

Action Research Guide

for Alberta Teachers



The Alberta
Teachers' Association



PUBLIC EDUCATION WORKS...
for Alberta

ISBN 1-896370-98-5

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11010 - 142 Street NW, Edmonton, Alberta T5N 2R1

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Foreword

The *Action Research Guide for Alberta Teachers* is intended to assist classroom teachers and school administrators in the development, implementation and publishing of an action research project.

Action research is a strategy educators can use to study educational issues, implement change and document professional growth.

The idea for this publication came from a model school project on collaborative action research in which the Association partnered with Chinook's Edge School Division. At the conclusion of that project the facilitators determined that teachers would benefit from a practical resource for action research focused on the Alberta educational context.

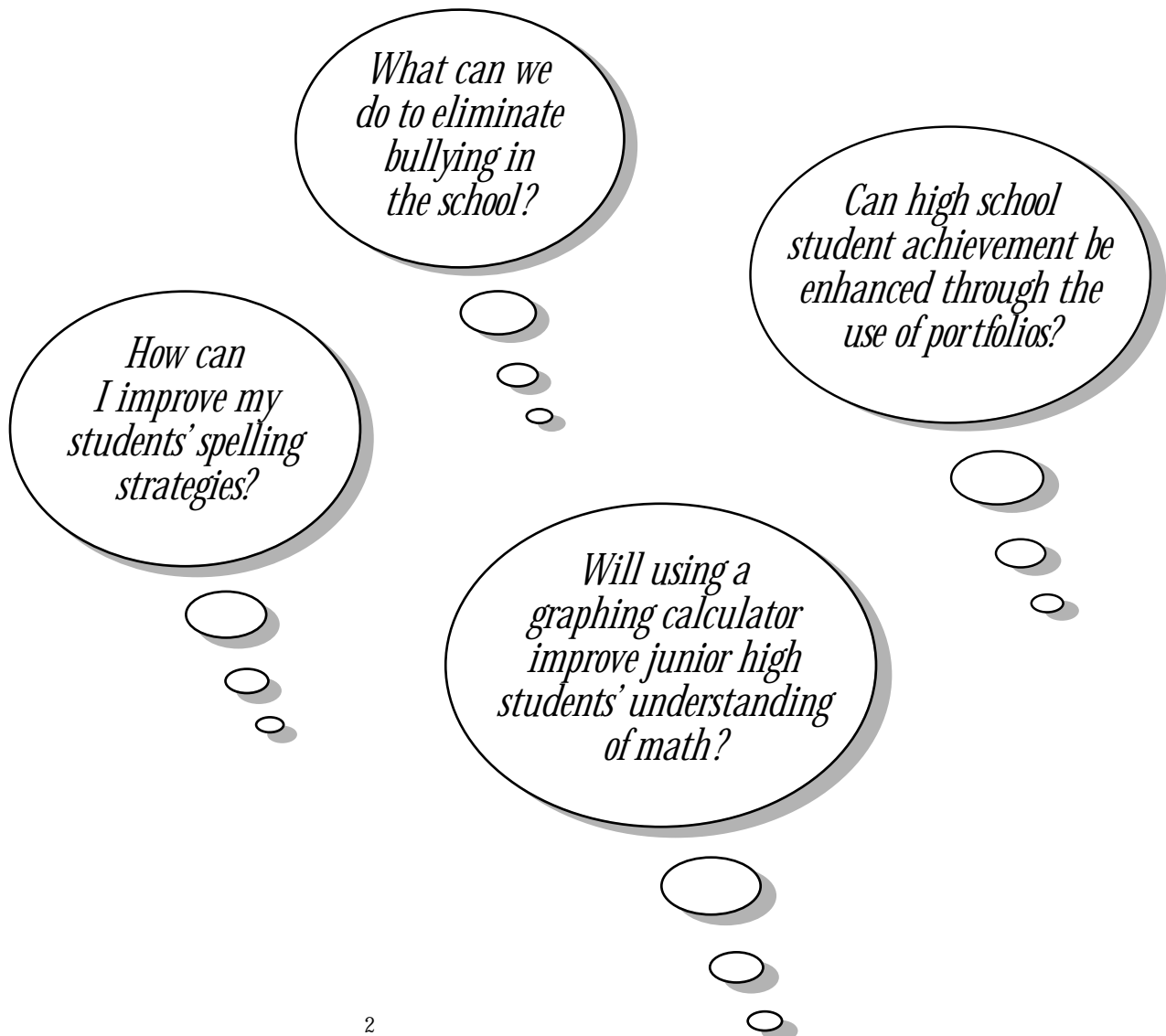
The *Action Research Guide for Alberta Teachers* was developed by Jacqueline Skytt with assistance from Jean-Claude Couture, both of the Alberta Teachers' Association Professional Development program area. Special recognition and thanks are extended to Dr. David Townsend for his helpful comments and guidance during the development of this publication. I hope that this publication will be useful to teachers embarking on an action research project.

Charles Hyman
Executive Secretary

Introduction

Action research is a strategy teachers can use to investigate a problem or area of interest specific to their professional context. It provides the structure to engage in a planned, systematic and documented process of professional growth.

This resource is intended to help you plan a self-guided action research project. As an educator, you are faced daily with challenges as you work to provide an effective learning environment for all the students in your classroom or school. These challenges surface in your reflections as questions that you attempt to answer to improve your professional practice.



Action Research as Professional Development

Action Research is a process of systematic inquiry into a self-identified teaching or learning problem to better understand its complex dynamics and to develop strategies geared towards the problem's improvement.

(Hamilton 1997, 3)



The action research process can result in:

- ★ *professional development*
- ★ *education change*
- ★ *enhanced personal awareness*
- ★ *improved practice and*
- ★ *new learnings*

Action research is one form of applied research.

Because action research draws on a range of designs and methodologies, it can provide teachers with the opportunity to examine a practical problem within a classroom or school setting. Action research has the potential to greatly enhance both teacher professional development and school improvement initiatives.

