A review of the research methodology used in a practioner action research project with particular reference to the interview methods used

Michael Thomas. Head of design and technology, Blaengwawr Comprehensive School
Howard Denton. Senior Lecturer, Loughborough University, UK

Abstract

This paper reviews an action research project at a South Wales comprehensive school. Specific consideration is given to interview methodology as it generated a significant amount of the data produced.

Initial work at the researcher's school found that a group of low ability and disaffected pupils had a very positive perception of the "relevance" of design and technology. The literature reviewed suggested pupils had a low perception of the "relevance" of design and technology. The researcher sought to understand this apparent dichotomy using action research principles and methods. Central to this was the use of interviews. Gathering data from a target group with low self-esteem and levels of literacy generates unique methodological challenges.

Key words: action research, interviewing, low ability, disaffected, Special Educational Needs,

Introduction

This paper reviews the interview methodology used to generate a significant amount of data in a long-term action research project at a South Wales comprehensive school. Curriculum and staffing constraints conspired to create a distinctive group in design and technology for low ability and disaffected pupils: a "sink" group. The groups consisted of a maximum of 16 pupils: Year 11- 11 boys and 5 girls, Year 10 – 9 boys and 5 girls.

Analysis of GCSE[1] results over a three-year period identified that this group were gaining their best results in design and technology. Ipsitive analysis, comparing the same pupils' results in different subjects, showed an average of +2.0 for the period. The Head of Design and Technology sought to identify factors that contributed to this.

This research project began with a pilot case study that focused on the perceptions of this disaffected and low ability group in relation to design and technology, school and themselves. This appeared to show that the pupils had a positive perception of design and technology at the school. A subsequent case study identified a range of factors that contributed to the development of the pupils' positive perception of the subject. Factors such as good relationships between staff and pupils, the practical nature of the subject and the use of group work emerged. Another significant factor appeared to be the issue of relevance. The pupils seemed to have a positive perception of the relevance of the subject. The final part of the research identified strategies employed to promote a positive perception of the relevance of design and technology. These strategies were then evaluated by an action research project in three different schools.

The research followed a qualitative approach. A range of data collection methods was used. These included a review of the literature, observation and the use of a Delphi group, (Toffler, 1970). However, each case study used interviewing as a primary data collection method. The group of pupils all had poor literacy skills. The act of reading questions and then writing answers, such as in a questionnaire, would be affected by their lack of literacy skills and their confidence in expressing themselves in the written word. This paper reviews the theory gleaned from the literature regarding interviewing as a data collection method and then reflects on how the researcher dealt with the practice of carrying out the interviews.

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[1]GCSE - General Certificate of Secondary Education; academic achievement qualification for 16 year olds in England, Wales and Northern Ireland

Interviewing

The central research question was: *What are the factors in design and technology lessons that contribute to disaffected and low ability pupils being engaged in learning?*

Secondary questions to be investigated were**:** *What features do staff perceive as being significant in the process of motivating disaffected and low ability pupils to engage in learning in design and technology lessons at this school?*
What are the pupils' perception of design and technology at this school?

For the reasons briefly outlined above a group of these pupils and a section of the staff were interviewed to gain their perceptions and responses to this question.

In designing these interviews the following issues were considered:

- The characteristics of a research interview
- Types of interview
- Where to interview?
- Whom to interview?
- When to interview?
- Group interviews
- The design of the interview
- Interviewing – advantages and disadvantages
- Triangulation and the use of a Delphi group
- How the data was gathered
- Semi-structured interviews
- Analysing the data
- Analysis – the Radnor method

Topic ordering
- Constructing categories
- Reading for content
- Generating coded transcripts
- Analysis to interpretation

The characteristics of a qualitative research interview

Wragg, (1984:177), describes interviewing as, "the oldest and yet sometimes the most ill-used research technique in the world". Interviewing requires skills and careful preparation. These skills, according to Woods, (1996:91), are portrayed through: Understanding and empathy, active listening – focussing –checking for accuracy, identifying clues and indicators. Kvale, (1996) sets out a list of characteristic features that should be evident in a qualitative research interview.

> The topic of the interview is the lived world of the subjects and their relation to it. The interviewer registers and interprets the meaning of what is said as well as how it is said. He/she seeks qualitative knowledge expressed in normal language and attempts to obtain open nuanced descriptions of different aspects of the subjects' worlds, (p. 30).

Bird et al, (1996:91) share the idea with other researchers - Cannell and Kahn, (1968), Radnor, (2001) – that the interview is a process that both parties must contribute to; a conversation rather than a monologue.

Kvale, (1983:174) defines the purpose of the interview: "To gather descriptions of the life world of the interviewee with respect to interpretation of the meaning of the described phenomena".

