

# Taking action into research!

**Erika Lövström & Linn Areskoug**

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# Introduction

The purpose of this material is to give an overview about action research to students who are considering using this method in a piece of research work, such as a bachelor's or master's thesis. While the primary target group are student teachers doing a research project for their studies, it also serves as a reference for supervisors of students conducting research within their education.

The aims of this material are:

- For students to get an understanding of what action research is, including the research process, variety of data, data collection and analysis methods that can be used, and ethical aspects and evaluation of action research.
- For students to become interested in using action research, have a basic understanding of how to start building an action research plan and start implementing the method.
- For supervisors to get an understanding of the nature and central elements of action research even if they have not used this approach themselves, and feel comfortable supervising students through the process.

In addition to this material, readers are advised to consult additional literature on action research in order to build a solid framework. Suggestions on readings are provided at the end of this guide.

## What is action research?

Action research involves the study of social situations carried out by practitioners with the aim to improve quality of action, activities or praxis (cf. Kemmis & McTaggart, 1988; Carr & Kemmis, 1986; Hopkins, 1993). This means that action research arises from practical questions or challenges of everyday practices at work. It is aimed at developing practice, and the individuals who carry out action research are often professionals, or are learning to become professionals in the field they research, e.g. teachers in schools and student teachers. Action research is, fundamentally, a reflective approach to research, where the researcher/professional engages in sincere scrutiny of one's own practices with the intention to develop those practices. In this process, the professional identity unfolds to the researcher/professional.

The starting point of action research is usually the observation of an event, a frustrating encounter, a puzzling incident, the recognition of an unsatisfactory outcome, a lack of knowledge for solving a problem, or a desire to understand more about a situation. Action research is academic inquiry, but rather than a method, it is an approach for research, which may involve the use of a variety of methods. The same principles of being systematic and rigorous that apply to academic inquiry in general also apply to action research.

What sets action research apart from other types of approaches is its close connection to practical application. Whereas researchers are, in general, concerned with application of research results after the research has been completed, the action researcher applies to practice the new knowledge arising from the research during the research process. Thus, the application of research results is built into the process and the application can be seen as an outcome of the research. The action researcher's "motto" could be coined quoting Lewin (1946, 34): "Research that produces nothing but books will not suffice".

## The practitioner researcher

In addition to the concerns with application, another aspect that distinguishes action research from other approaches of educational research is the researcher's role. In action research, the researcher is primarily a *practitioner* researcher. This means someone who (Ryhammar, 1989):

- studies local practice in a familiar context, e.g. own school or class,
- seeks legitimation and authorization for local everyday activities not through opinion but through evidence,
- engages in constant reflection,
- acquires authority in one's own work by taking responsibility for contributing with new insights to the common knowledge base,
- develops the body of professional knowledge to raise the level of professionalism in the field, e.g. teaching.

These characteristics make the action researcher's role somewhat different compared to the *educational* researcher who studies other people's actions rather than her own actions. Acquiring authority in one's work or raising the level of professionalism in one's field are generally not the key focus of educational research, although there may be elements of these involved. Educational researchers are focused on improving practice in a larger community (research community, schools and school teachers more generally), but the practitioner researcher often operates at a micro or meso level, meaning that focus is on her own practice, her own school or her own disciplinary field (cf. Norton, 2009).

This has consequences for what primarily guides the choices made in the research; is it research design (educational research) or is implementation (action research)? Educational researchers are often primarily methodologists and theoreticians employed at research institutes. This means that they are often, but not always, more detached from the contexts they investigate than the action researcher. Action researchers are much engaged with the practices they research and develop. Thus, benefits in action research involve in-depth knowledge of the local culture and a perspective of the local practitioner's every-day work and its problems. At the same time, it may be challenging to maintain objectivity and recognize things that are taken for granted (Ryhammar, 1989). Therefore, a reflective stance is key (e.g. Kember, 2000).

Action research can be considered in almost any school context where research is possible. However, if you do not get the support from school leaders and you don't find someone in the teaching personnel with whom to collaborate, it may not be advisable to do action research. Also, if you cannot ensure that data can be kept confidential and a sufficient level of pseudonymization obtained, consider other approaches. Action research, like any research, requires commitment. This is emphasized in action research as there is an action to be implemented, not only data collection. It can be disruptive for teaching and learning if the implementation of the action is interrupted half-way through. Consequently, it is necessary to ensure that you have the resources to engage in the project, and that the school is supportive of the initiative.

## The reflective practitioner

Educational researchers are guided by various forms of knowledge, such as meta-knowledge about learning, theoretical discipline-specific and pedagogical knowledge, and the social and moral code of the teacher profession (Niemi & Jakku-Sihvonen, 2006). These apply to the action researcher as well, who in addition utilizes reflection as an important source of knowledge. Reflection is a personal process of purposive thinking about one's own beliefs and behavior in relation to practice (cf. Schön, 1983). Reflection is a systematic and disciplined way of 'thinking about thinking'. At its best, reflection results in changes in attitudes and in the daily practices of teaching. Reflection involves asking questions to the daily teaching practice. By asking questions, such as "Why is this happening like this?", "How am I reacting and why?", "What does this mean for pupils' learning?", and "How can I change my teaching to enhance pupils' learning?" you will get to the core of reflection. When this becomes routine practice in your daily teaching, you have become a reflective practitioner.

