1. Introduction

Mixed methods are becoming increasingly significant in educational research. The case has been made that combining quantitative and qualitative methods in a single study can help elucidate various aspects of the phenomenon under investigation, providing a more holistic understanding of it, and resulting in better-informed education policies (Davies, 2000; Steckler et al., 1992). This is particularly true when studying complex social phenomena, such as, in the case of the study presented in this paper, the attitudes and behavioural reactions of teachers when confronted with an educational reform.

This paper reports on a large-scale longitudinal study that examines how a national reform, which has recently been introduced in England in the field of adult literacy, language (ESOL), and numeracy - known as Skills for Life strategy - is affecting teachers. The paper will focus on presenting how structured interviews and questionnaires are combined with focus groups and semi-structured interviews, in a mixed-methods design, to help answer one of the main research questions: How do teachers feel about or value the process of change? In other words, what are their attitudes towards the new policy initiatives introduced in the sector? How do these attitudes change over time, what are their underlying factors, and how do they affect teaching practice? Having information about teachers’ attitudes towards the new strategy, and about the factors shaping these attitudes, will allow proper measures to be taken to reduce resistance to change, increase teachers’ personal commitment to

1ESOL stands for “English for Speakers of Other Languages”.

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the goals of the strategy, and ultimately, make implementation easier and more effective.

2. Skills for Life and the Longitudinal Study of Teachers

The Skills for Life strategy was launched in England, in March 2001, with the intention of raising the quality of teaching and learning in the areas of adult literacy, ESOL, and numeracy. The target has been to significantly improve the literacy, language, and numeracy skills of 750,000 adults by 2004 and those of 1.5 million adults by 2007. Better skills in these areas are expected to increase the employment opportunities of individuals, improve the quality of their lives, promote social integration, and boost the country’s economy.

To achieve the above aims, a new teaching and learning infrastructure has been introduced in the sector, the core elements of which include: new national standards and tests; new core curricula; new learning materials and teaching guides; initial and diagnostic assessment tools; a new qualifications framework for teachers and those who support teaching; new programmes of Initial Teacher Education (ITE) and Continuing Professional Development (CPD); a new quality assurance framework; the development of partnerships between organisations; and the use of Information and Communications Technology (ICT) in the teaching and learning process.

Within the framework of Skills for Life, teachers are considered as the key, frontline people to deliver the new learning infrastructure at both organisational and classroom levels. Therefore, their practices can be expected to determine the success of the strategy in promoting learner progress and achievement. The Longitudinal Study of Teachers is designed to evaluate how the Skills for Life strategy is affecting teachers. The study is designed and carried out by the National Research and Development Centre for Adult Literacy and Numeracy (NRDC) and it will be following a cohort of 1,500 teachers over a three-year period2.

2The first phase of the fieldwork is due to start in January 2004. Although the Skills for Life strategy was launched approximately three years before this date, the new teaching and learning infrastructure has only gradually been introduced in the sector and many of its elements are still to be developed. Therefore, this is considered to be an appropriate time for starting this evaluation study.
The Longitudinal Study of Teachers will work in tandem with the Longitudinal Study of Learners that aims to examine the impact of the Skills for Life strategy on those who attend the new learning programmes. Each year, a sample of 3,000 learners being taught by the professionals followed in the Longitudinal Study of Teachers will be studied (i.e. two learners per teacher), using literacy and numeracy tests, attitude questionnaires, and interviews. The data from the two studies will be combined to explore the link between teachers’ attitudes and practice on the one hand, and learner outcomes on the other. Learner outcomes will include, among other things, learner motivation, retention, and achievement.

As the focus of this paper is on the Longitudinal Study of Teachers, the next section presents an overview of its aims and conceptual framework.

3. Aims of the Study and Conceptual Framework

There is little prior research on the population of teachers in the field of adult literacy, ESOL and numeracy in England. A recent study carried out by the NRDC provides useful information on the demographics, qualifications, sector of employment, working hours, and contract details of a large sample of teachers participating in a national training programme offered as part of the Skills for Life strategy (Casey, 2003). The sample of this study consisted of 1,005 adult literacy and numeracy teachers, as well as 5,073 ESOL teachers. Although the study provides a useful insight into the general profile of the teaching force in this sector, the range of the data that have been collected is limited. Another study carried out by Brooks et al. (2000) gives more comprehensive information on the population of adult literacy - but not ESOL or numeracy – teachers, by gathering additional data on their work environment (e.g. support from peers and managers, availability of resources), their teaching practice, and the progress of their learners during an adult literacy course. However, this study uses a rather small sample of teachers (177), which is not representative of the whole population of adult literacy teachers in England - see Hamilton (2001) for a critique of this study.

