EFFECTIVE CLASSROOM PRACTICE:
A mixed-method study of influences and outcomes

Interim report submitted to the Economic and Social Research Council

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1.0 Introduction
This is the interim report for a two-year, multi-disciplinary research study that, using a mixed-method approach, aims to identify key factors that contribute to teaching for effective measurable pupil outcomes in primary and secondary phases of schooling. The study builds on a four-year, longitudinal research project (Day et al., 2006c) into Variations in Teachers’ Work, Lives and their Effects on Pupils (VITAE). The current study extends existing datasets created as part of VITAE and includes a new observational component to investigate variations in teachers’ classroom practice, and relationships with professional life phase, identity and school context (using percentage of pupil’ free school meal eligibility as an indicator of social disadvantage, and value-added pupil attainment scores as indicators of effective teaching).

The report draws on progress made within the first year of the study (March 2006 – February 2007). It begins with the definition of effectiveness developed by VITAE and adopted by this study. This is followed by an overview of the aims and objectives of the research. The report then details Phases one and two (of four) of the project timetable. A brief description of the next two phases of the project, due to continue over the next year (March 2007 – February 2008) will conclude the report.

2.0 Defining effectiveness
In the short history of teacher and school effectiveness research, the focus has been explicitly on the impact of different policy influences and classroom practices on student outcomes (Teddlie and Stringfield, 1993; Henchey, 2001; Muijs et al., 2004; Sammons et al., 1995; James et al., 2005). Effective teachers, therefore, have been defined as those who have a positive impact on promoting pupils’ cognitive progress, as assessed through pupil assessments. Other important affective and social behaviours (including attitudes to school, learning and motivation) have been noted which show a positive relationship between classroom policies and practices and improved pupil outcomes, either in terms of cognitive progress or social/affective measures (Sammons et al., 1997). However, the ‘effectiveness’ literature does not identify what makes a teacher effective in different circumstances and at different times; nor does it examine the factors that affect the effectiveness quality of teachers, observed teaching practices and behaviours, and how these are sustained (or not sustained).
Prior to VITAE there had been no major research study which had examined the relationship between teacher effectiveness and the interplay of factors which impact on teachers’ working practices. As a result of data collected during the initial stages of the research, empirically-grounded notions of ‘relative’ and ‘relational’ effectiveness were developed as analytical tools (Day et al., 2006b). The term ‘relative’ referred to how teachers in similar school contexts, and of similar age and experience might be compared in relation to their perceived and measured¹ effectiveness, whereas the term ‘relational’ referred to how teachers might perceive themselves to be more or less effective in the classroom in relation to their past performance and according to perceived variations in effectiveness².

The term ‘effective’ in relation to this study is two-dimensional, comprising 1) the extent to which teachers believe that they are able to do the job to the best of their ability (perceived effectiveness), and 2) effectiveness measures by value-added analyses of pupil attainment and progress (relative effectiveness). In order to address these complex concepts, the study involves the collection of data via extended case studies of two samples of teachers identified as of theoretical interest from the VITAE research. One group is defined as more effective, those whose pupils have consistently performed above the expected level given their prior attainment and background, and a second group of teachers defined as typical or average effectiveness, whose pupils have consistently performed as expected given their prior attainment and background.

3.0 Aims and objectives
The overall substantive objective of the study is to extend knowledge, understanding, and outcomes of the VITAE project by embedding the understandings and insights gained regarding the relationships between the influence of personal, professional and organisational contexts, the impact of these on teachers’ sense of identity, and effectiveness in observed classroom grounded knowledge about typical/more effective teaching in terms of pupils’ value-added attainments. The study has three broad aims:

(1) To describe, analyse and explain the variation in primary and secondary school teachers’ classroom behaviours and practice using two different

¹ In terms of ‘value added’ pupil attainment scores.
² How one teacher perceives the present and how (s)he performs in relation to his/her past history.
observational instruments, detailed field notes and pupil and teachers’ perceptions, focusing on English and mathematics teaching;
(2) To explore typical and more effective classroom practice of teachers in Years 2, 6 and 9, across different school contexts, professional life phases and ages in relation to observation of practice and professional, situated and/or personal factors which are perceived to affect observed practice over time; and,
(3) To draw out implications from the findings of (1) and (2) above for policymakers concerned with raising standards, for schools and for teacher development.