For instance, in teaching, teachers have beliefs about what good teaching is, how pupils learn, or what a school is supposed to achieve. Professional teachers have a theoretical understanding of teaching and learning, which informs their practice. At the same time, practice challenges as well as consolidates that theoretical understanding. The reflective process is needed to articulate a personal professional theory-in-use to guide the daily work. Reflection is the bridge to make sense of practice through theory, but also to give theoretical abstractions a grounding in everyday practice. By engaging in action research, you practice a working attitude and method that allows you to assume agency in your (future) work as a professional teacher. Action research provides a tool for taking authority over one's profession.

## Writing an action research reflection journal

It is common in qualitative research to document observations and experiences while engaging in the research process. For instance, ethnographers keep a field diary. Similarly, it is advisable that the action researcher keeps an on-going logbook, e.g. reflection journal,

throughout the process. The reflection journal is a tool that helps the researcher to identify and express one's own conceptions of, and thoughts about, the phenomenon under investigation. This writing tool helps to structure, clarify, and conceptualize one's own thinking. At the same time, it is a way of documenting the research process. Reflective writing means describing one's experiences, observations, as well as recognizing and analyzing what takes place in the research environment.

Items that may be documented in the action research reflection journal include (Kember 2000):

- initial reflections on the topic,
- plans,
- actions taken,
- observations of the effects or implications of the action,
- reflections on actions,
- emotional reactions,
- questions, examples, cases, areas of practical application, interpretations (with caution),
- references for and notes on relevant literature and supporting documents discovered.

The initial reflections on the topic may be particularly helpful in grasping the process as these will allow the researcher/practitioner to return to the starting point, and understand subsequent choices in light of where one stood on the topic to begin with.

### **Suggestions for writing the action research reflection journal**

*Set aside regular time slots*, for instance 5-10 minutes at the end of a teaching session, for writing observations and experiences in the reflection journal.

*Writing regularly* will help you keep up the routine of writing, and will be of great help when you are reporting choices made and events in the process in your research report.

*Write spontaneously*, i.e. jot down thoughts as they appear in your mind. At this point, aiming for structure and perfect lines might have an impairing effect on the writing. The purpose is to document the research process including your thoughts, insights and questions so that you yourself can develop your relationship to your research, as well as accurately describe the research and its process to the audience who will read your research report.

*Focus on the process* in your writing, this is not yet the final product.

Writing whole sentences means writing whole ideas. *Keywords* may be helpful for quickly documenting insights or thoughts, but it can be difficult to recall later why you thought these keywords were important.

Sometimes, purposefully ending your writing with some more *open ends* may make it easier to pick up the writing the next time you return to the reflection journal.

*Share your writing* with peers and others who may be interested in your research. You can also invite peers to share their insights in your mutual journal. This gives each of you access to each other's thinking. Sharing a journal or log may be particularly useful if you are doing action research with a colleague and both of you are implementing the same activity in your respective classes. The mutual journal provides a means for sharing experiences while the process gets documented. Even if you use a shared reflection journal, you can still keep a personal version for yourself in which you document observations and thoughts that are for your personal use only.

While research reports usually follow an academic genre, *keeping a personal touch* throughout the reflection journal is likely to make the writing more interesting and motivating for you.

(cf. Boice, 1990; Lonka & Lonka, 1996).

## The process of action research

An action research process involves several phases that are interlinked (cf. Kemmis & McTaggart, 1988; Carr & Kemmis, 1986; Hopkins, 1993; Kember, 2000).

Action research begins with *identifying* a challenge in your work environment or professional situation that puzzles you. When the idea has taken shape, you can formulate a working hypothesis about the situation. The understanding of the researched phenomenon at this point is very much based on the action researcher's own practical theory or theory-in-use. Having articulated your theory-in-use as a teacher will help you to formulate your focus and guide you towards relevant literature. The importance of theory-in-use also implies that action research is not a-theoretical in nature, but the role of theory is different as theory is initially filtered through the action researcher's practical professional understanding.

It is important to identify what kind of beliefs you hold about the phenomenon you are about to study. What do you think causes it? Why? Could something else influence the situation? Once you have identified a challenge, it may be helpful to talk to others, including your peers and colleagues and ask for their views about the challenge. Other people's perspectives can help broaden your understanding, but they may have different understandings about it (for some it may not even be a challenge!). This information is necessary in order to design the project and develop a realistic action plan. At this point, the action researchers also familiarize themselves with prior research on the topic.

Once you have broadened your understanding about the challenge or situation, the next step is to *plan* the action to be taken. For example, teaching can be observed and data collected during classroom visits, or afterwards, depending on the nature of the project aims. The research questions decide how the data is collected, and there might be occasions during the

data collection that affects the research questions. However, often one also wants to know the baseline level, so for instance, mapping out pupils' current understanding about a topic may be useful if one is later to say something about the effectiveness of a teaching intervention. One might also be interested in pupils' experiences during a school-based project pertaining to, for instance, sustainable development, and in this case it may be important to gather data continuously.

Action research typically has two or more phases of implementation and development, and the subsequent phases build on insights from the first phase. At this point it is useful to differentiate between research methods and the methods used for implementing the action. The research method may be, for example, ethnographic observation, while the implementation method could be collaborative group work in the class.

An essential part of the cycle is the action researcher *reflecting* on what the experience means for one's own development as a professional. There is also a broader developmental interest, that is, the action researcher is expected to make suggestions on good practices for others dealing with similar challenges. Generalizations cannot be made, but there is value in communicating good practices so that others can adapt them to their own contexts.

The action research process typically includes the following activities. However, it is important to remember that you should revisit the research question several times in relation to the different activities of the process in order to keep a bird's eye view on the topic.

Designing and initiating the study:

*Focusing the topic.* Here it is important to keep it limited enough!

