



Glasgow Psychological Service
nurturing wellbeing and learning

Developing Action Inquiry

A resource pack for schools and nurseries in Glasgow



Education Services

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While Glasgow City Council Education Services are happy to share this resource we would appreciate
acknowledgement when others are using it.

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Introduction

One of the functions of Glasgow's Psychological Service is to provide advice and guidance to schools on effective learning and teaching strategies. Much of the evidence that informs this practice comes from research which takes place within the school and classroom environment.

Action Research is an increasingly popular tool for developing and improving learning and teaching. When adapted to the Action Research framework, many of the tools and techniques that practitioners use on a daily basis can help meet national priorities such as:

- Raising Attainment
- GIRFEC
- Curriculum for Excellence

It is also helpful for practitioners' own professional development as the process will help them learn more about their teaching and how their students learn. Schools as a whole can also benefit as the research can help contribute to School Improvement Plans through evidence-based practice.

This pack aims to provide guidance on how to conduct Action Research Inquiry in schools and nurseries across Glasgow.

What is Action Research?

Action Research is a framework for practitioners to enhance and develop their teaching, by making use of their own experiences. It can be used 'in almost any setting where a problem involving people, tasks and procedures cries out for solution, or where a change of feature results in a more desirable outcome' (Cohen, Manion & Morrison, 2011: p. 344). It is a cyclical process which involves stages of planning, observing, action and reflection, carried out by individual practitioners, a group of practitioners or across a whole establishment.

There are numerous areas where Action Research can be of benefit. For example:

- *Teaching methods – perhaps you want to try out an innovative teaching technique?*
- *Learning strategies – is there an approach used in a different area of the school that you feel could benefit your students?*
- *Evaluative procedures – do you want to improve methods of continuous assessment?*
- *Attitudes and values – could staff (or even pupils) in the school benefit from more positive work attitudes?*
- *Continuing Professional Development (CPD) – do you think that you would benefit from improved reflection skills?*
- *Management and Control – is there a need for behaviour modification techniques in your school or nursery?*
- *Administration – is there an aspect of the school administration which could be more efficient?*
- (Adapted from Cohen et al, 2011: p. 344)

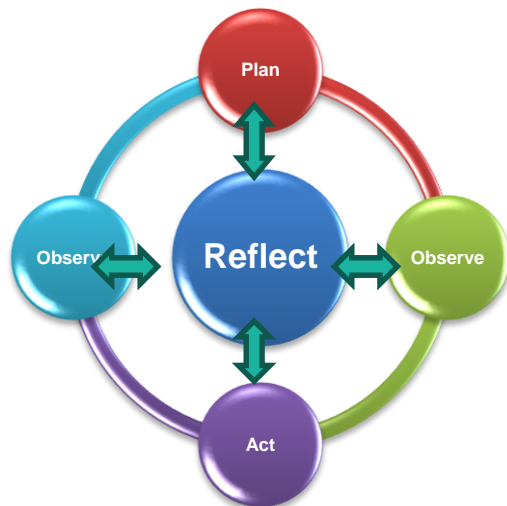
The range of areas where Action Research can be of benefit highlights the multi-faceted nature of it as an approach. One of the biggest advantages of Action Research in an educational setting is that it is conducted by practitioners (rather than an external researcher) in their everyday work environment (rather than in a laboratory setting). This is helpful because practitioners:

- Work collaboratively as part of a team and help each other;
- Work best on problems that they have identified themselves;
- Become more effective when they are encouraged to assess their own work and come up with solutions.
- (Ferrance, 2000: p. 1)

Action Research is teacher-led and school-based (or nursery-based) which means that the teacher action researchers can focus on problems which are of immediate concern to them. Although teachers constantly evolve and develop their practice, Action Research provides a systematic method for implementing and examining the effects of interventions. This means that practitioners create their own evidence base of what works (and what does not work) in their schools and nurseries.

What are the stages involved in the process?

Action Research is a cyclical process involving stages of planning, observing and action. Reflection is crucial throughout the process as it means that action researchers gain a fuller understanding of aspects of their work which are working, and those which could be improved. Action researchers take full ownership of their projects meaning that they have control over what they are researching.



PLAN

As with any new project, the first step involves careful planning. Talk to colleagues, find out if there are any areas of practice that could be developed and decide on an area to work on.

OBSERVE

What is happening in the situation now? How do you know that this is happening? Gather evidence of the current situation.

ACT

How can the situation be improved? Make a plan of action and put it into place.

OBSERVE

What is happening in the situation now? How do you know that this is happening? Gather evidence of the new situation.

REFLECT

Reflection is important throughout the process. Has the situation changed at all? How has it changed? Could further action be taken?

Once the cycle has come back round to the planning stage, reflection on the whole process will help inform whether:

- The issue has been resolved, or
- The cycle can begin again, taking on board the new evidence.