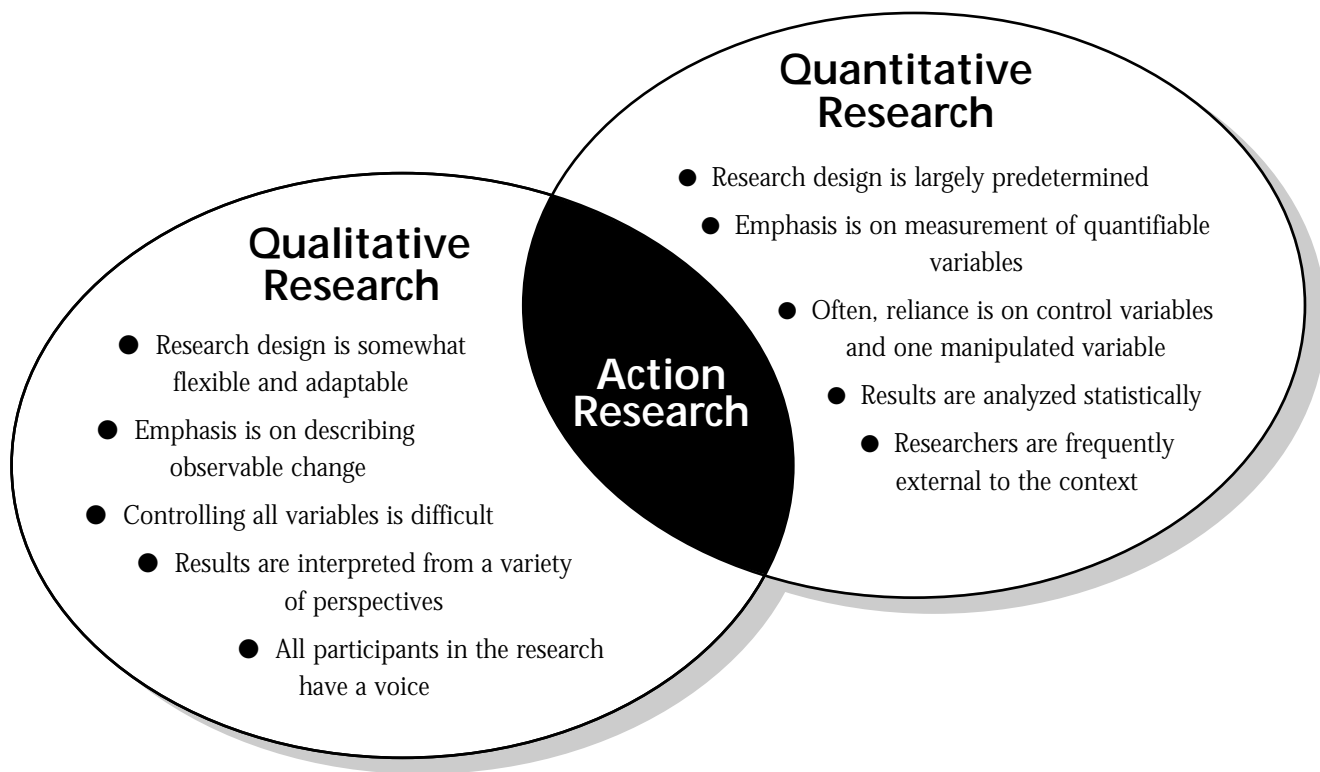
The following three forms of action research have been used extensively in Alberta:

1. Individual: an educator works on a personal inquiry
2. Collaborative: a team or group focuses on an issue
3. Schoolwide/districtwide: a community of practitioners works to solve a problem or make a change

Action Research can focus on the teaching and learning process.

Action Research can be used to solve a problem or institute a change.

Action Research can be used to document teacher professional growth.



Action research provides teachers with a systematic process to reflect, consider options, implement and evaluate potential solutions. Action research differs from the day-to-day decision making that teachers do. Consider this example.



During our high school staff meeting in June the vice-principal expressed frustration over the number of discipline problems that occur over the noon hour. The staff discussed the issue for 10 minutes and then one staff member made a motion to reduce the length of the lunch hour from 55 minutes to 40 minutes. The rationale given for the motion was that it would reduce the time students had to get into trouble. After some discussion the motion was put to a vote and was carried. The 40-minute lunch break was implemented in September and school was dismissed 10 minutes earlier every day. It now seems that fewer students participate in intramural and school clubs. The Students' Council had to adapt its activities to the shorter time. No one can really say if there are fewer discipline problems now because we don't know what the statistics were for last year.

In this situation the teachers did not have the opportunity to reflect on and examine the issue closely. A solution was implemented that focused on dealing with the “symptom” and as a result there could be a new and more serious problem to deal with. If they had taken the time to design and implement an action research study the teachers in this school would have learned more about the discipline problems, why they were occurring, what the students thought about the issue as well as other aspects of the problem. This might have led to a different, perhaps better, solution.



Action research is a valuable form of inquiry for educators because it is...

Practical: practical improvements are the focus.

Participative: teachers, administrators, teacher assistants, students and parents can all be involved in meaningful ways.

Empowering: all participants can contribute to and benefit from the process.

Interpretive: meaning is constructed using participants' multiple realities in the situation.

Tentative there are not always right or wrong answers; rather, there are possible solutions based on multiple view points.

Critical: participants look critically at specific problems and act as self-critical change agents.

(Schmuck 1997, 29)

Questions of Ethics in Action Research



As action researchers, teachers are knowledge generators rather than appliers of knowledge.

John Elliot

At its core, action research encourages teachers to share their experiences about how they have worked through an educational concern. Anyone who has spent time in schools will immediately recognize the issues that might emerge. The notion that teachers not only *apply knowledge* but *produce knowledge* can throw teachers into interesting waters. By its very nature, action research produces data and information that at times challenge us and our colleagues. Consider the predicament of these teachers.



It all started when we were reviewing our notes on a technology-integration action research project in our school. After meeting for over six months, it was clear that, no matter what we tried, we could not get approval for any further funding for release time from the school's PD budget. One day someone from the school's PD committee picked up a piece of paper from the recycling box in the staff photocopy room. On the back of the paper was a copy of a teacher's journal entry that was from one of our action research team meetings. In her notes, the teacher had written about her personal frustrations with the lack of PD funding in the school and with the committee's decision. When the PD representative asked the teacher about the notes her response was quite defensive: "How dare you spy on us. This is our group and you have no business reading our material."

This anecdote raises important questions about action research in schools. First and foremost, teachers are bound by common principles that guide how they relate to each other as professionals. In Alberta, the

Code of Professional Conduct does much to inform teachers about what constitutes appropriate collaborative relationships and ethical practices. Yet a code of conduct, or indeed any ethical practice, cannot be viewed as a simple formula or a checklist of do's and don'ts. Schools are complex social environments, and because action research affects the quality of relations with colleagues, it is important that we avoid looking for simple rules of thumb or lists of do's and don'ts.



A more helpful approach

is to consider examples of ethical questions that might inform your action research project. These might be questions a critical friend could pose as you move through your project.

- How might the intended changes from your project affect others?
- Who has an interest in being informed about your project?
- Who will own the information generated by the project?
- How does the project express an ethic of caring for others?
 - In whose interest is the change you are proposing being made?
 - Who will own the success/failure of the project?

As with any teaching practice, questions of ethics are central to all aspects of action research in schools. The previous questions can be further informed by four types of ethical practices:

1. Ethics of hope: Action research is motivated by an interest in making schools better places for students. However, improving schooling is much more than making technical changes to the ways that schools deliver curriculum. Action research should be informed by a concern for the broad range of needs of students and the school community.

2. Ethics of caring: It is far too easy to see getting the project done as the central purpose of action research. At all times, the general welfare of both students and teachers must be kept at the fore.

3. Ethics of openness: Action research can unwittingly create insiders and outsiders in a school. It is important that both the questions and the ways that teacher-researchers work through them are made clear to colleagues and school members.





4. Ethics of responsibility: As professionals, teacher-researchers must be committed to principled action. The welfare of students and the need to maintain collegiality must be kept in mind at all times.

These four practices, developed by Carson et al (1989), remind us that ethical issues are often too complex for simple rules or procedures. The best practice is to be mindful of the ambiguities that confront us in the complex life of schools.

Freedom of Information and the Protection of Privacy Act






Teachers must consider *The Freedom of Information and the Protection of Privacy Act* (FOIP) as they develop their action research project plans. Most classroom-based action research projects will involve collecting personal information about students, including their demographic and achievement data. Parents must give prior approval for this type of information to be collected and, if necessary, reported or published. The following questions can serve as a guide for writing a letter to seek parental permission in light of FOIP:

-  Why are you collecting the information?
-  What information will be collected?
-  How will the information be used?
-  Who will be the audience for the information?