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3 Again, this study is carried out by the NRDC.

4 A new sample of learners will be drawn from the teachers’ groups/classes each year.
Given this dearth of empirical research, the Longitudinal Study of Teachers has assumed quite broad aims and is largely exploratory. It gathers information on teachers’ demographics, qualifications, prior experience, employment details (e.g. salary, type of contract), professional development activities, training needs, organisational/work environment, learner characteristics, reasons for entering the profession, job satisfaction, future plans, and career aspirations. Keeping to the purpose of this paper, we will focus on one aspect of this study, which is encapsulated in the following questions:

1. What are the teachers’ attitudes towards the Skills for Life strategy? What aspects of the new strategy do they perceive as the most positive or most negative?

2. What are the factors shaping their attitudes?

3. How do these attitudes change over time? What are the factors explaining such changes?

4. How do teachers’ attitudes affect their practice and subsequent learner outcomes?

An attitude could be defined as a general and enduring feeling or evaluation – positive or negative – about some person, object or issue (Petty & Cacioppo, 1981). A large body of empirical studies from all disciplines of the social sciences provide evidence of a causal link between people's attitudes and behaviour (see, for example, Prosser & Walley, 2003; Zacharia, 2003; Hini et al., 1995).

In the field of education, it is believed that the successful implementation of any major reform is largely dependent on educators being positive about it. Sanders (1999) observes that teachers often experience powerful emotional responses when faced with an external request for change and their resistance to this change can be a serious obstacle to effective implementation. On these grounds, researchers have tried to identify the factors that shape teachers’ attitudes to educational change. Studies carried out in schools suggest two sets of factors that seem to be important predictors of attitudes:
1. Individual teacher characteristics and prior experiences

2. Organisational (school) characteristics

The first set of factors includes characteristics, such as gender, age, ethnicity, qualifications, and years of experience. For example, in a study carried out by Farkas & Johnson (2003) in the United States, teachers’ attitudes towards a number of reform plans varied according to a teacher’s length of service, with new teachers being more positive than veteran teachers. Some evidence also exists on a difference in attitudes between teachers with a different training background (Tsitouridou & Vryzas, 2003; Avramidis et al., 2000). One would also expect that teachers who have experienced highly successful reform implementation in the past would be more receptive to educational change than teachers who lack positive experiences or have had bad experiences.

The second set of factors includes the characteristics of the implementation context, that is, the features of the school, college or other organisation where the teacher works. A number of studies suggest that teachers are more motivated to take action and put a reform into practice, if their organisation is characterised by a shared vision, collaboration between staff members, management and administrative support, shared decision-making, adequate resources, and training opportunities (Heck, 2001; Geijsel et al., 2001).

For the purposes of this study, a conceptual framework has been developed, drawing on the above body of research. This conceptual framework describes the multitude of factors affecting teachers’ attitudes towards the new Skills for Life strategy, as well as the subsequent effect of these attitudes on teacher practice, and ultimately, on learner outcomes. This is diagrammatically presented in Figure 1.

More specifically, the Figure portrays teachers’ attitudes as affected most directly by their personal characteristics, previous experiences, and the organisational environment in which they work (see big arrows pointing upwards). In turn, teachers’ attitudes have a direct effect on their classroom practice and their use of the new learning infrastructure. Finally, teacher practice impacts upon learner outcomes, such as motivation, retention, and achievement. It could be argued that individual teacher and organisational characteristics also have a direct effect on classroom
practice (indicated by the dotted arrows), over and above their indirect effect through attitudes.

**Figure 1:** A conceptual framework of teachers’ attitudes towards the Skills for Life strategy and their impact on effective implementation.

Furthermore, the causal relationships implied by the big arrows in Figure 1 could also be reversed as shown by the dotted arrows pointing downwards. For example, it would be just as logical to argue that teachers' attitudes towards Skills for Life are caused by their teaching behaviour, as it is to argue that their teaching behaviour is caused by their attitudes (this would be congruent with the Cognitive Dissonance
Theory, see Festinger, 1957). For the purposes of this paper, however, the description of the model is simplified to facilitate its operationalisation.