Within these aims, five key questions are being addressed by the research:

- What are the factors which influence typical and more effective teachers’ classroom practices?
- What are the relationships between typical and more effective teachers’ perceived effectiveness and their classroom practice and organisation?
- What are the similarities and differences in the factors that influence classroom practice in different school phases and subjects?
- What are the relationships between observed classroom practice and policy, school context, teacher professional life phase, and professional identity?
- What are the implications of this for key stakeholders who are involved in raising standards in schools?

Through these research questions, the study builds on the concepts of relative and relational effectiveness achieved by the VITAE project. However, by adding the central observational component, teaching effectiveness and variations between teachers in specific aspects of their classroom teaching, and pupils’ responses to this, can be described and understood within a more holistic context. In addition to the wealth of rich, descriptive and explanatory data to be collected and analysed, statistical analysis techniques will be used to measure and test a number of important features of effective teaching behaviours identified in the school and teacher effectiveness literature (Teddle, 1994, Muijs and Reynolds, 2005). In this way, the research will make substantive theoretical and methodological contributions to the understanding and future study of teacher effectiveness and generate new knowledge which will have implications for policy, classroom practice and teacher development.

4
4.0 Research design

The study involves four distinctive phases (Table 1). This report deals with the first two phases of the study.

Table 1: Timetable for study

<table>
<thead>
<tr>
<th>Phase</th>
<th>Main activities</th>
<th>Time</th>
</tr>
</thead>
</table>
| Phase One | Recruitment of staff  
Review of the relevant literature  
Identification of two sample of teachers – more effective & typical  
Meta-analysis of VITAE data for sample  
Recruitment of schools & teachers  
Design of research instruments  
Final piloting of research instruments | March 2006 – September 2006 |
| Phase Two | Round One data collection in schools with 80 teachers  
Interim report | October 2006 – March 2007 |
| Phase Three | Analysis of Round One data  
Round Two data collection in schools with 80 teachers  
Analysis of Round Two data | April 2007 – September 2007 |
| Phase Four | Integration of Round One and Two data  
Final report | October 2007 – February 2008 |

4.1 Phase One

The first phase (March 2006 – September 2006) of the study began with the recruitment of staff. The process was successful in appointing the two research fellows (1xF-T, 1x0.5FTE) and project administrator (0.5FTE) costed for in the project bid, bringing the team to its full complement of six members. The first task was a preliminary review of the literature relevant to the aims and objectives of the research (Day et al., 2006a). As an ongoing part of the project, the team is extending the review with newly documented research that has theoretical, methodological or empirical relevance.

4.1.1 Sampling and recruitment of participants

The team identified two samples of teachers from the VITAE database; those whose pupils had consistently achieved above the expected level for their classes, and those whose pupils had consistently achieved as expected. A meta-analysis was conducted on data (questionnaire, interview, narrative, pupil attitudes, value-added) collected between 2001-2005 as part of the VITAE Project to provide an audit trail for the effectiveness record on which the teachers were selected. These two samples were based on an examination of three key characteristics. Firstly, the individual teacher profiles and cameos created as a result of the VITAE research; secondly teachers’ relative effectiveness (as defined by their pupil value-added data over three years); and, finally pupil attitudinal data. The sample was also chosen to represent a range
of professional life phases and age groups, teacher identities, and socio-economic contexts (from high through to low quartiles based on free school meal indicator).