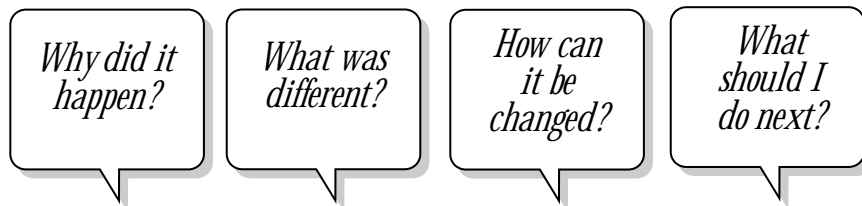
Parents must also give prior permission for teachers to use photographs or video tape students involved in the action research project. Use the previous guiding questions to write a letter of permission and include reassurance that neither the child's identity nor any personal information will be used in conjunction with the photograph.

For more information about FOIP, consult:

-  your school principal,
-  the school district FOIP coordinator or
-  the Alberta Teachers' Association website at www.teachers.ab.ca/publications/monographs/administrators

Developing a Research Question

Where do research questions come from? Simply put, action research questions originate in a teacher's reflections. Everyday there are situations that cause you to reflect later. You might ask yourself...



Strategies you can use to develop a research question

Keep a journal for at least one week, preferably two

- ✍ Set aside 10 minutes to write at the end of each day.
- ✍ At the end of two weeks, read your journal, looking for significant ideas and themes.
- ✍ Brainstorm a list of things that you would like to investigate.
- ✍ Review the list and write a first draft of your question.
- ✍ Write a paragraph of supporting rationale for your question.
- ✍ Reflect on your question.

(Patterson et al 1993, 23–25)



Sentence Stems

Focus on your classroom or role in the school and complete the following sentence stems.

One thing I would like to change is...

.....



My practice could be improved by...

The students I work with need...

I would like to know...

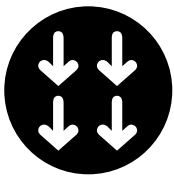
I wonder why...

The most important thing about teaching is...

The best learning environment for students is...

I need to learn how to...

My students would do better if...

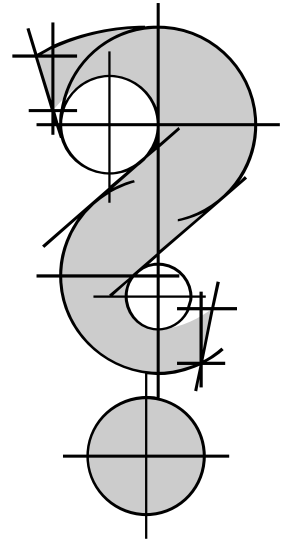


Affinity charting (for collaborative action research)

- Brainstorm issues of concern or interests relating to your educational context. Record each item on a separate note.
- Group your items using affinity charting. Place the most diverse statements on the table in a row. Place items that have a common theme or focus in each column.
- Review and reflect on the placement. Do some items fit better in a different column?
- Develop a draft research question that reflects the key issue in each column.
- Choose the question that most interests you and is possible to study.

Points to consider in developing a good question

- 1 Studying this question will enhance my professional practice.
- 2 This question will be of value to my classroom, school and/or colleagues.
- 3 The climate of my classroom and school will be supportive of this question.
- 4 The question focuses on an important issue.
- 5 The question can be studied in the time available.
- 6 I can access literature or other resources that will provide background information.
- 7 The data needed to answer this question is accessible.
- 8 The question is of personal interest to me.



Reflect on Your Question...

Which of the following words best describes your research question?

Problem

Issue

Trigger

Curious

Wish

What does this word say about your assumptions regarding the question?

Limiting OR Enabling

Indifferent OR Committed

Status Quo OR Change

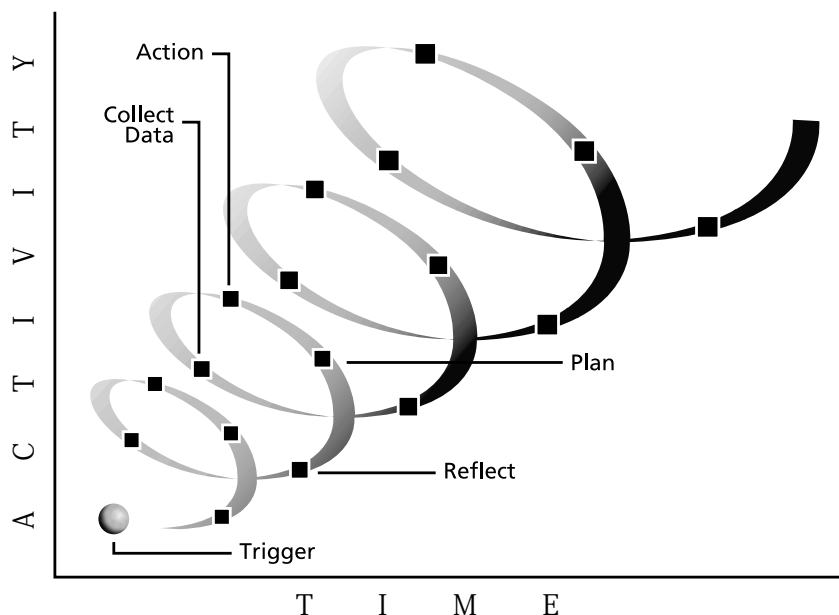


The Action Research Process



The action research process can generally be described as a series of four steps: **planning**, **action**, **observing** and **reflecting** on the results of the action. Depending on the research question, purpose of the study and number of researchers involved, each of these steps can be expanded. A single teacher researcher studying a classroom issue may work through the steps of the process in a relatively short time. In contrast, a collaborative group of researchers focusing on a school improvement initiative may engage in an in-depth study taking the entire school year to complete.

The action research process lends itself to a spiral of cycles, with the researcher reflecting on each stage of the process. When the results of the first action have been studied, the researcher then plans the next series of actions. Each reflective phase yields more information about the issue and increases the researcher's understanding. Sometimes the information gained leads the researcher to refine the question with a different focus. The most important skill the researcher needs in action research is the ability to engage in reflection. Reflection moves the practitioner from one stage to the next; thus, action is based on reflection. The diagram below illustrates the notion that the action research process is a series of steps or actions, propelled by reflection.



One of the first tasks in your project should be to develop an outline to guide your activities and describe the various steps in your action research process. The process you design will depend on the nature of your research question and the context of your study. For instance, if your project is to study the impact of two different computer-based math programs, you will not need to spend much time reviewing the research that supported the development of computer-based math programs. You are primarily interested in which program will give the best results in your school. However, if your study is to increase student achievement in mathematics, your research design will need to include an extensive review of different teaching and learning strategies to identify the strategies most likely to have a positive impact in your classroom. Engaging in an extensive literature review and seeking out expert information will help to ensure that the interventions you choose to implement will have a positive impact.

In 1996, the Ontario Public School Teachers' Federation sponsored the Common Curriculum Innovation Fund Project, which brought together teachers, principals and superintendents from four boards of education. Their action research projects focused on the implementation of the Common Curriculum. These teachers used the following key questions to help guide their action research.

- 1 > What is the problem?**
- 2 > What are some possible solutions?**
Solutions may be self designed, learned from colleagues or from reviews of educational literature.
- 3 > What is the possible solution I want to investigate?**
- 4 > How do I make the solution work?**
Test the proposed solution and modify it as needed.
- 5 > How do I record data and reflect on it?**
Keeping a journal and discussing it with a critical friend are effective methods.
- 6 > How do I share my experiences with others?**
This is how the practitioner demonstrates and models his or her

Approach



professional development and contributes to the improvement of educational practice. Holding a meeting, conducting a workshop, or writing a paper are possible ways of fulfilling this responsibility.