The hypotheses inherent in the above conceptual framework are empirically tested using both quantitative and qualitative research evidence. This mixed-methods approach is described and justified in the next section.


The research sample consists of 1,500 teachers responsible for the teaching of adult literacy, ESOL and/or numeracy in England. This sample is geographically stratified across regions and represents all different types of learning providers in post-16 education and training, such as colleges, community and voluntary organisations, private training providers, Learndirect (ICT) centres, and prisons. The same cohort of teachers will be followed over a three-year period (starting in January 2004), irrespective of whether they change organisation or move out of the profession altogether.

A mixed-methods research approach has been adopted, which draws on both quantitative and qualitative evidence. The quantitative strand of the study includes the use of the following data-collection instruments:

- A structured interview schedule for teachers.
- A closed (self-completion) questionnaire for the senior managers of the organisations where the teachers work.

A main reason for developing a questionnaire for senior managers has been to gather information on the teachers' work environment from the managers' point of view, and to explore managers' opinions about the group of teachers under study. On the other hand, some organisational data of interest – e.g. sources and levels of funding, average teacher salary across subjects, staff turnover, or learner retention and achievement rates - would be easier to collect directly from managers as teachers are unlikely to have access to this kind of information. Secondary data sources will also be used, such as published inspection reports for the organisations under study. It is envisaged that gathering data from a wide range of sources about
the same organisation will help us better understand the teachers’ work lives in their particular contexts.

The structured interviews with teachers will take place at three points in time - i.e. January 2004, 2005, and 2006. The managers’ questionnaire will also be administered during the same time periods. In the following paragraphs, we describe the methodological approach followed to explore the teachers’ attitudes towards the *Skills for Life* strategy, which constitutes one of the primary aims of this study.

It was initially planned to measure teachers’ attitudes using standard quantitative techniques. For this purpose, a Likert-scale instrument was developed and incorporated into the structured interview schedule. In the initial stage of developing this instrument, an open-ended, and largely exploratory, questionnaire was sent out to teachers of adult literacy, ESOL, and numeracy in all geographical regions of the country, using a snowball sampling approach. Teachers were asked to provide verbatim descriptions of their views on various aspects of the *Skills for Life* strategy. Questions were phrased in a way that elicited both positive and negative views. Some data were also collected on teachers’ gender, age, subject area, and type of employing organisation. A total of 99 questionnaires were returned. The analysis of the data on teacher characteristics showed that this sample adequately represented males and females, the three subject areas (literacy/ESOL/numeracy), the various age groups, and the different types of organisations in the sector.

Based on the teachers’ verbatim responses to this questionnaire, an attitude inventory was developed comprising 131 opinion items, each of which was rated on a five-point response scale of agreement/disagreement. This inventory was then piloted with a sample of 103 teachers, again using a snowball sampling approach. A principal factoring solution was applied to the attitude data collected, followed by Varimax rotation (means were substituted for missing values). A total of 99 items from the original scale were entered in this analysis. Items with low variation or highly skewed distributions were left out. Six factors were extracted that accounted for 37% of the total variation in the data. Each of the six factors was treated as a separate uni-dimensional subscale. These are presented in Table 1.
Table 1

