

# Meaningful Outcomes in Program Evaluation of Online Learning



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# Disclosures

Walter Tavares and David Wiljer are recipients of the Manning Grant and have funding from other government and nonprofit granting agencies. David W. and Walter are on the SACME Board of Directors.

# Objectives

By the end of this workshop participants will be able to:

- List and discuss principles of program evaluation applied to online formats of CPD
- Describe outcome frameworks that focus on change and can be applied to online formats of CPD

# Who I **am**...Briefly

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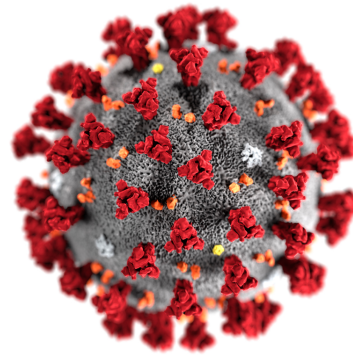
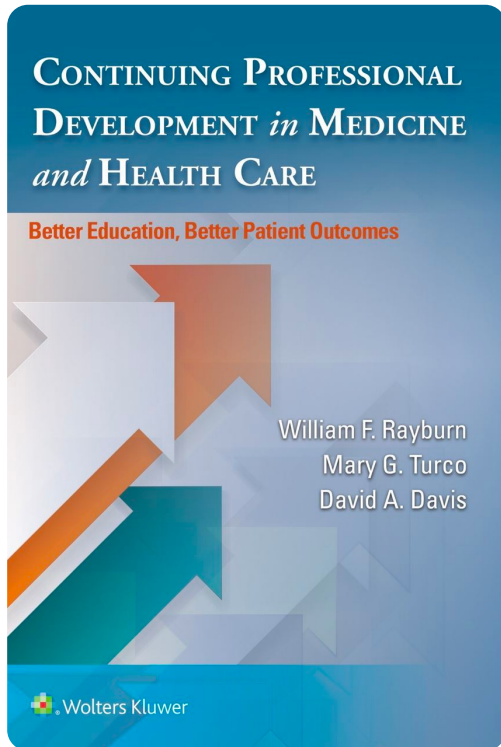
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# TEACHING AND LEARNING



ASSESSMENT

A different kind of driver...

# Rapid Retooling, Acquiring New Skills, and Competencies in the Pandemic Era: Implications and Expectations for Physician Continuing Professional Development

David W. Price, MD; Craig M. Campbell, MD

**Abstract:** The SARS-CoV-2 (COVID 19) pandemic has necessitated changes in health care delivery, including increases in delivery of care through asynchronous or virtual means, and deployment of clinicians in different teams and settings. Physical distancing and redeployment of clinicians has also necessitated changes in health care continuing professional development (CPD). Health care delivery and CPD is unlikely to fully return (in the near term, if at all) to pre-pandemic status. The authors raise questions and opportunities for development and provision of CPD during and after the pandemic

**Keywords:** continuing professional development, CPD, technology-enabled CPD, re-imagining CPD, retooling, new skills and competencies

DOI: 10.1097/CEH.0000000000000297

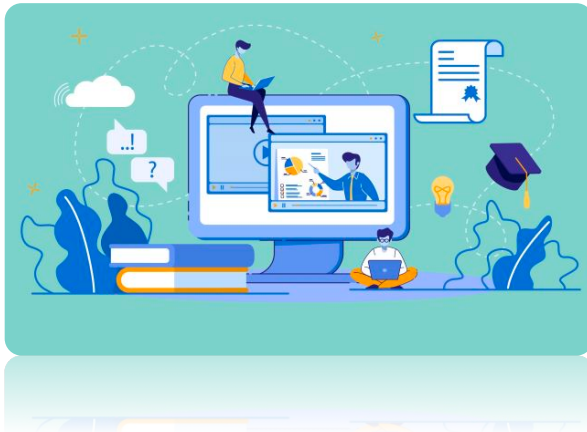


## Online Education:

learner interaction with content / people via the internet;  
can be directed or self directed. But too many variations  
and advances for a typology to work fully

# Context of Lifelong Learning

Defined as “a **continuously supportive process** that stimulates and empowers individuals to **acquire all the knowledge, values, skills and understanding** they will require throughout their lifetimes and to apply them with **confidence, creativity and enjoyment in all roles, circumstances and environments** ”





thinkific



WizIQ  
education.online



learnWorlds

Blackboard

SKILL  
SHARE.

zoom



ruzuku

podia

teachable



KHAN  
ACADEMY

# Remote Emergency Teaching and Online Education/Learning?

## Highly variable design solutions

- Distance
- Distributed
- Blended
- Online
- Mobile
- And others....including “emergency remote teaching”  
the common alternative to high quality online education
- Requires and ecosystem...
- Some not fully featured, or necessarily well planned with high probability of suboptimal implementation
- “temporary” shift of instructional delivery.....

