Action Research Handbook

Action Research Handbook

DR. ZABEDIA NAZIM AND DR. SOWMYA VENKAT-KISHORE

Contents

Overview

Action Research Handbook

The Scholarship of Teaching and Learning (SoTL) landscape has emerged as a more recent area of interest and exploration for many post-secondary institutions. This Open Educational Resource (OER) is an effort to support the SoTL movement by providing intentionally curated material that can be used to prepare yourself and plan in this journey. This 'handbook' or 'e binder' is meant to serve as a one-stop shop for potential learners and researchers such as yourself, to better acquaint yourself with the basics of Action Research in the field of Teaching and Learning.

From conceptualizing and operationalizing a teaching-focused action research question, reflecting on teaching practices, identifying a researchable question, applying lessons learned with implications for practice, and transferring the rigorous approach to other teaching contexts and issues encountered, you will also have the opportunity to compile your reflections, ideas and all relevant elements to a potential research study.

Ultimately, this indispensable OER resource is a valuable digital library for institutional researchers, scholars, and educators beyond Centennial College, who may be interested in using the information to develop and reflect on their teaching and learning practice within the higher educational landscape.

In partnership with eCampusOntario

Action Research Handbook

Acknowledgments

Share

If you adopt this book, as a core or supplemental resource, please report your adoption in order for us to celebrate your support of students' savings. Report your commitment using our Share an Adoption page.

We invite you to adapt this book further to meet your and your students' needs. Please let us know if you do! If you would like to use Pressbooks, the platform used to make this book, access the eCampusOntario Pressbooks account.

You can also send questions or information about the book to us at the following email address: open@ecampusontario.ca.

Funding Acknowledgment

This project is made possible with funding by the Government of Ontario and through eCampusOntario's support of the Virtual Learning Strategy. To learn more about the Virtual Learning Strategy visit: https://vls.ecampusontario.ca.

INTRODUCTION TO SOTL

Introduction to Scholarship of Teaching and Learning (SoTL)

Learning Outcomes
After completing this module, you will be able to:

- Identify current sources of post-secondary instructional training and their limitations
- Define traditional understanding of good teaching practices
- Explain key attributes of scholarly teaching practices

How Do We Learn About Teaching and Learning?

Introduction to SoTL

Common Sources for Post-secondary Training

Training for post-secondary instruction is often limited to informal structures. While each can provide positive growth in instructional development, the lack of formal training highlights deficits in each model.

For instance, as an instructor in a police foundations program, how do you stay updated with the latest policies, practices, skills, and knowledge in policing? Staying current in one's professional field is common, but if you're not actively working in the field, you might need to seek alternative methods to keep your skills and knowledge up-to-date.

This often involves reading materials that cover:

- Professional practices
- Standards
- Research & Literature
- Certificates and online courses

The primary ways post-secondary educators find help in developing their craft are:

1. **Colleagues**
   Often learn from their colleagues, which is largely due to convenience. It is more convenient to learn from those around you.
   Limitations
   While learning from your colleagues is convenient, it may limit your exposure to only those colleagues you surround yourself with and only to what they know including their poor teaching practices.

2. **Tradition**
   Learn from their past; what they have done in the past that has worked they continue to use and that which has not worked they discontinue. Tradition can include teaching methods they have been exposed to as a student and their effectiveness or not.
   Limitations
   There is no guarantee that what has worked in the past will continue to work, which is particularly true given that the education system, students, and the context of teaching and learning are continually changing. Tradition may limit educators from trying newer teaching practices that may work better.

3. **Authority**
   Look to the opinions of experts who they assume will know what works best.
   Limitations
   Authority alone does not necessarily provide enough support for the use of a particular instructional strategy. Plus, you will always find conflicting opinions about strategies.

4. **Common Sense**
   Use reasoning as a basis for how to teach; what they reason to be appropriate, effective, or both.
   Limitations
   Common sense can be problematic, particularly if the information that we rely on is sub-standard. The main problem with these sources of information is that they tend to be unreliable or faulty because of bias. This bias is due largely to how we collect the information, which is in an unsystematic and subjective manner.

While these sources of information can offer educators some pearls of wisdom when it comes to teaching, some limitations accompany them.

Post-Secondary Learning Research

The unfortunate reality is that even "professors with years of teaching experience often make commitments to certain pedagogies without ever questioning their evolving and unfolding understanding of a particular phenomenon and their students' ability or inability to grapple with content area the professor has already mastered." (Gayle, Randall, Langley & Preiss, 2013:81)

Notable American faculty developer Maryellen Weimer (2006) argues that faculty looking to improve their classrooms have too often **ignored the existing teaching and learning research;** a sentiment echoed by other educational scholars (Bok, 2006; Evers et al., 2009).

Why might this be?

- Most teachers in post-secondary institutions have little to no formal teacher training experience
- Very few go to teachers college (or its equivalent)
- Few universities and colleges in Canada offer teaching certificates.

The reality is that most faculty learn to teach haphazardly; simply learning as they engage in teaching.

(Evers et al., 2009: 3)

Findings from a Higher Education Quality Council of Ontario (HECQO) funded research study found that the majority of faculty surveyed use the following two methods as the primary way to learn about teaching.

1. Trial and error
2. Consulting colleagues

Many post-secondary teachers reported that when they were hired there was an expectation that they would naturally know how to teach.

Good Teaching, Scholarly Teaching, Scholarship of Teaching & Learning

Introduction to SoTL

Good Teaching

Source: Photo Credit, Centennial

Good teaching is operationalized in various ways, including student satisfaction ratings, peer observations, self-reflective portfolios.

Good teaching results in:

- Enhanced student learning
- Other desired student outcomes
- Supporting institution and department missions and objective

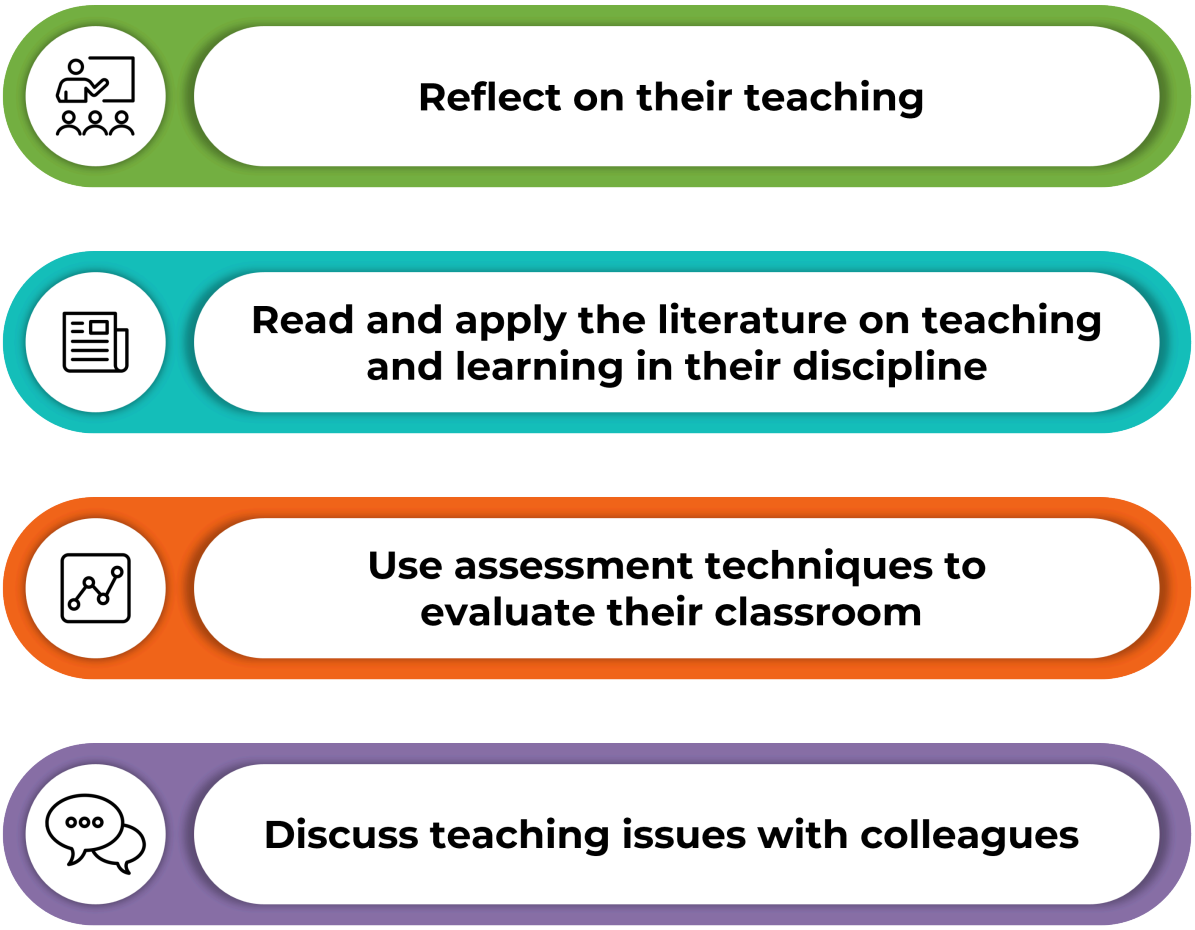
Scholarly Teaching

Source: Envato Elements

Scholarly teaching goes further than what is required for good teaching. It **involves taking a scholarly approach to teaching** as is done in other areas of knowledge and practice.

Dedicated educators view teaching as a profession, and they consider the body of knowledge that underlies teaching and learning as a discipline in which they strive to cultivate expertise.

Scholarly teachers:



An interactive H5P element has been excluded from this version of the text. You can view it online here: *https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=462#h5p-40*

The Scholarship of Teaching and Learning (SoTL)

Source: Envato Elements

The "scholarship of teaching and learning" (SoTL) is the **development of scholarly knowledge about teaching** through reflection, conducting research, and expertise sharing.

It aims to enhance not only individual classroom practices but also contribute to the broader institution and field. SoTL entails rigorous, evidence-based study of student learning, commitment to peer review, and

dissemination of collective knowledge. Its central goal is to contribute to teaching and learning literature, fostering continuous improvement for enhanced student learning.

SoTL Key Characteristics

Although closely related, the scholarship of teaching and scholarly teaching are similar, the intent and outcomes of these activities differ.

To find out more about both of these terms, view the following videos.

Video 1 / 2

Scholarship of Teaching and Learning vs. Scholarly Teaching

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=462#h5p-17

Source: CELatElon. YouTube, 16 Aug 2013

Video 2 / 2

Key Characteristics of the Scholarship of Teaching and Learning

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=462#h5p-18

Source: CELatElon. YouTube, 9 Sept 2013,

Knowledge Check

Introduction to SoTL

Questions

Multiple Choice (select all that apply)

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=811#h5p-19

Reflect

Consider the key characteristics and think about how they correspond to your own professional experience and practice and whether you can integrate them.

Additional Resource

Visit the Society for Teaching and Learning in Higher Education (STLHE) website to find out more about SoTL.

MODULE 1: ACTION RESEARCH

Module 1:

Action Research

Learning Outcomes

After completing this module, you will be able to:

- Define the concept of action research and differentiate it from traditional research methodologies
- Briefly explain the history of action research
- Describe the action research process in detail
- Identify the relationship between action research and reflexive practice in teaching
- Apply critical reflection on personal teaching philosophy and practice

Exploring Action Research

Module 1: Action Research

Defining Action Research

As we've seen in the introductory module, the Scholarship of Teaching and Learning (SoTL) research focuses specifically on the field of teaching and learning and can be conducted using various research approaches.

Action research is a specific research perspective that can be applied to many fields and disciplines including the field of education.

Video

What is Action Research?

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=112#h5p-4

Source: John Spencer. YouTube, 11 Jan 2017.

Definitions

There are many formal definitions of action research, but to quote only one would be insufficient.

Below are a few examples that define action research.

1. Action research is a **method of systematically examining behavior to improve practice.** The "action" refers to doing something. The "research" refers to thinking critically and logically about a problem. Together they form a powerful combination for making productive change in the "workplace"
   (Duesbery & Twyman, 2020: p. 3)
2. The approach is only **action research when it is collaborative**, though it is important to realize that action research of the group is achieved through the critically examined action of individual group members.
   (Kemmis and McTaggart 1988:5-6)
3. Action research is a **process of democratizing research and educational practice.** It is a process that employs systematic and sustained inquiry, and it is made public. It is a self-directed journey and an action in collaboration with students and/or colleagues.
   (Holly et al. 2009; 43)
4. We often try out new strategies and make **changes and modifications based on "how it worked"** in our daily lives. Action research formalizes this intuition.
   (Duesbery & Twyman, 2020: p. 3)

Types of Action Research

Presentation

The following three slides elaborate on collaborative, classroom, and participatory action research and provide examples and details in the videos available on each slide.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=112#h5p-41

Action Research vs Traditional Research

Many of us are familiar with traditional research but are less familiar with the term action research.

Distinctions

Flash Cards

Action Research vs Traditional Research

Click the Turn button on each card to flip it from the Action Research side to the Traditional Research side.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=112#h5p-9

Adapted from Duesbery, L., & Twyman, T. (2019).
100 Questions (and Answers) about Action Research. SAGE.

Knowledge Check

Module 1: Action Research

Drag the Words

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=922#h5p-10

History of Action Research

Module 1: Action Research

Action research, originating from community organizations and workplaces, significantly impacts education. Key contributors like Kurt Lewin, John Dewey, and Lawrence Stenhouse have been instrumental in its development.

Action Research Contributions

Kurt Lewin

Source:
Wikipedia.org, Public Domain

Kurt Lewin

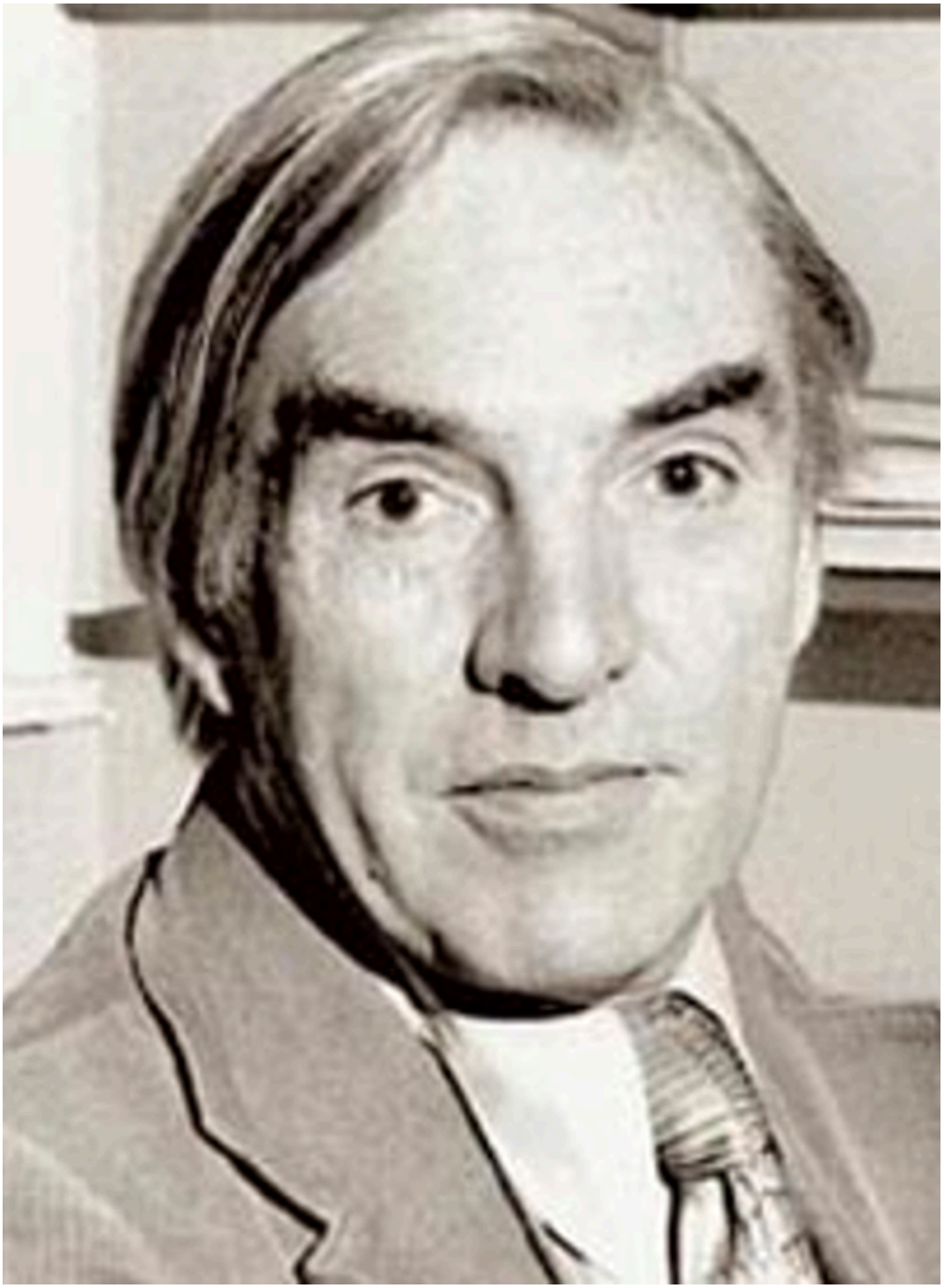
In the 1930s, Lewin first coined the term action research. His work initially in workplace studies led to the concept of action research as a reflective, spiraling process for improving work environments and addressing social issues. He linked his ideas to Dewey's progressive education movement, laying the foundation for schools to drive democratic change in communities. Lewin is recognized for formalizing the theory and principles of action research (Hendricks, 2013).

John Dewey

Source:
Wikipedia.org, Public Domain

John Dewey

In the 1930s, Lewin first coined the term action research. His work initially in workplace studies led to the concept of action research as a reflective, spiraling process for improving work environments and addressing social issues. He linked his ideas to Dewey's progressive education movement, laying the foundation for schools to drive democratic change in communities. Lewin is recognized for formalizing the theory and principles of action research (Hendricks, 2013).



Lawrence Stenhouse

Source:
richardmillwood.net

Lawrence Stenhouse

In the 1930s, Lewin first coined the term action research. His work initially in workplace studies led to the concept of action research as a reflective, spiraling process for improving work environments and addressing social issues. He linked his ideas to Dewey's progressive education movement, laying the foundation for schools to drive democratic change in communities. Lewin is recognized for formalizing the theory and principles of action research (Hendricks, 2013).

To get a more comprehensive history of action research, watch the following video.

Video

History of Action Research

An interactive H5P element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=162#h5p-11

Source: Lowry, Marian. YouTube, 24 Jan 2014

Rewards of Action Research

Educational action research is a **system of inquiry** that teachers, administrators, and other educational personnel can use to **examine, change, and improve their work** with students, educational institutions, and communities.

Benefits

Educator

- **Reflective Practice:**
  Encourages critical reflection in institutional and professional contexts, fostering lifelong learning.
- **Professional Empowerment:**
  Puts educators in control of their development, promotes collaboration and shared insights, and provides a platform for their voice.
- **Teaching Improvement:**

Integrates theory into practice, rethinks evaluation methods, and enhances awareness and knowledge of teaching methods.

Student

- **Enhanced Learning:**
  Builds deeper understanding through a learner-centered approach, engaging students in discussions about their learning.

Practice

- **Collaborative Enhancement:** Fosters collegiality and joint problem-solving across disciplines, generating valuable data for improvement in teaching methods and institutional practices. Helps educators apply theoretical knowledge in practical settings.

Overall, the action research process empowers educators to generate and share insights about their practice with students and colleagues. It serves as a guiding force for professional development, enabling practitioners to study and shape their work.

This transformative process informs and enhances teaching practices, fostering personal insight, self-awareness, and professional growth.

Additional Resource

To further your understanding of how action research can inform and enhance your teaching, view the following video: The Rewards of Action Research for Teachers

Knowledge Check

Module 1: Action Research

Questions

Test Your Knowledge

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=935#h5p-15

Reflect

What are you hoping to gain from this project?

Take some time to consider which benefits of action research have motivated you to conduct a research study.

What are you hoping to gain from this project?