Starting Out

To begin with, it is a good idea to talk to colleagues and discuss areas where the Action Research framework could be of benefit. There may already be some ideas floating around so have a brainstorming session and see if there is a topic that can be worked on together.

- Does this topic link in with the School Improvement Plan or the departments goals?
- Should other members of staff be linked in? (E.g. Head Teacher, pastoral care, language and communication support staff...)
- How was this topic identified?
- Is this topic the result of a specific class or the whole school?
- What do you already know about the topic?

It is important to think about these questions so that the research is as context-specific as possible, rather than a 'one-size-fits-all' approach. As Action Research can be a tool for professional development, looking at the learning that takes place within the classroom environment means that there is scope for long-term improvements in teaching and learning, regardless of any policy and curriculum changes.

In addition to talking topics over with your colleagues, it is good practice to research the topic further. This is called a 'literature review' and can help give you a broader understanding of the topic at hand. Reading up on the topic online or in books will inform you of what is already known about it, which strategies have been used previously etc. This can be particularly beneficial if you have decided to conduct an Action Research project on a new policy that has come into your school. Your Educational Psychologist may be able to point you in the right direction of reading on the subject.

Timescale is also very important. Although many of the data collection techniques that will be used are part and parcel of what you do every day anyway, it is important to think about what is a realistic timescale for the project to be completed in. Bearing in mind that there are several stages to the process, consideration must be given to the length of time devoted to each stage. It can be quite easy to get carried away with endless data collection, so set a timescale for data collection, before reconvening to discuss the results of the data collection and what the next steps are. The more action research projects you undertake, the more naturally this will come. Timescales will be affected by many things such as in-service days, public holidays, attendance or even the nature of the topic being explored, so this must all factor into consideration at the planning stage of the project.

What is your research question?

Coming up with a specific research question for your project will help you:

- *Define the project and its aims;*
 - *Set boundaries so that your project stays on track;*
 - *Give your project a direction and*
 - *Define success once your project is complete.*
- (Adapted from Robson, 2011: p. 59)*

Research questions can be categorised based on what you want to find out. Robson (2011: p. 60-1)

Classification	Purposes	Examples
Exploratory	<p>To find out what is happening especially in poorly understood situation</p> <p>To gain a new understanding</p> <p>To ask questions</p> <p>To re-evaluate something which is already known</p> <p>To generate new ideas for future research</p>	<p>What is the experience of the pupils using this programme?</p> <p>Which intervention is best able to meet the needs of our pupils?</p> <p>Is this programme transferable to our context?</p> <p>We know this works for the P7s, would the P5s also benefit?</p>
Descriptive	<p>To give an accurate picture of events or situations</p> <p>To create a profile of certain groups or individuals</p> <p>To collect data in a systematic way</p> <p>To collate all the information known about certain persons, situations or events.</p>	<p>Gathering information regarding the literacy outcomes of pupils.</p> <p>To what extent are parents involved in supporting the role out of this programme</p> <p>What are teachers' views about this intervention?</p>
Explanatory	<p>To explain a situation or problem, often in terms of a causal relationship</p> <p>To explain the patterns of relationships</p> <p>To understand which parts of an intervention are crucial.</p>	<p>To demonstrate that the new programme does bring about improvements in outcomes.</p> <p>To compare the new programme with the one currently in use</p> <p>To offer evidence regarding the types of children, groups or ages the programme is most suited to.</p>

When developing your research question it is important to think about what you would like to find out about your topic, i.e. whether you would like to explain, explore or describe an aspect of it. Your question should be clear, unambiguous and demonstrate the purpose of your experiment. Keeping your question as simple as possible will help ensure that it is answerable.

Things to Consider

Once you have decided your research question there are a few things to consider during your research project.

The best research projects are SMART, that is, they are:

- Specific
- Manageable
- Achievable
- Realistic
- Time-limited

It can be easy to get carried away once you start a project, so make sure that it meets the criteria above. It is a good idea to have your research question in mind at each stage of the process so that your project remains focussed on the outcomes you wish to achieve. SMART projects take into account timescales, available resources and the knowledge that each person involved can bring to the project.

Role assignment

Good projects are well managed and well organised. Although your project may well be a working party, it is worthwhile to assign roles to members of the group as this can help the research stay on track. You may wish to have someone as project leader to ensure that each stage of the project runs on schedule. This person would also arrange meetings for the group members to get together to discuss developments and collate the evidence as it is gathered. For reasons of confidentiality, it is best practice to keep all your data stored together in a secure place.

