, as Table 4.3 shows:

Table 4.3 - Salary Scale by Sex

Scale:	Men	Women	
Standard	14	36	
A	9	32	
B	25	42	
C	17	19	Chi square 29.8
D	61	37	
E	11	8	d.f.6
DH	13	12	
			p<.001
Total:	**150**	**186**	
%:	**44.6%**	**55.4%**	

If the sexes were distributed randomly among the salary scales we would expect the numbers at each level to approximate to the 45/55 sex balance in the sample as a whole and to be roughly similar, with perhaps one or two women more in each level. The obvious source of difference is Standard Scale, 'A' and 'B', where there are many more women than would follow from random distribution, and 'D', where there are many fewer women.

Since they gave the same amount of time to work as men, women were 'better value for money' if their work were to be considered on a strictly cost-of-the-job basis. (This view is strengthened by the evidence that women teachers spent more time teaching the (larger) Key Stage 3 classes).

Third, we found significantly more women ($p<.001$) falling into the category 1-10 years of experience of secondary teaching. There were 52 teachers overall in this category, of whom 43 were women. The difference here was much greater than in other categories of length of experience.

The findings here are of some interest in respect of policies for equal opportunities. We had data on the salary status, age and length of teaching experience of the teachers, both men and women. As has been shown in Table 4.2, women were over-represented in the lower salary statuses and under-represented in the higher statuses, especially 'D' allowances. This gender difference held up when the age of teachers was taken into the analysis, but almost disappeared when, instead of age, the length of teaching experience was the basis for analysis. In effect the gender inequalities in salary status in the sample appear to be derived mainly from the consequences of the 'career break' of women teachers rather than from deliberate discrimination or from in-school obstacles to promotion for women.

4.v) The National Curriculum and Assessment

The data on the national curriculum and assessment need to be put into context. In the school year 1990-1991, when the research was conducted, only three of the ten core and foundation subjects were statutorily in place, and assessment arrangements were not known.

Overall, relatively little emphasis appeared to have been given to the national curriculum at Key Stage 3. Our evidence is that only 6% of the teachers saw themselves as having responsibility for the delivery of the national curriculum. Of the 205 teachers teaching regularly at Key Stage 3 only 37% would use extra staffing for assessment/ recording. Very little time was devoted to In-service training for Key Stage 3 (about 2 minutes a day on average) and very small amounts of time (1½ minutes a day) to TGAT-style national curriculum assessment. As has been said, it is true that at the time the data were collected statutory end-of-Key-Stage assessment was not required. The orders for Mathematics and Science had been in place for little more than a year, and for English for over a term. However, a very big proportion of the teachers were teachers of the three core subjects (77 had Mathematics, 140 had Science and 43 had English as a main subject).

Direct comparison with the Key Stage 1 teachers in 1330 Days (Campbell and Neill 1990) is not technically possible, but where it is reasonable to make a comparison, in the case of Teacher Assessment, delivery seems more limited at Key Stage 3. In 1330 Days Key Stage 1 teachers were studied in 1990, ie. in the following year statutory assessment was implemented as a dummy run. This is the same timing, relative to statutory assessment, as for Key Stage 3 in 1991, yet Key Stage 1 teachers were spending about 50 minutes a week on TA compared to the 1½ minutes spent in Key Stage 3.

5. MANAGEMENT ISSUES

Five policy issues arise from our findings, especially from those identified in Section 4 of our findings. They are:

The Use of Teachers' Time

Match of Expertise to Teaching

Gender and Work

National Curriculum and Assessment

The 'Conscientiousness' Factor

5.i) The Use of Teachers' Time

We have shown that there were two broad categories of teachers, distinguished by the different structuring of

their time. The "Managers" spent large amounts of time on School Administration and relatively little time teaching, whereas the "Teachers" spent little time on School Administration and relatively large amounts of time on teaching. It is possible to exaggerate this distinction, but the statistical analysis indicates very highly significant differences between the use of time of teachers on Standard Scale, Allowance 'A', 'B' and 'C' on the one hand, and those on Allowance 'D', 'E' and deputy heads on the other.

Our data do not allow us to distinguish the extent to which the activities coded as School Administration were managerial (ie. involving high-level skills) or administrative (requiring low-level skills). However, other research, eg. Torrington and Weightman's The Realities of School Management, suggests it is probable that substantial amounts of time per week were being spent by the highest paid teachers on relatively low level routine tasks, of a clerical nature. If so, responsibility for this situation is not attributable to the teachers themselves but is a policy issue for school management as a whole, especially for the head and the governing body. It is worth examining the current use of senior teachers' time to see if the provision of more support staff, (to whom delegation of routine administration could be made), would enable both their managerial and their teaching skills to be exploited more effectively.