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=935#h5p-45

The Action Research Process

Module 1: Action Research

There are various models of the action research process. Some models are simple in their design while others appear relatively complex. Essentially, most of the models share similar elements with small variations.


1
Central Problem
2
Observation
3
Collection of Data
4
Action

Action research models begin with the central problem or topic. They involve some observation or monitoring of current practice, followed by the collection and synthesis of information and data. Finally, some sort of action is taken, which then serves as a basis for the next stage of action research (Mills 2011).

1. Central Problem / Topic
2. Observation / Monitoring
3. Collection of Data
4. Action Taken

In this course, we will define the action research process as composed of four stages and nine steps:

Image Hotspots

Action Research Process

Click each **+** icon to expand the steps of the stage:

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=184#h5p-13

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=184#h5p-16

It is important to note that action research is a flexible, iterative process of continuous improvement, emphasizing adaptability and responsiveness to findings at each cycle.

Kurt Lewin's approach to action research involves a cyclical, spiral process consisting of several stages, each comprising planning, action, and reviewing the results of the action. This method is aligned with Dewey's concept of experiential learning and is particularly suited to solving problems in social and organizational contexts.

Reflexive Practice and Action Research

Module 1: Action Research

We already engage in action research, but informally. Evidence indicates that teachers who engage informally in action research in the classroom are highly effective and reflective teachers

(Bernhardt, 2004; Reilly 2007)

What is the Relationship between Reflection and Action Research?

Source: Envato Elements

To be an effective teacher you must be an active participant in the classroom and an active observer of the

learning process; you have to analyze and interpret classroom information collected systematically and use that information as a basis for planning future and decision-making.

The process of systematic collection of information followed by active reflection all with the anticipation of improving the teaching process is at the core of action research.

Image Hotspots

Spirals of Inquiry

Click on the Learn More icons for more details about each cycle. To view the interaction in fullscreen mode, click on the fullscreen icon on the upper-right corner of the image.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=187#h5p-42

Action research is in and of itself a process of reflection.

When educators reflect as part of the action research cycle they have the opportunities to develop new knowledge about teaching and contribute to the knowledge base on best practices. Reflective inquiry is at the heart of action research providing educators with opportunities to examine the professional purposes and possibilities of their work.

Reflection involves more than simply thinking about practice.

John Dewey (1933) explained that reflective thinking is a process directed at seeking a conclusion through inquiry. This definition of reflection goes beyond the notion that reflection is merely thinking about a problem. Instead, thinking about a problem is the first step of reflection. The problem-solving nature of Dewey's definition of reflection asserts that for Dewey true reflection could occur only when an individual is confronted with a problem, recognizes it, and then attempts to resolve the problem rationally (Hendricks 2013).

Another way to consider reflection is as a habit of mind, through reflection, educators think about and make sense of their practice and how to improve it, they connect this thinking and knowing to an ethical stance that focuses on what they believe and value, and they take action in the direction of those values.

(Hendricks 2013)

Reflexive Inquiry

Reflecting on values and actions can be difficult, particularly when discrepancies are uncovered. It is important to understand that engaging in deep reflection can reveal your hidden assumptions and biases, as well as disconnections between what you say you value, your espoused values, and what you do or your enacted values (Hendricks 2013).

Considering what you say you believe in light of the decisions you make is an important part of the reflective process in action research.

Elements of Reflection

Reflective and reflexive inquiry often leads to moments of insight that help educators determine whether or not they are acting according to their values.

(Hendricks 2013)

Reflexive inquiry includes:

As Rossman and Rallis suggest, educators can ask themselves what they feel and believe about the topics they wish to study, whether they feel passionate about them or some aspect of them, and if they are open to solutions or possibilities, they have not yet considered (Hendricks 2013).

Ask yourself what you feel and believe about topics you wish to study

Determine whether you feel passionately about the topic, or some aspect of it

Decide whether you are open to possibilities you have not yet considered

A Way to Examine Assumptions

Reflexive inquiry, as defined by Rossman and Rallis (2012), is a process of introspection. It involves examining how your personal history and experiences shape your thoughts, beliefs, and values. This approach allows educators to recognize and understand their underlying assumptions and biases. It's a method to align what you profess to value (espoused values) with your actual behavior and decisions (enacted values), which is crucial for initiating action research.

Framework to Understand Context of Past

Reflexive inquiry provides a structured way to analyze one's background and past experiences. By reflecting on past thoughts and actions, educators can understand their current positions and decisions. This framework helps in situating present thoughts and actions within the broader context of individual history and experiences, offering clarity on how past influences shape current educational practices and decisions.

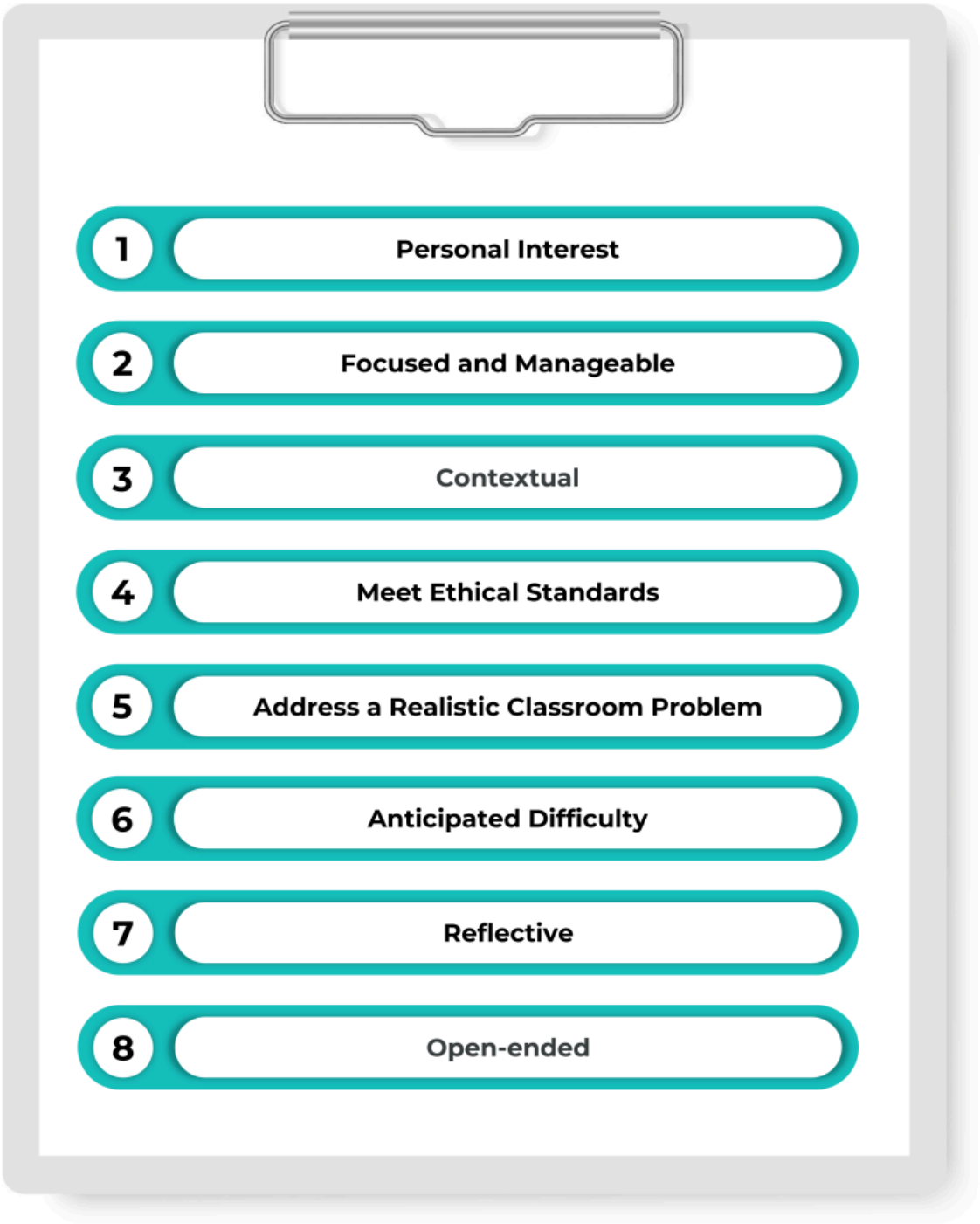
Understand Connections Between Experiences and Values

Through reflexive inquiry, educators can explore the relationship between their experiences and core educational values. This thoughtful consideration reveals how personal history and experiences have molded their professional identity. Understanding these connections is essential in identifying and addressing the gap between stated values and actual practices, thereby facilitating a more authentic and effective approach to education and action research.

Considerations for Getting Started

Module 1: Action Research

The purpose of action research is to answer a certain question or to solve an identified problem.



The following criteria can be considered when reflecting on your research topic.

1. **Personal Interest:**
   You should have a personal interest in your research topic.
2. **Focused and Manageable**:
   Ensure the topic is neither too broad nor too narrow to allow for manageable data collection within the given timeframe.
3. **Contextual:**
   Focus on areas within the normal scope of work that can be intentionally improved, emphasizing the deliberate nature of change in a specific work aspect.
4. **Meet Ethical Standards**:
   Adhere to ethical standards, ensuring participants are treated ethically and safeguarded from harm in any form.
5. **Address a Realistic Classroom Problem:**
   Formulate a research question directly addressing a classroom problem, with results contributing to positive change for participants.
6. **Anticipated Difficulty:**
   Evaluate the difficulty level of investigating the topic, designing the study within your research skill proficiency.
7. **Reflective:**
   Ensure the research question generates findings that prompt reflection on students, the classroom, and personal practice.
8. **Open-ended:**
   Frame the research question in an open-ended manner, avoiding yes/no responses.

Areas of Research

There is no shortage of research topics. Many of these topics can be clustered into the following three broad areas (Johnson 2008):
1. Trying a new teaching method

Action research that focuses on trying out a new teaching method allows for the systematic investigation of the effectiveness of this new method.
2. Identifying a problem

Frequently educators are aware of when there is a problem in their classrooms; a systematic organization of the problem can help educators better understand the problem and its possible causes and can help them explore various solutions.
3. Examining an area of interest

Educators like most professionals are curious about topics in their profession. Action research can be used to study topics in an exploratory fashion.

Examples

Mertler and Charles (2011) expanded on these three clusters. The following are just a few examples.

1. **Classroom Environment**
   Topics can include aspects of the physical and psychosocial environments in classrooms (face-to-face and online) and their impact on student learning.
2. **Instructional Materials**
   Topics can include the usefulness of instructional materials in supporting student learning.
3. **Instructional Methods**
   Topics can include the effectiveness of a given teaching method on student engagement, performance, etc.
4. **Grading and Evaluation**
   Topics can include the effectiveness of a particular form of assessment on student performance.

Centennial Research Examples

Interactive Book

Research Example

Click the previous/next arrows to move between the different examples or use the table of contents menu. You can view the presentation in full screen mode by clicking on the expand arrow icon.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=192#h5p-78

Knowledge Check

Module 1: Action Research

Questions

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=172#h5p-14

Summary

Module 1: Action Research

In this module, you have explored:

- Action Research in education, including Collaborative Action Research, Classroom Action Research, and Participatory Action Research.
- The historical roots of action research, with contributions from figures like Kurt Lewin and John Dewey
- The benefits of action research in your professional development, including collaborative work, empowered decision-making, and deeper student engagement.
- The action research process through four key stages: planning, acting, developing, and reflecting, focusing on continuous improvement.

Looking Ahead

In the next module, we will explore the first three steps in the Planning Phase of Action Research.

Phase 1: Planning

- Step 1: Identifying & limiting the topic
- Step 2: Gathering Information
- Step 3: Literature review and formulating your research question

MODULE 2: ACTION RESEARCH QUESTION & LITERATURE REVIEW

Module 2:

Action Research Question & Literature Review

Learning Outcomes

After completing this module, you will be able to:

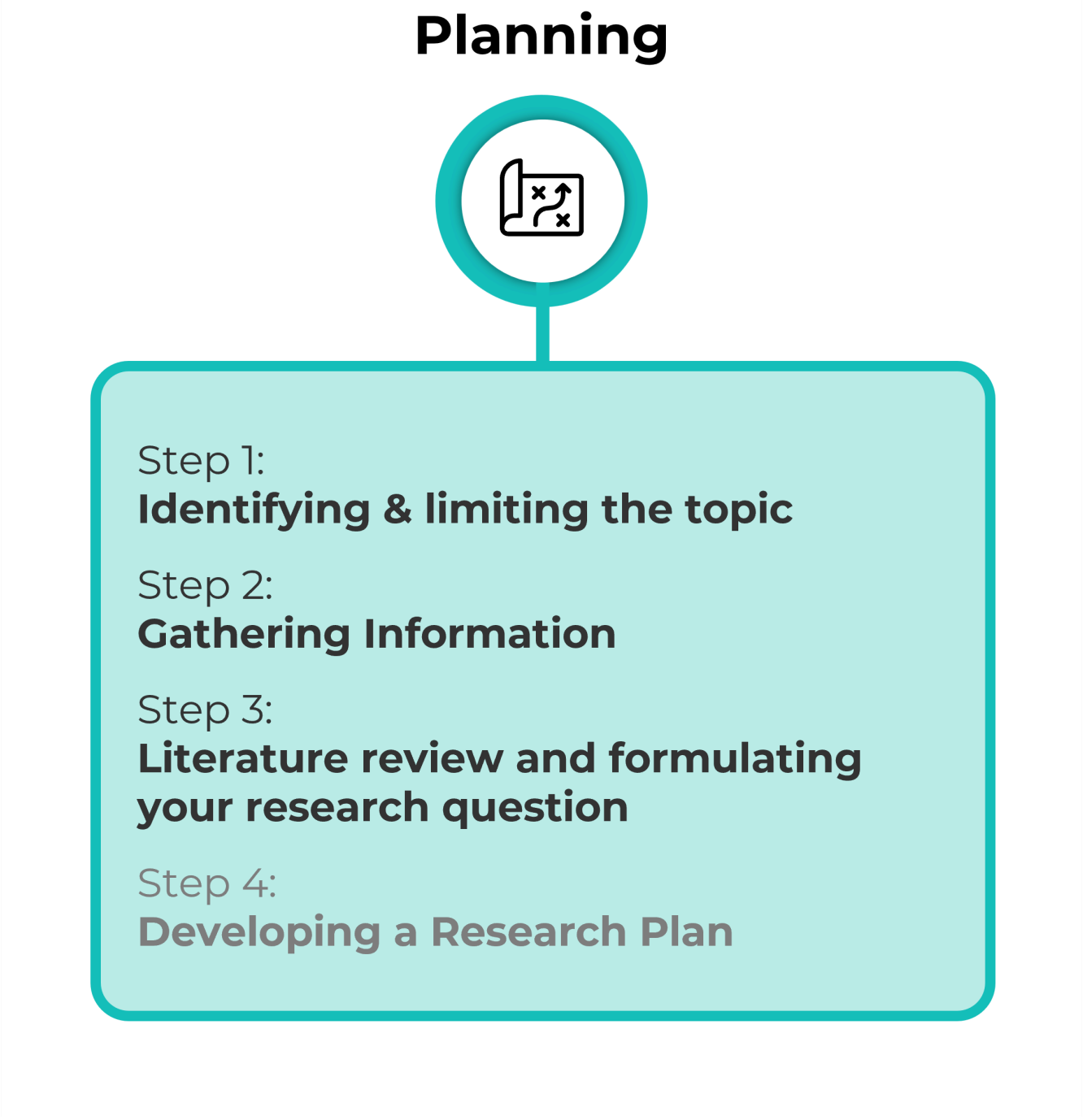
- Outline the necessary components of an action research question
- Formulate an action research question
- Explain the purpose of a literature review to action research
- Use library resources to gather scholarly research literature
- Summarize key information from scholarly literature
- Link relevant information derived from scholarly literature to action research question in an organized and logical fashion

Action Research Process: The Planning Stage

Module 2: Action Research Question & Literature Review

Stages of the Action Research Process

We are in the planning stage of the action research process, which is the first stage of the process.



In this module, you will be working towards completing the first three steps in the planning stage:

1. Identifying & limiting the topic
2. Gathering Information
3. Literature review and formulating your research question

The fourth and last step is Developing a Research Plan.

Beginning the Action Research Process

Module 2: Action Research Question & Literature Review

Action research starts with critical reflection to identify problems for investigation. This involves considering biases, assumptions, and values to align one's actions with their values. Reflection, both at the start and throughout the research, helps in selecting a study area based on actionable and outcome-oriented goals.

For educators beginning action research, it's important to focus reflections on manageable issues where change is possible, rather than broad, less actionable topics.

Continuously engage in reflective and reflexive inquiry throughout the research to refine understanding, actions, and desired outcomes. Reflexive journal writing is useful both at the beginning to identify a research focus and during the study.

Tip:

As research topics are identified, continue to engage in reflective and reflexive inquiry to clarify your understanding and beliefs about the topic, actions that might be taken, and outcomes that are desired (Hendricks 2013).

Video

T3 Finding my research question (2018)

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=715#h5p-20

Source: Margaret Riel. YouTube, 13 Sep 2018.

Gibbs' Reflective Cycle

There are many reflective practice models that you can use to start to identify a research topic. One of these is Gibbs' Reflective Practice Cycle.

This model is simple and the steps involved align nicely with Step One of the action research process: **Identifying and limiting the topic**.

Video

Gibbs' Reflective Cycle Explained

You can watch the video Gibbs' Reflective Cycle Explained to help you understand the steps of the model and to see how it is applied.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=715#h5p-37

Source: Expert Program Management. YouTube, 3 May 2019.

Example of Gibbs' Reflective Cycle

Image Hotspots

Click on the + icons of the diagram to read how the Gibbs' Reflective Cycle could be mapped to classroom scenario.

An interactive H5P element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=715#h5p-38

The 5 Why Process

Action researchers usually do not have difficulty noting problems **(the what)**, but getting at the root of that problem **(the why)** is more difficult. However, it is important to understand the why to determine what action needs to be taken to address the problem. One of the techniques to find this is the "5 Why Process", used to explore cause-and-effect relationships, to determine the root cause of a problem.

TOYOTA

Did you Know?
The 5 Why Process was originally developed in the 1930s by Sakichi Toyoda, the founder of Toyota, and is still used at the company to solve problems today.