Ethical Considerations

There are certain rules which need to be adhered to when conducting a piece of research, particularly if your research involves children and young people. You will already be aware of the need to get permission from parents and caregivers for certain aspects of your work; when conducting research, there are four key factors to take into account:

Confidentiality

The identity of anyone taking part in your research should be protected at all times. This means that if you are writing about any participant (child, parent, teacher...) you must either change their name or assign them a code. Most researchers use a letter number system, for example, young people could be Y1, Y2, Y3 etc.; parents P1, P2, P3 etc.; and teachers T1, T2, T3 etc. How you choose to make your participants anonymous is up to you. All of the raw data that you collect (i.e. the data that you gather before summarising or analysing it) should only be shared with people directly involved in the research. This means that your data should be kept safe, for example in a locked filing cabinet or a password-protected computer.

Consent

As a researcher you are required to get consent from anyone taking part in your research. This means that before they participate, anyone taking part must be told what your aims are and what they will be expected to do. For example, say you were conducting an Action Research project on an innovative reading programme; you would be required to tell participants that you are looking at

the effects of a new programme and participants will be asked to complete a questionnaire on their experiences of the programme. Letting them know what the aims and expectations are means that their consent will be 'informed'. It is up to the participant whether they want to take part or not, they therefore have the right to withdraw from the research at any point. Informed consent may be sought from parents and guardians in particular cases (e.g. very young children, children with additional support needs) but it is good practice to inform them of any research you are undertaking nonetheless. If you are unsure about who should be consulted for informed consent, it is worth checking with your line manager.

Respect

Researchers should always have respect for their participants, which means that you will need to take into account the effect that your research will have on your participants. The research should not impact on them negatively so you may need to adjust your data collection methods to accommodate this. For example, if your research involves some form of assessment and you have a child who does not cope with failing, this should be taken on board when planning your research. The wellbeing of all participants involved should always be taken into account during a research project.

Debriefing

It is best practice to tell your participants about your research in full once it is complete. They may want to provide you with feedback on how they found the study, which can be very beneficial for any future research projects you may wish to undertake.

Gathering Evidence

Now that you have your research question and have taken into account the practicalities of conducting your Action Research project, you can think about how to gather data as evidence. The methods you choose will depend entirely on the nature of your project. For example, if your project involves a new reading programme, you may want to use a combination of pre and post-reading measures and questionnaires with staff and pupils to get their thoughts on the programme. A classroom or video observation may not be quite so insightful in this study.

Gathering evidence of all aspects of the classroom and teaching environment is part of the work you do every day. Incorporating this into your Action Research project means that you can:

- Build up an evidence base;
- Demonstrate what happened before and after you implemented your intervention;
- Provide justification for choosing one intervention over another.

In the appendices, you will find handouts with further data collection techniques that may be of benefit to your project.

For examples of how to gather data, think back to when you were coming up with ideas for possible research topics. How did you identify the topic? What do you already know about it? Classroom records, learning journals, homework assignments, observations of the classroom, lesson plans, attendance records, conversations with parents, colleagues, pupils, artwork that pupils have produced, classroom layout maps...all of these can be used as data collection.



There are two stages for gathering data: the first allows you to have a baseline measure to measure the second lot of data against. It is best practice to gather data from different sources (i.e. from staff, pupils/parents and assessment/information) so that you get a broad understanding of the situation. This is called 'triangulation'.

When choosing your data collection technique, you need to think about how your topic will be measured. For example, if you were looking at conflict in the classroom, make sure there is agreement about what is meant by conflict. Does this mean pushing, kicking, arguments? Once you

have decided on a definition, the number of 'conflict incidents' could be tallied and compared before and after your intervention.

Analysing Evidence

After gathering data at the first stage, you need to find the meaning from it so that your intervention is informed by your evidence base:

- Has a questionnaire with pupils revealed that they are struggling with the volume of homework?
- Have staff members taking part in a focus group indicated that they need more planning time for managing conflicts in the playroom?

Picking apart the evidence for its meaning builds a picture of the issue you are researching and allows you to plan and prepare a well-informed intervention.

At the second stage, you need to gather meaning so that it is clear whether your actions have been successful or not. With some evidence it will be straightforward to measure the impact. For example, if you have tallied incidents of conflict in two stages, the frequency of incidents before and after will give you a clear indication of the project's success. Or with a new reading programme, the reading scores before and after will be an indication of the programme's effects. The handouts which accompany this pack (see appendices) will contain more information on analysis for each of the data collection described.

It is worthwhile to mention that even if there has been no change as a result of your intervention or there has been a negative impact as a result, this can be just as insightful as a successful intervention. Having evidence of what does not work is just as helpful as evidence of what does, as this will help inform any future interventions relating to this topic.

Act and Reflect

The first round of data gathering and analysis provides you with a full picture of your research topic. It will let you know what the current situation is, giving you a baseline to measure the effect of any intervention. Your next step is to plan and develop an action plan. This will be your intervention which will attempt to answer your research question.

In light of your first-round of evidence gathering and analysis, what *one* change can you make to improve practice? Making just one change means that any improvements that occur are more likely to be as a result of your change rather than any other factors. Putting more than one change into place makes it difficult to establish which intervention made an impact.