An alternative view is that the occupational split between "Teachers" and "Managers" is inevitable, given the managerial complexity of contemporary secondary schools and the increasing delegation of managerial responsibility to individual schools. On this view, the time of a few of the most highly-paid staff should be used almost entirely for management, policy-making and implementation, supported by more administrative staff. The patterning of the time of the rest of the staff should be more like that of the "Teachers" in this study, with relatively large amounts of time on Teaching. This would formalise the split we have identified in the occupational culture of the schools, though it is likely to lead to more oppositional attitudes within schools between the Teachers and the Managers. It would move teachers' professional development and the management of schools towards the systems in some states in the U.S.A., where clear-cut careers in educational administration are seen as alternative, rather than complementary, to teaching. For such a development to be worth the potential risk to relationships in schools, it would be essential for senior staff to be freed from routine administrative activities so that their time could be used to good effect in management, strategic planning and policy-making. They might also have to spend more time than they do currently

on the maintenance of good relationships with the "Teachers".

However, the issue is not merely a matter for the local management of schools. There are national implications concerning the use of Incentive Allowances, the development of pay flexibilities and performance-related pay. It is technically possible, under the Teachers' Pay and Conditions Document, to award incentive allowances (especially the 'A' allowance) for "outstanding abilities as a classroom teacher". Currently, as our data show, reduction in teaching load may be construed as the main reward, consequence or spin-off of progression through the pay structure. This view is deeply embedded in the professional culture and would make any dramatic change, such as the award of the larger Incentive Allowances for continuing to teach a full load, difficult to implement. It is possible to see this professional culture as working in the interest of male teachers, since a change in the direction at which we are hinting above would benefit women teachers more.

There are two further difficulties. First, the recent evidence submitted to the School Teachers' Review Body by AMMA and NAHT, suggests that the distribution of Incentive Allowances and discretionary pay depends more on contextual factors such as school size (and therefore their availability) than on the operation of rational principles according to the pre-specified criteria of the School Teachers' Pay and Conditions Document. Secondly, the "performance" by which performance-related pay might be awarded would differ depending on the status of the teachers. There would be difficulty in using a common set of performances by which, say, the "Teachers" and the "Managers" in our terms might be judged fairly in a competition for limited further allowances. It may be argued, understandably, that the schools are in a period of transition with regard to management. However, the pressures from the occupational culture outlined above, the problems of common performance indicators, a career progression favouring males, and the financial disincentives against awarding the highest allowances for good teaching alone, all point in the same direction. Excellent performance in the classroom is likely to continue to be rewarded by progressive removal from it.

5.ii) Match of Subject Expertise to Teaching Duties

The issue of subject match is important within a school and we have shown that, generally, the teachers were well-matched to their teaching duties, if the main subject(s) of the teachers' initial training were taken as the basis

for the analysis. We called this objective match. However, we showed that subjectively, viz. whether the teachers considered that their academic background was well-matched to current teaching, the match was less good. We showed variations by subject in this respect, with Technology being particularly poorly matched. We also found that teachers spent significantly more time on preparing lessons in their main subjects, which implies that poorly-matched lessons were less well planned and perhaps, therefore, less effectively taught. If so, the issue is not merely one of administrative difficulty but also one of teaching quality, though we have no direct evidence on this.

The main management issue here, however, relates to the forecasting of teacher competence and the identification of in-service training needs. Which of the measures of match is used determines how great the problem is perceived to be. Using the objective measure, as the DES does, has the administrative advantage of definition by clear criteria and the political advantage of showing the shortage at the lower limit, whilst disguising the teachers' view of the adequacy of their academic backgrounds. But the subjective measure may be much more real to the teachers involved and to the school management. It may also be an increasing issue as the foundation subjects come to be implemented in Key Stage 3 and Key Stage 4 since, in some subjects, eg. Science and English, teachers may have to teach elements which are new to them (eg. Biology teachers teaching Chemistry, English teachers teaching Awareness of Language) or were not part of their academic training.

5.iii) Gender and Secondary Teachers' Work

The data we have presented indicate that women teachers in the schools were at a disadvantage by comparison with their male colleagues. They taught the larger classes more, and the smaller classes less, than men; they clustered more on the lower, and less on the higher, salary levels than men; and more women than men were on fixed-term contracts. There is no self-evident explanation or justification for this state of affairs. The women worked as long hours as men and spent more time on In-service training at week-ends. Furthermore, there was no difference in "conscientiousness" between men and women. The women, therefore, represented better value for money (from an employer's perspective) or an exploited group of workers (from the perspective of equal opportunities).