Six attitude subscales for measuring teachers’ response to *Skills for Life*

<table>
<thead>
<tr>
<th>General, sector-wide impact of <em>Skills for Life</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>• <em>Skills for Life</em> initiatives have enhanced the image of teachers as professionals (.645)</td>
</tr>
<tr>
<td>• <em>Skills for Life</em> initiatives have enabled providers to attract more learners from hard-to-reach social groups (.638)</td>
</tr>
</tbody>
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<thead>
<tr>
<th>Curriculum and instruction</th>
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<tbody>
<tr>
<td>• The <em>Skills for Life</em> curricula provide a useful framework for designing lessons appropriate to the needs of learners (.656)</td>
</tr>
<tr>
<td>• Having to map everything to the curriculum constrains my teaching ideas (.630)</td>
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<thead>
<tr>
<th>Time-workload</th>
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<tbody>
<tr>
<td>• The hours I now have to work are excessive (.669)</td>
</tr>
<tr>
<td>• It worries me that rushing in new initiatives will only pay lip service to real change (.494)</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Teacher qualification requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The level of subject knowledge required of teachers to achieve a new Level 4 qualification is over the top (.643)</td>
</tr>
<tr>
<td>• Teachers with a new Level 4 qualification will be better prepared to deal with the realities of teaching adults with poor literacy, ESOL, or numeracy skills (.600)</td>
</tr>
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<tr>
<th>National tests – learner assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>• National tests deter adults from enrolling into programmes (.671)</td>
</tr>
<tr>
<td>• Standardised tests motivate learners to attend and study (.604)</td>
</tr>
</tbody>
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<table>
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<tr>
<th>Support and resources</th>
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</thead>
<tbody>
<tr>
<td>• The range of learning resources in this organisation facilitates differentiated teaching (.549)</td>
</tr>
<tr>
<td>• One thing I do not like in my current job is the lack of support from managers (.547)</td>
</tr>
</tbody>
</table>

Note: 1. Sample items are listed for each subscale
   2. Numbers in parentheses are factor loadings

An item analysis of reliability was carried out for each of these subscales, using items with factor loadings equal to or higher than 0.45. This analytical process reduced the number of items to four or five per subscale, all of which summed up to a total of 27 items. Alpha coefficients of reliability across subscales ranged from 0.68 to 0.81.

The above-described Likert-scale instrument will enable us to gather reliable data on teachers’ attitudes towards the new strategy. Most importantly, these data will be collected on a large scale, which will allow for generalisations, something difficult to achieve using qualitative methods alone. The attitude data will be analysed in relation to data on individual teacher characteristics and teachers’ work environment,

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5 A possible weakness in the process of developing this Likert-scale instrument is the relatively small number of cases (103) as compared to the total number of items that were factor-analysed (99). Unfortunately, due to time constraints, we were unable to send out more questionnaires, and therefore, we had to carry out the analysis with this relatively small number of cases. However, the results obtained from the factor analysis, and the item analysis of reliability, are considered satisfactory.
using advanced statistical techniques. This analytical process will allow us to identify the determinants of teachers’ attitudes towards the new policy initiatives, as well as their effect on classroom practice and subsequent learner outcomes. Additionally, the data gathered in the follow-up years of the study will produce evidence of attitude change among teachers over time, and the factors that account for such change. It will also reveal the pattern of this change, that is, whether it is linear and progressive or if it fluctuates between years. Finally, this longitudinal data will enable us to make inferences regarding the direction of possible causal relationships between attitudes and teaching behaviour - i.e. if attitudes precede and cause teaching behaviour and outcomes, or whether the reverse relationship exists.

Even though the above process of attitude measurement will produce valuable research evidence for those developing teacher training programmes and those who manage the learning provision in the sector, previous studies suggest that important aspects of the complex interrelationships depicted in Figure 1 would remain hidden if a qualitative strand was not incorporated in the study. More specifically, qualitative research would provide rich descriptive accounts of teachers’ lived experiences of the new *Skills for Life* strategy which, among other things, would help interpret the quantitative results or even identify new research questions not previously considered (Hudson, 2003; Flores & Alonso, 1995).

Therefore, it was decided to incorporate a small number of focus groups and semi-structured interviews with teachers and managers in the longitudinal design. These will take place in the summer/autumn each year following the quantitative strand in January. It is expected that this small-scale qualitative research will add to the study in five critical ways.

First, it will allow an in-depth exploration of teachers’ views and opinions about what works well in the new *Skills for Life* infrastructure, what needs to be changed or adjusted, and the reasons underlying their judgments. Such rich and precise data will constitute invaluable feedback for those developing various elements of the new learning infrastructure, such as curriculum content, learning materials, or teacher training programmes.

Second, the qualitative data generated through this small-scale investigation will help identify the reasons explaining the statistical relationships between variables in the research model which will be identified as a result of the quantitative data analysis. For example, if significant differences exist between the attitudes of
teachers working in different types of organisations, even after controlling for individual teacher and organisational characteristics, a possible explanation could then lie in the very culture that characterises each of these different settings. Such cultural influences could only be unveiled through a qualitative research approach.