Whatever intervention you decide upon, there are some things to consider:

- How will you monitor the change?
- What success criteria will inform you whether your action has been effective?
- Do you need to involve anyone else in the project?
- Do you have the resources available to implement your change?

Once you have devised your plan of action, you can put it in place and begin gathering and analysing evidence on the new situation. After your second round of data analysis, you will be in a good position to see what changes have occurred. Reflecting on what you have learnt from your study is perhaps the most valuable aspect of an Action Research project. In-depth reflection on your project will help you make an informed decision on what your next steps should be:

- Are you satisfied with your intervention?
 - How will you ensure that your intervention is long-lasting?
 - How will you communicate your findings? – In-service meetings, parents' evenings, School Improvement Plans, leaflets in the school reception...?
- Could further improvements be made?
 - Based on your evidence, what is your new research question?
 - How will you gather data? → The cycle begins again.

At this point it is worth talking to your colleagues and finding out their thoughts on the process. What about colleagues who have not been directly involved in the research, have they any thoughts on your study?

The research you have conducted can be of enormous benefit in building up knowledge of classes, of pupils, as well as creating ideas for continuing professional development.

Case Studies

The National Teacher Research Panel (www.ntrp.org.uk) has a range of action research projects that have been conducted by teachers and practitioners in England. This panel was set up to promote teaching as an evidence informed profession and is a good starting point for inspiration for your own Action Research. The following are examples of projects outlined on the site.

Case Study 1

Theale Green Community School in West Berkshire *'Narrowing the Gap: Developing personalised curricula for vulnerable students'*

What was the main aim?

To improve attendance, attainment, progression and life opportunities for vulnerable students by creating personalised curricula and increasing inclusion in the school.

How was evidence gathered?

- Discussions with students, staff and others who were involved in the alternative curriculum provision
- Questionnaires with all teaching and support staff;
- Formal literacy and numeracy assessments (baseline data);
- Records of students' work to track progress and;
- Attendance and behaviour reports which were collected every 6-7 weeks.

What action was put into place?

Rather than giving the students in the Inclusion Unit work which was explicitly labelled 'English' or 'Maths', learning was incorporated across subjects. A 'Healthy Lifestyles' project was turned into a cooking competition which subtly incorporated numeracy, literacy, ICT and social, emotional and personal skills.

What was the outcome?

- Perceptions of mainstream teaching staff were changed as they began to see the benefits of providing a more flexible curriculum for students in the Inclusion Unit;
- Visitors to the school (e.g. Inclusion Managers from neighbouring schools) found a positive atmosphere and a welcoming culture being fostered in the school;
- Significant improvement in attendance of pupils involved in the programme (one girl's attendance increased from 29% to 76% and she received 5 GCSEs as a result);
- Number of behaviour incidents fell and;
- Increased engagement from parents who were previously disengaged (some even came in to the school to see their children's work).

Case Study 2:

Mowbray School in North Yorkshire *'Teaching Children with Autism to use Pretend Play'*

What was the main aim?

To find out whether Early Years children with autism and additional learning difficulties can learn to use pretend play in a group context and the implications of this for future learning.

How was evidence gathered?

Formal assessments of their verbal comprehension skills (as there is a link between verbal comprehension and pretend play) were conducted before and after the modelled play scenarios. Also videos were made of the children's play in formal and informal settings.

What action was taken?

The children were presented with a variety of pretend play scenarios with teachers using exaggerated voice and gestures to hold the children's attention.

What was the outcome?

Instances of pretend play behaviour increased as a result of their intervention;

Instances of social play increased, particularly among the children with autism who began to engage their peers in play.

Case Study 3

The Park School in Surrey *'Accident or Design: To what extent do teachers plan and own their professional learning?'*

What was the main aim?

To look at the extent to which teachers working in schools with Additional Support Needs have ownership of and are able to plan their professional learning

How was evidence gathered?

Documentary data and interviews with teachers over a four month period

What action was taken?

This study is an ongoing exploration of the different experiences of the teachers in relation to their professional learning: this is known as a 'case study'

What was the outcome?

- The initial findings were that all the teachers have a positive attitude and approach to their professional learning and feel able to talk openly about their development;
- The teachers find collaborative learning, peer observation and peer mentoring to be more effective than one-off courses;
- How the teachers plan their learning varied depending on a range of personal and professional factors.

Further Information

If you have any queries about conducting Action Research, speak to your Educational Psychologist as they will be able to provide you with guidance and point you in the direction of assessments which may be of use to you researching your topic.