A long list of potential participant teachers was drawn up with the intention of achieving a sample of forty primary (Year 2 and 6) teachers and 40 secondary (Year 9) teachers of English and mathematics. The team made every effort to recruit the target sample of 80 teachers from the VITAÉ sample, but the initial achieved sample was only 42 teachers\(^3\). Furthermore, due to workload commitments, 13 of these teachers withdrew from the study. This left a shortfall in the sample of 52 teachers. The original rational, outlined in the project bid, for having a sample size of 80 teachers was that it would allow the sample to be broadly representative, with enough schools in each year/subject group category to allow both {	extit{within-}} and {	extit{across-category}} conclusions to be drawn. The team, therefore, felt it vital to the study to achieve the target sample of 80 teachers, and sought other ways of recruiting teachers for whom they had effectiveness data.

Fortunately, the team was able to draw on an extensive list of successful and improving schools in England, supplied by the Fischer Family Trust (FFT) for Key Stage 2 and Key Stage 3. By identifying a sample of effective primary and secondary schools, based on three years of recent data (2003-2005), a further 55 teachers were recruited from this sample, giving a final sample size of 83 teachers (Table 2). Schools from which teachers were recruited had all received good or excellent Ofsted reports and had been recommended by their headteachers (and Heads of Department in secondary schools) as teachers who were effective classroom practitioners.

<table>
<thead>
<tr>
<th>Table 2: Teacher sample by school phase - INSERT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of teachers</td>
</tr>
<tr>
<td>83 (in 49 schools)</td>
</tr>
<tr>
<td>Primary teachers</td>
</tr>
<tr>
<td>N = 45</td>
</tr>
<tr>
<td>Year 2</td>
</tr>
<tr>
<td>N = 23</td>
</tr>
<tr>
<td>Year 6</td>
</tr>
<tr>
<td>N = 22</td>
</tr>
<tr>
<td>Secondary teachers</td>
</tr>
<tr>
<td>N = 38</td>
</tr>
<tr>
<td>Maths</td>
</tr>
<tr>
<td>N = 17</td>
</tr>
<tr>
<td>English</td>
</tr>
<tr>
<td>N = 21</td>
</tr>
</tbody>
</table>

Table 2 shows that the problems experienced in the recruitment of participants did not prevent the team fulfilling the aims of the original proposal by recruiting teachers from geographical clusters of schools to represent different contexts (urban, suburban, rural, etc) and levels of disadvantage.

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\(^3\) Reasons for non-participation included changes in year group taught, moving to a new school, change of career, increased workload, retirement, and family and health issues.
4.1.2 Instrument development and piloting

Instruments for use in Phase Two (see below) were developed by the team, including a teacher questionnaire, pre- and post-observation interview schedules, and a pupil focus group interview. All instruments, however, centred on the observations of classroom activity, and the project has provided the team with a unique opportunity to test the applicability and validity of two new observational instruments for the study of classroom practice.

The first, used during Phase Two of the research, is the International System of Teacher Observation and Feedback (ISTOF), developed as part of a collaborative, cross-national research initiative by the Methodology of Research in Effectiveness (MORE) group of the International Congress for School Effectiveness and Improvement (ICSEI) involving 21 countries. This instrument was derived from reviews of school and teacher effectiveness research and expert opinion from a range of countries (using the Delfic method). The second observation instrument, for use during Phase Three of the study, was developed in collaboration between different inspection systems (Dutch and UK) and was also based on expert opinion, in the form of professional judgement (Van de Grift et al., 2004).

Both of these instruments require the individual researcher to rate specific elements of the observed lesson. This activity is carried out immediately after the observation has taken place rather than during the lesson in order that the researcher can focus on taking detailed field notes. These field notes are used to triangulate evidence from ISTOF and the pre- and post-observation interviews with teachers.