7 > What is next?

Action research is an open-ended, ongoing, cyclical process. The solution one develops to the initial problem will generate the next problem to be addressed. This is the catalyst to continuous professional improvement. (Halsall and Hosack 1996, 16)

Approach



Dr. David Townsend, a professor in the Faculty of Education at the University of Lethbridge, has made extensive use of an 11-step process with teachers in Alberta.

1 > Define the Focus or Problem

- *Ask the right questions.*
- *Reflection begins.*

2 > Collect Information

- *Read the literature, consult colleagues, talk to experts.*
- *Reflection continues.*

3 > Make Sense of the Information

- *What is relevant?*
- *What is doable?*
- *What can be modified and adapted to suit the circumstances?*

4 > Share the Information

- *Share your preliminary conclusions with your team.*
- *Be prepared to deal with conflicting information.*

5 > Plan Action

- *Share individual intentions with members of the team.*
- *Build personal commitment and group support.*
- *Develop a plan of action.*

6 > Take Action

- *Start putting your plan into effect.*
- *Begin to think otherwise about what is happening and why.*
- *Reflection in action and on action will make your efforts more purposeful.*

7 > **Collect Information**

- *Let your students see you as a learner.*
- *Gather data to answer your research question and document carefully.*
- *Meet regularly to share your experiences and re-focus as necessary.*

8 > **Analyze**

- *Use the collective knowledge of your group to make sense of what's happening and why.*
- *Compare the pre- and post-intervention data.*

9 > **Assess Your Achievements**

- *Think about evidence-based practice.*
- *Your conclusions are supported by the data collected.*

10 > **Publish**

- *Commit yourself to making conclusions about the impact of your efforts.*
- *Share these conclusions with the group.*
- *Be prepared to disseminate your report beyond your group and beyond the school.*

11 > **Future Action**

- *Celebrate. Relax. Reflect.*
- *Take time to consolidate your learning and your gains before you start something new.*

School districts across Alberta have organized school improvement projects on a range of topics. Action research can be applied to many of these initiatives. J. Glanz (1998) in *Action Research: An Educational Leader's Guide to School Improvement* describes a four-step process for action research to examine educational problems in school settings.

Steps in Action Research

1 > **Select a Focus**

Includes three steps: a) know what you want to investigate, b) develop some questions about the area you've chosen; and c) establish a plan to answer the question. As you focus on a problem, begin to pose some questions that will serve to guide your research. Developing guiding questions will eventually lead to specifying research questions and/or hypotheses. Selecting a focus also includes developing a research design.

Approach



2 > Collect Data

Once you have developed the research question you can begin to collect data that will provide evidence of the effectiveness of the intervention. You may administer tests, conduct surveys and interviews and examine documents. Collected data must be transformed into a useable form.

3 > Analyze and Interpret Data

Once the relevant data is collected, you need to begin the process of analysis and interpretation in order to arrive at a decision.

4 > Take Action

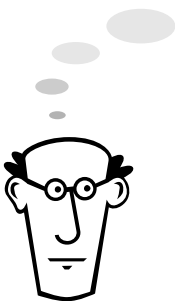
The research question is answered based on the data collected and a decision is made. Three possibilities exist: a) continue the intervention, b) disband the intervention, c) modify the intervention in some way(s).

Action research is cyclical – the process doesn't necessarily have to stop at any particular point. Information gained from previous research may open new avenues of research. (Glanz 1998, 24–26)

Before you plan the steps...

in your action research process, consider the context of your project. You will need to take many factors into consideration. For example:

- What is the purpose of the research project? Are you trying to solve a problem, implement a change or make an improvement?
- To what degree are different stakeholders aware of the issue?
- How much time is available to engage in the various aspects of the project?
- What financial resources are available to support the project?
- What is the desired impact of your project? Will the project be replicated in other classrooms or schools?
 - How manageable is the project? What is the scope? How many people are involved?
 - Who else has a legitimate right to be involved or should be involved in the project?



Developing Your Knowledge of the Issue

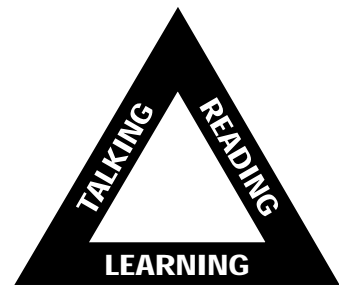
Once the research focus has been identified, the next step is to learn more about the issue. The amount of time spent on this initial review will vary depending on the amount of information available and how specifically the issue has been defined. People experienced in action research say that time spent on this activity is time well spent. Developing your knowledge of the issue and finding out what others have experienced will help you to refine your research question and to focus on the most likely solutions or interventions.

There are three strategies to use in developing your background knowledge.

Talking Seek out expert knowledge from every available source. Begin your search in your school district. Who has taken courses, attended conferences or applied this information in the classroom? Contact the universities and ask for the names of professors or graduate students working in the area. Contact staff at the Alberta Teachers' Association and regional consortia in your area to ask for names of people who have offered workshops on the topic. Contact these people by telephone or e-mail to arrange a meeting or to ask for advice.

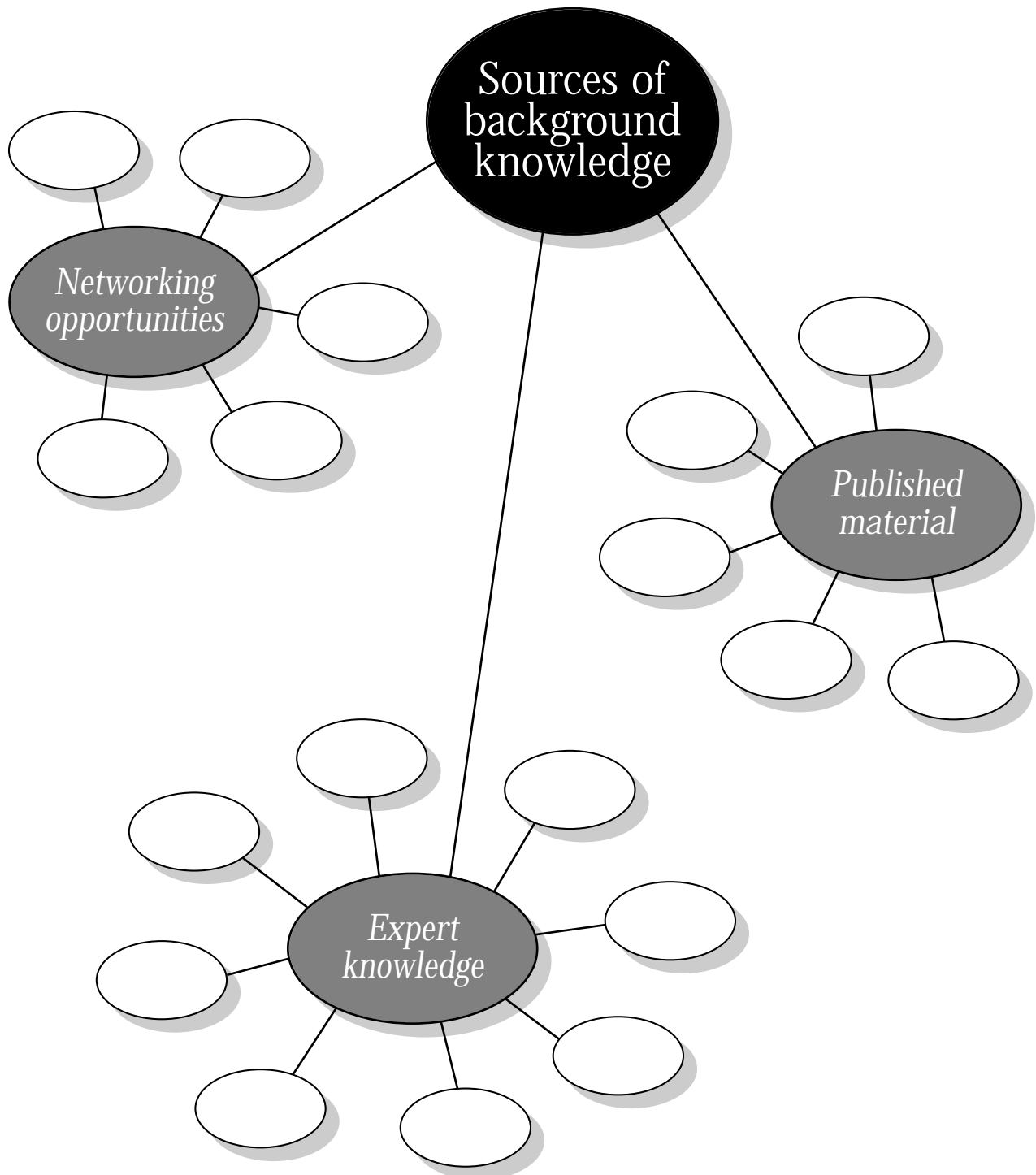
Reading Accessing published material can be a challenge because of the volume of reference material. Your teacher librarian or the library services at the Association can assist you in designing an efficient search of print and web-based materials. Refer to the bibliographies of material you find valuable to identify additional sources of information, such as writers working in the field.