Research methods and conducting a research project:

Cohen, L., Manion, L. & Morrison, K. (2011). *Research Methods in Education*, 7th Ed., Oxon: Routledge

Robson, C. (2011). *Real World Research*, 3rd Ed., Chichester: John Wiley

Action Research: Useful Websites

www.ntrp.org.uk

http://teachersnetwork.org/tnli/Action_Research_Booklet.pdf

http://www.brown.edu/academics/education-alliance/sites/brown.edu/academics/education-alliance/files/publications/act_research.pdf

<http://www.jeanmcniff.com/ar-booklet.asp>

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Jacobs, J. K., Hollingsworth, H. and Givvin, K. B. (2007). Video-based research made “easy”: Methodological lessons learned from the TIMSS Video Studies. *Field Methods*, 19 (3), 284-299

Robson, C. (2011). *Real World Research*, 3rd Ed., Chichester: John Wiley

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Walsh, P (2011) Accident or design: To what extent do teachers plan and own their professional learning? *National Teacher Research Panel: Engaging Teacher Expertise*. Retrieved 2014 from <http://www.ntrp.org.uk/>

Zhang, M., Lundeberg, M., Koehler, M. J. & Eberhardt, J. (2011). Understanding affordances and challenges of three types of video for teacher professional development. *Teaching and Teacher Education*, 27, 454-46

Appendices

Interviews

Interviews consist of an interviewer who asks questions and an interviewee, who responds. They are similar to conversations which are focussed on a particular topic, except the interviewer takes care to:

- **Listen** more than talk (it is the interviewees opinions which are of interest to the research)
- Ask questions in a **clear, straight-forward** and **non-threatening** way, so that the interviewee feels comfortable to respond
- Avoid **leading** questions which force participants to respond in a particular way
- Either **enjoy** it, or at least give the impression of enjoyment (bored or scared interviewers are less likely to get the required responses)

Interviews tend to be most beneficial when used alongside other forms of data collection. Perhaps you want to expand on answers from a questionnaire or survey?

Sometimes researchers use interviews to go into great depth on a topic, sometimes they may want to get general opinions on a topic. There are three types of interview depending on the response which is sought:

- **Structured** – the interviewer asks the same questions (i.e. exact same wording) in the same order to each participant because he/she is looking for responses to specific questions
- **Semi-structured** – the interviewer has a general set of questions on a topic but has the freedom to vary the wording and order depending on the participants' responses
- **Unstructured** – the interviewer wants a completely informal interview, letting the conversation flow within the topic of interest

The type of interview used depends on the topic being researched and how comfortable you are with each of the types above. Structured interviews are typically the most straightforward, but you should bear in mind that you would not be able to stray from the script and follow up responses.

Interviewers use interviews to find out: **facts** (what interviewees *know*), **behaviours** (what interviewees *do*) and/or **beliefs** or **attitudes** (what interviewees *think* or *feel*).

It is helpful to take a recording of the interview so that you can pay full attention to what questions you would like to ask and how the interviewee is responding. It might also be helpful to take little notes of things that might be useful for later analysis (such as body language cues). Make sure that recording equipment is checked beforehand for batteries, clarity of recording etc. and that there is a quiet room available for the interview to take place. This is to help minimise background noise or any interruptions during the interview, which may interfere with the quality of the recording.

How questions are worded during the interview is very important, so it is best to avoid:

- Long questions as these may be confusing and the interviewee may only remember part of the question
- Complex questions with several points. For example: 'what do you feel about the current levels of literacy compared to five years ago?' should be broken down into simpler questions:

- What do you feel about the current levels of literacy?
 - Can you recall the levels of literacy from five years ago?
 - How do they compare?
- Using jargon as interviewees may not understand the wording
 - Questions which lead interviewees in a particular direction
 - Agreeing or disagreeing with the interviewee as this could bias their opinions – it is best to stay as neutral as possible.

Sometimes interviewers use probes to get more information from interviewees such as asking ‘anything else?’ or repeating back what interviewees have said. You can also ask for personal opinions (e.g. ‘what are your personal views on this?’) if you feel that the interviewee has given a general response. Do not worry if there are some silences as silences in an interview may mean that interviewee is considering how to respond.

Interviews should always begin with an introduction stating:

- Who you are
- Why the interview is taking place
- That the interview is confidential
- That the interview will be recorded, checking that the interviewee is ok with this

Once the interviews are complete, it is best to transcribe the interviews for reference. The interview responses can then be analysed for common topics and themes. For example, if you had interviewed teachers regarding literacy levels in schools, there could be several mentions of, for example:

- **Technology** – several teachers may pick up on the increased use of iPads and other electronic tablets having an impact on literacy levels;
- **Curriculum changes** – perhaps there are a few changes in the curriculum which teachers feel is impacting on literacy.

Categorising the responses will help you pick out the key information, providing you with an analysis of your participants’ opinions on the topic. How many themes or categories you have will depend on the topic, how long your interviews are and how many people you interview. You can furnish your analysis with key quotes from your participants, just make sure that they are kept anonymous (i.e. change participants’ names or number them).