The first stage of piloting involved researchers watching videoed lessons, to enable them to practice and refine the detailed field notes to be taken and to train in the use of the ISTOF observation schedule. This was followed by preliminary piloting in two primary and two secondary schools, after which the team met to discuss issues that had arisen. Having made revisions to all instruments, a further stage of piloting was conducted in 4 primary and 2 secondary schools with 4 Yr 2, 4 Yr 6 and 4 Yr 9 teachers. This stage of piloting was conducted in pairs in order to seek agreement (for field notes and the ISTOF schedule) between sites for individual researchers, as well as between researchers for a singular site.

4.2 Phase Two

This phase has involved the first round of data collection in schools which began in October 2006 (Table 3).
Table 3: Summary of data collection methods – Round One

<table>
<thead>
<tr>
<th>Focus</th>
<th>Data collection activity</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers</td>
<td>Initial teacher questionnaire</td>
<td>45 primary Yr 2 &amp; 6 teachers, 38 secondary Yr 9 maths &amp; English teachers = 83 teachers</td>
</tr>
<tr>
<td></td>
<td>Pre-observation interview</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Classroom observation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- field notes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- ISTOF observation schedule</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post-observation interview</td>
<td></td>
</tr>
<tr>
<td>School leaders</td>
<td>Interview</td>
<td>1 school leader in each of the participating schools = 49 school leaders</td>
</tr>
<tr>
<td>Pupils</td>
<td>Pupil focus group</td>
<td>Approx 4-6 pupils from each of the Yr 2, 6 and Yr 9 classes of participating teachers</td>
</tr>
</tbody>
</table>

Mixed methods designs offer significant advantages through the use of case studies and ‘qualitative’ data gathering, and analysis with ‘quantitative’ value-added approaches to measure effectiveness. By including the collection and analysis of observational data it will be possible to get below the surface of general effectiveness characteristics to reveal the interactions between classroom practice, effectiveness (relative and relational), teacher identity, professional life phase and school context.

4.2.1 Data collection with teachers

The initial questionnaire has been administered to all teachers involved in the study. The instrument draws on previous classroom effectiveness research literature (e.g. Teddlie and Reynolds, 2000, Sammons et al, 2003), and focuses on a number of aspects of classroom practice, resources and class composition. In addition, its aim is also to collect background details regarding years teaching in current school, additional responsibilities, etc.

The pre-observation interview with teachers explored issues such as planning, differentiation and inclusion, classroom management, teaching skills, assessment, and role as classroom teacher. It comprised a series of generic questions drawn from classroom effectiveness research literature (e.g. Macbeath and Mortimore, 2001; Muijs and Reynolds, 2001; Muijs et al, 2005) alongside a set of questions designed for the project, based on the longitudinal data already collected during VITAE. This instrument has been used in conjunction with a post-observation interview which has allowed the in-depth probing of issues, this time relating to the observed teaching session and its purposes, as well as following up important data strands empirically grounded in the VITAE data such as teacher effectiveness, leadership issues, teacher identity, professional life phase and teacher efficacy. The interview also provided
teachers with an opportunity to reflect on their role which has been reported as a popular approach amongst teachers involved in the research.

Although the strength of the study is in its mixed-method design, the central method of data collection used has been the classroom observation. During Phase Two of the project, the team used the ISTOF observation schedule which explored: assessment and evaluation, differentiation and inclusion, clarity of instruction, instructional skills, promotion of active learning and development of metacognitive skills, classroom climate, and classroom management. Researchers also maintained detailed field notes which are being coded, classified and tagged to link with the numeric observation records.

4.2.2 Data collection with school leaders
The final element of Phase Two data collection was a semi-structured interview with school leaders. In the majority of cases, this was carried out with the headteacher, all of whom wanted to express their support for the project. The main purpose of this interview was to gather a further perspective on the practice and effectiveness of participating teachers, and the role of school leadership. In addition, the instrument was designed to collect information relating to pupil intake, behaviour, parental involvement, and school culture, in addition to data relating to the participating teachers, their classroom practices, relationships with pupils, professional development needs and effectiveness.