However, interviewing fellow professionals and pupils can present particular ethical problems, (Thomas and Denton, 2006). Griffiths, (1985:210), reflects on this ethical dilemma that could be particularly acute amongst teacher researchers; how could the research affect "the delicate credibility structures amongst one's colleagues?" Fraser, (1997:2) comments that the practitioner researcher has a professional obligation to the subjects of the research; in this case a responsibility to pupils' parents and staff. Pring, (1984: 10) adds the realistic factor of re-negotiation. It is not sufficient to negotiate aims and purposes at the outset, as it is possible that these will shift as the project evolves. The researcher must develop a process of feeding back data and sharing findings with the participants. However, this action carries with it the problems of participants being over sensitised. The participants can become so aware of the research that their behaviour is altered thus affecting the validity of the data gathered, (the "Hawthorn effect", Cohen 2000:116).

Comment in relation to the author's research

Background reading was essential to raise awareness of the relevant issues. The aim was to create a model of interviewing that addressed these issues and was usable. Two concerns emerged regarding relationships between the researcher, staff and pupils. Firstly, the researcher had an existing relationship with the subjects of the research. These relationships could not be reconstructed; they were already firmly established. In some cases a member of staff would be line managed by the researcher whilst in other cases the researcher could be interviewing a member of staff who is in a more senior position. The nature of these relationships may colour their responses. It was also important to be conscious of time constraints.

The group of pupils all had reading ages at least 3 years less than their chronological age as found by an NFER reading test.[2] The act of reading questions and then writing answers, such as in a questionnaire, would be affected by their lack of literacy skills and their confidence in expressing themselves in the written word. Their experiences at school of similar activities – a comprehension test, sitting an examination – could easily colour their approach to a questionnaire. Interviewing these pupils could also carry negative overtones. The pupils could have perceived it as a cross-examination exercise and needed to be reassured. Woods, (1996:90) points to the quality of the interviewer and interviewee relationship as being vital in the data collection process.

Types of interview

Cohen and Manion, (1980:309-10) describe four types of interview. A *structured interview,* in which the content and procedures are organised in advance, is characterised by being a closed situation. In contrast the, *unstructured interview* is an open situation having greater flexibility and freedom. The *non-directive interview* – derives from the therapeutic interview…the respondent expresses his subjective feelings as spontaneously as possible. Finally, the *focussed interview* – focuses on the respondent's subjective response based on a previous interview that has been analysed by the interviewer prior to the interview. To this list Watts and Ebbutt, (1987) add the *group interview*; and*,* (Cohen et al 2000:245) the *semi-structured interview*. The semi-structured interview emerged as a key tool in the research reported here and is evaluated later in the paper. Wragg, (1984: 178 – 181) provides an invaluable interviewing checklist for researchers.

Where to interview?

Wragg, (1984:178 – 181) identifies the quality of the environment in which the interview takes place as being crucial to gaining useful data. For both staff and pupils offices in a school setting are easily associated with disciplinary matters. This could create a negative, confrontational atmosphere before the interview begins. Yet for this research the office had the advantage of being able to provide a confidential environment. LeCompte and Preissle, (1993) identify the problems of risk and vulnerability to participants. The confidential one-on-one interview may allow interviewees to be more open. This had to be balanced against the ethical dilemma of interviewing a child or a fellow member of staff behind closed doors in a one to one situation, (Thomas and Denton, 2006).

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[2] NFER reading test– National Foundation for Educational Research standardised reading test; used widely in Wales as an indication of chronological reading ability

Comment in relation to the author's research

For the pupils, interviewing in a classroom or workshop area may negate the potentially negative confrontational environment of the office. It could be a setting that is both familiar and secure for both interviewer and interviewee but would lack the privacy of the office environment. The most open environment would be in non-teaching areas – the yard, the staff room the hall at break and lunchtimes. Such settings could provide an arena for the interviewee who wanted to sound off in front of friends or conversely inhibit the more introvert.

All settings will carry with them some form of value to the participants and have the potential to skew responses. Ideally, a range of locations should be used to balance out this problem. Practically, however, as a teacher researcher the research must be balanced against other commitments. The obvious choice was to interview the pupils in the workshop. This setting was familiar to them and was the environment that supported the relationship between them and the researcher. Staff were interviewed in their own rooms. A setting that was natural to them. In each case the details of where and when the interview took place, the number of people involved, the time of day and even the relevant weather conditions were recorded. The reader could then make their own judgement as to the quality and limitations of the data.

Who to interview?