Focus Groups

Interviews can also take place in a group context as well as one to one. Interviews consist of a conversation between an interviewer and interviewee; focus groups are a discussion between a moderator and a group of individuals. The moderator guides the conversation around the topic they are interested in researching, whilst the group interaction is recorded and analysed. As there are similarities between focus groups and interviews, it is worthwhile reading the 'interviews' handout, particularly in relation to the types of questions and format.

There are some benefits to running a focus group rather than an interview in that:

- Some people may be more comfortable interacting in a group context rather than one to one;
- You can essentially gather everyone's opinions at once which can be beneficial if you are short of time;
- They can be set up relatively quickly and easily once you have a room and time when everyone is available, and
- Participants feel empowered to talk freely, encouraged by the interactions of others in the group

As focus groups involve several participants at once, there are also certain things to be aware of:

- When moderating the discussion, it is important to make sure that everyone has the chance to speak rather than having one or two people dominate the discussion;
- The size of the group can also affect the success of a focus group – usually around 5-10 people is recommended so that you get a good variation of responses but the group is not too large to manage;
- Any hierarchies that exist within the group may affect group dynamics, particularly if there is a combination of different job titles (some people may not be so keen to talk openly in front of their line manager).

Depending on the nature of your research you may want your group to be **heterogeneous** or **homogenous**:

- **Heterogeneous** groups are made up of people with different backgrounds and experience for example:
 - Parents of pupils of different year groups;
 - Pupils who have recently sat different exams (National 4 or 5, Standard Grades, Highers)
 - All teaching and support staff in a school.
- **Homogenous** groups are made up of individuals with similar backgrounds and experiences for example:
 - Parents of pupils in Primary 1;
 - Pupils who have recently sat their National 5 exams;
 - Teachers of secondary school pupils.

Focus groups should be transcribed and analysed in the same way as interviews are analysed.

Rating scales

Rating scales are very useful not only for finding out *what* peoples' opinions are on a particular concept or issue, but *how strongly* they feel about it. They are particularly helpful for researchers wanting to move away from a simple yes/no response from participants, towards a much deeper insight into the topic.

Scales usually consist of 10 to 20 items (i.e. questions or statements) depending on the topic being researched. It is important to consider the wording of the statements as this can have an effect on participants' responses. For example:

- Do you...?
- Have you...?
- Are you...?

May lead participants to respond in one way or another. Rephrasing these questions can help achieve a much broader response:

- To what extent...?
- How far / much / often ...?

Two of the most frequently used rating scales are *Likert scales* and *semantic differential scales*.

Likert Scales

Likert scales (named after Rensis Likert) are useful for providing the researcher with a range of responses to a given question or statement. For example:

How important do you consider work experience placements to be for secondary school students?

- Not at all
- Very little
- A little
- Quite a lot
- A very great deal

The same set of items can be posed to different groups (i.e. teachers, parents, pupils) if the research requires it, as long as the items and scaling are easily understood by the respondents. For example, would young children understand the difference between time descriptors such as often, seldom, or hardly ever? With younger children it may be more beneficial to use visual aids such as smiley, neutral and sad faces.

There are a few things to consider when creating a Likert rating scale. Firstly, be clear on the items that are to be included and how they relate to the research topic. Talking to colleagues, brainstorming the topic or reading up on it, can help to establish particular points of interest. It is good practice to have a range of positive and negative stances on the topic so that the participants are not being led in one way or another. It is also important to put the items in a random order, rather than a list of all the positive items followed by the negative items, as this too could bias participants.

Next, a system for categorising the responses should be established. The simplest way to do so is to give a numerical value to set expressions relating to the positive or negative statements. For example:

5 = Strongly Agree

4 = Agree

3 = Neither Agree nor Disagree

2 = Disagree

1 = Strongly Disagree

Each participant can then be given a total score based on their responses. For each positive statement they strongly agree with, they receive a score of 5; agree 4...etc. For negative statement, their score would be the reverse. So for each negative item they strongly agree with, they would receive a score of 1 and 5 for strongly disagree. These scores can then be added up for each participant and for each item which will give an overall indication of the direction and strength of opinion for each item. If the same rating scale has been used for different groups of participants, this could give a really interesting comparison.

Semantic differential scales

Another popular form of scaling is known as the *semantic differential scale*. Rather than giving an indication of how much participants agree or disagree with a set of items, this scale indicates what the items means to them. This is done through lists of adjectives and their polar opposites, separated by a scale:

How informative did you find your recent class trip to Kelvingrove museum?

Useful 1 2 3 4 5 6 7 **Useless**

Mark on the scale the extent to which you think the following adjectives describe your school environment.

