Evaluation of Field Operation Training Programs: A Systematic Review

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Introduction

What are adult training programs?

- Designed to enhance skills, knowledge, and competencies for personal or professional development
  - Often focus on **practical**, job-related skills and can be delivered through various formats such as workshops, online courses, or in-person classes
- **Census Bureau example**: Nonresponse Followup (NRFU) operation training

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Training Evaluation Benefits

1. Evaluation is a diagnostic tool for identifying *areas of improvement* and illuminating pathways for enhancing training effectiveness

How can the training program be improved?

Training Evaluation Benefits (Cont.)

2. Evaluation helps us to answer if the training efforts are *producing results* that align with the intended goals of the training program

Is the training program accomplishing its goal?

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Training Evaluation Benefits (Cont.)

3. Evaluation extends its utility in determining the alignment of training initiatives with *organizational objectives* (Dwyer, 2004). Evaluation helps us justify costs of continuing the training program.

Does the training program help the organization overall

e.g., by reducing costs or increasing data quality?

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Motivation & objective of the systematic review

Motivation: field operation training programs are essential to data collection quality at the Census Bureau – we need to know how to evaluate these training programs to ensure that the training is accomplishing its goals

Objective: Delineate the **methodologies** employed in the literature for future improvement of operational training programs at the Census Bureau

Methods & Materials

Review Process

We used a **two-stage** process to identify studies for final review

1. In the first stage, we searched for articles using Google Scholar and screened abstracts using our inclusion and exclusion criteria

2. In the second stage, we reviewed the articles that passed screening in the first stage

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Inclusion and Exclusion criteria

Inclusion criteria:

- Relevant peer-reviewed articles written in English

- Articles that were published in 2014-2024

- Articles that were studies

Exclusion criteria:

- Not written in English

- Non-peer-reviewed sources

- Irrelevant to the research questions

- Studies with smaller sample size (n<30)

- Studies exclusively qualitative in nature

- Reviews of studies

Search Protocol

- Literature search was conducted using the following search terms:

  ("Adult training program" OR "adult education program") AND

  ("evaluation" OR "assessment" OR "learning outcomes" OR "learning assessment" OR "appraisal")

- We employed "Subject Terms" within the TITLE field, utilizing the operator "allintitle:"

- Subsequently, if the initial search yielded insufficient articles, we expanded the search to encompass "All Text"

Search Protocol (Cont.)

- Following the search, **two reviewers independently reviewed the abstracts** of the identified articles to select the first 50 relevant studies, adhering to predefined inclusion and exclusion criteria throughout the screening process

- Disagreements between reviewers regarding article inclusion were resolved through discussion

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Results

PRISMA Diagram

Source: Page MJ, et al. BMJ 2021;372:n71. doi: 10.1136/bmj.n71.
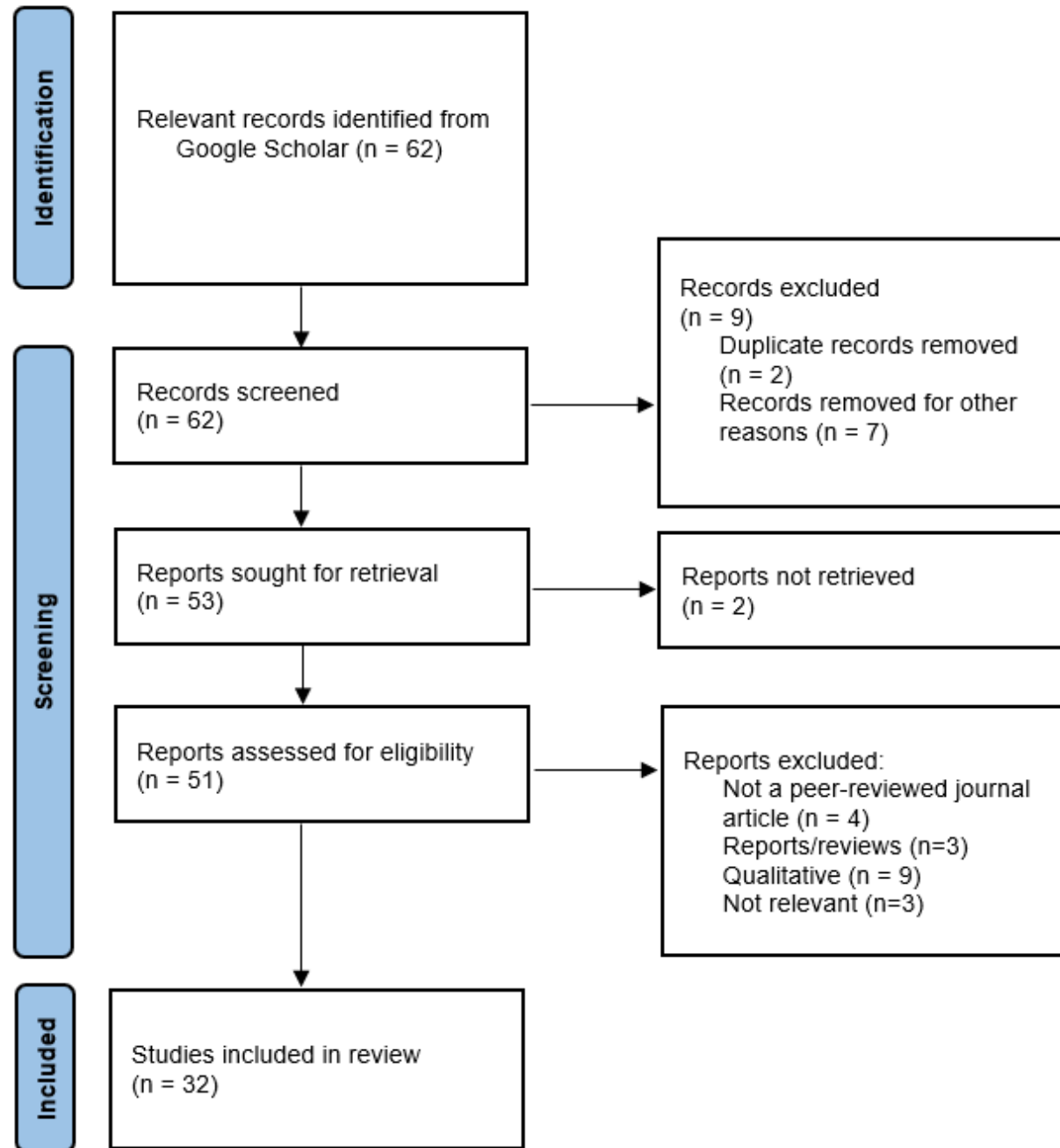
Descriptive Summary of Methods Used in Included Studies