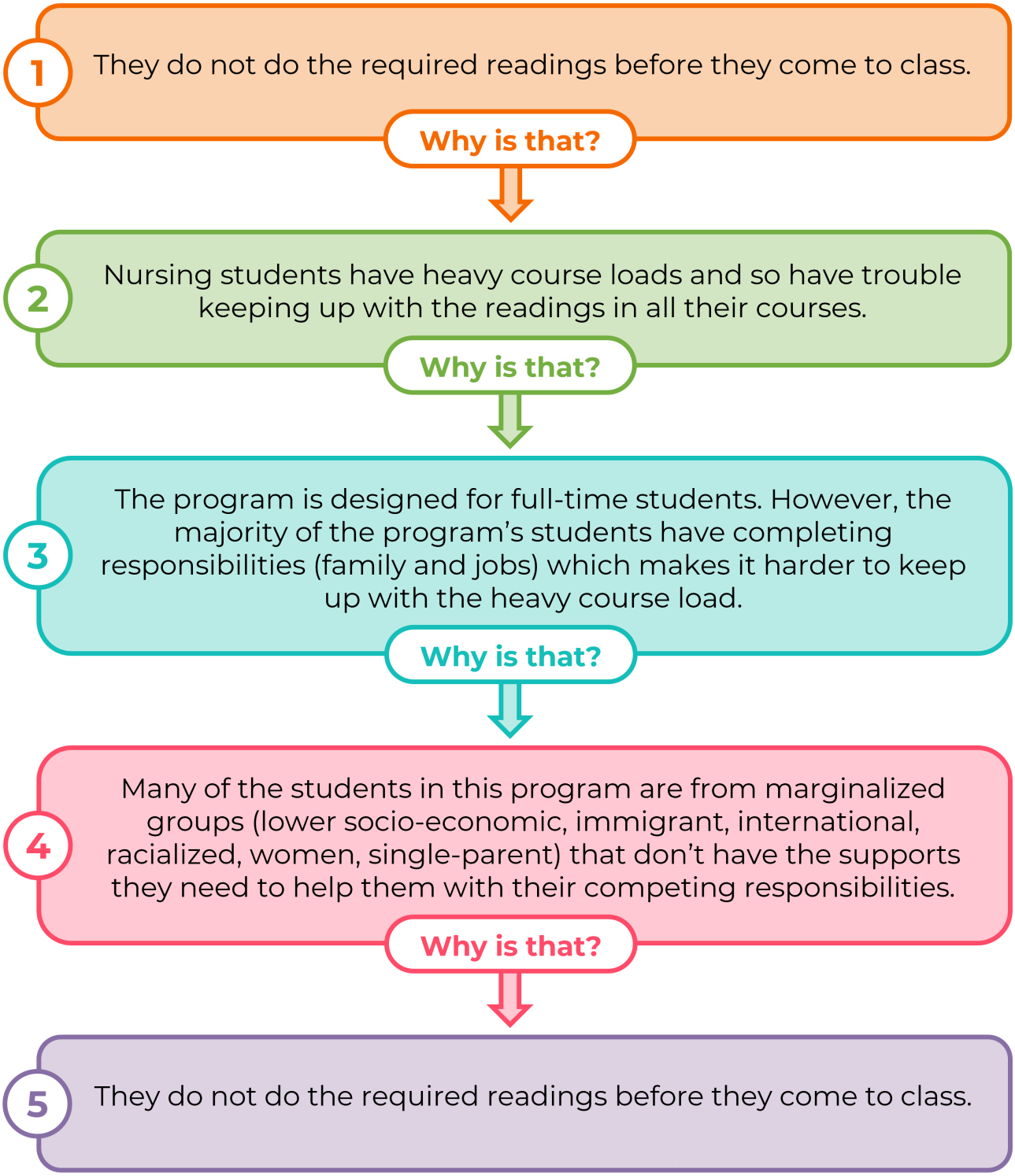
See the example below of nursing students not performing well during class to help illustrate how the 5 Why Process works.

Questions to address:

- **What specific problem have you observed?**
  Nursing students perform poorly in class.

- **Why does/doesn't this happen?**
  See details below.

Tip:
If your last answer is something you can't control, go back to the previous answer.



An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=715#h5p-39

Caution:

Avoid listing 5 different reasons; you want to go deep on 1 reason.

Step 1: Identifying and Limiting Your Research Topic

Module 2: Action Research Question & Literature Review

Limiting Your Research Topic

Luke Duesbery and Todd Twyman (2020) offer the following practical suggestions for helping action researchers limit their research topic: **Reflect, Be Specific, and Discover the Research Question.**

Presentation

Limiting Your Research Topic

The following three slides provide a brief overview and an example for each of the suggestions:

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=595#h5p-44

Once researchers have limited their research topic there is a tendency to want to proceed directly to formulating an action research question.

However, before doing this it is important to gather preliminary information on your research topic.

Step 2: Gathering Information

Module 2: Action Research Question & Literature Review

Gathering preliminary information helps to increase your knowledge of the topic and can help refine your research topic and make it easier to formulate a research question.

What You Know About Your Topic

Experiential knowledge

Effective research begins by formulating a relevant question, often the most challenging step. Understanding the background of your topic is crucial. Start by examining your own experiential and intuitive knowledge critically, considering broader historical, economic, social, cultural, and political contexts. This involves questioning routine knowledge and assumptions.

What Others Know About Your Topic

Colleagues

Gathering preliminary information is as much about querying what we know as it is about learning new facts. Collaborating with colleagues offers diverse perspectives and strategies, potentially highlighting different aspects of your topic and its feasibility.

Remain open to feedback, using it to critically reassess your beliefs and knowledge, deepening your understanding of your research's context.

Step 3a: Literature Review

Module 2: Action Research Question & Literature Review

What is a Literature Review?

Generally speaking, a literature review would involve an in-depth scan of available material to identify material and gaps in your field of study.

The following videos explain the purpose and steps of a literature review in more detail.

Video

What is a Literature Review? Explained with a REAL Example

An interactive H5P element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=609#h5p-21

Source: Scribbr. YouTube, 25 Mar 2020.

Additional Resources

To further your understanding, view the following video: What is a Literature Review?

The Key Benefits of a Literature Review

Completing a lit review provides numerous benefits to the researcher.

Flash Cards

An interactive H5P element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=609#h5p-23

Using Databases and Keyword Searches to Find Scholarly Research Literature

Keywords/Descriptors:

These are specific terms related to your research topic. By searching with these keywords, you will find a list of scholarly articles where these terms appear.

Alternative Search Methods:

Beyond keywords, there are other methods to explore, which can be equally effective.

To learn about conducting effective searches in scholarly databases, please review the following booklets and watch the instructional videos provided. These will guide you through the process of keyword searches and introduce other search strategies.

Interactive Book

Finding Scholarly Research Literature

Be sure to view the following booklet, which will help you to search for scholarly articles.

An interactive H5P element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=609#h5p-25

Step 3b: Conducting a Literature Review

Module 2: Action Research Question & Literature Review

Tips for Conducting a Review of the Literature

Luke Duesbery and Todd Twyman (2020) offer some advice for doing an efficient literature review.
Caution
Be cautious of allowing the literature to shape questions when you are in a better position to do so.
Focus
Don't get side-tracked or distracted by other issues
Timeliness
Be aware of the dates of the literature you find, focus your review on the thinking and empirical research that is most current in that particular discipline –look largely at literature produced or published in the last five years
Counter-arguments
Look for material that both support and contradict your views. It is important to examine the literature to better understand how and why things changed.
Primary Sources
Consult primary sources where possible (those conducting the research and publishing their findings). Primary sources are preferable to secondary sources (those that build on, quote and use other peoples' research). Use as many primary sources as possible.
Simplify
Beware of feeling the need to read beyond the point necessary to conceptualize one's study. Read enough to get started, but not so much that you become too exhausted to conduct your study –Simply read until ideas are framed in a context that makes sense for your purposes.

Reading a Research Article

Steps:

1. Keyword search
2. Skim articles
3. Read abstracts
4. Read articles
5. Check reference lists
6. Obtain references (as needed)

After conducting a keyword search and finding literature,

- Start by skimming the articles to identify those most relevant to your research topic or question. Skimming involves quickly reading to assess the potential usefulness of each article.
- Pay special attention to the abstracts, as they summarize the study's main questions and findings.
- If an abstract suggests the article is highly relevant to your research, read the article in detail to decide if it should be included in your research sources.
- Also, check the reference lists of these articles for additional relevant titles.

- If you find promising sources in these lists, obtain and read them to evaluate their relevance and usefulness for your research.

Structure of a Research Article

Most research articles have a similar structure. Being familiar with the structure of research articles will help you know where to look for what in the article.

1. **Abstract:**
   Summary of the aims/method/results
2. **Introduction:**
   General introduction into the topic
3. **Literature Review:**
   Summary of previous relevant research and identification of research gaps
4. **Method:**
   Description of how the research was conducted (participants/procedure/data analysis)
5. **Results:**
   Summary of the significant findings (often includes tables/figures/statistics etc.)
6. **Discussion:**
   Interpretation of main findings concerning data and the literature
7. **Conclusion:**
   Summary of main findings/implications/limitations
   References: Research cited

For each study you review, encapsulate it into a brief summary that reflects any aspect of the study that has relevance to your topic.
This may include

- the variable studied,
- the methodology employed,
- the participants studied, and
- the conclusions obtained.

Note:
Remember, however, to emphasize the research findings – that is what will influence your study most.

Video

Identify Themes and Gaps in Literature
The following video will help you as you review the literature relevant to your research topic.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=614#h5p-28

Source: Scribbr. YouTube, 23 Apr 2020.

Evaluating the Literature

Once sources are chosen they must be further evaluated to determine how the reviewed information can be used to guide your action research project (Hendricks, 2013).

Questions to ask in evaluating the literature include the following:

Relevance

Does the source provide information that can help inform my action research study?

Credibility

Does the source seem credible? If the source is not a research study, are the claims and/or suggestions made by the author based on his or her extensive experience?

Similarity

Is the information in the source based on the study of a setting that is similar to mine?

Synthesizing the Relevant Literature

Once sources have been chosen based on their relevance, credibility, and similarity to the action research study the next step is to synthesize information. Synthesizing involves connecting information into a coherent, integrated whole. This is done when all the relevant sources have been thoroughly read.

Reflective Activity

Reflect

Using the documentation tool below, write both your proposed action research topic and the keywords in your action research question.

Example:

Proposed Action Research Question:

"*How can **online polling** increase student **engagement** during **lectures**?*"

Keywords in Action Research Question: *Online Polling*, *Engagement*, *Lectures*

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=614#h5p-48

Step 3c: Formulating Your Action Research Question

Module 2: Action Research Question & Literature Review

Once the initial information is gathered on your research topic, refine your action research question through a revision process.

Consider the study's purpose and insights from your literature review. Given the course's focus on enhancing teaching practices, questions typically address a problem in your classes, incorporating an intervention strategy or action aimed at achieving a desired outcome.

For intervention studies, ensure your question includes

- the problem,
- the intervention, and
- the expected outcome.

Include the setting if it adds clarity without complicating the question.

The flashcards below provide a few examples of formulating a clear and targeted research question.

Flash Cards

Poor and Better Questions

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=622#h5p-30

Refining Your AR Question

Step 1: Begin by writing your initial research question.

Documentation Tool

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=622#h5p-49

Step 2: Use the following Research Question Checklist to see if your research question meets all four criteria* of a good research question.

** If your question does not meet all of these criteria, continue to reformulate your question until it does.*

Research Question Checklist:

- A problem

- An intervention/action to be taken to address the problem
- The outcome you would like to see from the intervention
- Your question cannot be answered with a yes/no

Your action research question must contain all the above elements.

Step 3: When you've finalized your research question, you can put it into the Action Research proposal!

Action Research Project Examples

View the following videos of previous learners as they talk about their action research projects. Note how their projects reflect the criteria discussed in this lesson.

Video

What is Action Research?

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=622#h5p-31

Source: Centennial College. YouTube, 20 Mar 2019.

Video

Teaching and Learning in Higher Education Aviation

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=622#h5p-32

Source: Centennial College. YouTube, 20 Mar 2019.

Knowledge Check

Module 2: Action Research Question & Literature Review

Question

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=995#h5p-43

Summary

Module 2: Action Research Question & Literature Review

In this module, you explored:

- The components of an action research question, including strategies on how to identify and limit your topic
- Gathering information and how to conduct a literature review using scholarly research
- How to Formulate Your Action Research Question

Looking Ahead

In the next module, we will explore Research Design and focus on developing a research plan.
Phase 1: Planning

- Step 1: Identifying and limiting the topic
- Step 2: Gathering Information
- Step 3: Reviewing the related literature
- **Step 4: Developing a research plan**

MODULE 3, PART 1: RESEARCH DESIGN

Module 3, Part 1:

Research Design

Learning Outcomes

After completing this module, you will be able to:

- Distinguish between qualitative, quantitative, and mixed methods research designs
-
- Distinguish between qualitative and quantitative data
- Conceptualize and operationalize your research variables
- Determine appropriate data sources for action research
- Explain the concepts of data reliability and validity

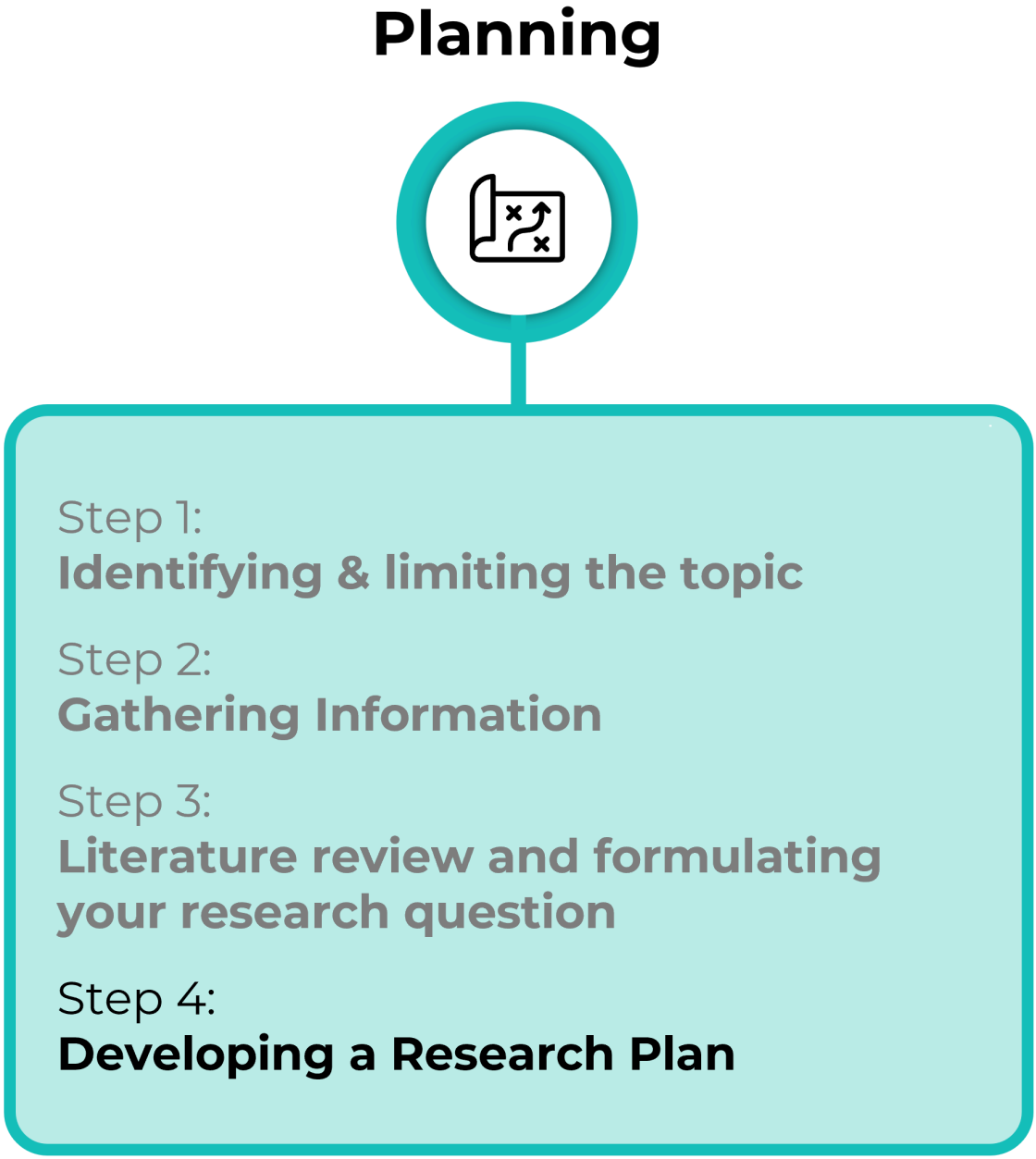
Introduction: Reviewing the Stages of a Research Plan

Module 3, Part 1: Research Design

Stages of Action Research Process

Developing a Research Plan

We are still in the planning stage of the action research process, which is the first stage of the process. In this module you will be focusing on the last step in the planning stage:



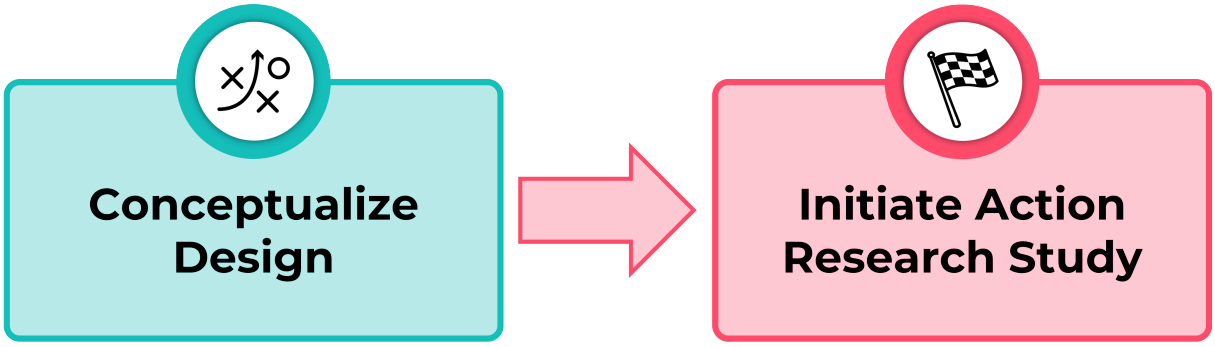
1. Identifying and limiting the topic
2. Gathering Information
3. Reviewing the related literature
4. **Developing a research plan**

A Look Back: Steps One to Three

Prior to entering the fourth stage, you have:

- Identified your topic
- Gathered information
- Reviewed the related literature
- Designed a research question

The next step is to design the action plan. The plan should be written in enough detail that if another teacher/researcher wanted to they could carry it out in their classroom. The plan describes the activities included in the action plan as well as the length of time required for it.



It is imperative to conceptualize the design of a given action research study prior to its initiation.

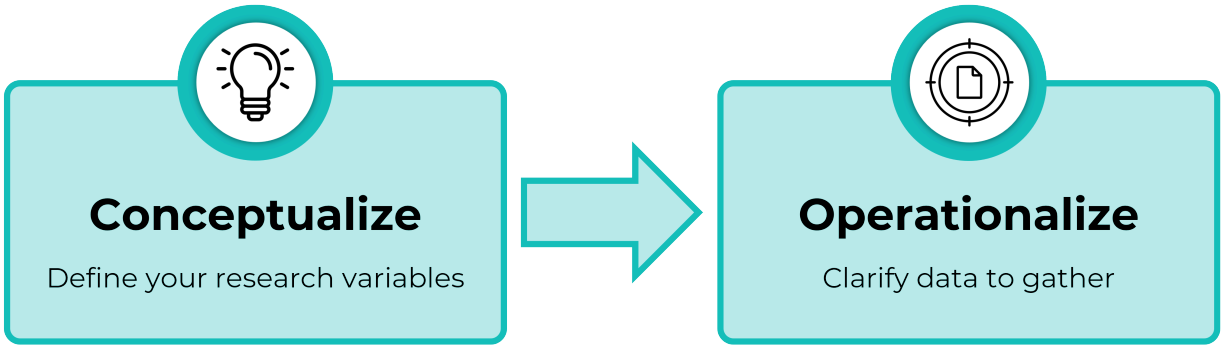
Practitioner-researchers must carefully consider all aspects of the study to be conducted. These design aspects include not only how data will be collected and analyzed but also how the study will be planned.

The research design is the formal plan for conducting the action research study – the "blueprint" that specifies exactly how the study will be carried out.

Overview: Conceptualization and Operationalization

Module 3, Part 1: Research Design

When starting your research study, conceptualization and operalization are two important concepts.



Conceptualization

What is Conceptualization?

Conceptualization in research refers to the process in which the research concepts are defined and specified. Conceptualization is an integral part of a research process since it establishes the ground for the measurement process in the given study. (Study.com, 2023).

For example, refining a construct like “student engagement” by providing it with a theoretical definition. This definition is abstract and relates to other ideas or constructs.

Tip:

In qualitative research, instead of refining abstract ideas into theoretical definitions early in the research process, qualitative researchers refine basic or undeveloped “working ideas” during the data collection, and analysis process. Conceptualization is a process of forming coherent theoretical definitions as the researcher attempts to make sense of or organize the data and one’s preliminary ideas (Neuman & Robson, 2012).

Approach:

1. Gather various definitions from: your own knowledge, input from others, and scholarly literature. You may also encounter multiple dimensions of a construct such as online vs. face-to-face student engagement.
2. Consider the units of analysis that align with your definition. For student engagement, examples could be: individual engagement with course materials or engagement among students as they interact with course content.

Tip:

It’s crucial to differentiate your construct from closely related ones, such as student participation and student

motivation, even if they share similarities (Neuman & Robson, 2012).

Reflect

Academic Engagement

To familiarize yourself with the idea of conceptualization using the academic literature, skim the following article.

Document: Academic Engagement – An Overview of Its Definitions, Dimensions (PDF)

Then, address the two questions below.