Friendly	1	2	3	4	5	6	7	Unfriendly
Unwelcoming	1	2	3	4	5	6	7	Unwelcoming

Respondents circle the number which best indicates how they feel towards the item. Items should be listed in a random order, with a mixture of positive and negative adjectives on each side to help remove any bias towards a particular response. Similar to the Likert scale, these responses can be coded numerically for analysis. The above examples use a 7-point scale but any number can be used, depending on the topic.

Surveys and Questionnaires

Ideally, this should be read in conjunction with the 'rating scales' handout as rating scales are a common feature of surveys and questionnaires. Surveys are beneficial for 'gathering factual information, data on attitudes and preferences, beliefs and predictions, opinions, behaviour and experiences' (Cohen et al., 2011: p. 257). For example:

- You may want to know what parents' opinions on the school environment are;
- You might want to explore a particular behaviour in your school (e.g. bullying);
- You may want to look at why more students' choose one subject over another.

There are three key things to consider when preparing a survey or questionnaire: purpose, population and resources:

Purpose – specify the exact purpose of the enquiry

A study 'exploring bullying behaviour', for example, may be too vague; to make it more specific you could think about the impact of bullying on pupils, parents' perceptions of bullying behaviour in the school...etc.

Once your overall purpose has been decided, the next step would be to think about the subsidiary topics, which will form the questions in your survey: for example, you may want to differentiate between the types of bullying (spreading rumours, hitting, name-calling...etc.)

Finally, you would think about what specific information you are interested in gathering: for example, the frequency of each type of bullying behaviour (3+ times a week, 1-2 times a week...etc.)

Population – who should the survey/questionnaire be focused on?

Before conducting your survey, you will already have an idea of who you would like it to focus on, but you will need to take into account how feasible it is to get a response from everyone in your population (e.g. is it possible to survey all pupils in the school?).

If it is not possible to survey everyone, you can choose a sample from the population (e.g. pupils from primaries 4 to 7).

When choosing a sample, make sure that they are representative of your population (e.g. if you have a mixture of male and female pupils in your school population, make sure you have a mixture of male and female pupils in your sample).

Resources – what resources are required?

You may find it simplest to hand out a 'paper and pencil' form to be filled in, so you might need to consider the costs involved, such as photocopying.

If computer access is readily available in your school, computer surveys are becoming more and more popular. Survey monkey (www.surveymonkey.com) is a type of online survey software which is free, easy to use and has a whole range of examples for use in education. One of the benefits of

online surveys is that they can be emailed to participants to complete in their own time (this may help with response rates from parents).

Surveys and questionnaires are most straightforward and easy to analyse when they are 'how many', 'how often' etc. type questions (see 'rating scales' handout for more detail). Once you have created your survey/questionnaire, it is a good idea to get someone who can provide constructive advice to read it over. You want the questions to be clear and unambiguous for the participants in your sample, so make sure you steer clear of confusing or 'double-barrelled' questions (e.g. 'Is your teacher caring and supportive?' should be broken down into two questions). You should also avoid questions which ask the participant to assume another person's point of view (e.g. avoid asking teachers how pupils feel about bullying behaviour, it is better to ask the pupils themselves).

The 'rating scales' handout and the above information refer to closed questions, that is, questions where there is already a pre-determined answer. You may want to include some open-ended questions too in order to gain more in depth detail on a topic. For example, your research may be looking at pupils' attitudes towards homework, specifically, how supported pupils feel to complete their homework. You could have a range of closed questions such as 'Do you ask your parent or guardian for help with your homework?' with fixed responses (e.g. always, often, sometimes, never...). You may also have something like: 'Can teachers do more to help you with your homework? (tick all that apply)' with a set of responses such as better instructions, less time-consuming homework, clearer link to work in class etc. This might then be supplemented by an open question of 'Anything else?' As their responses could be on anything, it is a good idea to:

Read through all the responses and pick out recurring topics

Organise these topics into groups of similar content for your analysis, for example, 'Many of the pupils felt that they would benefit from less homework leading up to exams as this detracts from study time.'

The Psychological Service has a range of questionnaires that you could refer to for examples of the structure and format if need be. There are also a range of questionnaires and surveys online (survey monkey is a good example).

Video Observations

Video is becoming an increasingly popular tool for teachers' professional development as it provides teachers with a unique opportunity for reflection on their teaching practice. If action researchers have the means for filming the classroom situation, then this can be a valuable data collection method.

The use of video as an observation tool will depend on the aim of the study so the general and specific questions should be established at the outset. For example:

Broad goal – the use of solution-focussed approaches in the classroom environment

Specific questions – What content is covered in the lesson? How was the lesson structured? How did the teacher set up activities? How did the pupils react?

Depending on the topic being researched, the angle of the camera will vary. Even though the focus of the lesson might be on, for example, how effective group work is in a lesson, it is important that aspects of the whole lesson are captured. Focussing in on the students will mean that data will not be gathered on the teacher, which means that what the teacher did to engage students is lost. The aim is to get the most natural results possible, so researchers will need to make sure that everyone involved is familiarised with the camera beforehand.