We have shown (p.35) that when length of experience was controlled, the sex differences in salary scale were

substantially reduced, and this seems to imply that a main source of discrimination against the women teachers was not within the school but outside it, arising from the "career break" experienced by women. If true, this would not mean that a school's equal opportunity policies should be regarded as irrelevant, but that the major source of inequality cannot easily or fully be confronted by them. Wider social policies, especially those concerned with child-care provision, would need to be implemented for those women teachers who wish to avoid career breaks, if the inequalities we found are to be removed.

Nevertheless, even without such wider policies, governing bodies might wish to avoid the worst aspects of gender disadvantage by adopting deliberate in-school policies. These could include the monitoring of the use of fixed-term contracts in order to reduce the number of women wishing for permanent contracts being awarded fixed-term ones; and the recognition of the career break as a professional advantage rather than a disadvantage, for example, by fully counting 'years of experience' related to children since training, whether or not carried out in school.

5.iv) National Curriculum and Assessment

We found that the national curriculum and assessment were given relatively little attention at Key Stage 3. Almost certainly this is because, at the time the research was being conducted, Mathematics and Science had been in statutory orders for just over a year, and English for a term. Arrangements for the end-of-Key Stage assessment were not known. Nonetheless, and allowing for the timing, there was relative neglect of the national curriculum, especially in respect of TGAT-style Teacher Assessment for formative purposes in Years 7 and 8. Also, there was little In-service training targeted on Key Stage 3.

This has policy implications for In-service training programmes in 1991-1992. Some GEST funding has been earmarked for assessment at Key Stage 3. The assessment arrangements for the 1992 pilot SATs at the end of the Key Stage are now known to require single sitting, fixed-time tests of 3 hours duration, in June 1992 for Mathematics and Science. The tests will cover all attainment targets except the two concerned with Exploration of Science and Application of Mathematics. Thus, there will be little direct pressure on those teaching Key Stage 3 pupils to give substantial attention to the formative purposes of Teacher Assessment across the Key Stage, since the SAT scores will normally over-rule teacher assessment. In-service training in 1991 and 1992, whilst not neglecting the administration of the pilot SATs, ought to include

training in the educational value of, and professional development inherent in, the formative functions of classroom-based teacher assessment. If this does not happen, the main improvement in assessment techniques promised by the TGAT Report will be lost.

5.v) The "Conscientiousness" Factor and Teacher Motivation

It needs to be said that long hours spent on work are not necessarily indicators of professional commitment or teaching quality. They may be evidence of inefficient preparation, wasted time in meetings and other things. Having said that, we reiterate that the best predictor of the amount of time that the teachers spent on work was what we called "conscientiousness" - the answer to an item on the questionnaire asking them:

> "As a general rule, and excluding holidays, how many hours a week do you think it is reasonable for you to be expected to spend in non-directed time (ie. mainly planning, record-keeping, report writing, organising resources, keeping up-to-date and all INSET)?"

The more time they thought was reasonable for them to be expected to spend on work in their "own" time, the more time the teachers actually spent. (We have reported similar findings with infant teachers in 1330 Days and Workloads, Achievement and Stress - Campbell and Neill 1990; Campbell et al 1991). Except for deputy heads, the amount of time spent on work was not related to salary level. This suggests that secondary teachers are motivated more by personal qualities, such as their sense of obligation to pupils, than by positional or contractual factors such as salary levels. Teaching is not yet a contract-led profession, and these teachers were working for much longer than both the requirements of directed time, and the hours they considered reasonable.

This finding is highly problematic for policy makers, teacher unions and school management. On the one hand it reveals a vocation-driven professional attitude, with teachers showing extensive commitment of their own time in order to perform their school duties adequately and, on average, spending nearly 15 hours a week on work off school premises, mostly at home. On the other hand, it suggests that within the limits of the overall salary levels, policies on the use of Incentive Allowances, and for performance-related pay and discretionary allowances will not, of themselves, be highly motivating for teachers. Put at its lowest, such payments will not affect the length of time that teachers devote to work,

though they may be seen as reward for extra responsibilities.