*Selecting participants,* i.e. deciding whom one will collect data from

*Literature review.* Prior research will help to understand the challenge so that one can design an adequate intervention or development plan.

*Identifying the sources of information.*

*Identifying ethical issues.* There are many ethical issues involved especially if the research participants are one's own students or clients.

Mapping out the context and relevance statement:

*Mapping out the current situation,* e.g. how is the challenge perceived by others? How prevalent is it? Why is it important to investigate the issue?

*Choosing methods for collecting information* about the current situation. These may include, for instance, interviewing, observing, reviewing documents and records, doing a survey.

Creating and implementing the action plan:

*Deciding, in the light of what we know by now about the challenge from prior research and from the mapping of the current situation, what kind of intervention could help to tackle the identified challenge.* The intervention can be a teaching experiment, developing and using new materials, developing communication between school and parents, doing school plans.

Data collection and analysis:

*Data collection takes place through, for instance, interviewing, observing, or doing a survey.* It is possible to be creative. If pupils make products (essays, pieces of arts etc.), one can utilize these as data (provided that the pupils and their parents have given their consent).

Data analysis identifying key issues and experiences:

*Data analysis* depends on the data collected, but may involve, for instance, coding and categorizing, or doing statistical analyses (if the data set is large enough to permit use of other than purely descriptive statistics). A plethora of methods literature is available to inform the reader on methodological choices. Based on the analysis, *a synthesis* of key results and recommendations can be made.

Written and oral reporting to stakeholders:

*Sharing key results* and recommendations to others through formal reports, narrative accounts and presentations.

# The research objective and research questions

## Identifying your topic

As mentioned above, the starting point of action research is usually a challenge, a problem, or a puzzling incident. The next step will be to answer some fundamental questions that will help you to consider the stakeholders of your research:

- Why is the action research project important to me?
- How does literature support the research?
- How will the action research influence the pupils in my class?
- How will the action research influence my colleagues, school, grade level...?
- How will the action research influence pupils' legal guardians?
- How can doing action research develop my teaching/me as a professional?

Answering these questions will help you identify key concepts of your research, and to explicate the rationale for the research. It will also help you to identify different perspectives that you may wish to explore, including pupils, your colleagues, the pupils' legal guardians, school leaders and so on. At this point, the context of your research should be clear to you. You are also likely to have some expectations as to what you hope to achieve as an outcome of the study, that is, how the process of conducting this study might help to develop practice.

Action research is often participative and community-focused, and may involve pupils and colleagues in the school community more broadly; there are benefits in working collaboratively. An individual can only work effectively to solve those issues, problems or dilemmas over which he or she has power to change. Collectively the power is greater (Woolhouse, 2005). It may be necessary to involve colleagues in the project as early as possible. Before getting started with data collection, it may be useful to check with school personnel how they perceive your research initiative as they might have important insights that will allow you to broaden your perspective or narrow down your focus. You may also need help in data collection and implementation of action plans, and it will benefit your study if you can involve your colleagues in decision-making that involves them, or require their help and support during the research.

Here are some suggestions that may aid you in setting up a project in a school setting:

- Consider opportunities to work on your project in connection to your teaching practice if your curriculum allows incorporation of school-based project work in the practice period. Combining practice tasks with an action research project can help you get started more efficiently with your action research even if you cannot do actual research during your practice. You may nevertheless be able to do initial mapping and observe potential focus areas for a research project.
- Ask your supervisors at the school and the university for advice and support. Practice supervisors at school are typically very familiar with the context and may already be able to pinpoint several foci for research! This may also provide an ample opportunity

to collaborate with your supervising teacher in a relationship that can have features of mentoring.

- Ask for an opportunity to talk with teachers in the school about things that they would like to develop. This way you can also find allies who have insight in the school practices and can guide you in identifying key people for the project, inform how to get access to materials, and so on. If you are not already working at the school you are likely to need help with practical aspects of the project and therefore collaboration with a teacher or several teachers at the school is helpful.
- Consult with the rector or school leader to gain the support of the leadership for your project. The school may have ongoing or planned development projects that your project can be attached to. This will probably improve your chances of getting legitimacy, support, access and visibility for your project.

You will need to map out what resources you are going to need and the availability of those resources throughout the action research project. Resources include, for instance, input from colleagues, working hours and time, technical equipment and support, and administrative support. You also need to look up professional/academic literature to help you to identify what is already known about the phenomenon you are about to investigate.

### **Learning task 1: Identifying your topic**

*Identify the issue:* Identify a challenge/problem/event/ you have experienced yourself as a teacher in class, school or other professional context, for example if pupils are failing to complete their homework, or they show disinterested in the topic in class. Write down, in your own words, a short description about the challenge. State the issue as a one-sentence problem, for example, "some pupils are always silent in class", "there have been cases of bullying", "pupils do not come prepared to class".

*Reframe the problem as a question:* For example "how do pupils experience x subject?", "what obstacles do pupils have in doing class assignments?", "what kind of tasks do pupils find motivating?"

*Find out your objective:* Put in words what you hope to achieve, for example "to understand what the experience of x subject means to pupils, and to be able to develop x subject assignments so that they better serve the pupils' learning".

(Cf. Stringer, 2008)

## **Drawing up the research questions**

Asking the right questions is tricky. Let us take a look at the kind of questions that can be addressed through action research. Action research tends in general to answer questions of the following five types (Anttila, 1998):

*1. Manifestation of the phenomenon.*

Questions target the features or characteristics of a phenomenon, including finding out the most important or typical ways in which a phenomenon occurs. In the example of bullying, we might ask: What kind of bullying has pupils observed in school, and how do they experience bullying to affect daily life in school?