One of the biggest advantages to using video observations to collect data is that it allows practitioners to observe and pick up on aspects of the teaching environment that they may not have noticed before. It is a versatile method because teacher researchers are able to analyse parts of their lessons that they may not have considered before.

Analysing the video can be an individual or a collaborative event. Self-reflection on a lesson can be hugely beneficial, but collaborative analysis can allow for even deeper analysis as others may pick up on things that were not noticed on one's own. If the video is to be analysed in a group, it is important that the group are informed of the context of the lesson.

When analysing the video, there are certain things to look for:

- Content – what is being taught? How is the content presented?
- Materials – what kinds of materials are used? Are they beneficial to the lesson goals?
- Students – what are the students doing? Have they faced any difficulties?
- Instructional – what are the goals of the lesson? What strategies does the teacher use to engage students?

By looking at the above aspects, it should help analysis move away from the superficial aspects of the video (e.g. 'I was talking too fast', 'What on earth am I doing with my hands?').

Content Analysis

Content analysis is a **qualitative** research technique and refers to a method of summarising lots of written, or spoken and transcribed, data so that the main points and ideas become clear. More formally it refers to a set of systematic procedures which allow the researcher to rigorously analyse data in a way which is verifiable and possible to replicate. It can be used to analyse any sort of written material, from transcriptions of interviews, to comments on questionnaires, reports or newspaper articles as well as documents such as films, TV programmes, comic strips and cartoons etc.

How do I undertake content analysis?

Identify the text to be analysed

This will depend on the source of your data. If it is questionnaire responses it is likely that you will have relatively small amounts of text to analyse and you will be able to use all of the data you have gathered. If you are looking at the content of recorded verbal responses you will first have to transcribe your material (be warned, this will take a long time unless you are a skilled audio typist). You may find that you have huge quantities of data in which case you will need to consider how to take a representative sample as it would be too time consuming to analyse everything.

Define the units of analysis

Are you going to be looking at a word, phrase, sentence, paragraph or theme? For example you may be looking for how often a person uses a particular word or phrase in the context of an interview which you have recorded. You may also be looking to identify the ideas or themes which are expressed within the text (sometimes this is specifically referred to as **thematic analysis**. It follows a similar process as outlined here.)

What are the categories for analysis?

Your categories might be concerned with the following kinds of things;

- The subject matter
- Is it positive or negative?
- What values are revealed?
- What are the goals or intentions?
- What are the characteristics used in describing people?
- Are there sources of conflict?
- How are conflicts resolved?

This is, of course not an exhaustive list and the categories you choose will be linked to the kind of data you have collected and to your research question.

Decide on the codes to use for the data

A code is a way of organising and summarising the data you have. Codes are usually words which express ideas contained within the text and are linked to the categories you've identified. Your codes can be either **pre-defined** or **emergent**. Pre-defined codes are those you have arrived at prior to analysing the data. For example you may be researching teacher stress. You have reviewed the literature and are interested in looking at the cause of stress, the physical, emotional and relational effects of stress, perceived impacts of stress and solutions. Your pre-defined codes

therefore may be 'cause', 'physical', 'emotional', 'relational', 'impact' and 'solutions'. When a piece of text seems to be referring to the idea expressed in your code, you would allocate it to this code. Practically this is done by either using colours as a key or by cutting out the text and physically placing it under the heading (post it notes and flip chart paper come in handy here).

Emergent codes are those which arise as you read through the data and are constructed as you go along. This can be useful if your research question is fairly open ended and you are looking for information which might guide the construction of your hypothesis.

Test your codes

Before you analyse all of your data it is a good idea to check whether or not the codes you have chosen are clear and unambiguous. One way to do this is to ask someone else (at least one but possibly more people) to code a sample of the data in the same way you did and to compare their results with yours. You may find that you have to adjust your coding system to take into account a different 'reading' of the data.

Carry out the analysis

Once you are as sure as you can be that your coding system is reliable and can be replicated by others, you can carry out your preliminary analysis of your data. At this point you are likely to find that some of your codes are too 'coarse' to capture some of the subtleties of the meanings within the text or you may realise that some of your codes are semantically very similar. This will cause you to either reduce or increase the codes you are working with and will require you to re-analyse your data using the refined system. You may find that you have to repeat this process several times until you are sure that each code you have used is unambiguous and represents a clear and distinct meaning.

General Observations

Content analysis is very often time consuming and laborious. It can also be quite subjective even if you have gone to great lengths to ensure that your coding system is as reliable as possible and can be replicated. It is more common for this methodology to supplement other forms of data analysis. However, it can be a very rich source of data and provide interesting examples to illustrate findings which have arisen from other methods of analysis. It is possible to use computer programmes to assist with the analysis of large quantities of data.