Wragg, (1984:179), writes, "sampling is a problem throughout educational research. A single or a few respondents may be atypical, and a cast of thousands may be equally unrepresentative if badly selected". Random sampling could give all pupils an equal chance to be interviewed. However, random samples can be unrepresentative. Random sampling would not be appropriate in a study of this size. The overall samples would need to be much larger to achieve a statistical balance. A development of random sampling is stratified random sampling, Wragg, (1984:180). This technique allows for specified groups to be identified in advance as part of the research design. For example an issue such as gender imbalance, having only boys in a sample would be avoided by specifying that a certain number of girls must be included in the random sample. An opportunity sample is based on those participants who are convenient to interview. This research is based on two classes of pupils. See Yin, (2003) for discussion of information rich cases.

Comment in relation to the author's research

As a teacher researching into the perceptions of a distinct group of pupils the opportunity sample would appear to be the most appropriate. The researcher met the pupils on a regular basis in the workshop. Both the environment for the interview and the group selected are all part of a natural setting

When to Interview?

Wragg, (1984:181), also identifies the issue of timing – when to interview – as being critical to the quality of the data collection process. Interviewing this group of pupils - first thing in the morning, last lesson on a Friday, at the beginning of a term, at the end of a term – will be reflected in the nature of their responses, (Ibid:182). A pupil's response to a question regarding the quality of teacher / pupil relationships will undoubtedly be coloured by his/her immediate experience. Woods, (1996:92) identifies "representative sampling" as a means of addressing this problem. Representative sampling should cover a wide range of factors: times, places and people.

The duration of the interview was also significant. The aim was to make the interviews as a normal part of the lesson and to use a maximum of ten minutes at the end of a lesson. The pupils were familiar with a discussion at the end of the lesson. Ten minutes would be slightly longer than the normal recapitulation but would probably be within the attention span of the pupils. To use more time could create a class management problem - to hold their attention, to keep the interview focussed.

Fraser, (1997:2) argues that "practitioner" researcher has a professional obligation to the subjects of the research. In this research a professional responsibility to pupils, parents and staff.

Comment in relation to the author's research

As a teacher researcher working at the school timetabled access to this group of children was spread across all the timetable slots in the school day and covered all days of the week. This allowed the researcher to interview across a range of times and help address the problem of when to interview. As their subject teacher the researcher needed to balance their participation in the interview with their opportunities to complete class work. The 10-minute interviews would be the pattern for 10 lessons during which a series of questions were asked. If the questions were not fully answered in this time they were carried over into the next lesson. This gave the researcher a 100 minutes of group interview time.

Group interviews

Watts and Ebbutt, (1987) set out the advantages of the group interview. The group interview offers the potential for discussions to develop and yield a wide range of responses. Bogdan and Biklen, (1992:100) comment that group interviews are useful for gaining an insight into what might be pursued in subsequent interviews. These were both supportive reasons to start this research with a series of group interviews. Cohen *et al*, (2002:287) add a series of practical reasons to support the group interviews: "Group interviews are often quicker and involve minimal disruption…can bring together people with varied opinions…might also be less intimidating for them, (children) than individual interviews". The group interview requires skilful management to keep the situation focussed, see Morgan, (1998). Lewis, (1992), indicates that a group of around six would be the optimum size.

Comment in relation to the author's research

These factors needed to be managed carefully so that all group members had an opportunity to take part. As a teacher researcher the issues of group size presented management difficulties. How could the group be reduced to six? How would the 6 be selected? Would they be the same 6 each lesson? Where would the other pupils be supervised? Staggering the interviews over a 10-lesson period helped to reduce the novelty aspect of the questioning and allowed for some degree of flexibility. This flexibility also helped overcome the problems presented by group dynamics – Will only the vociferous be heard? What about the quiet ones? What about absent pupils who might have something vital to share? Further opportunities were created for the pupils to respond and offered more flexibility; to come back at break or lunch time. It allowed pupils, whose voices are not easily heard in the group situation, a greater opportunity to take part.

The discussions over location and the size of the group were all governed by the researcher's position within the school. Ultimately, the decisions that were arrived at were compromises between attempts to carry out "good" research and to fulfil duties as a teacher at the school. The interviews were carried out with all the pupils who were present in the lesson. There was no selection policy. Pupils could not be excluded from an opportunity to participate in the research. As a result numbers ranged from a minimum of 11 to a maximum of 16, when all pupils were present.

The design of the Interview

The interview was designed based on a combination of Cohen et al's (1980:309-10) description of the four kinds of interview. Radnor, (2001:60) also designed her interviews drawing on all four elements. She began by asking open questions to elicit responses to her research questions. These open questions are supported by what she calls "pick ups". These "pick ups" are areas of information which are deemed important to the research question. If responses to the original open questions are not sufficiently focussed she uses these "pick ups" to develop further questions. Radnor sees three main advantages in this interview technique:

- It keeps the interview free flowing. Subsidiary questions can be introduced seamlessly into the flow of the conversation.
- Information on the same topics can be gathered in a range of interviews.
- The interviewee has the opportunity to expand on her perceived priorities.