4.2.3 Data collection with pupils
Although not scheduled until Round Two data collection, the team took the opportunity to talk to small groups of pupils after each of the classroom observation sessions. The focus group interview centred on pupils’ experiences and perceptions of the observed lesson.

5.0 Next steps
5.1 Phase Three
This phase will begin with the analysis of Round One data collected from teachers and school leaders. This analysis will lead directly into the development of instruments for the Round Two school-based visits.
5.1.1 Analysis of Round One data
All interview data has been digitally recorded, saved onto sound files and subsequently saved as anonymised, uniquely identified files onto a PC. These files are in the process of being transcribed and field notes are being written up by individual researchers.

‘NVivo’, computer-assisted qualitative data analysis software (CAQDAS), which provided a powerful tool for the analysis and synthesis of the different kinds of data collected for VITAE, will be used in this study to integrate the qualitative and quantitative strands through the use of key attributes at an individual teacher level. These attributes will be developed primarily from the initial teacher questionnaire and will include the characteristics of the school in which the teacher works, professional life phase, post of responsibility and gender. Following analysis of teachers’ observational data, a number of summary measures will be added to the NVivo database in the form of further attributes for the teachers in the sample.

Qualitative data generated via interviews with and observations of teachers, and interviews with school leaders and pupils will be subjected to a first level, ‘grounded’ analysis by members of the research team and subsequently to a thematic analysis using ‘NVivo’. In addition, basic statistical techniques will be adopted in order to explore the frequencies of different aspects of teaching behaviours, practice and contextual features, such as classroom resources, organisation and teacher-pupil interactions.

5.1.2 Instrument development and piloting
Instruments for use in Phase Three (see below) will be developed during this phase. Having built relationships with the teachers and headteachers who participated in the first round of piloting, the team will be returning to the same primary and secondary schools in order to pilot Round Two instruments of data collection. As in Phase Two, there will be two stages to the piloting, allowing the team to discuss revisions to be made.

5.1.3 Round Two data collection
Round Two of data collection will begin in May 2007 and will involve collecting data from teachers and pupils (Table 4). Data collection with teachers will follow a similar format to Round One, involving a pre-observation interview and a classroom observation.

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* Storage of data is overseen by the Project Administrator.
There are, however, two distinct differences. The first is that a new observation schedule (Van de Grift et al, 2004) will be used alongside detailed field notes. In addition to items included on the first round schedule (ISTOF), the instrument includes items such as teacher knowledge, teacher professionalism and reflectivity, and principles of constructivism in teaching.

The second difference is in the post-observation instrument, which will include techniques commonly used within repertory grid interviewing to provide triangulation (Fransella et al, 2003) through exploring personal constructs related to teaching.

Table 4: Summary of data collection methods – Round Two

<table>
<thead>
<tr>
<th>Focus</th>
<th>Data collection activity</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers</td>
<td>Pre-observation interview</td>
<td>45 primary Yr 2 &amp; 6 teachers, 38 secondary Yr 9 maths &amp; English teachers = 83 teachers</td>
</tr>
<tr>
<td></td>
<td>Classroom observation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post-observation (incl repertory grid)</td>
<td></td>
</tr>
<tr>
<td>Pupils</td>
<td>Pupil attitudinal survey</td>
<td>Approx 30 pupils in each of the Yr 2, 6 and Yr 9 classes of participating teachers = 690 Yr 2, 660 Yr 6 and 1140 Yr 9 pupils</td>
</tr>
<tr>
<td></td>
<td>Pupil focus group</td>
<td>Approx 4-6 pupils from each of the Yr 2, 6 and Yr 9 classes of participating teachers</td>
</tr>
</tbody>
</table>

Finally, Round Two will involve an extended pupil element. The pupil attitudinal questionnaire will be conducted with approximately 30 pupils in each class or teaching group involved in the study. It focuses upon the social and affective pupil outcomes, the relationships between effective teachers and pupils’ perceptions of the class and school, and provides further indicators of classroom practice to compare with observational measures. There will also be a second pupil focus group which will follow-up, in more detail, information gleaned from the attitudinal questionnaire about pupils’ experiences and perceptions.