Learning Conferences, workshops and courses are excellent networking opportunities. These events can provide skills training and valuable materials to assist you in implementing your intervention or strategy. Just as valuable, however, is the experience of being immersed in the topic and discussing the issues with others interested in the same topic.





During the learning phase develop a plan to save time and focus your research activities. Use the mindmap format below and brainstorm to identify potential sources of background information related to your research question.



A standard format makes it easier to compare materials and share information with others involved in the project. Many action researchers use recipe cards to collect and organize information. Use the following template to summarize the information; note three or four points under each heading.



Topic:

Title

Author

Date

Publisher

Information Highlights – What did the author say about this issue?

Implications – What action do you recommend based on this information?

Further Investigation – Is further investigation required in relation to this information?

Name:

Name

Position

Phone / Email

Date

Key Points

Consideration

Follow-up

If you are working on a collaborative action research project, share the background research activities with members of the team. Plan to meet as a team every one to three weeks to share the information you have gathered. At these meetings take a critical stance in the discussion and challenge the information. Frequently you will discover conflicting information that you will have to evaluate. Your research plan may need to be modified to address the new knowledge you have gained.



Documenting your information is important for a number of reasons:

- It creates a permanent record for future reference.
- It helps to build continuity for the project if the participants change.
- This information is valuable if you plan to share your work with others.
- It can be used to support applications for funding.

Designing a Data Collection Plan

Now that you have learned more about the issues relating to your research question you are ready to develop a plan of action. The plan of action will describe the interventions to be implemented, the data to be collected and who is responsible for each aspect of the plan.

In action research, data is gathered for different purposes at different steps in the process.

How big is the problem?

What is the current situation?

Baseline data determines the extent of a problem and clarifies the existing situation.

Am I making a difference?

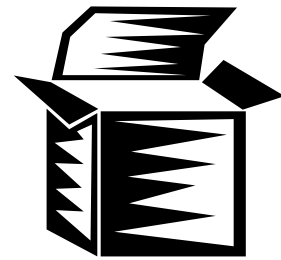
Is the situation changing?

Research data measures the impact of the intervention.

Cornering Your Question/Problem

- ☑ Match data sources to the research question.
- ☑ Collect data from as many sources as possible.
- ☑ Keep a data log that includes the date, time and data information collected.
- ☑ Organize your data around themes, key issues or topics.

(National Staff Development Council 2000, 2)



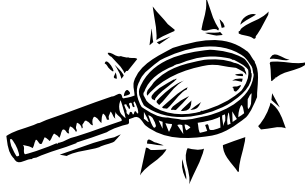
The Principle of Triangulation

Researchers remind us that it is important to use a variety of data sources. Triangulation refers to the use of three (or more) types of data related to the same question.

Corroboration can be achieved by involving different people to interpret the data. Triangulation and corroboration, or verification, increase the credibility of the information. In other words, the researcher can say that the information is more trustworthy because it comes from multiple sources and through multiple channels.

(Grady1998, 33)

Sources of Research Data



There are many sources of research data available to the researcher. However, you must ensure that the data relates to your research question.

Use this list to identify your data sources.

Document analysis

- | | |
|---|---|
| <input type="checkbox"/> student achievement data | <input type="checkbox"/> diagnostic assessment |
| <input type="checkbox"/> samples of student work | <input type="checkbox"/> attendance records |
| <input type="checkbox"/> anecdotal records | <input type="checkbox"/> files |
| <input type="checkbox"/> behavior records | <input type="checkbox"/> literature review |
| <input type="checkbox"/> web research | <input type="checkbox"/> journal |
| <input type="checkbox"/> lesson plans | <input type="checkbox"/> portfolio |
| <input type="checkbox"/> activity reports | <input type="checkbox"/> pre-test and post-test |
| <input type="checkbox"/> self-evaluation | <input type="checkbox"/> standardized test scores |
| <input type="checkbox"/> _____ | <input type="checkbox"/> _____ |
| <input type="checkbox"/> _____ | <input type="checkbox"/> _____ |
| <input type="checkbox"/> _____ | <input type="checkbox"/> _____ |

Observations

- | | |
|--------------------------------------|--|
| <input type="checkbox"/> checklists | <input type="checkbox"/> anecdotal records |
| <input type="checkbox"/> sociograms | <input type="checkbox"/> rubrics |
| <input type="checkbox"/> video tapes | <input type="checkbox"/> photographs |
| <input type="checkbox"/> _____ | <input type="checkbox"/> _____ |
| <input type="checkbox"/> _____ | <input type="checkbox"/> _____ |

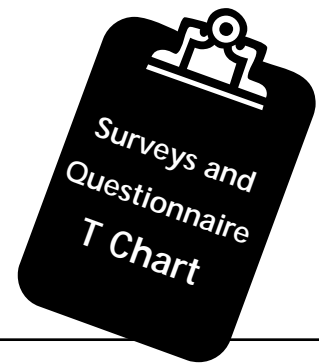
Interviews

- | | |
|---|---|
| <input type="checkbox"/> students | <input type="checkbox"/> teachers |
| <input type="checkbox"/> administrators | <input type="checkbox"/> parents |
| <input type="checkbox"/> experts | <input type="checkbox"/> focus groups |
| <input type="checkbox"/> surveys | <input type="checkbox"/> questionnaires |
| <input type="checkbox"/> _____ | <input type="checkbox"/> _____ |
| <input type="checkbox"/> _____ | <input type="checkbox"/> _____ |

Survey and Questionnaire Tips

Surveys and questionnaires are useful tools for collecting data from a large number of people.

