

Implementation Research:

What is it? Where does it come from? What is it good for?

Committee on Equal Opportunities in Science and Engineering (CEOSE)

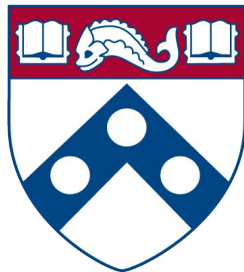
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Conceptual Confusion

“Although progress has been made in conceptualizing implementation research over the past decade, considerable confusion persists about its terminology and scope.”

- Peters (2013), “Implementation Research: What It Is and How to Do It”

- “Dissemination and implementation research intends to bridge the gap between public health, clinical research, and everyday practice by building a knowledge base.... *Unfortunately, there continues to be great variation in how these terms are used.*”
 - National Institute of Health (2002), “Dissemination and Implementation Research in Health”
- “Implementation science is the study of methods to promote the integration of research findings and evidence into healthcare policy and practice. It seeks to understand the behavior of healthcare professionals and other stakeholders as a key variable in the sustainable uptake, adoption, and implementation of evidence-based interventions....As a newly emerging field, *the definition of implementation science and the type of research it encompasses may vary according setting and sponsor.*”
 - Fogarty International Center (2016), “Implementation Science Information and Resources”

Some Attributes

1. “Seeks to *understand and work within real world conditions*, rather than trying to control for these conditions or to remove their influence as causal effects.”
2. “Especially concerned with the *users of the research* and not purely the production of knowledge.” Users often “should be intimately involved in the identification, design, and conduct phases of research and not just be targets for dissemination of study results.”
3. “Research designs that depend on having a single and fixed intervention, such as a typical randomized controlled trial, would not be an appropriate design to study *phenomena that change*, especially when they change in unpredictable and variable ways.”

- Peters (2013), “Implementation Research: What It Is and How to Do It”

Towards a Working Definition

Goal:

- ❖ To produce significant change, advance intellectual work, and develop new discoveries at the frontier.

Core Assumptions:

- ❖ Human beings learn from and through implementation.
- ❖ Research designed to realize large societal goals through developing and implementing programs on the ground, studying these programs, improving these programs, and engaging in an iterative process of study, reflection, and change, leads to significant learning and high-level theoretical advances.

General Approach:

- ❖ Theory is integrated with practice, and the test of knowledge is the ability of human beings to improve the world.
- ❖ Incorporating a range of methods is seen as necessary if progress is to be made towards the solution of highly complex, real world problems.
- ❖ Methods, such as participatory action research, that promote the inclusive involvement of practitioners, community members, patients, etc., in all stages of the research process (as appropriate to the setting and problem) are particularly essential for successful implementation research that results in reliable findings and actual change.

Some Roots and Connections

Goal:

❖ To produce significant change, advance intellectual work, and develop new discoveries at the frontier.

- Francis Bacon: Knowledge is power “for the relief of man’s estate.”
 - Bacon (1605), *The Advancement of Learning*
- Benjamin Franklin: “an *Inclination* join’d with an *Ability* to serve Mankind, one’s Country, Friends and Family . . . should indeed be the great *Aim* and *End* of all Learning.”
 - Franklin (1749), *Proposals Relating to the Education of Youth in Pennsylvania*

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 - John Dewey: "Thinking begins in . . . a forked-road situation, a situation which is ambiguous, which presents a dilemma, which proposes alternatives."
 - Dewey (1910), *How We Think*
 - Kurt Lewin: "If you want to truly understand something, try to change it."
 - Lewin (1890-1947), quoted in Franco Orsucci, *Mind Force: On Human Attractions*
 - William M.K. Trochim: ". . .our evaluation culture will embrace an *action-oriented* perspective that actively seeks solutions to problems, trying out tentative ones, weighing the results and consequences of actions, all within an endless cycle of supposition-action-evidence-revision that characterizes good science and good management [emphasis in original]."
 - Trochim (2006), *The Research Methods Knowledge Base*, "An Evaluation Culture"