*2. Time-related connection of the phenomenon.*

Questions target chronological aspects, for example, what has the phenomenon been like in the past, or what is it anticipated to be like in the future? We may be interested in comparing past experiences with the situation today. Comparing learning results in the past with a particular set of assessment tasks to the learning results from a reformed set of assessment tasks might be an example of a time-related question.

*3. Questions related to the amount of the phenomenon.*

Questions target the frequency of a phenomenon, or “how much”/“how often” something takes place, i.e. the prevalence of a phenomenon. In the example of bullying, we might ask, “How many pupils have a) seen, b) experienced bullying in the school. We may combine frequency-related questions with time-related questions (see type 2) (Time-related connection of the phenomenon). For instance, how has the frequency of bullying incidents changed over the past two years?

*4. Impressions concerning the phenomenon.*

Questions target what people think about the phenomenon and their subjective experiences of and reactions to the phenomenon, for instance, how does it make the pupils feel when they see bullying taking place? How do the pupils react or what do they do when they see or hear that another child is bullied?

5. *Questions related to the comparison of the phenomenon and the factors affecting it.*

Questions compare the phenomenon to something else, or seeking connections or relationships. For instance, school bullying can be physical in nature (pushing), but it may also be psychological (calling names). We might want to find out if these two forms of bullying take place separately or do they tend to be connected. We may also be interested in factors that contribute to why some pupils engage in bullying, (What factors affect the phenomenon?) or in the differences in forms of bullying based on age group (What kind of variations are there inside the phenomenon?)

### **Learning task 2: Drawing up the research questions**

In the first Learning task you were asked to identify the issue, write it down in your own words together with a short description about the problem, and state the issue as a one-sentence problem.

The next step is to think of the three to five types of questions one can ask, and decide what exactly it is that you want to know about the phenomenon. Note that you may have more than one question, and these can represent different types.

Once you have identified which types of questions are the most relevant for you, try to reframe the problem that you identified as a question in Learning Task 1, if necessary. Researchers put a lot of effort on formulating the questions so that they are clear, understandable, and possible to evaluate.

## **Thinking about what you would like to achieve with your study**

We also need to decide on indicators for evaluating how well the goals of the project are achieved. The following is an example (based on Altrichter & al., 2008) of how the goal might be to end bullying and improve the school climate:

- *Aim:* We strive for a school climate in which teachers and pupils feel comfortable and are stimulated to high performance.
- *Realization, i.e. what would this aim mean in practice:* Teachers, pupils and staff respect each other; rules are jointly developed and committed to; mistakes are viewed as learning opportunities rather than something to be punished for.
- *Indicators:* Teachers and pupils demonstrate respect of one another by being courteous, behaving friendly and showing that they care for each other; there are guidelines for conflict resolution that have been developed together; rules have been negotiated democratically.
- *Instruments:* survey on school climate, interviews with teachers, pupils, observations and classroom visits.

### **Learning task 3: What do you like to achieve with your research?**

In the first Learning task you were asked to identify the issue, write it down, in your own words together with a short description about the problem, and state the issue as a one-sentence problem. The next step was to think of the type of questions one can ask, and decide what it is that you want to know about the phenomenon.

Now, write down the aim that you hope to achieve with your project. Try to envision what a school or class in which this aim in reality would look like (realization).

Think about indicators that show if the intervention is successful, and whether or not your research achieves the goal you have set for it. What aspects will you need to monitor or gather information about? What kind of instruments or tools do you need to gather information?

Always, keep in mind what your aim is, and what it is that you ultimately want to achieve by your research initiative.

## **Planning your time**

Plan a sufficient time span for the project, and consider the time you have at your disposal. For instance, a bachelor's thesis might be extended over 1-2 semesters, a master's thesis in 2-3 semesters, and a doctoral dissertation in 8 semesters. These times vary depending on the institution and the national context. For example, in professional programs the student theses are often called independent projects, and they are included in courses that run intensely for half a semester. The level of work efforts and academic standards are equivalent of a bachelor's thesis.

As you prepare for your research, you may need to seek permission from school authorities to carry out research, and informed consent from pupils and their guardians. This part of the process often takes more time than predicted. It is a good idea to make a week-by-week schedule. Furthermore, observing changes in learning may require a long enough intervention to influence change. Therefore, action research is best done in student research projects that span over at least a whole semester or more.

A time plan for a 2-semester Master's thesis might look like this:

*Semester 1.* Doing a literature review, planning the intervention, writing a research plan, obtaining research permissions from school authorities, preparing information sheets, informing participants and obtaining consent, preparing data collection, and possibly mapping out the current situation, writing the introduction and theoretical part of the thesis and the methods section to the extent it is possible.

Semester 2. Obtaining informed consent from pupils and their guardians if this has not been done yet, implementing intervention, collecting data, analyzing data, writing up the results and conclusions.

#### Learning task 4: Planning your time

How would you describe the action research as a time-bound process and activity?

Draw a map (or other visualization) of the process. Identify the crucial steps or stages in the process. Indicate these on your “map”.

What is your role in the key points? What other parties are involved, and what is their role.

## The action research plan

A research plan outlines the aims of the research, an overview of prior literature on the topic, the research questions, methods to be used, and a list of references. Often information letters and consent sheets as well as research instruments or interview protocol are attached to the research plan. Here we describe the contents of the research plan in more detail.