- Questions must be limited to the research question and design.
- Field test the questions with three to five people.
- Provide a short explanation of the research study, explain the purpose of the questionnaire and how the data will be used.
- The formats of different questions will yield different types of data.
- Using a computer may save time in organizing and analyzing the data.



<input checked="" type="checkbox"/> Advantages	<input checked="" type="checkbox"/> Disadvantages
<input checked="" type="checkbox"/> Efficient means of gathering large amounts of data	<input checked="" type="checkbox"/> Not a good source of quantitative data; best used to identify trends or themes
<input checked="" type="checkbox"/> Respondents can be anonymous	<input checked="" type="checkbox"/> Can lack the richness of personal interviews or direct observation
<input checked="" type="checkbox"/> Rating scales yield data that can be displayed in tables and charts	<input checked="" type="checkbox"/> Open-ended questions are time consuming to analyze
<input checked="" type="checkbox"/> Useful for pre- and post-intervention data gathering	<input checked="" type="checkbox"/> Questions must be worded clearly to avoid misinterpretation

Interview Tips

Interviews are purposeful conversations between the respondents and researcher.

- Plan the interview by developing a set of questions that focus on the research problem you have identified.
- Field test the interview questions with three to five people not involved in the study.
- Group interviews can work well with students, depending on the research question.
- During the interview, take time to develop a rapport with respondents.
- Consider taping the interview (with the permission of your participants).

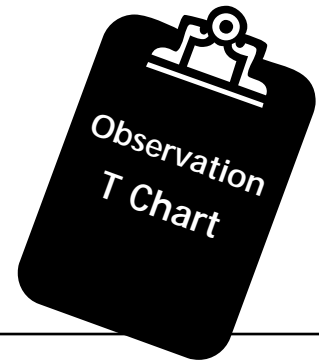


<input checked="" type="checkbox"/> Advantages	<input checked="" type="checkbox"/> Disadvantages
<input checked="" type="checkbox"/> Provides the opportunity for indepth conversation with respondents	<input checked="" type="checkbox"/> Interviews and data analysis can be time consuming
<input checked="" type="checkbox"/> Can yield rich data	<input checked="" type="checkbox"/> If the interview is poorly planned, the data may be difficult to analyze
<input checked="" type="checkbox"/> Questions can be clarified if necessary	<input checked="" type="checkbox"/> Respondents do not have anonymity
<input checked="" type="checkbox"/> Researcher can ask additional questions	<input checked="" type="checkbox"/> Possibility of interviewer bias
<input checked="" type="checkbox"/> Useful for gathering data from younger students	<input checked="" type="checkbox"/> Data does not lend itself easily to quantification

Observation Tips

Observation is looking with a purpose (Grady 1998, 23–24). Observations are very effective when combined with other data-collection methods.

- Develop an observation plan and a data-collection template.
- Conduct observations at different times of the day.
- Consider asking a colleague to conduct the observation.
- Consider using a camera or video tape when ethically appropriate.
- Be aware that the observer's presence can affect the process.



<input checked="" type="checkbox"/> Advantages	<input checked="" type="checkbox"/> Disadvantages
<input checked="" type="checkbox"/> Provides a holistic picture	<input checked="" type="checkbox"/> It might be difficult to isolate specific behaviors
<input checked="" type="checkbox"/> Is effective in classroom and playground situations	<input checked="" type="checkbox"/> Must use multiple observations for validity
<input checked="" type="checkbox"/> Can document non-verbal behaviors	<input checked="" type="checkbox"/> Time consuming and labor intensive
<input checked="" type="checkbox"/> Increases the researcher's sensitivity to multiple variables	<input checked="" type="checkbox"/> May be distracting to participants



A Data Collection Plan

A team of teachers from an elementary school designed an action research project to determine if “Brain Gym,” when used as an academic tool, will improve reading achievement in Grade 2/3 students. Their data collection plan included a variety of data sources:

- *pre and post student reading surveys*
- *pre and post Alberta Diagnostic Reading Tests*
- *dominant-brain profile testing*
- *teacher observations*
- *student work samples*
- *student reflections*

The data from each of these sources was collected over the course of the project and analyzed at the end of the project. Using these multiple sources of data the teachers were able to determine the overall impact of using “Brain Gym,” which students showed the greatest improvement in reading and how the program fit within each teacher’s classroom practice.

Reflect on your data collection plan.



- Why are you collecting the data?
- Who is going to collect it?
- What exactly are you collecting?
- Where are you going to collect it?
- When are you going to collect it?
- How will the data be collected and reported?

(National Staff Development Council 2000, 5)

Analyzing the Research Data

Most of the data collected in an action research project is qualitative, which means that the researcher must use his or her intellect to analyze and interpret the collected information. The intellectual process of qualitative analysis includes critical reading, finding connections between data, forming judgments and determining answers to complex research problems. The processes described below are strategies that others have used to organize and analyze qualitative data.

Pamela Adams, an instructor at the University of Lethbridge and classroom teacher, has developed a process of analyzing data from participant interviews. She has found this process valuable for research questions for which you need to gather the opinions of the participants. Pamela described the process as a combination of selective note-taking and the use of visual organizers to gather and sort the data. The process is outlined below.

- ① Conduct three interviews using broad questions based on your research questions. Take as many notes as possible during these interviews.
- ② Reflect on these interviews to identify repetitive themes. Draft new interview questions related to these themes.
- ③ Conduct the remaining interviews. Use selective note-taking. After a group of interviews, reflect on the process. How effective is your interview facilitation? Are the themes you have identified still valid?
- ④ When all the interviews are complete, analyze the data in broad categories or groups. Color code comments in each category using highlighter pens.
- ⑤ Regroup the data and analyze it using the themes.
- ⑥ Use the trends from your category and theme analysis as a basis for reflection. What are your conclusions based on your interpretation of the data?



How to analyze qualitative data

- ① Gather all the data in a clear, readable form.
- ② Sort the data according to the research question(s).
- ③ Create analytic files.
- ④ Code the data.

(Grady 1996, 29–30)

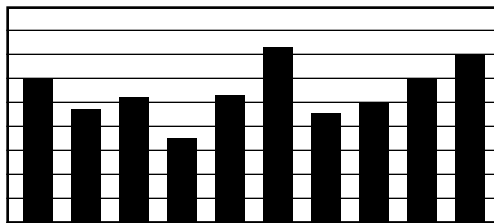


Teachers may want to consider the use of mindmapping computer software for organizing, sorting and analyzing qualitative data.

Be systematic and objective as you examine your data. Joan Richardson (*NSCD 2000, 2*) offers a rough outline to follow when analyzing data.

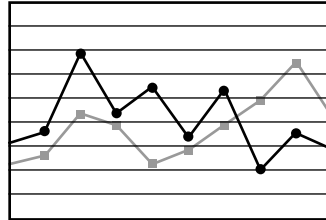
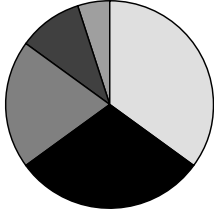
- 1 Jot down the themes, patterns and big ideas in the data you've collected.
- 2 Pare down your list to the essential points.
- 3 Label information according to relevant themes, creating sub-themes as appropriate.
- 4 Make notes as you go along.
- 5 Review your information. Identify the points that occur more frequently and are the most powerful.
- 6 Write up your major points. Match collected data with each major point.

Computer software can reduce some of the time needed to record, tabulate and analyze data. In addition, it helps in the production of graphs and charts to explain the results.