An interactive H5P element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=638#h5p-69

Operationalization

What is Operalization?

Operationalization is the process of moving from the conceptual definition of a construct to a set of specific activities or measures that allow a researcher to observe it empirically.

This process translates the theoretical, conceptual variable of interest into a set of specific operations or procedures that define the variable's meaning in a specific study (Neuman & Robson, 2012).

Interactive Book

Operationalization | Quantitative methods | Measurement | UvA

Click on the previous/next buttons to move between pages.

An interactive H5P element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=638#h5p-77

Additional Resources

- Operationalization | A Guide with Examples, Pros & Cons
- 4.1 Operationalization | Quantitative methods | Measurement | UvA Run Time: 03:32 min
- Research Methods – Chapter 03 – Operational Definitions Run Time: 08:44 min
- operational definition Run Time: 02:17 min
- Variables – Conceptual and Operational Definitions Run Time: 02:16 min

Research Design: Quantitative, Qualitative & Mixed Methods

Module 3, Part 1: Research Design

Research Methodology

Research methodology is the specific procedures or techniques used to identify, select, process, and analyze information about a topic.

In a research paper, the methodology section allows the reader to critically evaluate a study's overall validity and reliability.

Questions:

The methodology section answers two main questions:

- **How was the data collected or generated?**
- **How was it analyzed?**

(University of the Witwatersrand LibGuides)

Approaches to research design are divided into one of three categories:

Purely qualitative

A qualitative researcher is interested in figuring out why things are the way they are; often a microscopic perspective.

Purely quantitative

A quantitative researcher is interested in relationships –and how they might be generalized –a wider perspective. Researchers usually lean one way or another.

Mixed-methods

A combination of both qualitative and quantitative design.

An increasing number of action researchers are embracing mixed-methods designs. However, it's worth noting that the distinction between these methods and their contrasting ideas may not always be straightforward. (Duesbery & Twyman, 2020)

Flash Cards

Qualitative and Quantitative Approaches

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=649#h5p-33

Tip:

While conducting action research, it's crucial to remember that the primary aim of the action plan is to **solve**

the specific problem you're studying. Traditionally, action research involves in-depth and often prolonged engagement with a particular situation. (Mertler, 2020).

In your case, the focus of your action research is likely your students, and your research question pertains specifically to them, rather than addressing broader topics like teaching or learning in a general sense. Your main concern isn't about generalizing your findings beyond your specific context. However, this doesn't mean that your research won't have value for others outside your specific situation.

Therefore, your **research design and approach would typically fall within the realm of qualitative research methods**. Nevertheless, since you may have quantitative data at your disposal, it's possible to incorporate both qualitative and quantitative approaches to address your practical, localized issue, which is known as a mixed-methods design.

Examples of Research Designs in Action Research

Presentation

Research Design in Action Research

An interactive H5P element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=649#h5p-34

Additional Resources

- **Action Research Part 2: Now What?**
  Run Time: 07:50 minutes
- **Quantitative vs. Qualitative Research: The Differences Explained | Scribbr**
  Run Time: 03:37 minutes
- **Qualitative and Quantitative Research**
  Run Time: 04:30 minutes

Knowledge Check

Module 3, Part 1: Research Design

Questions

Instructions:
Indicate which each whether each description corresponds to a quantitative or qualitative research design.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1112#h5p-35

Putting Your Research Plan Together

Module 3, Part 1: Research Design

When putting your research plan together, answering the **what**, **when** and **who** questions will guide your thinking as you design your research study.

Let's break these down further:

What and When?

While putting your research plan together it is important to consider:

- The activities included in the intervention
- The length of the intervention or time frame

Note:
A timeline will help the researcher stay focused on their plan. Even if adjustments need to be made to the plan as you proceed it is important to have a timeline.

If your research does not involve an intervention (i.e. exploratory research) where the focus is on understanding or describing, the **research plan** typically includes simply the **data collection strategies** that will be used to answer the **broad general question** and a **timeline for collecting data.**

Who?

Your research plan should outline:

- Your research participants
- How you'll choose them

Essentially, who will be part of your study?

Consider whether your action research will target:

- all students
- students in a particular course
- a specific section of a course

Source: Envato Elements

Tip:
When deciding on study participants, it's essential to keep your research manageable. If you're teaching multiple courses or sections of the same course, it might be wise to limit your focus to one course or one section of a course.

Ethical considerations, which we will address in Module 4, may come into play when dealing with course sections.

It's important to keep in mind that in your project, you aren't solely the researcher; you're also a participant. While you might initially think of action research as a way to collect information from others, a significant aspect of it involves self-discovery (Hendricks, 2013).

When it comes to choosing your research participants, there are numerous methods available:
Methods for Choosing Research Participants

- Simple random sampling

- Systematic sampling
- Cluster sampling
- Convenience sampling
- Purposive sampling

Remember:

Considering that most action research projects involve the researcher's own students, it's highly probable that **purposive sampling, where participants are chosen for a particular reason will be the preferred approach**.

Summary

Note:

Your research question drives your research design.

The following are some guidelines that will help map out your research design:

1. Research focus
2. Research participant characteristics
3. Sample size
4. Length & frequency of intervention
5. Data: what will be collected, how will it be accessed, what is the timing?

(Duesbery & Twyman, 2020)

Data and Data Collection: Overview

Module 3, Part 1: Research Design

Question:
"What data will I collect to provide evidence of the consequences of my actions and how should I collect it?"

In order to see if the action you take has addressed the issue/problem you've identified you will need to collect information or data.

To determine if your data aligns with your research question ask yourself the following questions:

- What are you trying to do?
- What is the main purpose of conducting your research?

Data can include both qualitative data and information that can be quantified, tabulated, and, analyzed using statistics.

Tip:
Keep in mind that action research is a form of qualitative research. Quantifying your data does not mean you are conducting a quantitatively designed study. You can include quantifiable data within your study if they inform your research. Some data such as surveys, questionnaires and checklists can be quantified and the results can be presented in a quantifiable format.

Data Collection Strategies

Before implementing the research plan, you must decide on the data collection strategies you will use in your action research study.

Having a lot of data is useless unless it is connected to what you are studying. Be sure you are collecting data that aligns with your research question and purpose of your research. Collecting baseline data (i.e. from classroom observation sheets, survey, and questionnaire) will help you see what is taking place before you enact your study/pedagogical strategies.

Below are the 3 main types of data collection strategies. We will expand on each of these types in the subsequent sections.

Certain types of data will require ethics board approval. The * refers to data collection types that will require consent.

Artifacts

- Tests/Quizzes/Exams
- Written assignments
- Presentations
- Projects
- Journals
- Peer assessments
- Self-assessments
- Student records (i.e. grades)

Observational Data

- Field notes/observational records
- Logs
- Checklists
- Tally sheets
- Organizational maps
- Behaviour scales
- Videotapes*
- Audiotapes*
- Photographs*

Inquiry Data

- Interviews*
- Focus groups*
- Conferencing*
- Surveys/ questionnaires
- Attitude scales

Additional Resources: Collecting Data for Action Research

Additional Resources

These activities and resources will help when planning your data collection and in the design of your data collection methods.

1. Watch the following video: Collecting Data for Action Research (11:37 minutes)
   Riel, Margaret. "T7: Collecting Data for Action Research."
   YouTube, 7 Sept 2018, https://youtu.be/JHSnAllFniY
2. Once you've finished watching Riel's video tutorial, navigate to the Tutorial 7 Activities: https://www.actionresearchtutorials.org/7-activities.
   THen, read section A (Planning – Create a Data Collection Plan) and section B (Planning – Building your Knowledge)
3. Next, navigate to the Tutorial 7 Resources: https://www.actionresearchtutorials.org/resources. Read section A (Planning – Create a Data Collection Plan) and section B (Planning – Learning How to Collect Data)

Data and Data Collection: Artifacts

Module 3, Part 1: Research Design

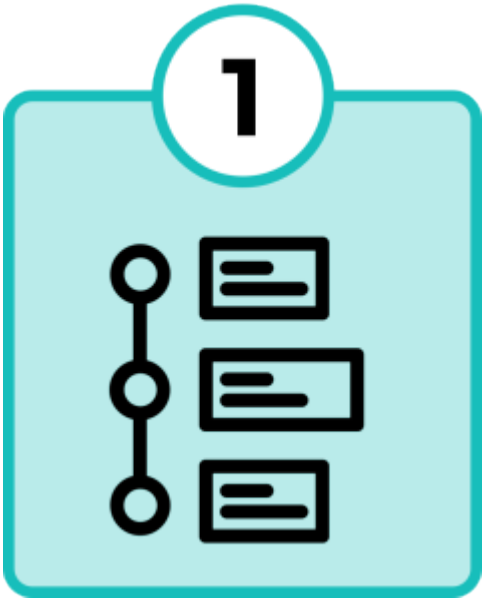
Artifacts are various types of work and products created by participants.

Examples include

Student-Generated Artifacts: Focus on enhancing student performance. Choose from assignments, projects, tests, or other work as study data (Hendricks, 2013).

Archived Sources: Utilize records like students' grades as additional artifact sources (Hendricks, 2013).

Types of Artifacts



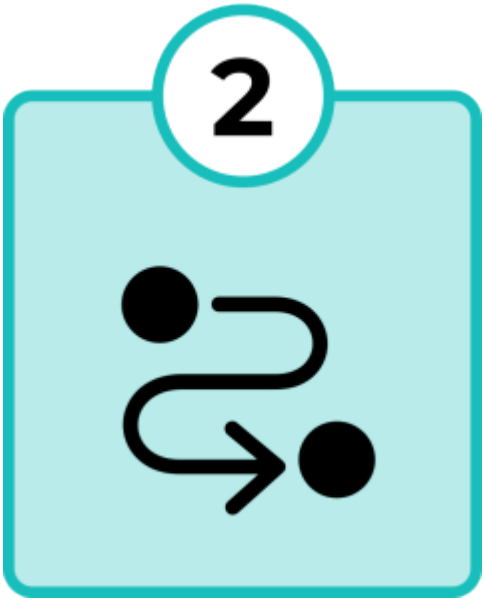
Formative Assessment Artifacts

Ongoing assessment to gauge progress during instruction.

Examples: Quizzes, assignments, and worksheets.

Benefits: Determine teaching strategy effectiveness, assess strategy success, and facilitate reflective adjustments (Hendricks, 2013).

Considerations: Note that formative assessments can be informal and take various forms, including observations and oral questioning (Mertler, 2020).



Summative Assessment Artifacts

Measure instructional outcomes and skills at the action/strategy conclusion.

Examples: Projects, e-portfolios, papers, performances, presentations, and exams (Hendricks, 2013).

Other Student Artifacts

Explore artifacts like journals to gauge emotions, learning struggles, success, and personal growth (Hendricks, 2013).

Best Practices with Artifacts

Ensure validity by:

- Scrutinizing assessment methods **alignment with instruction.**
- Standardize artifact assessment to maintain consistency across evaluations, promoting accurate measurement in action research studies.

Advantages

- Formative and summative assessments serve as readily available classroom data, simplifying data collection during the teaching-learning process.
- Their routine administration enhances study feasibility by eliminating the need for designing specific instruments solely for research purposes.

Disadvantages

- Potential mismatch with the study's goals poses a risk.
- It is essential to ensure alignment between assessment instruments and the research questions to avoid collecting potentially irrelevant or inconclusive data.

Tip:
To evaluate subjective work consistently, establish a scoring rubric for standard measurement. This guideline outlines predetermined performance criteria, determining how various performance levels translate into scores or grades. This ensures standardized assessment of students' subjective work, promoting fairness and clarity in evaluation (Hendricks, 2013).

Data and Data Collection: Observational Data

Module 3, Part 1: Research Design

Observations are a means of collecting qualitative data that involves carefully watching and systematically recording what you see and hear going on in a particular setting.

Observational data is crucial in action research and can help **determine why** an intervention was **successful** or **unsuccessful** and how the context of the setting affected the study.

It becomes especially important when assessing non-verbal behaviors, such as students' body language during group work, providing a deeper understanding of their interactions and communication (Hendricks, 2013).

Interactive Book

Collecting Data: Observations

Click the previous/next arrows to move between the page or use the table of contents menu.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1148#h5p-75

Advantages

- Can gather data about actual student behaviours as opposed to student's perceptions.
- Enables teacher to see some things that students might not be able to report on themselves (i.e. survey)

Disadvantages

- Presence of a researcher can change student's behaviours if they know they are being watched.
- It is difficult to record detailed information as you are teaching or facilitating. It is more realistic to jot down brief notes on significant events, or incidents and then fill in the details immediately after the class.

Data and Data Collection: Inquiry

Module 3, Part 1: Research Design

Inquiry data is collected **to understand participants' knowledge, values, beliefs, experiences, feelings, opinions, attitudes, or perceptions.** This information provides insights into the effectiveness of a strategy, offering feedback and improvement suggestions.

Inquiry data can be collected through:

1. Surveys
2. Verbally through interviews and focus groups

Important:
Using interviews and focus groups requires a full ethics review process, not just an expedited ethics (QI) review process.

Inquiry data helps to answer the 'why' questions in your study by providing your participants' assessment of the effectiveness of the strategy. This allows for a more thorough understanding of the reasons the strategy was successful or unsuccessful.

Advantages

- Participants have the opportunity to provide detailed feedback
- Researcher can shift focus based on participants' comments
- Researcher can ask questions

Disadvantages

- Interviewing, transcribing, and analyzing interviews is very time-consuming
- Need to have effective interview and/or facilitation skills

Interactive Book

Inquiry Methods of Data Collection

Click on the previous/next buttons to move between pages.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1153#h5p-76

Creating Clear Questions for Inquiry Data

There are no real hard and fast rules about how to write strong questions, but rather a set of guidelines. Here are some tips to avoid common problems you might run into. (Neuman & Robson, 2012).

- **Emphasize clarity** by avoiding ambiguous language, jargon, and abbreviations.

- **Tailor vocabulary** to respondents' understanding, ensuring precision and avoiding multiple ideas in one question.
- **Maintain emotional neutrality** and prestige awareness to prevent bias.
- **Eliminate double-barreled questions**, differentiate beliefs from reality, and guard against leading questions.
- **Assess respondents' capability**, avoiding questions beyond their knowledge. Address timeframe sensibly, focusing on current attitudes.
- **Ensure grammatical correctness**, eliminate double negatives, and create balanced response categories.
- **Mitigate social desirability bias** by framing questions to reduce socially desirable answers. Providing face-saving alternatives and considering survey delivery impact can enhance response reliability.

Creating good survey questions takes practice. Now that you are aware of some of the pitfalls of creating survey questions, take a look at the following problem examples and possible improvements.

Problems to Avoid	Example of Problem	Possible Improvement
False premises	When was the last time you consumed non-prescription drugs?	Have you ever consumed non-prescription drugs?
Distant future intentions	After you graduate from college and gain employment in your field do you feel you would continue to work in that field until you retire?	Based on your current studies do you feel that you would pursue employment in that field of study?
Social desirability bias	Do you give to charity?	How often do you give to charity? a. Never b. Not as often as I'd like to c. Often d. Very often

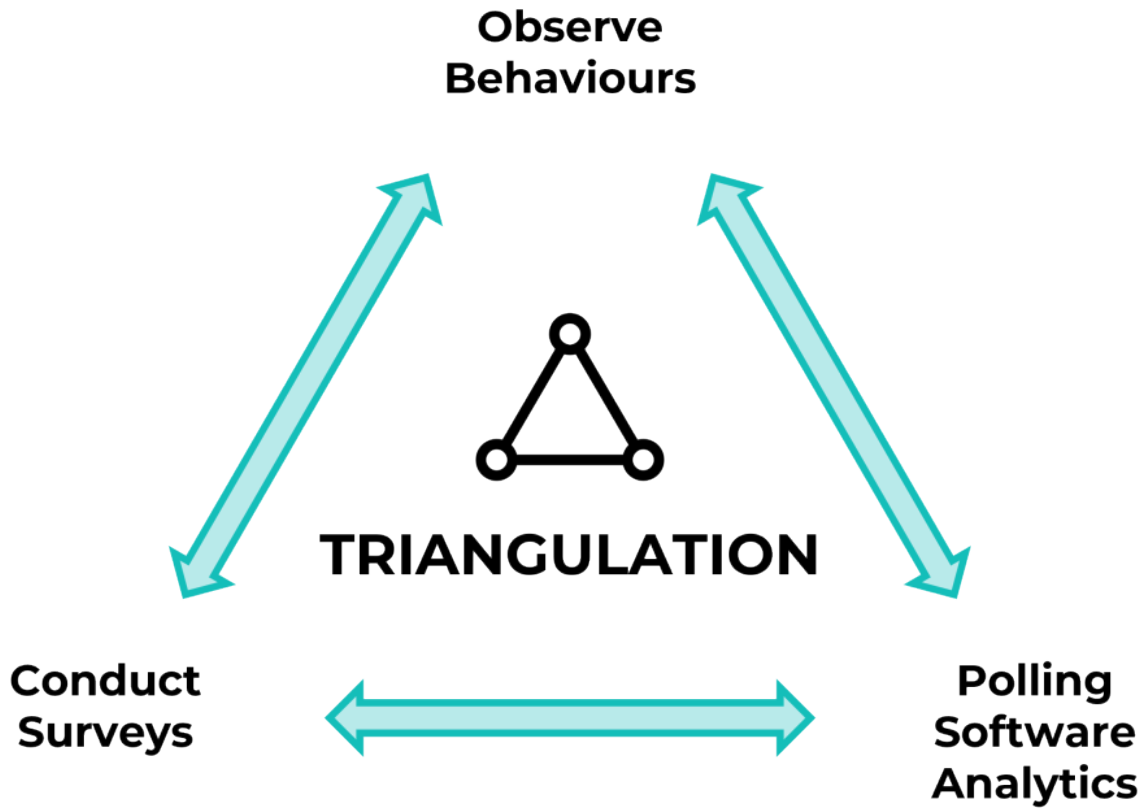
Data Validity and Reliability

Module 3, Part 1: Research Design

Triangulation

Action research commonly employs triangulation as a strategy to establish validity and reliability.

Triangulation involves collecting and analyzing various forms of data to address research questions, mitigating gaps that might arise from relying on a single data source. This approach facilitates corroboration by examining independent pieces of evidence that converge on the same conclusion.



For instance, in a study on enhancing student engagement through online polling in large classrooms, researchers might observe behaviours, conduct surveys, and analyze polling software analytics. Analyzing these diverse data sets individually and collectively ensures alignment, enhancing the credibility of conclusions.

Triangulation, although traditionally involving three data sources, can include more for greater research study reliability. However, researchers must be mindful of increased time and potential complexity in data analysis associated with incorporating multiple data sources, balancing the benefits with practical considerations.

Triangulation Matrix Example

A Triangulation Matrix can be used to determine what sources of data can be used. The table below identifies three different types of data (Artifact, Observation, and Inquiry).

Research Question	Artifacts	Observational Data	Inquiry Data
How can the use of online polling increase student engagement in large classes?	Analytics from polling software	Field notes – record body language during class to see if there are differences when polling is used	Attitude Scale that asks students about the use of online polling

Knowledge Check

Module 3, Part 1: Research Design

Questions

Instructions:
Select the correct option for each of the following questions.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1165#h5p-47

Summary

Module 3, Part 1: Research Design

In this module, you explored:

- The importance of conceptualization and operationalization as you begin your research design
- Types of research design, including qualitative, quantitative, and mixed methods
- Pulling your research plan together using the what, when, who questions
- Different types of data and data collection including artifacts, observational and inquiry data
- The concept of triangulation to verify data reliability and validity

Looking Ahead

In the next module, we will focus on survey creation as a type of inquiry data collection.

MODULE 3, PART 2: SURVEYS

Module 3, Part 2:

Surveys

Learning Outcomes

After completing this module, you will be able to:

- Differentiate between closed-ended and open-ended survey questions, identifying the advantages and disadvantages associated with each format.
- Apply Fink's (2017) guidelines for survey creation, including the importance of conceptualization and operationalization of research variables in the development of effective survey questions.
- Explain the three types of rating scales (categorical, ordinal, and numerical) and their application in measuring attitudes, perceptions, and behaviors in surveys.
- Design a well-structured survey, including considerations for question sequencing, formatting, and pre-testing to ensure clarity, logical flow, and respondent engagement.