Wragg, (1984:189) strongly recommends that interviews should be piloted. The questions should be scrutinised by a suitably qualified third party, ideally more than one. The questions should then themselves be piloted with a group of respondents that are similar in make up to the group that will ultimately be interviewed. This also creates an opportunity to develop understanding and experience of the technique for the interviewer.

Comment in relation to the author's research

Radnor's technique outlined above was adapted with her use of "pickups", but there was also awareness that interviews can unearth other relevant information. It would be methodologically unsound to ignore this potential of gathering data outside of the themes identified in the "pickups". Flexibility was retained to react to opportunities if and when they arose. The technique was piloted and is discussed on page 12.

Interviewing – advantages

King, (1994:22), identifies flexibility of use as a key advantage of interviewing: "The qualitative research interview is ideally suited to examining topics in which different levels of meaning need to be explored." There is also flexibility within the interview itself. There are questions and pickups scheduled but also an awareness that the interview could lead outside these parameters. This type of interview allows the researcher the flexibility to pursue these points and creates the potential for greater depth of data collection. The interview allows the interviewer the opportunity to clarify questions and responses and has the potential to be the least obtrusive of methods. King, (1994:23), suggests that interviewees actually enjoy being interviewed. Oppenheim, (1992:81-2) adds to this theme of participation. He suggests that interviews have a higher response rate compared to questionnaires because participants feel more involved in the research process.

Disadvantages.

Developing an interview schedule, conducting the interviews, recording and analysing the interviews are all potentially very time consuming. King, (1994:23), also identifies "data overload" as another perceived disadvantage. Interviews can generate a great deal of data. This creates problems in how to collect and how to code and analyse the data. The researcher can feel overwhelmed. Kvale, (1996:183) writes, "interviewee's statements are not simply collected by the interviewer, they are in reality, co-authored". Tuckman, (1972) identifies four sources of error – the interviewer, the instrument, coding and sampling. Cohen *et al* , (2002:269) also identify the interviewer as a potential source of error. The interviewer is prone to bias and subjectivity and needs to ensure that appropriate measures - for example triangulation and respondent validation – are in place to guard against these problems. Methods of data capture, recording, collation and analysis are reviewed below.

Comment in relation to the author's research

Transcribing the significant interactions of a 10-minute interview was manageable. These transcribed to one A4 sheet per 10-minute interview. The sample size was a problem in this research. As a practitioner the researcher was constrained greatly by professional obligations. Reliability was addressed through triangulation and through respondent validation. The transcripts were read back to the pupils and staff for them to check the researchers interpretation.

The researcher had interviewed similar groups of pupils during the course of M.A. studies. The obvious method of recording was to use a tape recorder. This was assumed to be a fairly

unobtrusive method. However, ethically it was thought essential to tell the pupils that their conversations were being taped. This provoked a range of responses:

- A pupil withdrew and refused to have anything he said taped.

- Another pupil refused to take part because he felt that his voice would be recognised. This would immediately compromise any promise of confidentiality.

- A girl in the group sang in local clubs and wanted to hold the microphone.

- Some pupils were unusually quiet and said very little during the course of the interview despite efforts made to engage them.

- Most of the group watched the tape recorder. It became the focus of their attention.

There would be the same issue of acting up to a video camera and an even more overt ethical threat. Appropriate data would have to be collected by using other methods. The use of a note taker could have been useful. However, how would the presence of another adult in the room affect the behaviour of the group? Interviews were recorded by taking notes. However, this too was perceived as too formal and detracted from the flow of the interview. From these experiences a system of recording interviews with groups of pupils was developed. The interview took place at the end of a lesson and was no longer than ten minutes. Very brief notes were taken – key points, both verbal and non verbal. When the interview and lesson had finished the key points were fleshed out. Due to the brevity of the interview it was found that this could be done quite accurately because it could be validated the following lesson. The next interview – the following lesson – began with reading the transcription to them. The transcription could contain a verbatim story from the pupils or it could be a more descriptive account describing how the group felt about a particular topic and used key points rather than a verbatim account. This appeared to solve many problems in terms of recording the information and accuracy of transcribing.

- The group could verify the accuracy of the data

- Contextual issues could be recorded – facial and physical gestures. How people reacted to each other in the group – how long is a pause?

- Individual accounts could be checked and further clarified either at the time of the interview or informally during the course of a lesson.

- Involving the pupils helped to develop trust.