Action research teams in three elementary schools were interested in whether a guided-reading program would improve the reading comprehension, word accuracy and fluency of emerging readers in a small group setting. This project involved 12 teachers and more than 350 students in three schools. To make the data collection and analysis more manageable, these teachers developed a template using database software. The database included 35 different fields and allowed for tabulation and graphing of the data collected.

Depending on the style of question used, survey data can be organized and analyzed as numerical results. Survey questions that ask the respondent to select one answer out of a list of alternatives lend themselves to quantifiable results.



A high school action research team was interested in increasing student achievement by implementing a study skills program. The first thing this team did was develop a survey, which all students completed. The results were tabulated using spreadsheet software and then graphs were developed to illustrate the information. Representing the data in this form made it quite easy to see what study skills students were already using and which ones they would like to learn more about.



Reporting on an Action Research Project

Teacher researchers should prepare some kind of final documentation and share the results of their study. This activity will

- ★ *encourage reflection,*
- ★ *help to organize thoughts,*
- ★ *conclude the research process and*
- ★ *contribute to professional knowledge.*

When action research is used as part of your professional growth plan or in a school improvement project, the final report will serve to summarize the project activities and highlight the results of your study.

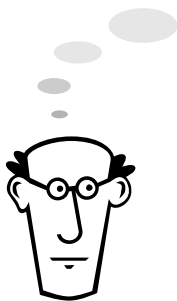
Deciding How to Report Your Research

The answers to these questions will help you to decide how to report your research.

Purpose – what motivated you to do this project?
– who else is interested in this project?

Product – does the product relate to the purpose of the project?
– is a particular format required?

Process – does the process by which you share the results of your study also relate to the purpose?
– have you considered presenting and/or publishing your study?



Text

Video

Portfolio

Poster

Presentation

Web-based

Sample Outline for a Report

No matter what method you use to report your project, the following outline can be used to organize the material for sharing with others.



Introduction

- what was the research question?
 - why is this question important to me?
 - what was the context of the study?
-

Review of the Literature

- what did I learn from my investigation of the topic?
-

Methodology

- what was my research plan?
 - what data collection methods were used?
-

Results and Conclusions

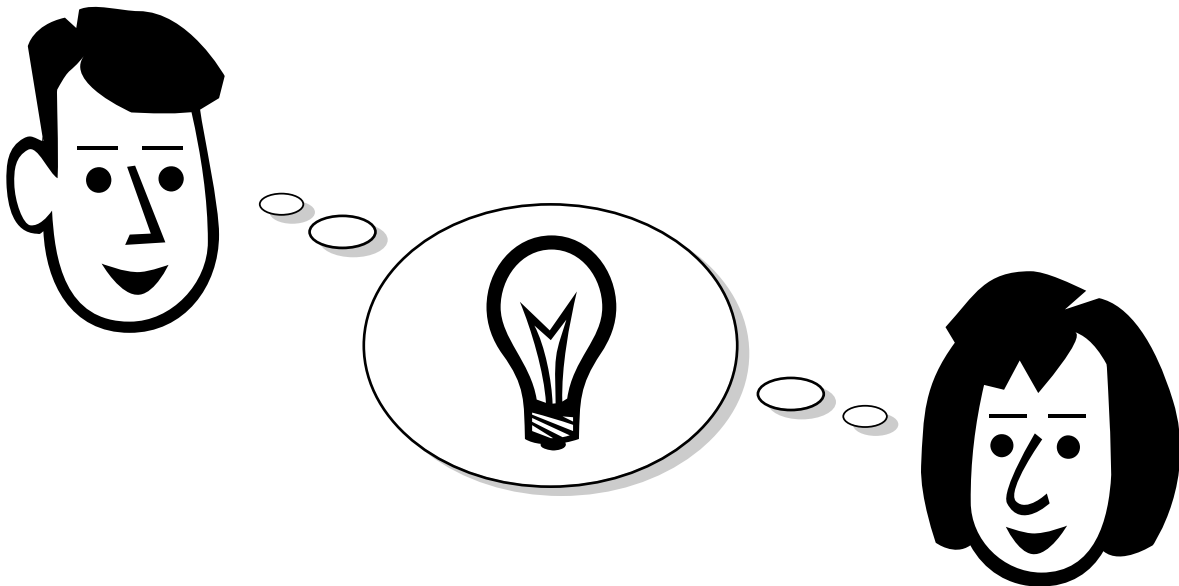
- summarize the data collected.
 - discuss your conclusions based on the data collected.
-

Implications and Recommendations

- what have you learned from doing this study?
 - how can this information be useful to others?
 - if you repeated the study, what would you do differently?
-

Share Your Results

- 💡 Organize a meeting of several colleagues.
- 💡 Present your final report during the year-end review of your professional growth plan.
- 💡 Share your study with the school council or school board.
- 💡 Talk to your students about your study and what you learned.
- 💡 Talk to parents about your project.
- 💡 Summarize your results and share them with the participants of your project.
- 💡 Prepare an article for a specialist council journal or another educational publication.
- 💡 Present the results of your study at a conference or a workshop.
- 💡 Include the results of your study in your school's improvement project report.
- 💡 Submit your report for publication on an appropriate website.



Facilitating and Supporting Action Research



The success of action research initiatives can be significantly enhanced by the support and facilitation of others not directly involved in the project, for example a school administrator, district consultant, university professor, teacher experienced in the process or a critical friend. These people can help to keep the project moving forward, encourage reflection and problem solving, provide feedback and generally lend support. Action research can be frustrating when things don't turn out the way you had expected or hoped for. The process is not linear—the action plan often has to be modified in light of new information.

Rarely, did anything turn out to be “absolute.” It was “messy” not “tidy,” “usually” not “always” allowing for continued creativity and reflective thinking.



Teachers working alone or in teams may find it helpful to identify someone to act as their critical friend in the action research process. A critical friend is a trusted person who asks provocative questions, provides a different perspective on data to be examined and offers a critique of the person's work. (Costa and Kallick 1995) A collaborative working relationship with a critical friend is built on trust.

The teacher-researcher needs to feel assured that the critical friend will

- ★ *be a good listener;*
- ★ *offer value judgments upon request,*
- ★ *respond to the project with integrity and*
- ★ *advocate for the success of the project.*



Our critical friend encouraged self-evaluation and reflective thinking. He listened, heard at a higher level, and encouraged us to take the next step. He asked three pertinent questions that empowered us and encouraged accountability: What have we done? What are we going to do next? How are we going to do it? He was a very effective facilitator.

In action research, a critical friend

- ★ *provides another set of eyes,*
- ★ *is a trusted friend who asks proactive questions,*
- ★ *encourages and supports reflection,*
- ★ *offers suggestions and advice when requested,*
- ★ *spends time with the researcher throughout the project, and*
- ★ *does not impose personal judgments or evaluations.*

Education Leadership and Action Research

Strategies that those in leadership and facilitating roles can use to help sustain the project and provide support to the researcher are

- ★ *encouraging risk taking,*
- ★ *developing a school culture that honors professionalism,*
- ★ *providing time to prepare the project plan and write the final report,*
- ★ *demonstrating genuine professional curiosity about the project,*
- ★ *supporting the project with resources,*
- ★ *providing feedback on the design,*

- ★ *assisting with problem solving during the study,*
- ★ *expressing interest in the progress of the study,*
- ★ *promoting the publication and dissemination of the study,*
- ★ *identifying useful resources,*
- ★ *sharing literature related to the project,*
- ★ *advocating for teachers involved in the study,*
- ★ *organizing inservice workshops that support the research process and give teachers access to new knowledge,*
- ★ *letting others know about the work teachers are doing, and*
- ★ *attending meetings and workshops related to the action research project.*

The Principal's Role

As instructional leader in the school, the principal strives to develop a school culture that is supportive of professional growth and risk taking. Collaborative action research is an effective tool for curriculum implementation, problem solving and school improvement and for developing a culture of teamwork and continuous improvement.