Survey Creation and Design

Module 3, Part 2: Surveys

Survey Creation

As noted in the previous module, surveys are a common data collection tool used by researchers to gather data that can help answer their research question.

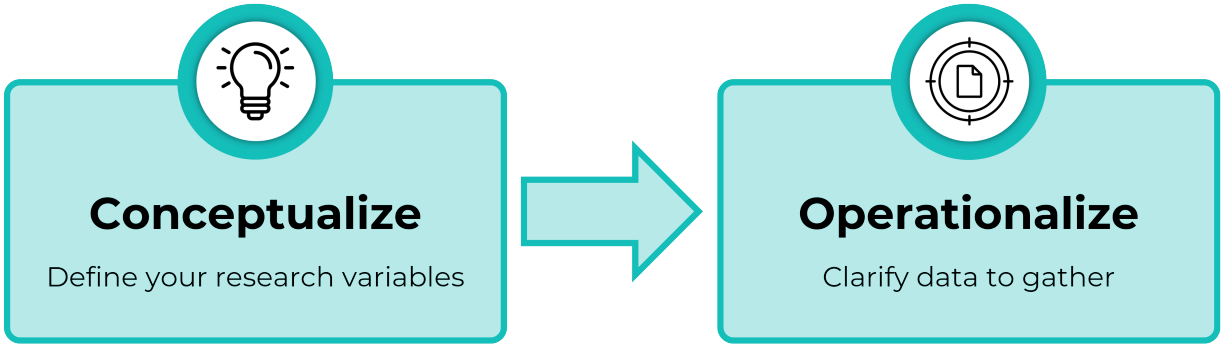
In this section, you will be introduced to Qualtrics, which is a *"simple to use web-based survey tool/application to conduct survey research, evaluations, and other data collection activities."* Qualtrics allows you to create and distribute self-administered online surveys, as well as analyze survey responses. You may be able to get institutional approval for Qualtrics account activation.

According to Fink (2017), "Online surveys have many useful features such as drop-down menus and the ability to build on the answer to one question to create the next. You can also reach large numbers of people with one click. Consider the cost, which includes purchase fees and time to learn and use the new software."

Where to Start?

Once you decide to use a Survey to collect your data, the next step would be to consider the content or topics that your survey will include (i.e. content that will assist you in answering your research question).

This consideration relates to the Conceptualization and Operationalization of your research variables, covered in Module 3, Part 1. Essentially, you would define (conceptualize) your research variables and clarify what information/data you would need to gather (operationalize) from your respondents.



Tip:
Ask yourself the question **"What information do I want and must therefore make certain I collect?"** (Fink 2017)
Do not ask for information unless you can act on it (why raise hopes that you cannot or will not fulfill)!

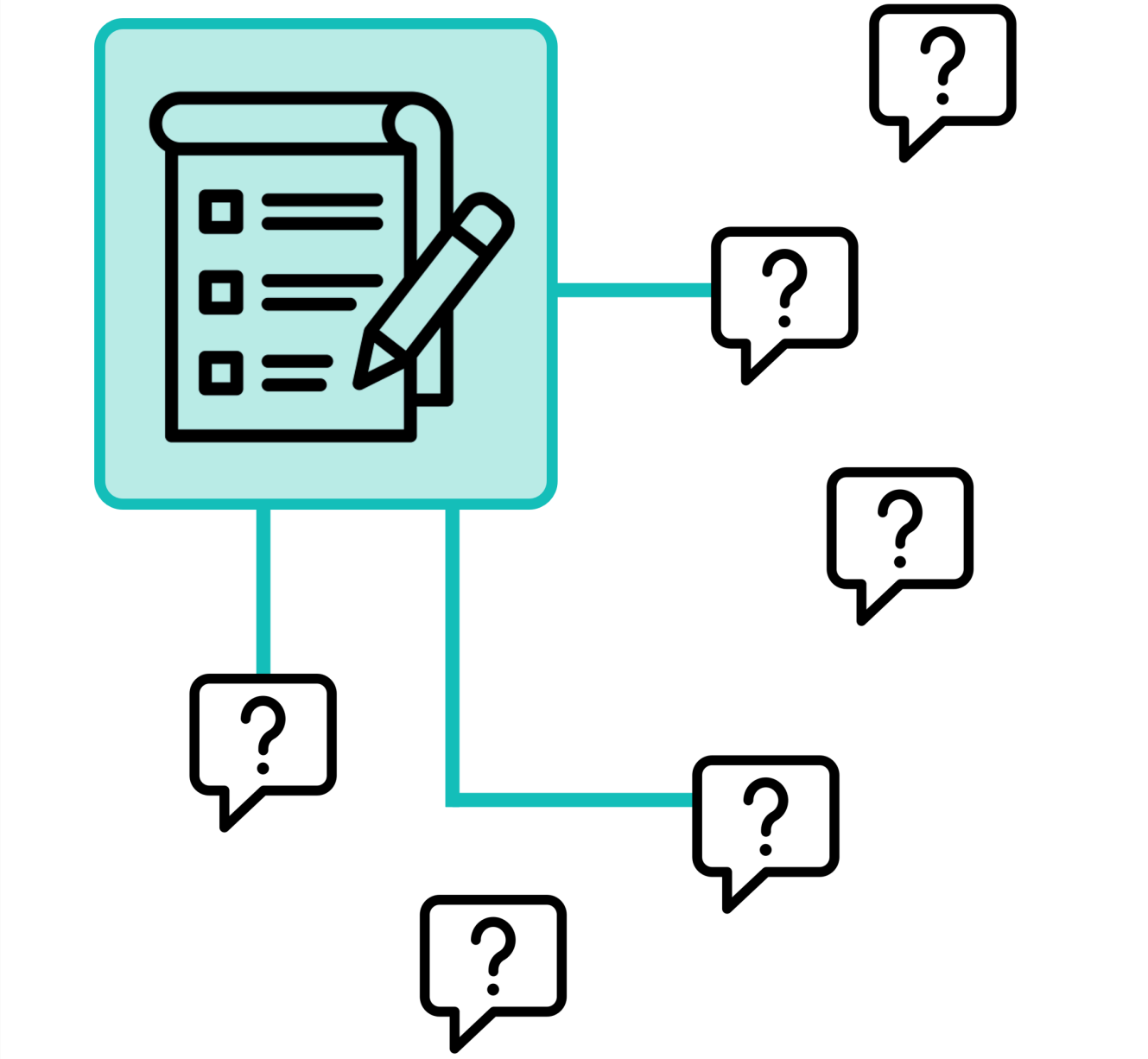
Once you have settled on the content and set the survey boundaries, write the survey questions. It is advisable to write more questions than you plan to use because you will probably eliminate those that are unusable. Before deciding on the number and sequence of questions, ensure you cover the complete content you have identified as important to the survey (Fink, 2017).

Survey Design

Remember, when formulating survey questions it is important to:

- Only use questions that will generate relevant data or information that will answer your research question.
- Survey questions and response choices should be written at a sixth to eighth-grade reading level.

Evidence suggests that most people prefer simple words and sentences in surveys (Fink, 2017). It is important to use standard grammar and syntax.



There are two main question formats used to create surveys: open-ended and closed-ended questions.

Open-ended Questions

Allow the respondents to provide the wording of the reply. They choose how to answer in their own words, similar to short-answer questions on tests. Responses can range from a single word to a more lengthy statement (Guppy & Gray, 2008).

Advantages

Allows detailed, personal responses, capturing respondent's opinions and distinctions in their own words. Useful for unanticipated answers, enjoyable for respondents, and provides rich, quotable content. Ideal for initial research in unfamiliar areas.

Disadvantages

Responses can be too diverse for comparability, vague, or incomplete. Long answers are less likely to be written by respondents, and coding these responses is challenging and time-consuming. Respondents face greater demands, potentially leading to partial answers.

Close-ended Questions

Force the respondents to choose from predetermined answers. Responses can take the form of *yes or no answers, checklists, and rating scales*. Respondents may also be asked to give a number for an answer (Fink, 2017).

Advantages

Offer uniform, easily compared responses within a common frame of reference. Respondents consider all alternatives, reducing memory reliance and simplifying recording.

Disadvantages

May not fully capture respondent views due to inadequate response categories. Can lead to superficial responses and respondent frustration with long lists of choices. Only effective with shorter lists of alternatives.

Guppy, N. and Gray, G. (2008). Successful Surveys: Research Methods and Practice (4th edition). Toronto: ON, Nelson, Thomson Canada Ltd

Wording Questions

Guppy and Grary (2008) contend that the way questions are worded requires attention and offer the following suggestions.

Interactive Book

Wording Questions

Click the previous/next arrows to move between the page or use the table of contents menu.

An interactive H5P element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1176#h5p-67

Remember!
Questions that raise ethical issues must be raised as part of your Research Ethics Board – Quality Improvement process, no matter how sophisticated a strategy you use to frame these questions.

Additional Resources

- Dr Nic's Maths and Stats. *Writing Good Survey Questions – Statistics Help*. Youtube, 6 August 2019.
- Check out the Qualtrics blog on "How to create an effective survey".

Survey Question Types

Module 3, Part 2: Surveys

It is easy to get overwhelmed with all the types and styles when it comes to formulating survey questions. It is important to keep in mind that every question counts.

Let's explore some of these question types/formats.

Interactive Book

Survey Questions – Types & Purpose

Click the previous/next arrows to move between the page or use the table of contents menu.

An interactive H5P element has been excluded from this version of the text. You can view it online here: *https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1183#h5p-64*

Rating Scales

Many surveys use closed-ended questions that require respondents to rate attitudes, perceptions, and/or behaviours. Rating scales are appropriate when asking individuals to respond to a set of questions where their response indicates the strength (e.g. the extent of agreement, level of frequency, degree of understanding) of that response.

A rating scale requires respondents to place the item being rated in any one of an ordered series of categories or at some point along a continuum. A numerical value is assigned to the ordered categories or points.

Example of a rating scale with 5 levels, from 1 which represents "Poor" to 5 which represents "Outstanding"

There are three types of rating or measurement scales.

Type 1: Categorical

Also called ‘Nominal’ response scales

These require people to affirm or name the groups to which they belong: *gender, religious affiliation, college last attended.*

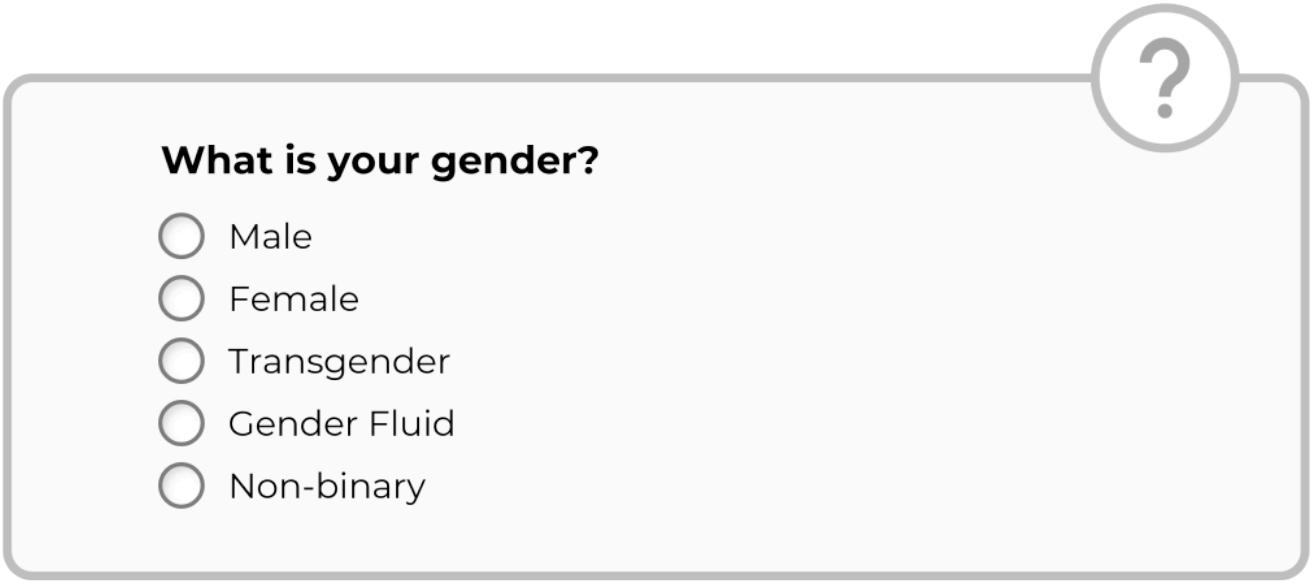


Image Description

The example above shows the question “*What is your gender?*” with the following options: *Male*, *Female*, *Transgender*, *Gender Fluid*, and *Non-binary*.

Type 2: Ordinal

These scales require that respondents place answers in order of importance. When raters use Ordinal scales, they select one of a limited number of categories that have some order in them.

Image Description

The example above shows the question "*What is the highest level of education you completed?*" with the following options: *Elementary School, High School, College diploma/degree*, *University undergraduate degree*, and *Graduate degree*.

An often-used ordinal scale is the Likert or Likert-like scales. Likert scale begins with a statement and then asks individuals to respond on an agree / disagree continuum. This typically ranges from strongly agree to strongly disagree (Hendricks, 2013; Mertler 2020). Likert-type scale also exists on a continuum but something other than extent of agreement is being measured. For example, a question could examine frequency of occurrence or quality of an experience or level of comfort (Hendricks, 2013; Mertler 2020).

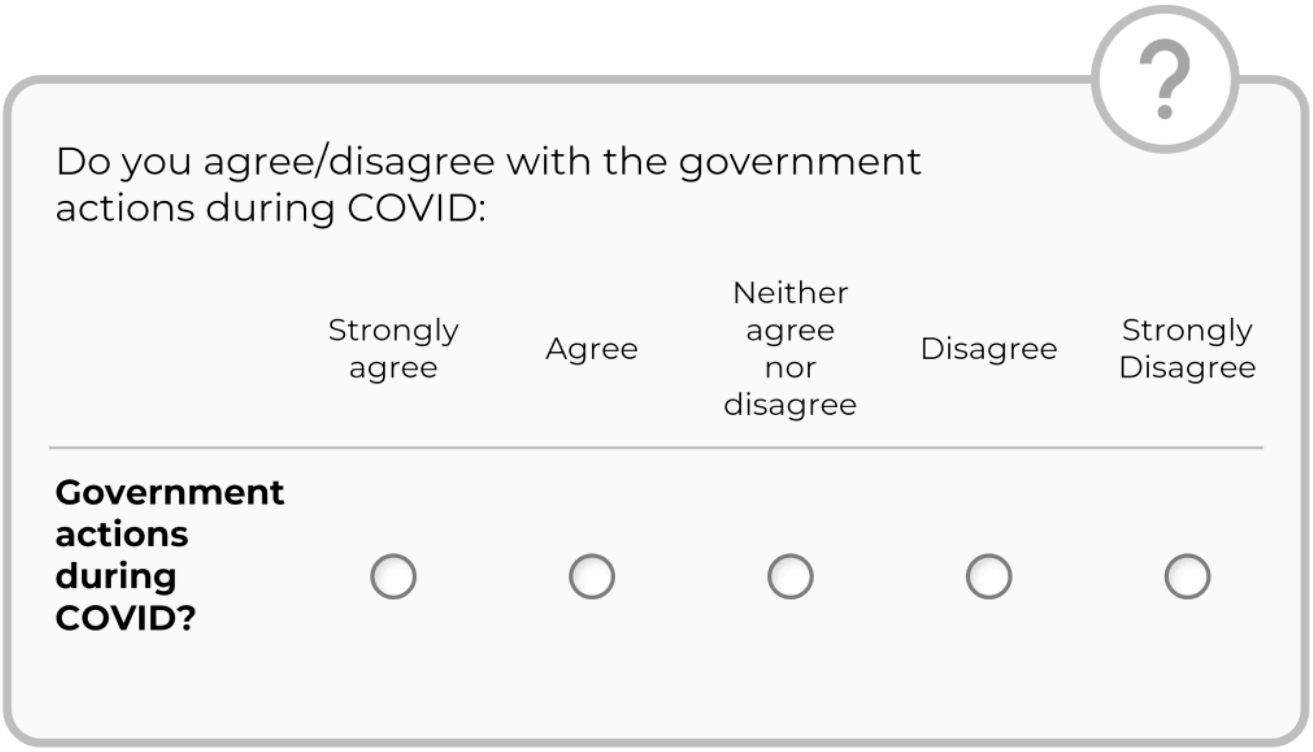


Image Description

The example above shows the question “Do you agree/disagree with the government actions during COVID?” on a Likert scale of approve/disapprove with the options: *Strongly agree*, *Agree*, *Neither agree nor disagree*, *Disagree*, and *Strongly disagree*.

Ordinal scales are easy to use and interpret or make sense of. There are questions raised about how many categories should be used. Some researchers suggest using as many as nine categories and others as few as three. But, it is the needs of the survey and skills of the respondent, which determine the number of categories.

Tip:

If precise information is needed and the respondents are willing and able to give it (i.e. time respondents willing to spend answering the survey), and you have the resources to collect it, use more categories (between 7 and 9); otherwise use fewer (Fink, 2017).

Type 3: Numerical

This scale takes two forms: discrete and continuous.

A **discrete scale** produces a precise number, whereas a continuous scale produces a number that falls on a continuum.

Image Description

The question above allows the respondent to select a level of satisfaction of a numerical scale from 1 to 10 where 1 indicates *Not at all satisfied* and 10 indicated *Extremely satisfied*. There's also an option for selecting N/A.

Continuous data can have almost any numeric value and can be meaningfully subdivided into finer and finer increments depending on the precision of the measurement system. You can also use graphic scales to get continuous data.

- Graphic scales are a kind of rating scale in which the continuum of responses is visual. For example, a well-known graphic scale is that which is used to describe pain a person experiencing. They are asked to place a mark on a scale or indicate a number that best illustrates his or her pain (Fink, 2017).

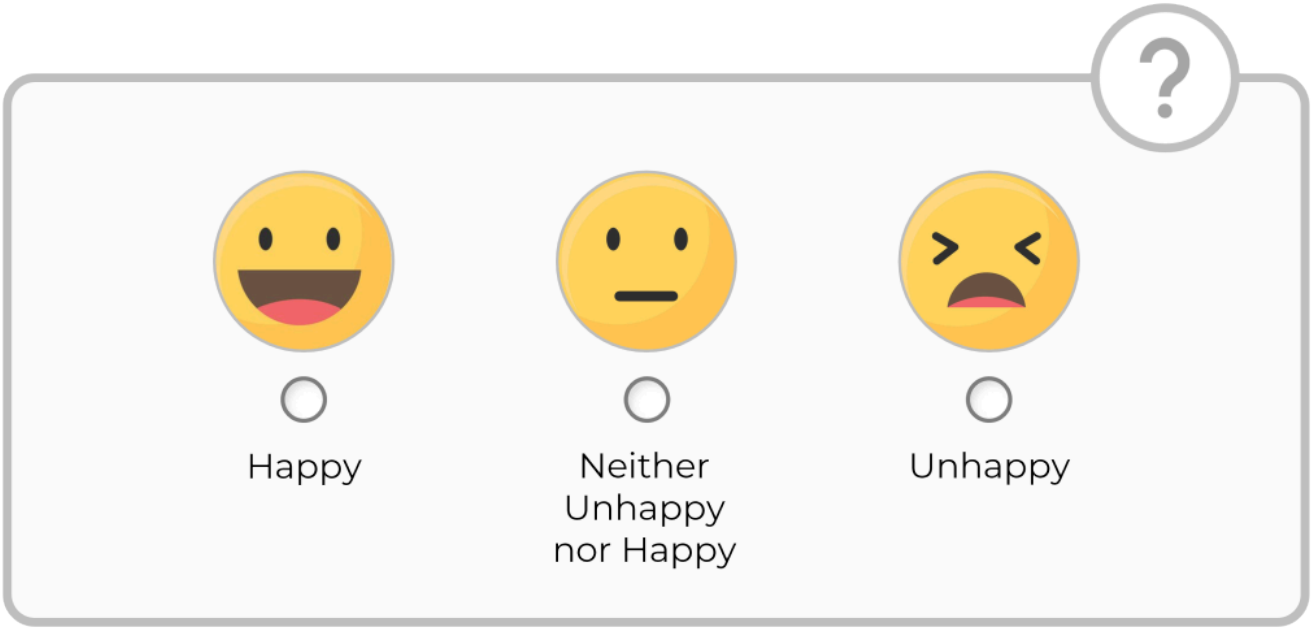


Image Description

The example above represents three options for a question that requires a selection of happiness levels. The options are *Happy*, *Neither Unhappy nor Happy*, and *Unhappy*.