We do not see the evidence as leading to the conclusion that teachers' pay in general is irrelevant to morale, motivation and retention. The basic salary structure is important in a market-led Europe-wide economy where graduates may be in short supply over the coming decade. However, within that structure, the current use of Incentive Allowances and prospective use of performance-related pay appear unmotivating compared to the conscientiousness of teachers. This is because the professional culture into which secondary teachers are socialised by their training and the experience of work still stresses a collective professional accountability (ie. accountability to colleagues for pupil progression) rather than individual or competitive accountability (ie. accountability to individual career interests). It remains to be seen how far the new climate under LMS, performance indicators, teacher appraisal and performance-related pay will be able to induce a change in such a culture.

CODES FOR THE RECORD OF TEACHER TIME

1. TEACHING

Include activities where you are in direct contact with pupils/students helping them to learn. There are four codes:

TM Teaching your maiu subject.
TO Teaching other subjects.
TA Assessment and/or recording for the National Curriculum carried out during teaching.
TT Assessment and testing in teaching time, excluding assessment for National Curriculum.

The codes TM and TO should be followed by either 3 (= Key Stage 3, ie., Years 7, 8 & 9), or 4 (= Key Stage 4, ie., Years 10 & 11), or 6 (= 6th Form). In addition, write in the class size with a ring round it, eg., TM4 (21) or TM3.TA (21)

2. PREPARATION/MARKING

Include activities in which you prepare or mark pupils' work, but are not in direct contact with them. There are three codes:

PR Preparing and planning for pupils' learning, writing lesson plans, forecasts, schemes of work, organising the classroom and resources in it, briefing technicians/assistants, parent helpers, etc.
PM Marking work, writing comments on it, recording results.
PO Organising or collecting resources, organising visits/trips.

Where it is possible to do so, add 3, 4 or 6, as for the teaching codes above, to indicate the age level for which the preparation was being done. Where the preparation was general rather than focused on an age range, add 7, eg. PR3, PO6, PM4, PR7, etc.

3. IN-SERVICE TRAINING

Include formal and informal activities intended to help in your or others' professional development, such as training days, all courses (including those leading to a further qualification), conferences and workshops. There are five codes:

IN Organised courses, conferences, etc., but not the 5 non-pupil ("Baker") days.
IT Travel to organised courses, conferences, etc., but not the 5 non-pupil ("Baker") days.
ID Non-pupil days (ie. "Baker" Days)
IS Meetings, both formal and informal, with colleagues, advisers, advisory teachers, etc.
IR Reading of professional magazines, journals, National Curriculum documentation, syllabuses/exam. regulations, etc.

Where it is possible to do so, add 3 (= training for National Curriculum Key Stage 3). Otherwise add O, eg., IN3, ID3, INO, etc.

4. ADMINISTRATION

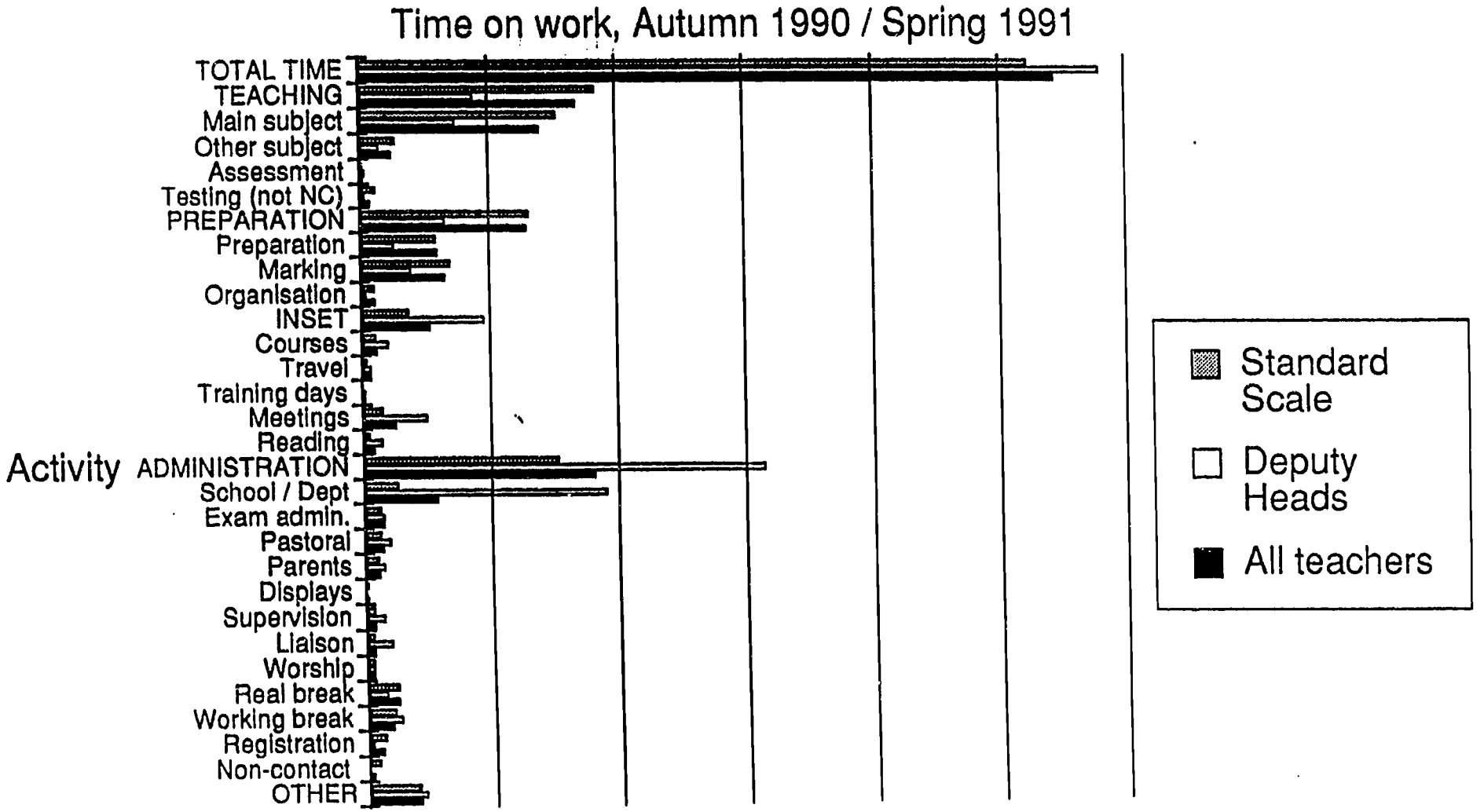
Include activities concerned with the routines of school work. There are twelve codes:

AA Administration to help in the running of the department or the school, unless identified in other A codes, (include writing reports).
AE Administration in connection with external examinations/course work and their moderation.
AC Pastoral/Discipline/Counselling/Guidance activities with individual pupils/students.
AP Discussion/consultation with parents.
AD Mounting displays.
AS Supervising pupils before the school day begins, at break/lunch, end of school day, etc.
AL Liaison meetings/activities with teachers in other phases, other schools, etc.
AW Attending/participating in assembly/act of worship.
AB Lunch, coffee/tea breaks – free of work.
AF Lunch, coffee/tea breaks – which were not free of work.
AN Non-contact time – free of work.
/// Registration and collecting dinner money; and/or moving children from one location to another (eg. from class to hall, playground to class, school to swimming baths), tidying up, etc. (The code for this is simply to fill diagonal lines in the time space, thus //////, since these are sometimes short time spaces).

5. OTHER ACTIVITIES

OG Attendance at meetings of gov[illegible]ning bodies.
OS Work with sports teams, drama productions, orchestras, clubs, and all educational visits etc., outside timetabled lessons.
OA Activities that you cannot easily allocate to one of the other codes, eg. filling in this record, dealing with lengthy interruptions, and other things.

Please turn over to see two examples of part of a completed record.


Time on work, Autumn 1990 / Spring 1991
Activity
TOTAL TIME
TEACHING
Main subject
Other subject
Assessment
Testing (not NC)
PREPARATION
Preparation
Marking
Organisation
INSET
Courses
Travel
Training days
Meetings
Reading
ADMINISTRATION
School / Dept
Exam admin.
Pastoral
Parents
Displays
Supervision
Liaison
Worship
Real break
Working break
Registration
Non-contact
OTHER
Standard Scale
Deputy Heads
All teachers

A P P E N D I X I I I

FACTOR ANALYSIS

FACTOR 1 : (THE "MANAGERS" FACTOR)

Questionnaire Variable	Factor 1
Experience	.81346
Age	.66393
Salary status	.63879
Non-contact time	.28770
Fixed term contract	.27126
Re-training	.12243
Time spent teaching main subjects	-.10674
Time on work in other terms	-.14973
No responsibility for other aspects	-.24634
Temporary Allowance	-.33475
Female	-.34515
Time spent teaching alongside colleagues	-.40806

This factor represents the most clear-cut grouping of questionnaire responses; it is dominated by the "managerial" criteria of experience, age and salary status. Salary status was selected as representative of these three for the multiple regression analysis, as the most likely to affect work duties. The less strongly loaded items (eg. Female) also appeared on other factors of the analysis, which represented aspects of working practice such as time spent on joint work. They were therefore included as separate items in the multiple regression analysis.

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