Triangulation and the use of a Delphi group

Cohen *et al*, (2000:112), explain that: "Triangulation may be defined as the use of two or more methods of data collection in the study of some aspect of human behaviour". Triangulation in educational research attempts to map out or explain more fully the richness and complexity of human interaction by studying it from different stand points. Any method of data collection is susceptible to bias. Using more than one method of data collection helps to overcome the risk of error. This technique is known as multi method triangulation. However, it should be acknowledged that in research of this nature – social science research- methodological errors would always be very probable. Denzin, (1970), extends the concept of multi method triangulation and identifies other forms of triangulation: time triangulation, space triangulation, combined levels of triangulation, theoretical triangulation, investigator triangulation and methodological triangulation. (See Cohen *et al*, 2000).

In order to triangulate, (Cohen *et al*, 2000) data the researcher had established a Delphi group (Toffler, 1970) within the design and technology department. The Delphi Technique was developed in the 1950s at the Rand Corporation, (Toffler, 1970). The researcher asks the group to make written responses to a series of issues, questions or statements. This can be done at the individuals' convenience. The researcher gathers the responses and collates them into clusters. A group response begins to be formed. The information is then fed back to the group members for further reaction and comment. This gives the individuals in the group opportunity to agree or disagree with the group responses. Further responses may be collated and returned. The process ends when there is identification of clear consensus.

The researcher collects, collates, synthesises and re-circulates the data. The advantages are considerable for the group members as it allows for flexibility in its application and also addresses issues of confidentiality as it can protect the individual group members' right to privacy. Judd, (1972) comments that the Delphi Technique is of particular use in an educational context when attempting to find consensus as to values and evaluations; for example, in obtaining consensus on the characteristics of a "good lesson" or a "good teacher".

The group members consisted of a design and technology teaching colleague, the Special Educational Needs Coordinator, (SENCO) and a teaching assistant with experience of working with the target group. The dynamics of this group were well established. They had worked together for at least eight years in a supportive environment where listening to colleagues is an essential factor. This allowed for a more longitudinal perspective to be applied. Group members were encouraged to reflect on practice over a period of years to help focus on practice in a single lesson. The Delphi group was utilised to explore issues emerging during the action research and to limit the danger of single observer bias

Analysing the data.

Historically, analysis in qualitative research was an entirely paper based activity. Computer technology now offers an alternative technique of analysis. A range of computer programmes that assist the process of qualitative analysis are now available. "The Ethnograph" produced by Qualis Research Associates is a popular example; others include NUD.IST, Qualpro, Word Match, and Word Cruncher. These computer programmes enable the researcher to carry out searches of textual data. The Ethnograph allows the researcher to code each theme and even allows for overlapping themes. The programme can then seek out these coded themes in the other transcribed interviews. (For further information see Prein, et al, 1995:190 – 209)

Comment in relation to the author's research

The deployment of such programmes would appear to be very useful in order to carry out qualitative analysis of what would be potentially a great deal of data. However, whilst acknowledging the potential of these programmes there is an obvious disadvantage: the need to acquire and master the use of such a programme. By reading and re-reading the transcripts there would be a greater chance to identify a broader range of themes, sub-themes and overlapping themes. There would be a greater opportunity for the researcher to be immersed in the data. Using a Word processor allows editing and movement of text from one document to another, from one category to another as they arise.

Semi structured interviews

Exploring the target group's perceptions would not be straightforward. Disaffected and low ability adolescent pupils tend to react poorly to questionnaire type surveys based on the written word. In addition, as a teacher researcher, one's presence may influence pupil responses, (Hammersley, 1993:219). To alleviate this problem a semi-structured interview approach was adopted (Cohen *et al* 2000:245). This was developed in such a way that the special needs coordinator (SENCO) could administer it. The pupils knew this teacher, had good verbal communications established and yet was not seen as 'belonging' to any specific subject area.

Cohen *et al,* (2000:258) emphasises the need for clarity, for short unambiguous instructions to support each section of the semi-structured interview. This data needed to be in a form that would be readily analysed, (Wilson and McLean, 1994:5). Rating scales offer a flexible response and the ability to offer frequencies, correlations and other forms of quantitative analysis. The scale selected was a 6- point version of the Likert, (1932) rating scale ranging from 6 very strongly agree to 1 very strongly disagree. The 6-point scale was selected to avoid the neutral mid point that may have provided an easy option for pupils to select without much thought. The 6-point scale can also indicate the intensity of agreement or disagreement. However, the assumption cannot be made that the scale between intervals is mathematically accurate. It uses ordinal, not interval, data. A person who records 1 as a response does not necessarily have 3 times the intensity of disagreement than the person who scores 3, (Oppenheim, 1992:190-5). Rating scales have other limitations, (Cohen *et al,* 2000:309). The recorded responses may not accurately reflect what the respondents' opinion might be. The flexibility of a semi-structured interview enabled the researcher to add supplementary questions to clarify issues.