The distinctions among categorical, ordinal, and continuous scales are important because they determine the kind of statistical treatments you can use when it comes to your analysis.

For example,

- If you want the average score for **continuous data** you would use the arithmetic average for the mean. For ordinal data, you might consider calculating the median or the number separating the higher half of responses from the lower half.
- For **nominal data**, the only real statistical measure that can be used to analyze responses is the mode. (Fink, 2017).

QUALTRICS also provides over 100 different ways to ask a question. There are many question types and a variety of settings that can be used to access each of these possibilities. The Qualtrics question types page provides a brief description of each with links to pages where you can learn more.

Tip:
Read the Survey Creation section from the article *The Ultimate Guide to Surveys* to find out more about the different types of survey questions!

Additional Resources

- How to Design Rating Scale Questions
- 15 Common Rating Scales Explained
- Is a Three-Point Scale Good Enough?
- Do Too Many Response Options Confuse People?
- Should All Scale Points Be Labeled?
- Rating Scale: Definition, Survey Question Types and Examples

Survey Structure and Elements

Module 3, Part 2: Surveys

Putting Your Survey Together

Once you have developed your questions, you need to organize the sequence of questions and format them to facilitate responses. Sequencing of survey questions must be an intelligible, logical flow, with smooth transitions between question topics. There must also be clarity in the expectations for answers. Formatting and organizational flow work in tandem to make it easier for respondents to answer the survey questions.

Guppy and Gray (2008) propose using the analogy of a social conversation to structure surveys effectively. They argue that well-organized surveys leverage the logic inherent in conversations to guide respondents systematically through the reporting process. The construction of a survey should be approached with careful consideration, as respondents interpret cues from question sequencing, formatting, word choices, and order, similar to cues in a conversation.

Survey Structure and Flow

The following example illustrates the stages of the order in which questions involving two main survey topics are asked (*note that this example can apply to both administered and self-administered questionnaires and surveys*).

Note that extra stages (another transition, another buildup, and more detailed questions) can be added to the process when the survey consists of more than two topics.

- Opening (introduction)
- Exploring the relationship (respondent characteristics)
- Building up to main topic (opening question, including justification)
- Main topic (detailed questions)
- Transition (questions to bridge between topics)
- Buildup to the next main topic (opening questions including justifications)
- Next main topic (detailed questions)
- Transition to the End (general survey-related questions, closing, thanks, goodbye)

It is important to note that applying the logic of conversations to the survey process the specifics of each stage vary depending on whether the survey is self-administered or interview administered.

Self-administered Surveys

Must dos

- Pre-define the surveyor's part of the interaction completely

- Work out conversation patterns before administering the survey
- Anticipate potential problems
- Plan to organize the question flow

Cannot do

- Personally motivate respondents to participate
- Vary the approach in response to respondent feedback
- Elaborate on a question or statement
- Probe for further information
- Guide respondents through complex measurements

Online Surveys

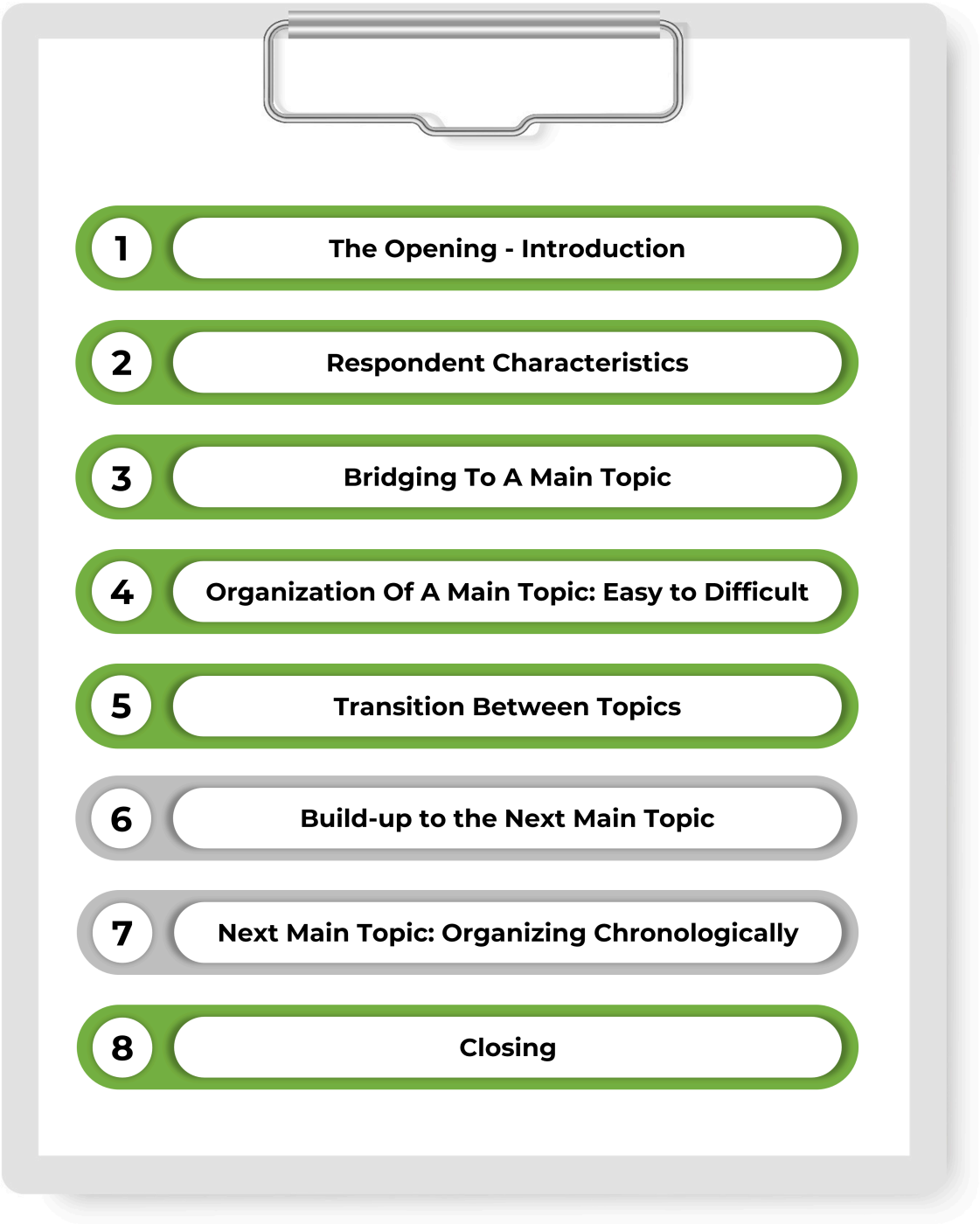
Provide:

- Greater flexibility in question organization
- Questions tailored to how a survey participant responds
- Alterations involving not question wording and sequencing
- Alterations with the number and focus of questions asked

Survey Structure and Elements

Module 3, Part 2: Surveys

We now examine the stages of the “conversation” or the constructions of a survey, specifically, as it applies to self-administered online surveys.



Section 1:
The Opening – Introduction

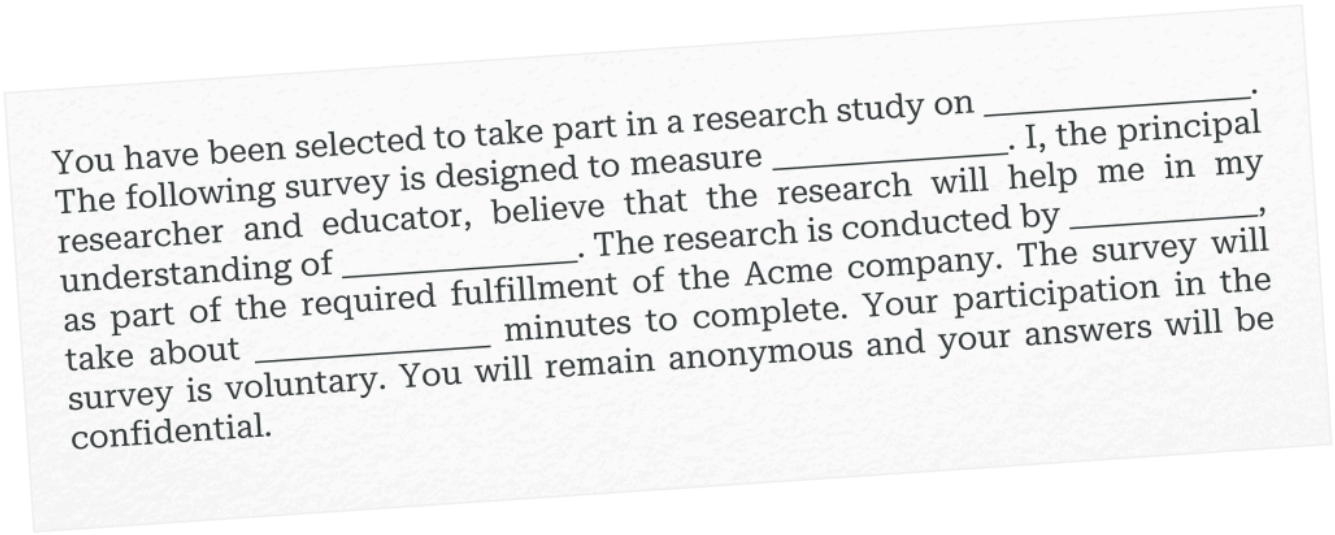
All surveys begin with an introduction. Usually, the introduction explaining the survey is made via an email or letter during the recruitment stage of the research process. For self-administered surveys (i.e. online surveys) some of this information is repeated on the cover or "splash page" of the survey itself.

Information that should be included on the cover or Survey splash page*

- Purpose of the survey
- Who is administering the survey
- A statement about the voluntary nature of the respondents' participation
- Confidentiality of the respondents' participation
- Approximate time the survey will take to complete

* For self-administered surveys, the splash page can sometimes require respondents to indicate their consent before proceeding with the survey.

Example, adapted from Guppy and Gray, 2008:


You have been selected to take part in a research study on _____. The following survey is designed to measure _____. I, the principal researcher and educator, believe that the research will help me in my understanding of _____. The research is conducted by _____, as part of the required fulfillment of the Acme company. The survey will take about _____ minutes to complete. Your participation in the survey is voluntary. You will remain anonymous and your answers will be confidential.

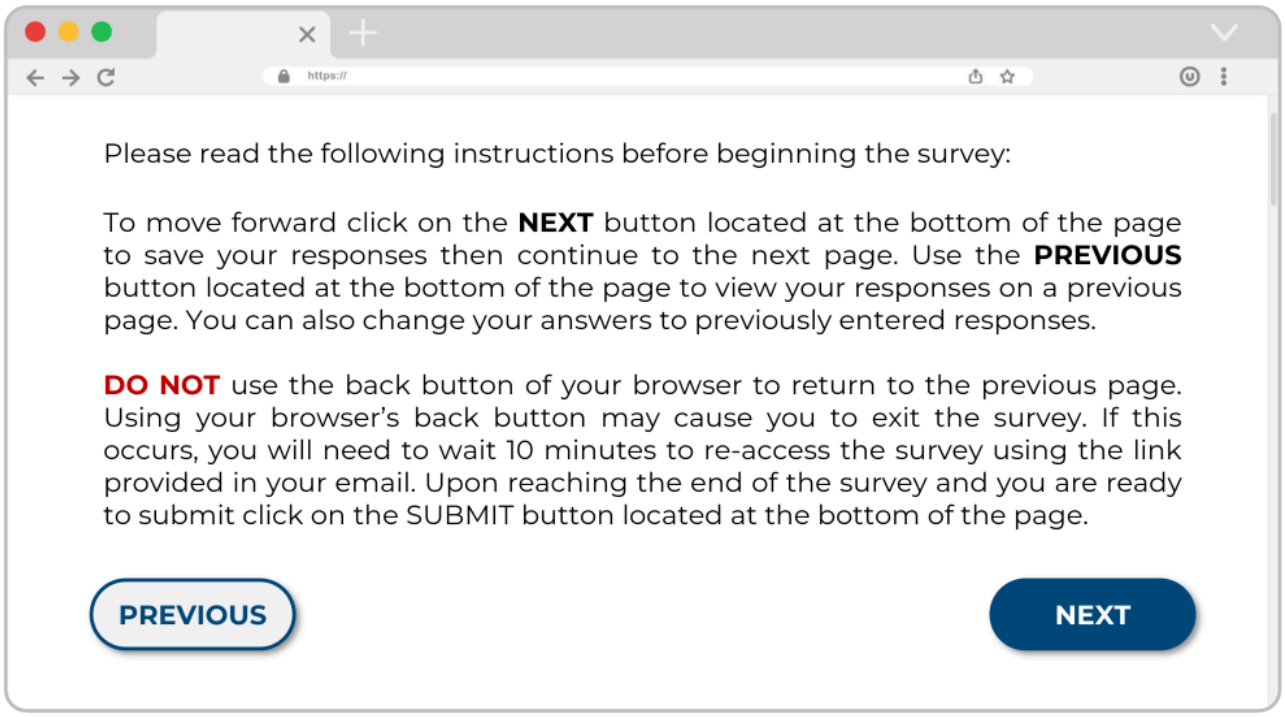
"You have been selected to take part in a research study on _____. The following survey is designed to measure _____. I, the principal researcher and educator, believe that the research will help me in my understanding of _____. The research is conducted by _____, as part of the required fulfillment of the [Insert course or program and institution/company]. The survey will take about _____ minutes to complete. Your participation in the survey is voluntary. You will remain anonymous and your answers will be confidential."

I consent I do NOT consent

Tip:

- Advise respondents how to navigate the survey, especially moving forward, and backward, how to change answers, review and submit the survey
- Respondents may not be familiar with the online software or platform that the survey is offered on
- Offer these instructions at the beginning of the survey

Example (adapted from Fink, 2017) of instructions for navigating an online survey:



Please read the following instructions before beginning the survey:

To move forward click on the NEXT button located at the bottom of the page to save your responses then continue to the next page. Use the PREVIOUS button located at the bottom of the page to view your responses on a previous page. You can also change your answers to previously entered responses. DO NOT use the back buttons of your browser to return to the previous page. Using your browser's back button may cause you to exit the survey. If this occurs, you will need to wait 10 minutes to re-access the survey using the link provided in your email. Upon reaching the end of the survey and you are ready to submit click on the SUBMIT button located at the bottom of the page.

Section 2:
Respondent Characteristics

When conversing with strangers, individuals typically initiate discussions with broad questions, fostering a mutual understanding of shared ground such as status, attitudes, values, interests, and experiences.

This approach aims to establish a comfortable discussion topic and prevent unintentional offense. Subsequent inquiries are shaped by the responses to these general questions, progressively building a comprehensive image of the person being conversed with.

Similarly, surveyors employ a parallel strategy in survey instruments, often commencing with central questions.

This early introduction serves multiple purposes:

- Ensures respondents stay focused, establishing a professional tone.
- Recognizes the value of respondents' time, prompting a swift transition to central questions.
- Addresses potential respondent suspicion or apprehension by promptly addressing the survey's main

topics.

Socio-demographic questions may be strategically placed at the end or separated from less personal ones at the beginning to navigate respondent comfort.

Section 3:
Bridging To A Main Topic

Section headings with short descriptions provide visual cues that signal that a new topic is being introduced and alert respondents to the nature of the topic and the next set of questions to follow.

See the following example:

Section B “Learning Experience”: This section addresses the factors that are of concern to you when it comes to your post-secondary learning experience.

Section 4:
Organization Of A Main Topic: Easy to Difficult

At this stage, the surveyor has yet to build trust with the respondent. As such, the opening questions in the first section should be easy for the respondent to answer, salient to the main topic, and non-threatening. It is usually at this early point where respondents decide whether or not to continue with the survey so getting to the point quickly is advisable. In terms of the flow of questions, the surveyor begins with relatively easy, general questions and progresses to more specific questions requiring more thoughts on the part of the respondent.

Section 5:
Transition Between Topics

To move respondents’ attention from one topic to another a bridge is needed. The bridge can take the form of one or more questions. This eases the response from one main topic to the next. Remember, there needs to be a sufficient number of questions on the topic to make organizing material into the section worthwhile.

Section 6:
Build-up to the Next Main Topic (Optional)

Introducing the next main topic requires a statement that justifies why the surveyor is interested in the topic. The survey then shifts to introductory questions on the next main topic by developing respondent interest in the topic.

Section 7:

Next Main Topic: Organizing Chronologically (Optional)

Similar to the organization of the first main topic. The flow of questions moves from relatively easy, general questions and progress to more specific questions requiring more thoughts on the part of the respondent. Other issues to consider when ordering/sequencing questions are things like using chronological order either from the past to the present or from the present to the past. This helps the respondent recall the necessary information.

Chronological organization can also be used to determine respondent behaviour that occurs through time. This process involves getting the respondent to focus on events and having them recall the most recent occurrence and provide necessary details then working back to the prior occurrence of that event detailing it and so on. More on the ordering of questions will be discussed later.

Section 8:
Closing

According to Guppy and Gray (2008) It is important to allow the respondents to state some conclusions about the topic(s) explored in the survey. By doing so it helps offset any negative feelings respondents may have about being closely questioned. Some surveyors favour using an open-ended question at the end of the survey allowing respondents to add detail or provide pertinent comments.

Respondents mustn't feel they are being used. The surveyor should explain to them that their contributions to the survey have been helpful, answer any questions they may have, and thank them for their time. Also, if you plan on sharing the results let them know when and how.

Question Order

Module 3, Part 2: Surveys

Survey questions can be ordered in various formats due to differences in survey objectives, types of information sought, and administration methods.

For example, computers enable dynamic adjustments to survey flow based on respondents' answers. Question order within sections can be customized, varying for each respondent based on specific answers or randomly to prevent artificial response effects caused by question sequence (Guppy and Gray, 2008).

There are, however, some general suggestions that researchers have found helpful when it comes to ordering questions. Fink (2017) offers the following tips when it comes to the order of questions:

Interactive Book

Survey Question Order

Click on the previous/next buttons to move between pages.

An interactive H5P element has been excluded from this version of the text. You can view it online here: *https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1214#h5p-66*

Guiding the Order of Survey Questions

Checklist

- For any given topic, ask relatively objective questions before the subjective ones
- Move from the most familiar to the least
- Follow the natural sequence of time
- See to it that all questions are independent
- Relatively easy-to answer-questions (including demographic questions) should be asked at the end
- Relatively easy-to answer-questions (including demographic questions) should be asked at the end
- Avoid many items that look alike
- Sensitive questions should be placed well after the start of the survey but also well before its conclusion
- Questions should be in a logical order

(Fink, 2017: p.71)

Formatting and Pre-Testing

Module 3, Part 2: Surveys

Formatting

Effective survey design is crucial for successful engagement and responses. Before administration, questionnaire instructions, questions, and answers should be well-formatted to ensure simplicity for respondents, whether self-administered or conducted in person.

A well-organized layout enhances respondent understanding and concentration, promoting accuracy. Appealing design increases the likelihood of respondents completing the survey.

Fink (2017) provides a self-administered questionnaire checklist:

Checklist

- Send an advance letter explaining the survey's purpose, timing, reimbursement, and selection reasons.
- Accompany the questionnaire with a brief, formal explanation reiterating the survey's aims, respondents, and response burden.
- Consider sharing a summary of findings.
- Explain the necessity of personal questions like gender, race, ethnicity, age, or income.
- Keep procedures and the questionnaire itself simple and concise.
- Utilize incentives, such as gift cards or lotteries, to encourage participation.
- Be prepared for follow-ups or reminders, keeping them brief and to the point.

