

Action Research: A Focus on Participatory Action Research and Implementation in Mathematics Education

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Abstract

The workshop on participatory action research will support attendees to become familiar with action research, consider examples of action research, and focus on ways they may integrate action research into their own agendas. The workshop will be structured around four main focal sections: (a) introduction to action research, including participatory action research, (b) examples of action research, including those in research literature as well as those of the workshop facilitator, (c) planning action research, including consideration of action research projects that attendees could take up, and (d) resources for action research. Attendees will have the opportunity to share and discuss ideas with others at the session. They will also leave the session with organized notes to support their future plans for implementing action research in their varied contexts. The following describes each of the four sections of the workshop in greater detail.

I. Introduction to Action Research

The first section of the workshop will focus on action research in general, as well as participatory action research. The intent of this section of the workshop is to provide an introduction and overview of action research.

Focus on Action Research (What is it?) and Research on Action Research (What is known?)

The session will begin with an overview of action research and what action research may entail at both a K-12 level and from a higher education perspective. A second focus will be on what has been learned from action research studies specific to mathematics education. Emphasis will be placed on different kinds of action research, the evolution of action research, and various purposes of conducting action research.

Participatory Action Research Overview

The affordances of participatory action research will be discussed, with a focus on five aspects of the process that are unique. Based on the work of Kemmis and colleagues (2014), features unique to participatory action research include (a) consideration of practices ‘from within’, (b) shared language, (c) participation in the practice conducted, (d) development of communities of practice, and (e) transformation of practice to meet the changing needs and times.

II. Examples of Action Research

The second section of the workshop will focus on examples of action research, both those from research literature as well as personal examples from the workshop facilitator. The intent of this section of the workshop is to provide opportunities for consideration of various action research projects that may be pertinent to participants. Participants will have time to critique the examples provided and consider how they may relate to their own contexts.

Examples from Existing Research Studies

Examples of action research from research literature will be discussed and critiqued. These include example of Kemmis, McTaggart, and Nixon (2014), Brydon-Miller and Maguire (2009), and Raygoza (2016). An emphasis will be placed on examples that occur in an education context, and primarily with mathematics education contexts.

Example of Action Research with K-12 Teacher Leaders

This part of session on participatory action will focus on an example action research project in which the workshop facilitator designed and led, focused specific on mathematics education. This part of the workshop is purposely designed to support participants to become more familiar with: a) conducting action research, b) collecting data from action research, c) analyzing action research data, and d) learned lessons from engaging in action research. The intent is to draw a translation between research studies on action research broadly and mathematics education contexts in which action research can occur (see Amador, Wallin, & Keehr, 2019).

III. Planning and Conducting Action Research

The third section of the workshop will focus on supporting participants to consider how they may implement action research, including participatory action research, in their contexts.

Planning Action Research

In this part of the workshop, participants will have independent think time and group work time to consider action research projects they may implement. Time will be allocated for whole-group discussion, small-group discussions, and individual think time. Time will be spent focusing on and refining research questions that could be asked, possible data collection and analysis techniques, and the overall intent of the action research. The purpose of this section is to learn from others who may have experience with action research and to explore future research endeavors that may align with the research trajectories of attendees.

IV. Resources for Action Research

The fourth and final part of the workshop will focus on resources for action research. This will include a time for conversation about resources attendees use or are with which they are familiar. The workshop facilitator will share resources that have been used specifically for action research about mathematics education topics and will highlight journal articles, books, and websites that may be of particular interest for attendees. The workshop will conclude with conversations around next steps for conducting action research based on the examples, conversation, and resources provided.