5.2 Phase Four

5.2.1 Integration of Round One and Two data

Having carried out a first stage analysis on Round Two data (as with Round One), the team will conduct a full, integrated analysis on the combined datasets. The design of the study will allow analysis of the effects of factors at a number of levels, for example school factors (school size, level of social disadvantage, etc), pupil factors (class composition, intake, etc), and individual teacher factors (motivation, gender, age, etc). In addition to standard forms of parametric and non-parametric regression
analysis, confirmatory factor analysis and structural equation modelling will be used to analyse underlying dimensions of teachers’ observed classroom practice. This approach to analysis will be coupled with the use of teacher ‘cameos’ which will encapsulate the story teachers have told us during the project, including key contexts, characteristics and emergent issues. In this way the quality of teaching will be associated with qualitative and quantitative data, the former locating the teaching in personal, situational and professional contexts, and the latter locating teaching in behaviours and pupils’ socio-economic contexts. Bringing these two together in these ways is unique in ‘effectiveness’ classroom research.

In order to maximise the analyses possibilities some additional data has been collected on key attributes identified as important in teachers’ lives and work in the VITAE study from all teachers in this project. The common datasets for all 83 teachers in the sample will form the main subjects for data analysis. However, for the subgroup of original VITAE teachers, some further analyses will be conducted to link with the original VITAE datasets.

The range of data types and the sample size will allow a powerful variety of data analyses that can be applied progressively over the research period, concluding in fully integrated datasets which will feed into the responses to the project’s research questions. The availability of varying forms of data will amongst other things allow strong grounding for the reliability and validity of the study, not least through the comparison and illumination of general survey trends with the in-depth extended case studies, in addition to comparison and triangulation amongst the various data sources available (observation, survey and interviews) from different groups of informants.

6.0 Communication strategy and planned outputs

The team is committed to disseminating outputs from this study as widely as possible and will be taking advantage of links already established with the Teaching and Learning Research Project (TLRP). So far, details of the project have been registered on the CERUK database, and a paper was given at the University of Nottingham Staff Research Conference in July 2006, which focused on the development of the proposal for the project and outlined the methodological design of the study. In addition, an abstract giving an overview of the project design, focusing on the mixed-method approach to the study of effective classroom practice, has been accepted for

5 ‘Cameos’ were initially developed for the VITAE study.
6 VITAE is an Associate Project of the TLRP.
presentation at the annual meeting of the British Research Association (BERA, London, 2007).

During the coming year, the team will be presenting a further paper at the University of Nottingham Staff Research Conference in July 2007, and submitting papers for presentation at the annual meetings of the American Educational Research Association (AERA) in April 2008, the British Educational Research Association (BERA) in September 2008, and the European Conference of Educational Research (ECER) in September 2008. The team is in the process of writing its first project paper for a peer-reviewed academic journal. The overview of the research design will be submitted to the *International Journal of Social Research Methodology*. We are also planning a paper on emerging themes (journal not yet decided) to be submitted within the project duration.

In addition to articles in academic journals, the team is planning a variety of stakeholder-oriented outputs. These include appropriate articles prepared for professional journals, as well as feedback to participant teachers after the second round of school-based visits, relating to effective practice in different classroom settings. The structure of this approach to feedback has been piloted by the VITAE project and has proved successful in communicating the team’s commitment to engage with participants. The ISTOF instrument has been designed to assist in providing feedback and this will facilitate this aspect of the study. As part of the recruitment strategy, we produced the first of two project brochures which are posted to all participant teachers and headteachers.
References