Comment in relation to the author's research

Exploring the target group's perceptions of relevance would not be straightforward. The group's literacy skills were weak, which contributed to their reluctance to engage in formal written work The semi-structured interview was developed in such a way that the special needs coordinator (SENCO) could administer it. This would help alleviate the problem of the subject teacher's presence influencing pupil response identified above, (Hammersley, 1993:219). Pupils were asked to record their responses using a rating scale. The pupils were encouraged to add observations they felt were appropriate but not covered by the schedule. These would be recorded as qualitative data.

The interview schedule was required to measure pupil understanding of the term "relevance" and to gain data on what they perceived as a relevant subject. It is acknowledged that collecting data from other subjects could be ethically contentious. However, all staff were aware that action research was ongoing based on a theme of engaging pupils in learning. Other subjects had to be included to establish a reference point. Was design and technology perceived as more or less relevant than other subjects studied by the group?

The Delphi group was asked to discuss the issue of relevance with these pupils. This was carried out informally in one-to-one situations or in small groups in a range of settings: classrooms, workshops, in between lessons and lunch times. The group pooled its findings and generated broad interpretations of the term "relevant" that resonated with two broad definitions: The first, *connected to the present, situational; and* for the second interpretation; *preparation for a particular purpose.* The list of subjects was selected by timetable analysis. All the pupils studied English, mathematics, science and design and technology. In addition music, engineering, history and information communication technology, (ICT) were selected because a substantial percentage, over 50% of the sample, was studying the subjects in KS 4.

The format of the semi-structured interview needed to be user friendly. The group of pupils at the centre of the research were particularly sensitive to 'wordiness' and to being patronised. The solution was to word the statements as simply and briefly as possible. The SENCO checked the statements for their readability and then developed a more detailed script. She would read through the statements with each group, and amplify each from her more detailed script. The target groups were; a group of 16 pupils in year 11 and a group of 14 in year 10. This first draft of the interview was then re-circulated to the Delphi group as a further check. An example is given in figure 1

Figure 1- a school subject is relevant when

	Task 1	6	5	4	3	2	1
		very strongly agree ↓				very strongly disagree ↓	
A	The subject is useful to know about now	2	8	9	6	3	2
B	The subject is interesting	14	6	10			
C	You can see what you are doing	3	10	8	5	4	
D	You understand what you are doing	14	9	7			
E	You like the subject	17	8	5			
F	The subject is useful to help me in a job I might get when I leave school	8	8	6	6	2	
G	The time goes quickly	12	6	8	4		
H	You learn a lot	2	8	10	5	3	2
I	You like the teacher	8	8	14			
J	Can any one think of any other ways a subject could be relevant?	*					

Analysis – the Radnor method, (Radnor, 2002:71)

There are many useful suggestions as to how to analyse qualitative interview data – see Cohen *et al* (2002:282 / 86). As a practitioner researcher, Radnor identifies six steps, (Radnor, 2002:68):

- Topic ordering
- Constructing categories
- Reading for content
- Completing the coded sheets
- Generating coded transcripts
- Analysis to interpreting the data

Topic ordering identified topics that emerged from reading the whole text.

Comment in relation to the author's research

The original interview questions provided a percentage of these topics. It was essential, however, to read the transcripts carefully and with an open mind to allow further topics to be identified. After identifying all the relevant topics they were pasted as headings onto individual pages. Each topic was given a simple abbreviation eg. relationships – "rel". This process was carried out with ease using a word processor.

Having identified the topics the categories within each topic were constructed. Radnor, (Ibid, 72) identified two common categories. Those that were explicit in the data – eg. a respondents reasons given for liking a particular activity, and those that are implicit – responses to do with attitudes. The transcript was then re-read and the topics that had been identified were fleshed out with sub-headings. The sub-headings were generated from the areas of interest, issues and concerns discussed in the course of the interview. These sub-headings are the means by which the categories are constructed. Using the topic of relationships, the discrete page would start to look as shown in Figure 2:

```
Topic: Relationships
Code: rel

Categories:
    1. with staff
    2. with other pupils
    3. with themselves
    4. with the school
    5. with the outside world
    6. with family
    7. with SMT
```
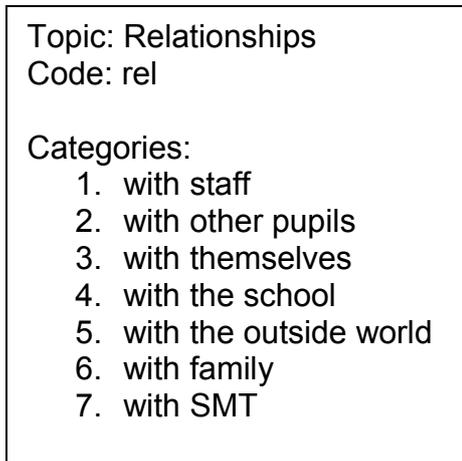
Fig2

The transcribed text could then be read for content. The text was coded and marked so that the section could be found easily again. Radnor, (ibid: 73) used the method illustrated in Figure 3.