Third, one should always bear in mind that teachers’ pedagogy and instructional approaches are often driven by deeply held beliefs and philosophical assumptions about the fundamental purposes of education (Davies & Bynner, 2000). External reforms often place requests upon teachers to change their teaching practices in a way that comes into direct conflict with these belief systems, resulting in negative feelings and strong resistance. It is, therefore, important for those managing the delivery of the new learning infrastructure to be aware of such underlying forces of teachers’ expressed attitudes and behaviour, which are often hidden at the level of the unconscious. Such belief systems are difficult to unfold using classic quantitative techniques, and therefore, a qualitative approach is deemed most appropriate.

Fourth, teachers’ descriptive accounts of their lived experiences will point out useful strategies that some of them might use to cope with the increased demands created by the new policy initiatives. For example, it is likely that some teachers have discovered effective ways of dealing with increased administrative workloads, not necessarily considered by others. Likewise, some managers may have found good ways of dealing with particularly difficult teachers and reducing resistance to change within their organisations. In this sense, the qualitative strand of the study will also contribute to the identification and dissemination of good practice.

Fifth, a qualitative investigation will help identify new research questions not previously taken into account, by drawing on the practitioners’ views of what is being studied. It is believed that this large-scale longitudinal survey will be a unique - and perhaps the only - opportunity for many practitioners in the field to openly express their views and to be heard.

As already noted, two different methods of data-collection will be used in the qualitative strand of the study. These include focus groups and one-to-one, semi-structured, interviews. Focus groups have the advantage of generating lively discussions that activate participants’ memories and experiences, reveal disagreements, oblige participants to look for arguments to support unreasoned perceptions or feelings, make them conscious of latent opinions, and oblige them to question themes ignored until that moment. The produced data are real because the
participants reciprocally influence one another in the same way as happens in real life. However, there is always a risk that the views of some of the participants will be invalidated during the discussion, because of others’ protagonism. Additionally, due to the respondents’ lack of anonymity, some of them may feel intimidated and avoid openly expressing their thoughts (Flores & Alonso, 1995). To overcome these limitations, a number of one-to-one, semi-structured, interviews will also be used in the study.

The individuals who will participate in the qualitative strand will be selected following a cluster analysis of the quantitative data gathered each year. This kind of analysis will help identify subgroups (clusters) of teachers and managers with similar characteristics. In the case of teachers, for example, these characteristics could be their attitudes towards the new strategy, their teaching behaviour or a combination of the two. In the case of managers, the classification criterion could be their perceptions of teacher quality and recruitment difficulties in their organisations. A number of individuals will then be selected from each identified subgroup and invited to participate in focus groups or one-to-one interviews to further explore the factors underlying their attitudes, perceptions or behaviours. Small thematic guides will steer both focus group discussions and interviews.

Prior to closing this section, it is worth noting that a number of classroom observations could prove beneficial as an additional method of collecting data on the instructional practice of teachers who fall into different subgroups, as well as on the social interactions that take place during their sessions. The latter might impact upon learner progress and achievement, and therefore, could explain differences in teaching effectiveness between professionals who otherwise adopt similar instructional approaches.

5. Conclusion

This paper presented how quantitative and qualitative research methods can be combined to examine teachers’ attitudes towards the new Skills for Life strategy in England. The quantitative strand of this mixed-methods design will enable us to use

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6 Cluster analysis is a statistical classification procedure that allows the researcher to identify relatively homogeneous subgroups of people from a wider population, which are clearly distinguished from others in terms of some pre-specified characteristic (criterion).
a large and representative sample of teachers to identify statistical relationships between their attitudes and a number of variables measuring individual and organisational characteristics, teaching practice, and learner outcomes. On the other hand, the qualitative strand is expected to give more precise information on the views of teachers regarding particular elements of the new learning infrastructure, help interpret the statistical results of the study, and identify new research questions not previously considered.

It is believed that this study will provide important feedback for judging the overall effectiveness of the Skills for Life strategy and for improving future planning and implementation. More specifically, knowledge of the determinants of teachers’ attitudes towards the strategy will help develop, among other things, teacher-training programmes and models of organisational management that promote positive attitudes, encourage constructive feedback, and ultimately, help improve the strategy and its implementation. A number of intervention studies could then be designed to evaluate such programmes or models. Moreover, the study will help identify teaching approaches that work best with learners and point out specific elements of the new learning infrastructure that need change or adjustment. Finally, the study will have wider applications in other educational contexts and will add to the international literature on the effects of educational reform on teachers.

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