<p><b>Background</b></p> <p>This part may also contain description of the context (i.e. school context), which may be elaborated further in a specific chapter/section devoted to the description of the contextual factors.</p>	<p>In this part you describe and make your case concerning:</p> <ul style="list-style-type: none"><li>• <i>the issue</i> causing concern and the challenge, and explain to the reader why it is important to conduct research on it. Many challenges are multifaceted, but it is necessary to limit the scope and decide on what specifically will be the focus of the research.</li><li>• <i>the focus</i> of the research, which means explaining to the reader what you have decided to include and what not to include even though you recognize that it may be related to your challenge, and to justify your inclusions/exclusions.</li><li>• <i>the aim</i> of the research and its importance in the context in which the project is carried through. The expected outcomes are also envisioned as part of the justification for why this project is carried through in the first place.</li></ul>
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<p><b><i>Theoretical frame of the research and prior research on the topic</i></b></p> <p>In the research plan the researcher shows familiarity with prior research in the field by describing a suitable framework and demonstrating how existing knowledge will be used in designing their own research project.</p>	<p>Although action research is mainly concerned with improving practice, it is not a-theoretical in nature. In fact, theory is relevant in action research in two ways: 1) Just as any research, action research focuses on a specific topic on which we are likely to find prior theoretical models and research. Continuing with the example of school bullying, there is plenty of research on this topic that has contributed to theory development in the field. You will need to familiarize yourself with this body of literature. 2) The second theoretical framework pertains to action research as an approach to conducting research. For instance, we may choose action research because we accept that learning takes place through reflection (e.g. Schön, 1983), that learning is situated (cf. Lave &amp; Wenger, 1991), or that learning takes place in a community of practice (Wenger, 1998; 2000). Such premises may lead the researcher to adopt action research as an approach to changing practice.</p>
<p><b><i>Research questions</i></b></p>	<p>Research questions typically target 1) characteristics of a phenomenon, including finding out the most important or typical ways in which a phenomenon occurs; 2) chronological aspects, for example, what has the phenomenon been like in the past, or what is it anticipated to be like in the future; 3) frequency of a phenomenon; 4) others' impressions concerning the phenomenon; or 5) compare the phenomenon and the factors affecting it (Anttila, 1998).</p>
<p><b><i>Ethical considerations</i></b></p>	<p>All research involves questions that are ethical in nature, and these are different depending on the approach adopted and the methods chosen. There are, however, certain common expectations that researchers must consider and adhere to. These include the voluntary nature of research participation and the need for participants to be sufficiently informed before consenting to research, the protection of the identities of the research participants, and the confidentiality of research data.</p>

<p><b><i>Intervention</i></b>  This part is generally descriptive in nature to allow the reader to understand the nature of the intervention and the context in which it takes place.</p>	This part is generally lacking from other types of research projects. The action plan should be as concrete as possible including descriptions of what is going to take place, when, where, and who are participants in the intervention. A carefully designed timeline of the intervention helps the researcher to keep on track of the process.
<p><b><i>Method</i></b>  In the methods section the researcher needs to describe with what kind of methods data will be collected, what kind of data is collected, and from whom (i.e. sample). Intended methods of data analysis are described as well.</p>	Action research is an approach that may utilize both qualitative and quantitative research data and a variety of data collection methods.
<p><b><i>Literature</i></b></p>	Research plans include a selection of central literature. This generally includes both nationally and internationally published research. The literature pertains to theoretical frameworks, prior research on the topic, and methodology.

## The research method and data collection in action research

Action research is systematic inquiry that may utilize both qualitative and quantitative research data. Data can be obtained through various methods, of which interview, observation, and questionnaires are commonly used. However, it is important to carefully consider what information you will need for answering your research questions, and select data collection method(s) accordingly. It is better to be focused, as one may otherwise end up with a pile of data that does not help to properly answer the research question(s). It is not good practice to collect any material that one might come across just in case it is useful later on.

Common data collection methods include:

- Interviews are usually semi-structured or open-ended, and conducted with individuals or groups.
- Questionnaires are usually structured, but may also contain open-ended questions. The caution that researchers using quantitative questionnaires must take into account is that sample sizes in action research tend to be small and often insufficient for elaborate statistical analyses. Descriptive statistics, however, can usually be reported.
- Observations can be structured, semi-structured or open-ended, depending on the degree to which the researcher has specified what is to be observed. Student feedback, and web-based discussions and blogs can also constitute data sources.
- In addition, class tasks and assignments, tests and exams can constitute data. In fact, there are numerous data sources, such as student reports, presentations, and essays, in the class that may be readily available to the action researcher without burdening the research participants with additional data collection.
- While the reflection journal is helpful throughout the process in making interpretations about data, it can also constitute research material.

## Interviews

Interviews are a common form of collecting data in action research. Interviews essentially provide reconstructions of the individual's reality, with the aim to reach the participants, e.g. pupils', experience (research questions of type 1 and 4 primarily). Focus is on the variety of the individuals' experiences, and the researcher attempts to "grasp the whole spectrum" with the emphasis on different types of experiences/ways of experiencing something. The researcher tries to find different themes in an individual's data (vertical analysis), and/or locate all individuals in whose interviews the theme is present (horizontal analysis) (cf. Polkinghorne, 1995).

When analyzing the interviews, the researcher may pay attention to a variety of aspects, such as the content of the talk, the narrative or "story", talk and silence, expressional strategies, and gestures (Kaasila, 2008).

- The content of the talk reveals the interviewee's emotions, beliefs, knowledge and motivations that the interviewee is aware of and is willing to tell about.
- The narrative or the "story" in the interview means identifying a genre and a plot. The way in which the story is told is expected to reveal something about the fundamental characteristics of the interviewee, i.e. their identities. Emphases, repetition, telling through negation, and telling through third voice are the interviewee's ways to signify higher personal relevance or importance of a certain theme or topic.
- Spontaneous talk, pauses and silence can tell about the interviewee's relationship with the topic, i.e. their willingness to talk about the topic or sensitivity of the topic for the individual.