Comment in relation to the author's research

The following is an exemplar extract from an interview:

Fig. 3

Code	Person	Text of interview
Rel 1a Rel 2a Rel 1b	Pupil	I really get on well with Mr.4. He's always got time for us. We do work but he lets us have a laugh as well. P5 always tries to wind him up, but he never does. P5 is a prat. He does it with all the teachers. We don't mind him winding up Miss 3 – nobody likes her anyway.

Code: Rel describes relationships
Rel 1 describes relationships with staff
Rel 1**a** describes the first extract in the transcript relating to relationships with staff. Rel 1b, describes the second extract that relates to relationships with staff.
Rel 2a describes the first extract relating to relationships with other pupils.

Completing the coded sheets.
Using the above system the original coded sheet, fig 2, can now be completed as shown in figure 4

```
Topic: Relationships
Code: rel

Categories:
    1. with staff – 1a,1b
    2. with other pupils – 2a
    3. with themselves
    4. with ……
```
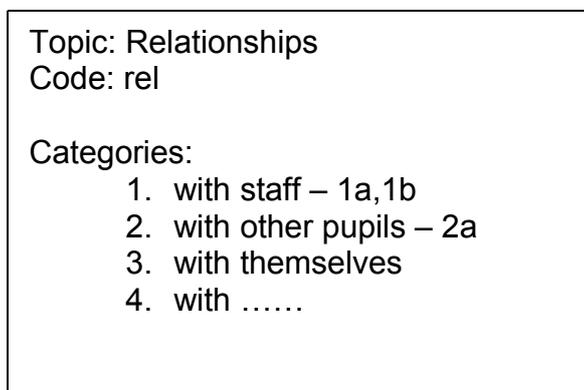
Fig 4

This process was repeated for the other topics and their categories. The data was identifiable both in terms of its location in the main text and also on the one sheet. This gave an overview of the data collected for each category and assisted in assessing the significance of each category. For example in Fig 4 the simple extract given has been recorded. In a live situation categories 1,2,3,4,5 and 7 could generate many responses and perhaps category 6 has only generated one response. The significance of this response could then be reassessed.

A word processor was used to copy and paste the data identified in each category. This exercise generated the coded transcripts. Radnor, (ibid:79), stresses the importance of "copying" rather than "cutting".

Comment in relation to the author's research

It was vital to keep a master copy of the original transcription intact because chunks of data were moved from the original to other places. These data chunks occasionally had information within them that could be categorised elsewhere. Categories found in relationships could overlap with those constructed for lesson content or teaching styles. There was always the possibility that new categories would emerge from other interviews.

Interpretation was the final stage of analysis. The data were interpreted rather than described. The coded transcripts were supported by the researcher's comments as to their significance. These comments summarised the findings within the category as interpreted by the researcher.
The completion of this stage enabled the researcher to read the findings of the research for each identified topic. The next step was to identify relationships and patterns across topics and categories. Radnor, (ibid: 90) believes that this leads to an ability to "make abstract conceptualisations of the phenomena under study"

Discussion

As a teacher researching into his own practice four key issues emerged that supported development of the interview methodology:

- Review of literature
- The formation of a Delphi group
- The importance of piloting all aspects of the interviews
- Academic support to sustain reflexivity

Background reading to inform decision-making and to raise awareness of potential problems was an essential part of the process. The aim of the literature review was to provide a clear, balanced picture of current leading concepts, theories and data relevant to interviewing methodology. The method of achieving this aim was similar to Hart's, (2003) recommendations.

Published books were skim read and relevant sections highlighted. The references from these sections were then used to identify further reading. This process was repeated for the newfound reading. References from the newfound reading were used to identify further reading. Relevant information was filed under broad headings. Records of the references that contributed directly to the research were updated at regular intervals. It is inevitable that this method of conducting a literature review is labour intensive. However, all the reading provided, to some extent, useful background.

Using published books has a disadvantage in terms of time scale. The theories and discussion may reflect the opinions of the authors up to the date of publication. To gain a more current review of contemporary concepts articles in Journals were accessed. As a practitioner researcher working

from home, electronic E journals proved particularly accessible. Access to Loughborough University's library facilities via the Internet was also essential. The Internet allowed access to the work of fellow researchers. This included abstracts, thesis, bibliographies and conference proceedings.

A major factor in carrying out the review was time management. A balance must be struck between carrying out the literature review and doing the research. This balance was achieved through the concept of "sufficiency"; that is when new factors emerge less frequently.