# An Example

Received: 1 April 2020 | Revised: 10 April 2020 | Accepted: 16 April 2020

DOI: 10.1111/medu.14187

MEDICALEUCATIONADAPTATIONS

## A remotely conducted paediatric bootcamp for fourth-year medical students

**Rebekah Burns**



**Jesse Wenger**

Department of Paediatrics, University of Washington, Seattle, Washington, USA **Correspondence:** Rebekah Burns, Department of Paediatrics, University of

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98105, USA. Email: rebekah.burns@seattlechildrens.org



# An Example

Received: 7 April 2020 | Accepted: 15 April 2020

DOI: 10.1111/medu.14190

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## MEDICAL EDUCATION ADAPTATIONS

# Online faculty development using cognitive apprenticeship in response to COVID-19

Ayat Nabil Eltayar  | Noha Ibrahim Eldesoky | Hoda Khalifa | Soha Rashed

**Correspondence:** Ayat Nabil Eltayar, Department of Medical Education, Alexandria Faculty of Medicine, Alexandria University, Champollion Street, El-Khartoum Square, Azarita Medical Campus, Alexandria, Egypt.

Email: dr.ayateltayar@yahoo.com



# A Look Into Two Camps

## **Camp 1**

- This is a pandemic
- Outcomes are different
- This is temporary...not ideal
- Evaluation not feasible / necessary (at least not now)

## **Camp 2**

- This is a pandemic
- New normal
- Needs / implications are elevated
- Evaluation is elevated...because consequences are significant and future is uncertain

# A focus on **OUTCOMES?**

**Changes** in awareness, knowledge, skill, behaviour etc.

- People, organizations, short, med, long
- Their enactment is dependent on preceding efforts, but comes first

# A focus on **IMPACT**?

Ultimate intended change in organization, community or other system...outcomes inform intended impact

Select **OUTCOMES**?

Jot that down...

What informed those choices of  
**OUTCOMES?**

How might we optimize or think about that differently?

The image shows the cover of the book 'The Program Evaluation Standards: A Guide for Evaluators and Evaluation Users'. The cover is divided into two horizontal sections: the top is black with white text, and the bottom is a gradient of orange and purple. The text on the cover includes 'Joint Committee on Standards for Educational Evaluation' at the top, followed by the title 'The Program Evaluation Standards' in a large serif font, and the subtitle 'A Guide for Evaluators and Evaluation Users' in a smaller sans-serif font.

Joint Committee on Standards for Educational Evaluation  
**The Program  
Evaluation Standards**  
A Guide for Evaluators and Evaluation Users

Evaluation Scientist

# Who am I, briefly

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## Conceptualization of Program Evaluation

**Traditionally:** Determine the effectiveness or value of a program (Binary Dichotomy)

**Broader literature:** Systematic process of data collection and analysis around activities, characteristics, and outcomes of programs that can be used to make judgments OR inform future program refinement. (Patton, 1997)

# Program Evaluation approaches by “Purpose”



DEVELOPMENTAL



FORMATIVE



SUMMATIVE

Maturity of the “Unit of Analysis”



**Innovations.** Iterative cycles to support implementation

Foster development and improvement within an **ongoing activity.**

Determine whether an **established activity** goals have been met.



“When the cook tastes the soup, that's formative; when the guests taste the soup, that's summative” (Stake, 2004)

When the host is planning what to do for the guest, that's developmental - Rojas

# Program Evaluation approaches by “Purpose”



DEVELOPMENTAL

**Innovations.** Iterative cycles to support implementation



FORMATIVE

Foster development and improvement within an **ongoing activity.**



SUMMATIVE

Determine whether an **established activity** goals have been met.

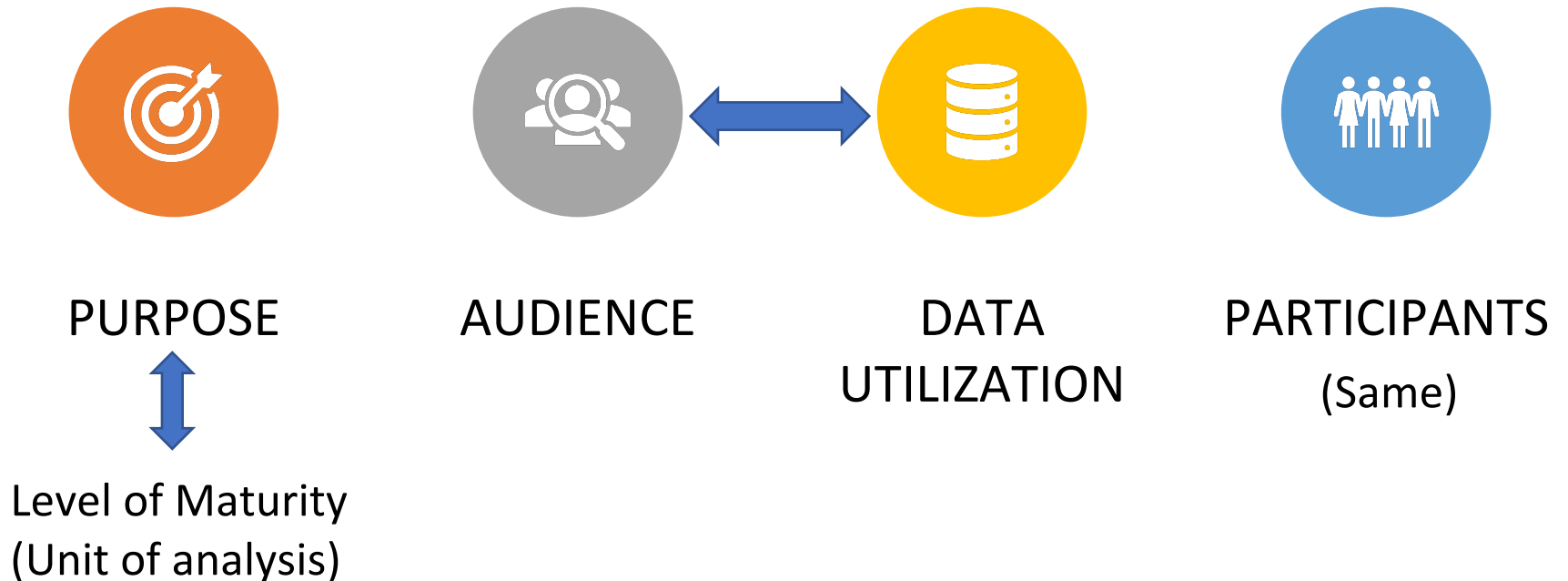
Maturity of the “Unit of Analysis”