Tip:
Formatting and Pre-Testing should be completed before you launch your survey!

Online Formatting

If you are doing an online survey, there are some special considerations.

- Prepare all survey questions and responses before you go online to create the survey. The survey software will guide you to the type of question such as multiple choice with one answer multiple-choice with check all that apply but do not let yourself be influenced by the software for the sake of convenience.
- If necessary, provide instructions for completing each question.
- Decide on whether to keep the survey as one continuous document or to divide into one or more questions per screen. If you choose to have one or more questions per screen, check on each screen to make sure that it is readable.
- Look at each question online. If it is difficult to read or use, edit it. Once you have all the questions in the document, review the document to ensure that the questions are properly sequenced and easy to complete.
- Keep respondents up-to-date on their progress. Online survey software allows you to provide a progress bar.

Pre-Testing Your Survey

Researchers ensure the survey functions correctly by pre-testing it on potential respondents, especially for self-administered questionnaires, which are one-sided and lack the adaptability of interview schedules. Pre-testing helps anticipate and address any issues in the survey design.

Pre-testing allows researchers to determine if:

1. The wording is understood
2. The most likely answers to close-ended questions are all included
3. Sufficient space is provided for answers to open-ended questions
4. The flow of the questions follows a proper sequence
5. The formatting is easy to follow
6. The filter and skip instructions work as intended

Researchers should set up a form to record concerns about the working of the introduction, instructions, questions, and responses, as well as formatting concerns. The researcher can then make changes after compiling the results of the pre-test.

Surveys go through several versions before they are ready to be used!

Knowledge Check

Module 3, Part 2: Surveys

Questions

Instructions:
Answer the following questions by selecting the correct answer(s).

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1350#h5p-50

Summary

Module 3, Part 2: Surveys

In this module, you explored:

- An overview of survey design, including the use of open-ended and close-ended questions
- The different types of survey questions that can be used when formulating your survey
- Recommendations for the overall structure and flow of a survey, including pertinent sections
- Tips on how to order your survey questions
- Guidelines on formatting and pre-testing your survey before launching

Looking Ahead

In the next module, we will focus on Ethical Considerations for your research project.

MODULE 4: RESEARCH ETHICS

Module 4:

Research Ethics

Learning Outcomes

After completing this module, you will be able to:

- Analyze the ethical issues involved in conducting research
- Distinguish between the Research Ethics Board and Quality Improvement
- Explain the ethical responsibilities of teachers who carry out research on their students
- Explain what measures should be taken by researchers to ensure ethical standards of research are upheld
- Describe the standards and principles developed by Indigenous peoples in Canada and globally to ensure ethical research practices in Indigenous communities

Trigger Warning

This is an alert that some content and videos in this module depict racist and offensive language. This language will upset or offend people, especially those who have previously experienced a related trauma. Although deeply troublesome, the video offers an opportunity to engage in meaningful reflection.

While viewing this video keep in mind that the language used is a reflection of the time in which this experiment was conducted (1960s United States).

Research Ethics

Module 4: Research Ethics

Developing a Research Plan

This lesson will focus on research ethics. Specifically, you will build into your research plan safeguards that ensure participants are respected, that their well-being is considered, and that their participation in the research does not expose them to any harm or any form of discrimination.

Planning

Step 1:
Identifying & limiting the topic

Step 2:
Gathering Information

Step 3:
Literature review and formulating your research question

Step 4:
Developing a Research Plan

1. Identifying and limiting the topic
2. Gathering Information
3. Reviewing the related literature
4. **Developing a research plan**

Brief History of Research Ethics

At one time there were no ethical research standards in place for researchers. As a result, there is a long history of what would now be considered unethical research. The Tuskegee Syphilis Study is probably one of the most shameful examples of unethical research.

Reflect

Unethical Research

Watch the following video and consider how this could have happened and what ethical issues it raises about conducting research with humans.

An interactive H5P element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1412#h5p-51

Source: Black History in Two Minutes or so. YouTube, 7 Feb 2020.

Blue Eyes/Brown Eyes

In response to the assassination of Martin Luther King, Jr. over thirty years ago, Jane Elliott developed the controversial, "Blue Eyes/Brown Eyes" exercise. This, now famous, exercise labels participants as inferior or superior based solely upon the color of their eyes and exposes them to the experience of being a minority.

Video

Brown eyes and blue eyes Racism experiment Children Session – Jane Elliott

Watch this video excerpt of Jane Elliot's Blue Eyes/Brown Eyes experiment.

An interactive H5P element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1412#h5p-52

Note: To view the captions, please open the video on YouTube.

Source: Mark Heckroth. YouTube, 1 Jun 2018.

Reflect

Brown Eye, Blue Eyes Racism Experiment

Should Jane Elliot have conducted this research using her students? Based on your understanding of research ethics, think about why or why not. Reflect on how your role as a teacher conducting research with your students raises ethical concerns.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1412#h5p-53

Dual-Role Research: Ethical Issues

Module 4: Research Ethics

In teacher-led research, educators play dual roles as both researchers and decision-makers in their classrooms. Mitchell (2004) highlights that teaching inherently involves efforts to enhance student learning by adjusting instructional methods.

This process is akin to conducting a study in the classroom to observe what is or isn't working. As part of their everyday routine, teachers intervene, gather data, and implement necessary modifications. Mitchell notes that most research projects conducted by teachers pose minimal to no risk to students (p. 1438-1439).

Ethical Teachers, Ethical Researchers

Researchers need to be able to demonstrate that they are aware of these obligations, of the sorts of unpredictable outcomes that they may face, the possible ethical implications of these and how they deal with them."

(Mitchell; pp. 1438-1439)

When instructors research their own professional practices to fulfill academic requirements that include the participation of others with whom they already have a relationship, such as their students, they assume the dual-role of practitioner and researcher.

Research conducted in this context typically raises two main issues that require particular attention:

Dual Relationships

Dual relationships exist between the researcher and participants when people in positions of status ("power-over") or undue influence undertake research in addition to their already established roles and responsibilities, and the research will potentially involve individuals of lesser power or status such as students.

Participant Privacy

Information and results obtained from studying one's own practice are made public through research reports, presentations (e.g. showing data/results), etc. The release of results could compromise the privacy or status of participants. The potential harm to the participants cannot outweigh the potential benefits to them.

Power-Over

Even when a practitioner-researcher perceives that his/her workplace, school or classroom has a "warm and friendly" atmosphere of trust and openness between teachers-students, the quality of these relationships does not address the underlying differences in status and influence that structure the nature of the relationships. Therefore, the researcher needs to recognize the structure of the relationships to assess the role of power-over in the research context.

The researcher needs to be especially attentive to the role of power-over. Students at a school, can be "captive audiences" for research particularly when a study is conducted by their own teacher, or even another teacher or member at their school rather than a person who they do not know.

Examples of power-over relationships

1. A student may not know that s/he can refuse a teacher's request to use a sample of their classroom work for research since it was a required assignment;
2. A student may perceive that not participating in an instructor's study will disadvantage their grade.

Scenario

Classroom Assignment as Research Material

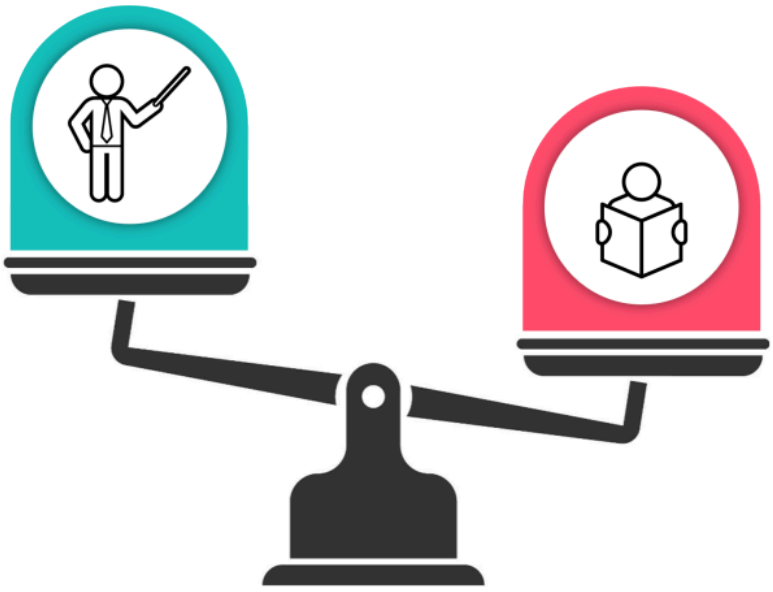
Play through the following scenarios to view examples of power-over interactions and how they can be handled when obtaining student permission for your research study. You can view the scenario in full screen mode by clicking on the expand arrow icon.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1420#h5p-70

Tip:
Teachers who conduct research in their classes should think through the power differentials in the relationships they have with students.

Reflect

Power-over Relationship



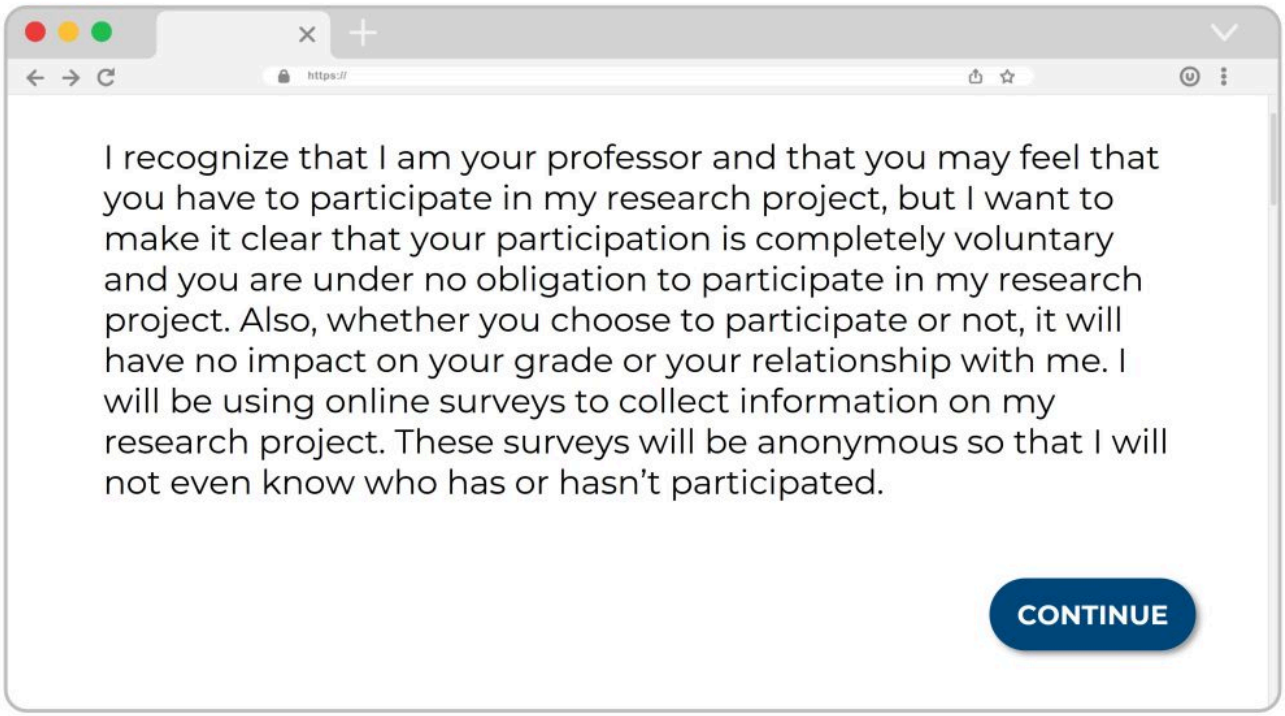
Think about your own instructor/researcher-student relationship and how this relationship can be a power-over relationship.

An interactive H5P element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1420#h5p-54

Tip:
The ethical issues associated with dual-role research must be considered when designing your research plan. You should provide adequate procedures for mitigating or minimizing the power-over differences that are part of the dual-role relationship. It is the job of the researcher to think through, explain, and justify the ethical approach and procedures in the research plan.

General Ways to Mitigate the Power-over Relationship

When explaining your research project to students as part of the consent process, be sure to declare the power-over situation and the safeguards you will use to prevent undue influence such as inducement, pressure, obligation, and coercion during participation. The following is an example:



Sample Disclaimer Text (from the image above)

"I recognize that I am your professor and that you may feel that you have to participate in my research project, but I want to make it clear that your participation is completely voluntary and you are under no obligation to participate in my research project. Also, whether you choose to participate or not, it will have no impact on your

grade or your relationship with me. I will be using online surveys to collect information on my research project. These surveys will be anonymous so that I will not even know who has or hasn't participated."

Tip:
Administering paper-based surveys for anonymity

- Assign a student or another colleague to administer the survey.
- Ensure there is no power-over relationship with the survey administrator.

Maintain a neutral tone when explaining your research project

- Avoid emotional appeals.
- Do not emphasize the project's importance to you.
- Refrain from statements like "I am counting on your participation."
- Avoid overstating potential benefits or promoting participation based on research importance or outcomes.

Ethical Guidelines for Action Research Studies

Module 4: Research Ethics

Historically, individuals engaging in academic educational research, including higher education faculty and others involved in educational research, have been bound by ethical guidelines that protect the rights of human subjects/participants.

Ethical guidelines are there to ensure that participants are **not harmed or deceived**, that they have been **informed** regarding what participation entails, that they have **agreed** to participate, and that they have been assured that the **confidentiality** of their responses and their participation will be maintained.

(Hendricks 2013)

Suggested Guidelines for Respectful Action Research Practice

Several suggestions have been put forth regarding ethical guidelines for action research Zeni (2009), including:

Image Description

- Being aware of larger social justice issues beyond classrooms
- Explain ethical issues, seek consent
- Keep participants aware of pivots or changes as they unfold in the AR process

However, procedural guidelines for conducting ethical action research have not yet been agreed upon by the professional community. So guidelines for outsider educational research must be observed.

In essence, researcher-practitioners must apply standard research ethics guidelines to their pedagogical, recruitment, data collection, and data reporting strategies.

Does my Action Research Study Require Ethics Board Approval?

Expedited Review / Waiver

In action research projects, often there's no need for institutional ethics board approval.

- Action research aims to improve workplace conditions, focusing on bettering the experience of students, clients, or patients. Unlike traditional research, which involves rigorous participant recruitment and ethical scrutiny, action research typically undergoes a simpler process.
- Studies aimed at enhancing program or course quality usually do not require approval from an institution's research ethics board. These practitioner-led studies often qualify for exempt or expedited review, categorized as Quality Improvement.
- This is because they rely on standard educational practices that don't disadvantage any group or harm participants.

Systematic Processes of Inquiry

- When practitioners involve students in routine inquiry activities as part of their regular interactions, formal consent is typically not necessary.
- This is because these systematic inquiry processes fall under the professional duty of care, which is legally recognized and doesn't require additional formal legitimization procedures.

Publication and Sharing

- When deciding on the need for formal permission for action research, consider your audience. If the research is only for you and your school's teachers, formal permission for data collection might not be needed.
- This data, used for diagnostic purposes, is part of routine teaching decisions. However, if you plan to present your findings to a broader audience beyond your school, including professional journals, conferences, or community presentations, you must obtain permission to use student work samples, quotes, or observation notes.
- The primary purpose of this permission is to safeguard student privacy. (Mertler 2020)

There are a number of ethical issues you must consider when planning or designing your research project. These issues are:

- Informed consent
- Privacy
- Confidentiality
- Anonymity
- Risk
- Harm

- Deception
- Exploitation

We will also review a few other ethical issues that you should be aware of when undertaking research, specifically the responsibility to be mindful and ensure the accuracy of your research.

Remember: Instructional Practice

- Standard evaluations by professors on their teaching methods typically do not require ethics approval.
- Ethics approval is necessary when an assessment aims to contribute to general knowledge, or results are intended for publication or presentation externally.
- Particularly critical in scenarios with a power imbalance, such as between students and faculty conducting research.
- Some institutions may allow an expedited ethics review or require a **Quality Improvement form** submission in these cases.
- Participants must be informed about data collection and analysis processes, with the option to opt-out provided.
- Action research emphasizes the importance of transparency and informed consent, ensuring all involved are aware and agree to the study's procedures.

Interactive Book

Principles of Research Ethics

Click on the previous/next buttons to move between pages.

An interactive H5P element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1437#h5p-65

Additional Resources

Ethics is Not Optional:

- Kwiatkowski, Richard. "60 seconds with Dr Richard Kwiatkowski – Research Ethics." YouTube, 17 Jan 2013.
- Minute of Medicine For Your Mind. "EDU671 Fundamentals of Educational Research – 3 Concerns of Ethics in Educational Research." YouTube, 10 Oct 2014.

Planning Your Research Project: Informed Consent

Module 4: Research Ethics

Researchers worry that informing participants about study details might alter their behavior, potentially skewing results. For instance, telling students that a study is assessing whether gaming apps increase class participation might lead them to act differently. This concern is valid, as awareness of being observed can influence behavior.

However, in action research, viewing participants as collaborators is crucial. Hiding the study's true purpose is unethical and undermines the collaborative aspect. Using various data types (triangulation) can enhance the study's reliability and mitigate bias.

It's important to communicate honestly and openly with participants. As a researcher and educator, sharing your goals of learning and improvement with students is vital. Emphasize that this isn't just about teaching them, but also about enhancing your own understanding and methods. By showing genuine interest in improving your teaching for their benefit, you're likely to engage them more effectively.

It's important to convey that this research is a joint endeavor aimed at mutual growth, not just an exercise conducted on them.

Special Care

Special care will need to be taken to ensure the students understand the purpose of the project, risks/potential harms, and how the information they share will be used/kept confidential. In short, they need to be allowed to make informed consent for the project and to opt out without any repercussions.

Informed Consent Checklist

Be sure to include these elements in your consent script:

Fillable Form: Document Generator

You can fill in (or leave blank) and download the MS Word version of the document by clicking on the Document Export tab of the activity below.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1503#h5p-59

Research Data Management

The data you gather as a researcher not only provides the evidence base for the results you make public, they may have ongoing value to you and others and where they are used, they can be cited to your benefit.

As researchers, the responsible preservation and sharing of research data is an integral component of scholarly work. Data deposit is now a common and expected part of the research process and the Centennial College Libraries supports researchers as they adhere to Canada's Tri-Agency Research Data Management Policy:

"The agencies believe that research data collected through the use of public funds should be responsibly and securely managed and be, where ethical, legal and commercial obligations allow, available for reuse by others" (Tri-Agency Research Data Management Policy For Consultation, 2021)

Data Management Plan (DMP)

The Centennial Library has a tool to help researchers who are required to submit a "data management plan" (DMP) called DMP Assistant. You can create an account as an external user to access these resources. The tool will prompt you with questions about your data, storage, and preservation plan. You can answer the questions right in the tool and then print out a plan at the end. You can read more about it here: RDM library guide. There is no right or wrong DMP. They exist to help you think about how you can protect your data. For example, if everyone else on your research team suddenly moved to another institution would you still have access to the data? Would the data still be secure?

Additional Resource

Watch the video and take note of what information you think is relevant to your setting (i.e. classroom) when it comes to informed consent.

- ELLICSR: Health, Wellness & Cancer Survivorship Centre, "What is Informed Consent / Informed Consent Training", YouTube, Jul 18, 2017.

Ethical Research Standards: Indigenous Peoples

Module 4: Research Ethics

Researchers worry that informing participants about study details might alter their behavior, potentially skewing results. For instance, telling students that a study is assessing whether gaming apps increase class participation might lead them to act differently. This concern is valid, as awareness of being observed can influence behavior.

Video

Is there an ethical way to research indigenous people?

The following video on Indigenous people and research ethics alerts us to the complexity and ongoing debates around research ethics.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1513#h5p-60

Source: Aljazeera, Al (English). "Is there an ethical way to research indigenous people?", YouTube, 16 Aug 2018

Indigenous Data Sovereignty

Visit the GIDA (Global Indigenous Data Alliance). This is an organization that works globally to promote Indigenous control of Indigenous data. GIDA uses the CARE principles (Collective Benefit, Authority to Control, Responsibility, and Ethics) to promote Indigenous data sovereignty.