- Facial expressions, posture, and tone of voice can express emotions in the interview situation and emotions associated with the theme or the topic of the interview (Kaasila, 2008).

Active interview (Holstein & Gubrium, 1995; cf. Burnaford & al., 2001) is a special interviewing technique sometimes used in action research. The active interview is a form of dialogue, in which meaning is actively constructed and emerges as a result of the interview. These interviews are relatively open in nature. However, guiding questions can be used, but their purpose is merely to set the agenda, not to control the content. The interviewer may even ask the interviewee what kind of questions he or she would like the reviewer to ask. In the active interview the interviewer may express viewpoints and perspectives, which generally is not the case in traditional interviewing. The interviewer shares thoughts with the interviewee on what he or she finds is important data or what he or she has so far been learned from the research. The active interview might be suitable when one wants to learn more about how pupils respond to an intervention, and to receive improvement suggestions from them.

## Observation

Just as the interview, observation, typically in class, can be an informative method. The action researcher needs to be aware of what are the things that can be analyzed in observation data. In a classroom setting, one can observe, for instance, emotional reactions, motivation, cognition or social phenomena (Hannula, 2007). The skilled observer can observe facial expressions, positions, proximity and distance, and voice tone as indicators of affective responses. Motivation may be interpreted through choices that the pupils make regarding assignments, for example. Cognitive aspects can be analyzed through the pupils' achievement, and through what pupils communicate about a subject, learning, social aspects or school. In addition, facial expressions may reveal something about the cognitive aspects as the pupils engage in solving their assignments. Social phenomena can be observed through the forms of communication used, and through the peer relations pupils express in class.

Both audio and video recordings should be transcribed. The first step is usually a rough transcription, which finds the most significant events or incidents. An exact transcription is sometimes done only in the most important places. However, it may be necessary for the researcher to transcribe all data in order to determine the significance of the different parts. Transcription of video recordings is aided by comic strips –type transcription with still pictures and transcriptions of speech. Sometimes also gestures, facial expressions, and body postures may be written down.

Observations are greatly aided by the use of videotaping. The researcher needs to consider how many video cameras are needed to cover the desired setting. Is the video primarily taping the teacher or the class, or both? Is the picture quality good enough to analyze more delicate features of for instance collaboration between peers?

### **Learning task 5: Deciding on data collection**

*What kind of data do you need?* Experiences, stories and narratives, feedback, grades, numerical information...? Take each research question at the time, and consider what kind of data you need for answering the question. You will also need to consider whether you use the same methods for collecting baseline data, i.e. mapping the current situation, and for assessing the success of the intervention.

*From whom?* Pupils, colleagues, school leaders, parents...?

*How do you plan to collect data?* Through observation, questionnaires, interviews, feedback sheets, graded assignments...?

*Who collects the data?* Are you, for instance, going to interview your own pupils, or would it be a better idea to ask a colleague who may not be involved with the grading of your pupils, to assist you?

## **Reliability and validity in action research**

Just like in any research, the action researcher critically scrutinizes the research once conducted. Typically, researchers evaluate their research based on its reliability and validity, but in action research trustworthiness and transferability are often more adequate measures. These mean that even though the results of the research are not generalizable to a broader population, someone in a similar context or experiencing a similar challenge may find the research interesting and useful, and that your study is documented and reported in a way that allows others to evaluate the choices made, results obtained and interpretations made.

Trustworthiness can be improved through triangulation and by having a second person coding part of the data. Triangulation means that the researcher compares the results obtained through different data, e.g. interview, observation and questionnaire data. This is often easy to implement in action research because the process tends to generate different types of data, especially when conducted in classroom settings.

Researchers sometimes aim for generalizability of their findings. The practitioner researcher is more concerned with the transferability of findings. The aim is not to generalize, and due to the nature of the research, this is not even possible. The action researcher asks instead, in what contexts are the results transferable or applicable? For a useful discussion on generalizability in action research, the reader is referred to pages 41-42 in *Action learning and action research* by Kember (2000).

In addition, action research is concerned with credibility, meaning that the findings/results are plausible from a practical point of view. And recall the starting point of action research: a challenge or a problem in the current circumstances. Consequently, one measure of the worth

of the study is its meaningfulness. Do results contribute to the aims of the study? Do the results contribute to new knowledge?

## Ethics in action research

Ethical questions that researchers need to consider include the voluntary nature of research participation and need for participants to be sufficiently informed before consenting to research, the protection of the identities of the research participants, and the confidentiality of research data. Participation in research is always voluntary for the participants.

Participants must have enough information based on which they can make an informed decision about research participation. The research participant has to have full capacity and legal status to provide consent. If this is not the case, as for example in many school-based action research projects that involve children as research participants, a parent or guardian needs to provide consent. Even if informed consent for a child's participation is provided by a caretaker, it is important that the child is given information according to an age-appropriate level, and that the child's right to make decisions concerning him or her are taken into account. A child must not be forced to participate in research. It is worthwhile to note that even a teaching and learning intervention is carried out as a part of regular teaching and all children in class take part in the intervention, it must still be voluntary to allow data collection for research purposes.