The formation of a Delphi group to act as a soundboard, to check and to advise the direction of the research was also vital. As a reflective practitioner carrying out action research it is inevitable that a range of researchable issues emerge. The practicalities of doing the research – relevance, time, fulfilling professional duties – means that the range of researchable issues needs to be focussed. The researcher must develop criteria to prioritise the issues that emerge. The criteria can be based on the practicality of doing the research. However, there is a danger that the research could be over influenced by the researcher's own bias towards a particular range of issues. Action can be taken to alleviate this through carefully planned discussion with other people who are part of the research. In this case, teaching colleagues and support staff.

The Delphi group was utilised to explore issues emerging during the action research and to limit the danger of single observer bias. The group participated in all aspects of developing the interview methodology; from formulating the schedules for both unstructured and semi-structured interviews to executing some interviews themselves to avoid the problem that as a teacher researcher, one's presence may influence pupil responses, (Hammersley, 1993:219).

The importance of piloting all aspects of the interviews, the questions, structure, timing, recording, execution, and analysis cannot be emphasised enough. Wragg, (1984:189) strongly recommends that interviews should be piloted. At the start of the research the piloting focussed on the researcher's skills. The aim of these pilot interviews was to:

- Evaluate the interviewing technique with a group of similar pupils
- To assess the effectiveness of the interview questions
- To assess the methods of recording

Two separate pilot interviews were carried out to address the above aims. The thinking behind this was:

- To gain experience and confidence in interviewing techniques and questions, and to reflect on their effectiveness.
- To receive feedback from experienced colleagues regarding the interview technique and the interview questions.
- To receive feedback from the pupils regarding the interview technique and the interview questions.
- To receive feedback from the tutor regarding the interview technique and the interview questions.

This posed two further questions: *How do I evaluate my own technique? What criteria should I evaluate against?* Kvale, (1996), Woods, (1996), The British Educational Research Association, (BERA, 1992), set of ethical guidelines, Loughborough University, (1999), ethical guidelines, and Radnor, (2002) all advise on the characteristic features that should be evident in a qualitative research interview. These could be combined to produce a useful framework against which to evaluate the interviewing skills.

Finally, academic support from a university tutor and independent referees helped to sustain reflexivity: a key mechanism for rigour in the analysis of data. Bird et al, (1996:90), emphasises the role of the researcher's self: The importance of developing skills of reflection, observation, listening and recording, the art of "mentally photographing and logging for commitment to written record". The

development of any skill requires practice and arguably the presence of a third party that might act as a coach or mentor. Lacey, (1976:114) begins his "Review of the Methodology for Hightown Grammar" with: "To write about one's own methodology and the problems of doing empirical research is inevitably to make gross assumptions about one's own theoretical orientations and even one's biography". Who the researcher is influences how reality is interpreted and constructed. Radnor, (2002:3) writes, "we interpret experiences through the filters of existing knowledge and beliefs, and these existing knowledge and beliefs that we hold are a product of ourselves as active subjects construing meaning" some font issues to resolve

Ball, (1990:157-71) comments that awareness of self provides part of the mechanism for rigour in the analysis of data: "The basis of this rigour is the conscious and deliberate linking of the social process of engagement in the field with the technical process of data collection….I call this linking reflexivity." Recognition and awareness of the researcher's effect on the process of collecting data is vital. The research strategies must be themselves researchable. Data are social constructs, a product of the skills and the imagination of the researcher and of the interface between the researcher and the researched. However, recognition and awareness of these issues are not enough. The key factor is how to manage these issues. As a teacher researcher, remote from an academic community, the support of a tutor has been particularly significant in developing strategies to manage these issues.

Conclusion

The aim of this paper was to review interviewing as date collection method within the context of action research. Gathering data from a target group of secondary pupils with low self-esteem and levels of literacy generated unique methodological challenges. Each component of the interviewing methodology was reviewed through the relevant literature and then commented on in relation to the author's research. This mirrored the action research model that the researcher was following. Kemmis, (1988:42), describes action research as a self-reflective enquiry undertaken by participants in order to improve the rationality, understanding and the situations in which the practices are carried out. The review of the interview methodology could be a starting point for researchers engaged in similar situations.

The discussion section may be of more practical use to fellow researchers. Four key issues emerged that supported development of the interview methodology. Background reading was a predictable significant factor, an essential starting point. The significance of a Delphi group, however, was not such a predictable factor. The notion came from reading and a suggestion by the tutor; a clear example of theory being put into practice. The significance of the Delphi group grew with the research by providing support and offered alternative perspectives.

The researcher commends its use by researchers engaged in similar situations. Piloting is highly recommended in the literature. This also proved in practice to be an essential component of the interview process. The Delphi group provided practical support but could not offer the same depth of academic support as the tutor. As a teacher researcher, remote from an academic community, the support of a tutor via telephone and email was essential.

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