Hossack (1997) notes that principals have the opportunity to engage in action research as

- ★ *practitioners conducting a project,*
- ★ *participants in a collaborative project, and*
- ★ *promoters to support and encourage all types of action research.*



Why Action Research



Teacher professional development and school improvement are a priority for the Alberta Teachers' Association. As the professional voice of teachers, the Association has allocated significant resources to the professional growth and improvement of its members.

The Association is not unique in these efforts. Indeed, many other professional organizations across North America have also focused on staff development as a priority, knowing that the key to school improvement is teacher improvement. Recent developments in the field of education have contributed to how we think about professional development.

RESULTS DRIVEN EDUCATION

- decisions about curriculum and instruction should be driven by what we want students to know and be able to do as a result of instruction.

SYSTEMS THINKING

- systems thinkers see the interconnectedness of all things and understand that causality is circular rather than linear.

CONSTRUCTIVISM

- learners create their own knowledge rather than receiving it from others.

Action Research and School Improvement

Whole staffs can engage in action research focused on school improvement, curriculum development, student behavior and staff development. Whole-staff collaborative action research has the potential to increase teamwork, improve staff morale and increase student achievement.

School-based action research can engage the entire staff in studying the same research question or the staff may volunteer to work in smaller groups to study several different questions related to a common theme.

One example of this might be the challenges associated with integrating technology across grade levels and subject areas. Another might be the processes used in building a safe and caring school environment.

Schmuck (1997, 141–142) refers to six conditions that foster effective school-based action research:

- **Openness to weakness:** *Administrators and staff members speak honestly to each other about the parts of the school program that need improvement.*
- **Chances for creativity:** *Administrators provide staff members with opportunities to brainstorm and analyze inventive ideas about alternative future practices.*
- **Support for trial and error:** *Administrators provide staff members with support, resources and materials to initiate and test alternative processes.*
- **Cooperative staff relations:** *Administrators and staff members share norms and skills that support cooperative problem solving about their own group efforts.*
- **Value data collection:** *Administrators and staff members believe they should go beyond casual inquiry to collect systematic data about their processes and school outcomes.*
- **Time for improvement:** *Administrators create ways to release staff members from regular duties so that they can engage in professional reflection, action research and staff problem solving.*

Action Research and Staff Development

The Association for Supervision and Curriculum Development published a handbook entitled *A New Vision for Staff Development* (Sparks and Hirsh, 1997). This new vision for staff development is characterized by a shift

- from individual development to a combination of individual development and organization development;
- from fragmented, piecemeal improvement efforts to staff development driven by a clear, coherent strategic plan for the school district, schools and the departments that serve the schools;



- from district-focused to school-focused approaches to staff development;
- from a focus on changes in adult needs and satisfaction to a focus on student needs and learning outcomes, and changes in on-the-job behaviors;
- from an orientation toward the transmission of knowledge and skills to teachers by “experts” to supporting teachers’ own studies of the teaching and learning processes;
- from a focus on generic instructional skills to a combination of generic and content-specific skills;
- from staff developers who function primarily as trainers to those who provide consultation, planning and facilitation services as well as training;
- from staff development provided by one or two departments to staff development as a critical function and major responsibility performed by all administrators and lead teachers;
- from staff development directed toward teachers as the primary recipients to continuous improvement in performance for everyone who is involved with student learning;
- from staff development as a frill that can be cut during difficult financial times to staff development as an indispensable process without which schools cannot hope to prepare young people for citizenship and productive employment.

For more information

Listed below are a number of Canadian websites which teachers may find helpful. These websites are accurate at the time of publication.

Action Research in Alberta, <http://www.edu.uleth.ca/arnia/>

The website, developed by David Townsend of the University of Lethbridge, provides an invaluable overview of action research in the Alberta context. It includes references to projects undertaken by teacher researchers in recent years.

Alberta Initiative for School Improvement (AISI),

<http://ednet.edc.gov.ab.ca/sib/aisi/>

This website contains an annotated bibliography of print materials that support action research aimed at school improvement.

Action Research at Queen's University, <http://educ.queensu.ca/~ar/>

As well as links to useful introductory sites that will help you get started, this web page contains one of the most comprehensive lists of the latest on-line resources and institutions active in action research.

The Ontario Action Researcher,

<http://www.unipissing.ca/oar/index.htm>

This website promotes the development of educational knowledge through action research for elementary, secondary and post-secondary teachers. One section provides links to action research projects focused on working with new teachers.

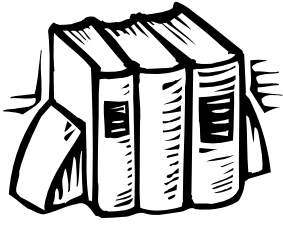
Networks: An On-line Journal for Teacher Research,

<http://www.oise.utoronto.ca/~ctd/networks/>

This website is one of the first on-line journals dedicated to teacher research and includes an on-line discussion form and links to other useful sites.

For more information on Action Research or to plan a workshop for your school, contact Professional Development staff at The Alberta Teachers' Association.





References

- Carson, T. B. et al. 1989. *Creating Possibilities: An Action Research Handbook*. Edmonton: University of Alberta.
- Costa, A. and B. Kallick, 1995. *Assessment in the learning organization*. Alexandria, Va: Association for Supervision and Curriculum Development.
- Glanz, J. 1998. *Action Research: An Educational Leader's Guide to School Improvement*. Norwood, Mass: Christopher-Gordon Publishers.
- . 1999. "Action Research." *Journal of Staff Development*. 20:3 (Summer): 22–23.
- Grady, M. P. 1998. *Qualitative and Action Research: A Practitioner Handbook*. Bloomington, Ind: Phi Delta Kappa Educational Foundation.
- Hamilton, D. and L. Zaretsky. 1997. "Building Professional Communities of Inquiry in Schools." *Orbit* 28:3: 44–47.
- Halsall, N. D. and L. A. Hossack. (Eds). 1996. *Act, Reflect, Revise, Revitalize: Action Research: Moving Beyond Problem-Solving to Renewal*. Mississauga, Ont: Ontario Public School Teachers' Federation.
- Hossack, L. A. 1997. "An Action Research Primer for Principals." *The Canadian School Executive* 16:7 (January): 9–13.
- Kemmis, S. and R. McTaggart. 1990. *The Action Research Planner*. Victoria, Australia: Deakin University.
- National Staff Development Council. February/March 2000. *Tools for Schools*. Oxford, Ohio.
- Patterson, L., C. Minnick Santa, K. G. Short and K. Smith (eds). 1993. *Teachers Are Researchers: Reflection and Action*. Newark, Del: International Reading Association.
- Schmuck, R. A. 1997. *Practical Action Research For Change*. Arlington Heights, Ill: IRI/Skylight Training and Publishing.
- Sparks, D., and S. Hirsh. 1997. *A New Vision For Staff Development*. Alexandria, Va: Association for Supervision and Curriculum Development.