Some Roots and Connections

General Approach

- ◆ **Theory is integrated with practice, and the test of knowledge is the ability of human beings to improve the world.**
 - Benjamin Franklin: “While they [students] are reading Natural History, might not a little *Gardening, Planting, Grafting, Inoculating, &c. be taught and practiced* [emphasis added]; and now and then Excursions made to the neighboring Plantations of the best Farmers, their Methods observ’d and reason’d upon for the Information of Youth. The Improvement of Agriculture being useful to all, and Skill in it no Disparagement to any.”
 - Franklin (1749), *Proposals Relating to the Education of Youth in Pennsylvania*
 - Karl Marx: “Philosophers have only *interpreted* the world in various ways; the point is to *change* it.”
 - Marx (1845), *Theses on Feuerbach*
 - John Dewey: “The social philosopher, dwelling in the region of his concepts, ‘solves’ problems by showing the relationship of ideas, instead of helping men solve problems in the concrete by supplying them hypotheses to be used and tested in projects of reform.”
 - Dewey (1920), *Reconstruction in Philosophy*

Some Roots and Connections

General Approach

- ◆ **Incorporating a range of methods is seen as necessary if progress is to be made towards the solution of highly complex, real world problems.**
 - Ernest Nagel: “The difference just described can be expressed by the dictum that the conclusions of science, unlike common-sense beliefs, are the products of scientific method. However, this brief formula should not be misconstrued. It must not be understood to assert, for example, that the practice of scientific method consists in following prescribed rules for making experimental discoveries or for finding satisfactory explanations for matters of established fact. There are no rules of discovery and invention in science any more than there are such rules in the arts. Nor must the formula be construed as maintaining that the practice of scientific method consists in the use in all inquiries of some special set of techniques (such as the techniques of measurement employed in physical science), irrespective of the subject matter or the problem under investigation. Such an interpretation of the dictum is a caricature of its intent; and in any event the dictum on that interpretation is preposterous.”
 - Nagel (1961), *Structure of Science: Problems in the Logic of Scientific Explanation*
 - Donald Schön: “The varied topography of professional practice, there is a high, hard ground overlooking a swamp. On the high ground, manageable problems lend themselves to solution through the use of research-based theory and technique. In the swampy lowlands, problems are messy and confusing and incapable of technical solution. The irony of this situation is that the problems of the high ground tend to be relatively unimportant to individuals or to society at large, however great their technical interest may be, while in the swamp lie the problems of greatest human concern.”
 - Schön (1995), “Knowing-in-Action: The New Scholarship Requires a New Epistemology”

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General Approach

- ❖ **Methods, such as participatory action research, that promote the inclusive involvement of practitioners, community members, patients, etc., in all stages of the research process (as appropriate to the setting and problem) are particularly essential for successful implementation research that results in reliable findings and actual change.**
 - William Foote Whyte: “In PAR the researcher combines participant observation with explicitly recognized action objectives and a commitment to carry out the project with the active participation in the research process by some members of the organization studied.”
 - Whyte (1989), “Advancing Scientific Knowledge through Participatory Action Research”
 - William M.K. Trochim: “There is growing recognition in many arenas that our most fundamental problems are systemic, interconnected, and inextricably linked to social and economic issues and factors. Solutions will involve husbanding the resources, talents and insights of a wide range of people. The formulation of problems and potential solutions needs to involve a broad range of constituencies.”
 - Trochim (2006), *The Research Methods Knowledge Base*, “An Evaluation Culture”

Implementing Implementation Research: How Do We Get There from Here?

- “Implementation assumes top priority because it is one of the most difficult problems humans ever face. . . . ‘Truth’ is the result/outcome of knowledge that is gained through the ‘successful’ implementation of a proposed, ethical solution to a significant world problem. In other words, knowledge cannot be separated from the problem of its implementation.”
 - Churchman & Mitroff (1994), “The Management of Science and the Mismanagement of the World”