Visit FNIGC (First Nations Information Governance Centre) an organization that works to promote data sovereignty among First Nations in Canada.

Video

Understanding the First Nations Principles of OCAP™: Our Road Map to Information Governance

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1513#h5p-61

Source: FNIGC. "Understanding the First Nations Principle of OCAP: Our Roadmap to Information Governance (Short)" YouTube, 22, July 2014.

Knowledge Check

Module 4: Research Ethics

Questions

Read the following scenario and reflect on the corresponding questions:

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1518#h5p-68

Reflect

Quality Improvement Script

Read the following scenario and reflect on the corresponding questions:

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1518#h5p-62

Tool

Quality Improvement Script

Practice writing a short statement/script for informed consent. This is often the starting point for Consent documents and is used to inform participants (students) about your research requesting their involvement in your research, while at the same time respecting their right to decide whether they want to participate or not.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1518#h5p-63

Summary

Module 4: Research Ethics

In this module, you have explored:

- History of Research Ethics
- Dual-Role Research & Power-over Relationships
- Ethical Guidelines for Action Research
- Informed Consent
- Ethical Research Standards: Indigenous Peoples

Next Steps

Congratulations! You have completed the Planning Stage of Action Research. Next, we will take a brief look at the Acting Stage, including the Interpretation and Sharing of your research findings.

MODULE 5: DATA ANALYSIS & RECIPROCITY

Module 5:

Data Analysis & Sharing Findings

Learning Outcomes

After completing this module, you will be able to:

- Apply the concept of continuous data analysis (interim analysis)
- Identify the key concepts for interpreting and verifying research findings
- Explain the ethical responsibilities of teachers who carry out research on their students
- Explain the concept of reciprocity and develop some ideas for communicating research findings effectively

The Acting Stage

Module 5: Data Analysis & Sharing FIndings

In the previous modules, you moved through the Planning stage of Action Research. In this module, we'll take a brief look at the Acting, Developing, and Reflecting stages.

More specifically, the process of analyzing the quantitative and qualitative data you gathered and sharing and communicating the results of your research in ways that make it easy for readers to understand what you found.

Image Hotspots

Action Research Process

Click each **+** icon to expand the steps of the stage:

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1743#h5p-13

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1743#h5p-16

Data Analysis

Module 5: Data Analysis & Reciprocity

At this stage, you're probably carrying out your planned intervention or action and gathering data to address your research question. Many newcomers to action research believe that analysis should only start after all the data has been collected.

An interim analysis is part of the continuous, ongoing data analysis. It is part of the ongoing reflective planning process of action research (Hendricks, 2013).

Your action research projects will typically involve both quantitative and qualitative data. The methods for simplifying quantitative data, such as **reporting, comparing**, and **displaying data,** differ significantly from those used for qualitative data, which include **analyzing the data to identify patterns and themes.**
You might wonder, "What if the results aren't what I expected?" It's quite common to find that your findings don't match your expectations. This is a normal aspect of conducting research. It's important to remember that regardless of the outcomes, your findings will contribute to enhancing your practices.

New researchers often feel disappointed when their interventions don't lead to the anticipated results. However, even in these situations, exploring the data to understand why things didn't work as expected can provide valuable insights. This process can guide you in refining your intervention to achieve better results in the future.

Remember!
Action research is an iterative process so what you learn from this cycle of your research project will inform your next iteration of action research.

Analysis of Quantitative Data: Reporting & Comparing

Quantitative data is usually gathered via:

- Test scores
- Rubric-scored work
- Checklists
- Tally sheets
- Behavioural scales
- Attitude scales
- Closed-ended survey items

Tip:
Even though specific data from some of these data-gathering tools are not quantitative in nature (numerical), the data can be analyzed quantitatively.

For example: Counting or averaging the number of responses for each item.

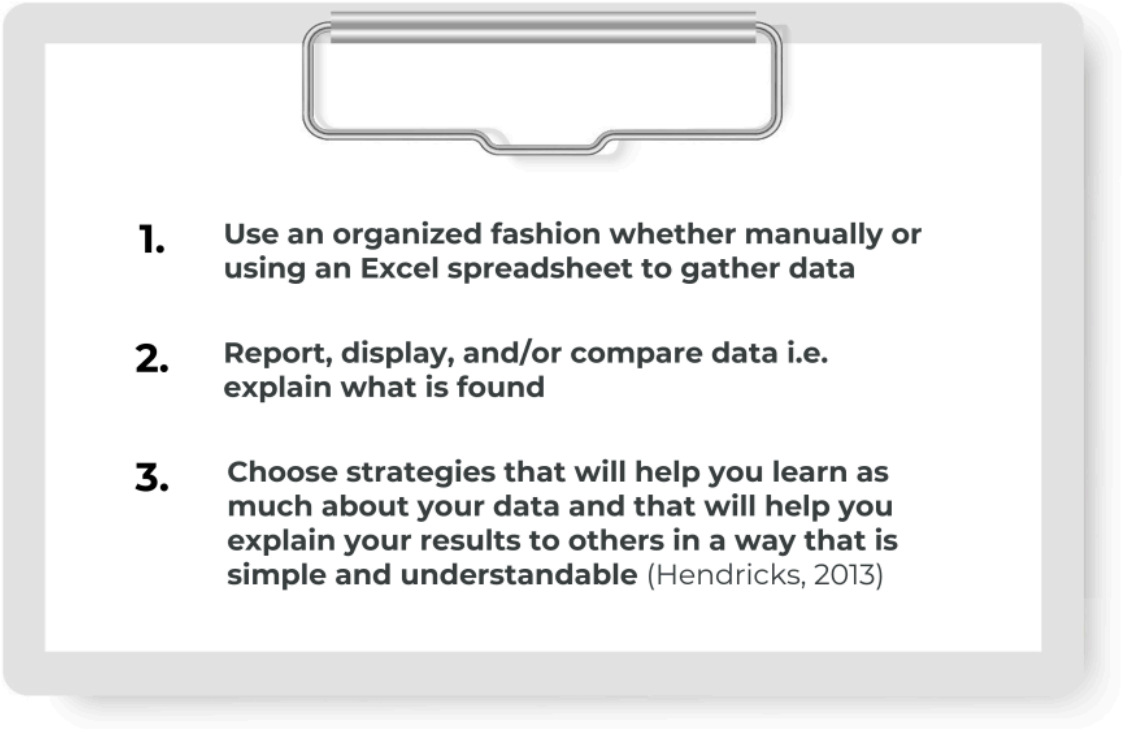
- Closed-ended responses (strong, average, weak) can reflect counts for the number of respondents who chose each response.

- For the behavioural scale item, which includes numerical responses, the actual number chosen for each item could be tallied and the numbers could be averaged to describe results (Hendricks, 2013).

Quick Tips to Analyze Quantitative Data

"According to Shank (ibid) "themes do not emerge from data. What emerges after much hard work and creative thought, is an awareness in the mind of the researcher that there are patterns of order that seem to cut across various aspects of the data. When these patterns become organized, and when they characterize different segments of data, then we can call them 'themes'."

(Hendricks 2013)



An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1749#h5p-71

Analysis of Qualitative Data: Looking for Themes & Patterns

Analysis of qualitative data is a process of making meaning from data sources that can be interpreted in several ways and helps answer the *why questions*.

These data sources can be explained and used to answer your research question only after they have been interpreted. This process requires a deeper analysis of data than those processes used to explain quantitative data sources (Hendricks 2013).

Tip:

As research topics are identified, continue to engage in reflective and reflexive inquiry to clarify your understanding and beliefs about the topic, actions that might be taken, and outcomes that are desired (Hendricks 2013).

Verification

Verification is knowing when you “got it right.” Reaching valid conclusions in your study is a critical step in the action research cycle. Conclusions must be reasonable in light of the results obtained.

Quick Tips to Analyze Qualitative Data

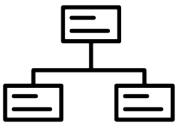
Write your research question(s).
Refer to your research question(s) often as you go through the process of qualitative data analysis

Compile qualitative data sources.

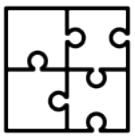
Convert non-textual data to textual form (e.g. audio or video recordings)

Read text sources several times and over several days.
Disassemble and code data.

Create a codebook. Define codes and illustrate them with quotes or examples from text sources



Look for themes as you reassemble data.
Interpret results and write up major findings. Describe the patterns and themes specifically related to your research questions(s)



Look for ways that the results of the different types of data you have collected (artifacts, observations, and inquiry data) support each other

(Hendricks 2013)

Reciprocity

Module 5: Data Analysis & Reciprocity

Presenting Results

Writing about your findings, particularly when dealing with qualitative data, can be challenging. You might feel overwhelmed by the volume of information, unsure how to present it all coherently. This is why it's crucial to remain focused on your research question as you sift through your data. While you should take note of significant but tangentially related details, prioritize the information that directly responds to your research question.

As part of the Scholarship of Teaching and Learning (SoTL) process, sharing your project and its outcomes is expected. This dissemination is a fundamental aspect of action research and serves as a valuable opportunity for reflection. Duesbery and Twyman (2020) offer several tips to keep in mind for effectively sharing your project and its results.

Quick Tips for Sharing Your Project and Results

Tool

Sharing Your Project and Results

You can use the following tips (downloadable/fillable document) when sharing your project and results:

An interactive H5P element has been excluded from this version of the text. You can view it online here: *https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1781#h5p-72*

Remember:
Research is only research when it is shared with others. This is particularly true for action research which is a more collaborative endeavor. Make room for people to ask questions about your practice, and they will question their own (Duesbery and Twyman 2020).

Examples

Here are a variety of ways you can share and present your final research report. Take a look at some of our previous SoTL-funded projects and the results they shared!

Videos

Example 1:
Scholarship of Teaching and Learning Research Nursing

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1781#oembed-1

Source: Centennial College. YouTube, 20 Mar 2019.

Example 2:
Video Games in Education

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1781#oembed-2

Source: Centennial College. YouTube, 9 Nov 2020.

Poster:
Exploring Student Perceptions of Empowerment

An interactive H5P element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1781#h5p-73

Open PDF in a New Tab

Final Report:
Disruptor or Saviour? A Centennial College Covid-19 Academic Case Study

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/actionresearchhandbook/?p=1781#h5p-74

Open PDF in a New Tab

Additional Resource

View more Centennial College SoTL Projects.

Summary

Module 5: Data Analysis & Reciprocity

In this module, you have explored:

- Overview of Data Analysis
- Reciprocity

Next Steps

Congratulations! You have completed all modules in the Action Research Handbook.
Look at the Project Showcase & Links pages in this book for further examples and links to additional programs of study to aid you in your research process.

Project Showcase & Links

Action Research Handbook

Resources

Websites

- **SoTL @ Centennial College** The Centre for Faculty Development and Teaching Innovation (CFDTI) is committed to fostering learning-centered communities on key academic priorities, including academic scholarship and the Scholarship of Teaching and Learning by funding new, innovative projects designed to examine compelling issues related to teaching and learning excellence and student engagement.

- **SoTL Research Projects** Since its launch in 2015, Centennial's SoTL Research Fund, there has been a growing number of research projects from a variety of Schools and departments at the College. Several of these have either gone on to secure additional funding, publicly shared via conferences and symposia, or published their work in academic and professional journals.

- **THLE Certification** The Teaching and Learning in Higher Education (TLHE) certificate program provides essential critical thinking and self-reflection skills and a robust knowledge base for high-impact teaching in higher education. Join us and discover how to design, develop, and deliver a curriculum that engages, inspires, and transforms.

Showcase Highlights of Past Projects

Short videos of the amazing research Centennial faculty and employees are doing as part of the Scholarship of Teaching and Learning (SoTL) Research Fund.

Videos

- **Nursing: Pain Simulation and Assessment**
- **English: Teaching Poetry Today**
- **Gamification in Culinary Arts Theory**
- **Video Games in Nursing Education**
- **Advertising: Use of LMS assets to Support Student Success**
- **Applied Biological and Engineering Sciences: Benefits of Online Learning**
- **Biomedical Engineering: Use of Illustrations to Improve Student Performance**

Samples

1. **User Engagement Using an Etextbook: A Descriptive Study**
2. **Incorporating the UDL Principles**
3. **Exploring Student Perceptions of Empowerment**
4. **Disruptor or Saviour? A Centennial College Covid-19 Academic Case Study**
5. **"Could that be me?" Use of role playing to increase self-awareness, empathy, and understanding of**

theoretical concepts

6. Exploring Academic Integrity (AI) in the Age of a Diverse Learning Environment – Issues & Strategies
7. Quest to Belong: Nursing Students' Perceptions while Transitioning from College to University Transitioning from College to University
8. Healthcare students' use of an e-textbook Open Educational Resource on Vital Sign Measurement: a qualitative study
9. The Effect of First Language on Intelligibility
10. Gentile's Giving Voice to Values as a Tool for Teaching – Academic Integrity

Glossary of Terms

Action Research

Action research is a specific research perspective that can be applied to many fields and disciplines including the field of education.

Artifacts

These are various types of work and products created by participants that can be considered and gathered as research data. (Ex. student-generated artifacts such as assignments, reflections, or other visual or submitted work, archived sources, etc.).

Classroom AR

Classroom action research is undertaken by teachers, individually or collectively, in their classrooms to improve their practice using the interpretations that teachers make based on data collected from their students.

Collaborative AR

Collaboration action research involves multiple researchers working together in an educational setting to study problems related to education.

Conceptualization

Conceptualization involves refining a construct by providing it with a theoretical definition. It requires careful thought, direct observation, consultations with others, reviewing existing literature, and experimenting with possible definitions.

Data Collection

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic way that enables one to answer stated research questions.

Data Management Plan

A data management plan, or DMP, is a formal document that outlines how data will be handled during and after a research project

Source: Longwood, Research Data Management

Data validity & reliability

Reliability refers to the consistency of a measure of whether the results can be reproduced under the same conditions. Validity refers to the accuracy of a measure and whether the results represent what they are supposed to measure

Source: Scribbr

Dual role

A dual role refers to the dual relationship between the researcher and the participant. When people

in a position of status “power-over” or undue influence undertake research in addition to their already established roles and responsibilities. The type of research will involve individuals of lesser power or status.
Source: University of Victoria, Office of Research Services

Educational AR

Educational action research is a system of inquiry that teachers, administrators, and other educational personnel can use to examine, change, and improve their work with students, educational institutions, and communities.

Formative assessments

Formative assessment is a method of ongoing assessment used to determine whether progress is being made toward goals.

Informed Consent

Informed Consent is an agreement from a person included in the data sample, who agrees to participate in a study with the understanding of what the study entails, including the duration, risks, and benefits
Source: University of Oxford, Research Support

Inquiry

Data that is collected to understand participants' knowledge, values, beliefs, experiences, feelings, opinions, attitudes, or perceptions and that can provide insights into the effectiveness of a strategy, offering feedback and improvement suggestions.

Interim Analysis

The collection and analysis of data during the research process is considered interim analysis (Huberman and Miles, 1998).

Keyword (search)

Also commonly called search terms, keywords are the words that you enter into the database search boxes. They represent the main concepts of your research topic and are the words used in everyday life to describe the topic. Using the right keywords, you can source relevant articles you need.

Literature Review

A literature review is a survey of scholarly sources on a specific topic to provide an overview of current knowledge, allowing you to identify relevant theories, methods, and gaps in the existing research.

Observation

The process of collecting qualitative data that involves carefully watching and systematically recording what you see and hear going on in a particular setting.

OCAP

OCAP stands for Ownership, Control, Access, and Possession. The concept was coined by First Nations Principals which assert that First Nations have control over data collection processes and that they own and control how this information can be used.
Source: First Nations Information Governance Center, The First Nations Principles of OCAP

Operationalization

Operationalization is the process of moving from the conceptual definition of a construct to a set of specific activities or measures that allow a researcher to observe it empirically. This process translates the theoretical, conceptual variable of interest into a set of specific operations or procedures that define the variable's meaning in a specific study.

Participant Privacy

Information and results obtained from studying one's own practice are made public through research reports, presentations (e.g. showing data/results), etc. The release of results could compromise the privacy or status of participants. The potential harm to the participants cannot outweigh the potential benefits to them.

Participatory AR

Participatory action research is a social and collaborative process. The goal is to bring about social change in an organization, institution, or community.

Power Over

Recognizing the structure of imbalanced relationships in the research context. Even when a practitioner-researcher perceives that his/her workplace, school or classroom has a "warm and friendly" atmosphere of trust and openness between teachers-students, the quality of these relationships does not address the underlying differences in status and influence that structure the nature of the relationships.

Professional Empowerment

Puts educators in control of their development, promotes collaboration and shared insights, and provides a platform for their voice.

Qualitative Research

The type of research that explores and provides deeper insights into real-world problems through lived experiences, values, opinions and beliefs. Qualitative data can help generate hypotheses as well as further investigate and understand quantitative data.

Quality Improvement

QI involves implementing previously proven/tested, planned and systematic activities, done to improve or satisfy quality requirements.

Quantitative Research

The process of collecting and analyzing numerical data. It can be used to find patterns and averages, make predictions, test causal relationships, and generalize results to wider populations.

Rating Scale

A rating scale requires respondents to place the item being rated in any one of an ordered series of categories or at some point along a continuum.

Reciprocity

The expectation from researchers to share their project and findings. Reciprocity is an essential part of action research and is an important reflective time for researchers.

Reflective Practice

The ability to reflect on one's actions so as to take a critical stance or attitude towards one's own practice and that of one's peers, engaging in a process of continuous adaptation and learning. It encourages critical reflection in institutional and professional contexts, fostering lifelong learning.

Reflexive Practice

Reflexive practice is a process of introspection that examines how your personal history and experiences shape your thoughts, beliefs, and values. This approach allows researchers to recognize and understand their underlying assumptions and biases.

Research Design

The research design refers to the overall strategy that is chosen to integrate the different components of the study coherently and logically. It constitutes the blueprint for the collection, measurement, and analysis of data.

Research Ethics Board (REB)

A research ethics board (REB) is an independent committee that reviews the ethical acceptability of research projects, reflecting on, potential risks and benefits; respect for, and protection of, research participants; and relevance and rigour of the research.

Source: Canada's Research Ethics Board

Research Methodology

Research methodology is the specific procedure or techniques used to identify, select, process, and analyze information about a topic.

Research Methods

Research methods are the strategies, processes or techniques utilized in the collection of data or evidence for analysis in order to uncover new information or create better understanding of a topic.

Research Question

A research question is a problem, an intervention/action to be taken to address the problem, and the outcome that you would like to see from the intervention. The research question cannot be answered with a yes/no.

Sampling

Sampling is the act, process, or technique of selecting a suitable sample from whom data is collected for research.

Source: Merriam-Webster Dictionary

Scholarly Teaching

The development of scholarly knowledge about teaching through reflection, conducting research, and sharing expertise; not only to improve practice within one's classroom but also beyond, the institution and the field.

Scholarship of Teaching & Learning (SoTL)

Scholarship of teaching and learning Involves developing scholarly knowledge about teaching through reflection, research, and expertise sharing.

Summative assessments

Summative assessments are used to measure instructional outcomes and acquisition of skills after an action/strategy.

Survey

Survey research is defined as "the collection of information from a sample of individuals through their responses to questions" (Check & Schutt, 2012, p. 160).

Teaching Improvement

Integrates theory into practice, rethinks evaluation methods, and enhances awareness and knowledge of teaching methods.

Thematic Analysis

Analyze to search for categories and themes in the data which involves building general themes from specific examples in the data (Shank, 2002).

Themes

The awareness for researchers that there are patterns of order that seem to cut across various aspects of the data, and when these patterns become organized, that they characterize different segments of data, they can be called 'themes' (Hendricks 2013).

Triangulation

Triangulation is a process in which multiple forms of data are collected and analyzed. The multiple forms of data facilitate the researcher to fill gaps that would be present if only one source of data was used.

Variable

A variable in research refers to a person, place, thing, or phenomenon that you are trying to measure in some way.

Source: University of Southern California (USC)

Verification

Knowing when you "got it right" i.e. reaching valid conclusions in your study so as to conclude reasonably in light of the results obtained.