The following are suggestions on aspects of the research that the action researcher may wish to include an information letter to parents and guardians:

- the title and purpose of the research,
- the intervention and procedures,
- timeframe and possible follow-ups,
- time needed for interviews, or answering questionnaires, and other expectations regarding participants,
- the voluntary nature of participation and the right to withdraw from research at any point of time without providing a reason and without fear of sanctions,
- participation or non-participation will not affect how the research participant is treated or what services will be available for the person,
- possible benefits and discomforts,
- researchers contact details,
- information about financier, if the project has gained external funding,
- how the collected data is stored and what will happen to it after the completion of the project. If there are no plans of continuing the research project it is advisable to destroy the collected data unless its full confidentiality can be fully granted.

In addition, if identifiable personal data are collected, the research must comply with the law (General Data Protection Regulation) and prepare a data protection sheet. The data protection

sheet is a different document from the information letter about the research to potential research participants. Whereas the information sheet mainly is a research ethical document, the data protection information sheet is a document about certain legal aspects pertaining to how information about people is handled. Institutions of higher education have usually prepared data protection information templates.

It is a good idea to let the participants know that the researcher offers to answer any questions that the participants (or their parents/guardians) might have about the research. The researcher also needs to inform participants about their right to withdraw from the research at any time without penalty or sanctions. The research participant must have an idea of what the research is about, and what risks may be associated with participation. In educational action research harm could include anxiety, regret, or emotional distress, or social harm meaning stigmatization of a group of individuals. The researcher must minimize the risk of such negative effects. To protect research participants and their environment, individual and school names are not disclosed.

Many ethical issues in research are common for a variety of research approaches and initiatives. But, there are questions that the practitioner researcher typically needs to think about (Norton 2009; cf. also Kuriloff, Andrus & Ravitch, 2011):

- *Distribution of benefit*: If an intervention is believed to facilitate learning, is it ethical to refuse it from a control group?
- *Power issues*: There is always a power relation (relation of authority) between the teacher and the pupil. This means that pupils may feel obliged to participate in the research conducted by their teacher, or they may feel that they need to respond in a certain way to questions posed to them. Research participation must always be voluntary, but in practice it may be difficult for a pupil to refuse to participate if he or she feels that refusal will have social implications. The action researcher/teacher must then think of ways in which to make space for voluntary participation. One way is to collect data anonymously. Another way is not to analyze research data before all grading has been done.
- *Presenting data from small groups or special populations*: Action research is often contextualized in one or a few schools and/or with specific age groups or classes. Even if the researcher takes great care in maintaining the anonymity of the research participants, covert breaches of confidentiality are still possible. By publishing action research with one's own name it may be possible to connect the author to the school in which he or she may work as a teacher, and thus identification of the context and colleagues will be possible. Also, from this perspective, it is wise to inform colleagues about the action research project and seek their views and opinions throughout the process through mutual dialogue.
- *Anonymity*: Anonymity can be difficult to maintain when collecting data in a small school, a single institution, or amongst a specific group of people. In reporting excerpts from interviews some information is generally provided about the research participants (e.g. 8<sup>th</sup> grade math teacher, female, 38 years...). Even if no names are

provided, it may be possible from this kind of data to deductively identify the identity of a participant. Therefore, the action researcher must extremely carefully consider what information he or she gives away about the research participants.

It is common in qualitative research that research questions get clarified along the way once the data is collected and analyzed. It is sometimes difficult to formulate very precise questions in the beginning. This is often different from quantitative research, in which the research questions must be precise from the beginning and they steer the choice of measuring instruments. In such research, changing research questions afterwards can be unethical. However, the logic of qualitative research is different; research questions can and often must be finetuned once we understand our data better and this can only happen after we have our collected data. In this type of research, the data are never as predictable as in quantitative research. It is sometimes difficult to formulate very precise questions in the beginning.

It is strongly advisable that the practitioner researcher consults literature on ethics in research with human participants. Lin Norton's *Action Research in Teaching and Learning. A practical guide to conducting pedagogical research in universities* (2009) provides a good starting point to ethics in action research. Bruce Macfarlane's *Researching with Integrity. The Ethics of Academic Enquiry* (2009) provides food for thought on ethics from a virtues perspective. This is particularly relevant for the action researcher as they often have a mission to do good with their research, e.g. to improve learning or develop school practices for greater justice.

In addition, there are national and/or institutional guidelines that one must adhere to.

#### **Learning task 6: Ethics in action research**

Take a look at the above ethical issues. Do you recognize any of them as relevant in your action research? What other ethical issues are you able to identify? What are the potential dangers or risks if ethics are breached in your study? Could someone be harmed? How would you as a researcher need to act to avoid harming your research participants?

#### **Learning task 7: Confidentiality, anonymity and risk**

Research participation must always be voluntary, but in practice it may be difficult for a pupil to refuse to participate because of the power relation that is inherent in the teacher pupil relationship.

*What can you as teacher-researcher do to make sure that pupils participate voluntarily?*

Covert breaches of confidentiality can happen when publishing action research. Even if you never mention the school and the names of colleagues and pupils, a reader may guess which

school has been the context of the research just by connecting your name to the school you work in. This can be a problem especially if researching sensitive issues.

*What can you as teacher-researcher do to minimize risk of causing harm to the reputation of the school and its teachers and students?* In reporting excerpts from interviews some information is generally provided about the research participants (e.g. 8th grade math teacher, female, 38 year). Sometimes this information can give a way who this research participant is. It may be possible to deductively identify the identity of the participant.