Methods	Percentage of Studies
Closed-ended Questionnaires	100%
Open-ended Questionnaires	34%
Interviews	41%
Observations	16%
Mixed Methods	59%

Closed-ended questionnaires

- **Satisfaction Questionnaire:** Hussein & Oğlak (2014) used a 4-point Likert scale of trainee satisfaction from "very satisfied" to "very dissatisfied". One example of an item evaluated for trainee satisfaction was the statement: "The content of the training was adequate."

- **Pre/post Knowledge Test:** Nurse (2017) used a 13-item pre-test, post-test design to evaluate learning in a sexual abuse prevention training. The questions combined True/False statements with a 5-point Likert scale which measured how confident they were in their answer – e.g. ("I am somewhat sure this is true", "I am very sure this is true"). An example knowledge item was "True/False: Child sexual abuse takes place mainly in poor families." (Correct answer: False)

Open-ended questionnaires

- **<u>Satisfaction</u> questionnaire:** Hussein & Oğlak (2014) also integrated open-ended feedback questions in their satisfaction questionnaire to assess trainee satisfaction; these open-ended comments were analyzed using thematic analysis

- **Open-ended question on <u>trainee behavior</u>:** Tibbitts (2015) included an open-ended question at the end of a close-ended questionnaire asking trainees to comment on the 'most significant change' that they experienced based on their involvement in the Human Rights Education Practices training

Interviews

- **Interviews to assess <u>trainee behavior</u>:** Francis (2015) conducted 13 semi-structured interviews with families who underwent training in person or via telephone. The primary objective of the interview was to assess if and how families were implementing what they learned. One quote from an interview was:

    "We started looking for employment and volunteer opportunities because of the reasons that you made us aware of. So we really appreciate the training you gave us very, very much."

Interviews (Cont.)

- **Interviews to assess <u>facilitators</u> of training:** Hordofa (2019) used both questionnaires and interviews, targeting the training program facilitators and supervisors, to assess the training results, specifically training program quality. In an interview with a supervisor, it was noted that the organizational goals were not being met due to facilitators being unable to adequately train trainees:

"Facilitators are not in position to help adult learners. ... Most facilitators didn't need to apply what they have trained. Instead, they need to leave."

Observations

- **Assessment of trainee behavior <u>during training</u>:** Morera et al. (2014) utilized observations of trainees directly during the training to evaluate how both facilitators and trainees performed during training

- **Assessment of trainee behavior <u>in the field </u>by supervisor:** Alsalamah & Callinan (2021) used observations and supervision of the head teachers, their job performance, and their students' results and achievements

Discussion

- Overall, studies used **mixed methods** to evaluate training outcomes
- **Closed-ended questionnaires** were the most used method among all reported methodologies, maybe due to their ease in implementation and analysis
  - Provide data that can be quantitatively analyzed and is easier to obtain for a large group of trainees
- **Interviews and observations** were used less often in the training evaluation studies, potentially due to **increased burden** in implementing and analyzing them
  - Provide richer, in-depth descriptive data that can provide a large amount of insight from a smaller group of people

Field Operation Training Evaluation Across the Methodologies

- **How satisfied are the trainees?**

  → assess with a satisfaction questionnaire with both closed- and open-ended questions *immediately* post-training

- **What did the trainees learn?**

  → assess with a pre-training knowledge test right before the training and a post-test questionnaire and self-assessment of learning *immediately* post-training, again mixing closed- and open-ended questions

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Field Operation Training Evaluation Across the Methodologies

- **How are trainees implementing what they learned?**

  → assess with observations during training such as in practice scenarios or during the operation if possible and assess interviews after the training (typically *several months later* to give trainees time to implement in the field)

- **Are the organization's goals being met?**

  → assess with interviews with facilitators or supervisors of the training *after the operation has ended* and with supportive metrics such as trainee retention, increased data quality, or reduced costs

Conclusions

- Based on this systematic review, it is recommended that evaluation methods should include **both quantitative and qualitative components**
  - Quantitative approaches let you get more data on specific questions whereas qualitative data can give richer in-depth evaluation
- Ideally, **a combination of methodologies should be used to address different questions**

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The Big Take Away

- Evaluation of adult training and education programs is **essential** to ensuring **program quality**

- In the context of the training programs, such as for the NRFU operation, evaluating the effectiveness of the training that enumerators undergo helps **improve training** and in turn **field performance** and **data quality**

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Thank you!

- Thank you for your long attention.

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