*What can you as a teacher-researcher do to maintain anonymity of colleagues and pupils who participate in the research?*

## Evaluating action research

Common criteria for evaluating research typically include:

- choice and relevance of research topic,
- theoretical knowledge, knowledge of research in the topic, and the use of literature and relevant sources,
- the relevance of the research objectives, and clarity and feasibility of the research questions,
- the suitability of the data considering the objectives and research questions, and credibility of the data collection,
- the suitability and credibility of data analysis and the techniques used,
- consistency and depth of analyses,
- consistency and clarity of the reporting of the findings, and the extent to which the research questions are answered,
- consistency of the conclusions with the findings,
- researcher's own critical assessment of the research,
- balance between independence and the ability to seek and take advice,
- cohesion of the entire thesis, i.e. all parts "fitting together",
- fine-tuning of the thesis, both linguistic and outer appearance.

In action research, however, there are aspects that need to be highlighted, and the evaluation of the study should also acknowledge the fact that action research has characteristics that can be tricky from the point of view of traditional evaluation criteria. These are nevertheless vital aspects of action research and should be addressed. These include the following:

- the relevance of the topic and objectives for the practitioner's community,
- suitability of the development idea considering the aims and target group,
- implementation of the development intervention,
- evaluation of both the research outcome and the process as the process may be worthwhile even if the results might not be what was expected or hoped for,

- reflectivity on part of the researcher / practitioner.

In action research, it is necessary to look at the whole process, not only the end results. Another feature that adds an element to the evaluation of action research is the activity implementation or intervention, that is, how appropriate were these considering the objectives of the project, and how well were the activities or intervention implemented. Can the findings be used to reach the goals of the action research project? As action research is concerned with improving practice, this should also be evaluated on the basis of its meaningfulness, i.e. do the findings open new views or create new understandings of (school) practice? While it is not reasonable to expect generalizability from action research, it is pertinent to ask, can this study be useful to others tackling a similar challenge?

Writing in the reflection can be perceived as difficult, both from the writer's and the evaluator's perspective. This is so because a traditional research report often does not contain a whole lot of reflection and the traditional reporting structure does not give explicit space for that either, except for perhaps a "Limitations" section. In an action research thesis, the reflection could be incorporated along the way, or if this is perceived as too difficult or the institution's writing instructions and evaluation criteria clearly does not support that, to include a separate chapter on reflection, for example as a sub-chapter in the Discussion chapter. Irrespective of the choice, a reflection on the researcher's/practitioner's choices during the research process, especially as they inform the researcher in subsequent steps of the process, are relevant to explicate to the reader. Making one's reflection explicit is difficult as it easily gets a rather subjective flavor. This is something that also evaluators will be focusing on.

Consequently, it may be wise to connect one's reflections also to theory or prior research to help justify and provide added weight to the choices made. Nevertheless, the reflection will inevitably involve much consideration around the context and pondering upon the question; "Is this doable / relevant in my context considering x, y and z circumstances?". This in turn will raise a series of ethical considerations: "If I tell x about my class, will it make my research participants vulnerable to recognition?" As a rule of thumb, the ethical considerations must override any other considerations.

## Suggested literature

There are many methodological books on action research. The following are suggestions that may be helpful:

<p>Includes reflection, social implications, and theoretical arguments.</p>	<p>Altrichter, H., Feldman, A., Posch, P. &amp; Somekh, B. (2008) 2nd Ed. <i>Teachers Investigate their work. An introduction to action research across the professions</i>. London: Routledge.</p>
<p>Includes practical cases and examples of action research.</p>	<p>Burnaford, G., Fischer, J. &amp; Hobson, D. (2001) 2nd Ed. <i>Teachers doing Research. The power of action through inquiry</i>. London: Lawrence Erlbaum.</p>
<p>Reports a large-scale university-based action research project.</p>	<p>Kember, D. (2000). <i>Action learning and action research</i>. London: Kogan Page.</p>
<p>Illuminating cases of what might go wrong even when intentions are good. Highlights the importance of considering ethical aspects very carefully when engaging in action research. Cases describe many sensitivities including race and gender.</p>	<p>Kuriloff, P. J., Andrus, S. H. &amp; Ravitch, S, M. (2011). Messy ethics: Conducting moral participatory action research in the crucible of university–school relations. <i>Mind, Brain, and Education</i>, 5(2), 49-62.</p>
<p>Detailed guidance on action and reflection including a number of examples from different fields.</p>	<p>McGill, I. &amp; Beaty, L. (1995). <i>Action Learning: a guide for professional, management and educational development</i>. (2nd ed.) London: Kogan Page.</p>
<p>An easy-access guide to action research as academic inquiry. Many examples from the author’s own experience illustrate the approach. Includes an elaborate introduction to ethical issues in action research.</p>	<p>Norton, L.S. (2009). <i>Action Research in Teaching and Learning. A practical guide to conducting pedagogical research in universities</i>. London: Routledge.</p>

<p>Open access publication with practical examples including how to develop practical challenges into research questions, action plan and research design.</p>	<p>Nugent, G., Malik, S. &amp; Hollingsworth, S. (2012). <i>A practical Guide to Action Research for Literacy Educators</i>. International Reading Association. Washington DC.  <a href="https://www.literacyworldwide.org/docs/default-source/resource-documents/a-practical-guide-to-action-research-for-literacy-educators.pdf?sfvrsn=4">https://www.literacyworldwide.org/docs/default-source/resource-documents/a-practical-guide-to-action-research-for-literacy-educators.pdf?sfvrsn=4</a>          (April 14, 2020).</p>
<p>Emphasis on methodological issues and qualitative research.</p>	<p>Stringer, E. (2008) 2nd Ed. <i>Action Research in Education</i>. Upper Saddle River, NJ: Pearson Merrill Prentice Hall.</p>

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