How about Program  
evaluation during  
COVID?

# Program Evaluation Components

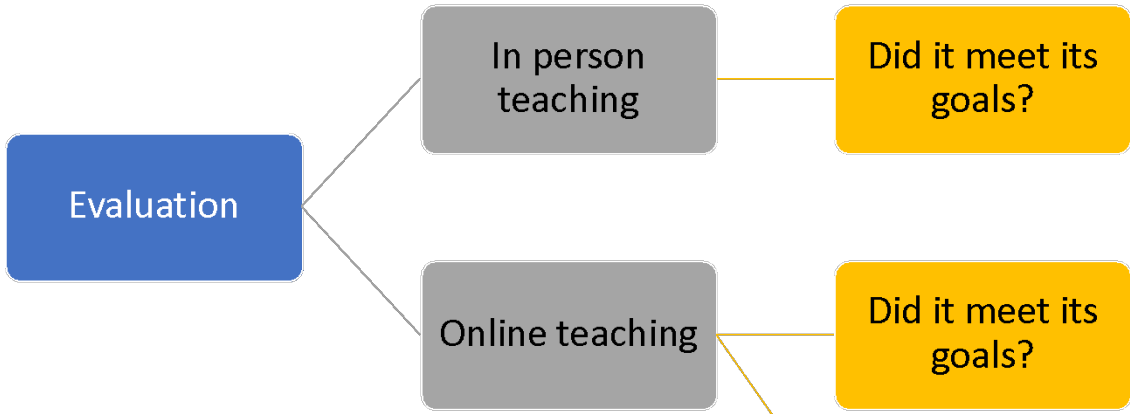




# Purpose : Does it change?

The level of maturity of the Unit of  
analysis changes.

# Unit of Analysis Changed



## Round-up

This course helped me improve my work-related skills significantly.

<input type="radio"/> Strongly disagree	<input type="radio"/> Disagree	<input type="radio"/> Neutral	<input type="radio"/> Agree	<input type="radio"/> Strongly agree
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Submit your answer →



# Audience & Data Utilization

How does it change now that purpose has changed?

Did it meet its goals?

Does it need to be improved?

Data Utilization

Quality Assurance

Continuous Quality Improvement

Audience

Program leadership, Accreditation processes

Faculty, Leadership, Trainees, Students

Purpose changed



# CORE Principles



The maturity of the unit of analysis would help inform the evaluation purpose and the question.



The evaluation “purpose” can inform the types of outcomes to be captured/analyzed



New platforms and technologies offer the opportunity to focus on different/new outcomes, however, it is important to have a purpose for the collected data. How is it going to be used? What would it inform?



Determine whether the theoretical underpinnings would remain the same for the learning activities (Unit of analysis). This is important as the “program theory” would help inform the expected change and the associated outcomes



Always close the loop. Show what has been done with the collected data and (when possible) report back to your participants. [response rate]

# Reflecting on the case studies

## Online Faculty Development during COVID (Eltayar, et al., 2020)

- Cognitive apprenticeship model
- Effectiveness measured by quality of new questions – could there be other outcomes? [participants perceptions – less interference/better participation]
- Outcomes informed by conceptual framework

## Remote pediatric Bootcamp (Burns & Wenger, 2020)

- Pre-existing curriculum could be adapted to remote format (no mention of the theoretical framework). Replacement for activities.
- Sessions were highly rated (that does that imply?)
- No formal feedback collected from facilitators (Participatory evaluation)
- The model was successful – what does it mean?

# A FOCUS on **OUTCOMES?**

## Who am I, briefly

David Wiljer, PhD

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Innovation, UHN;

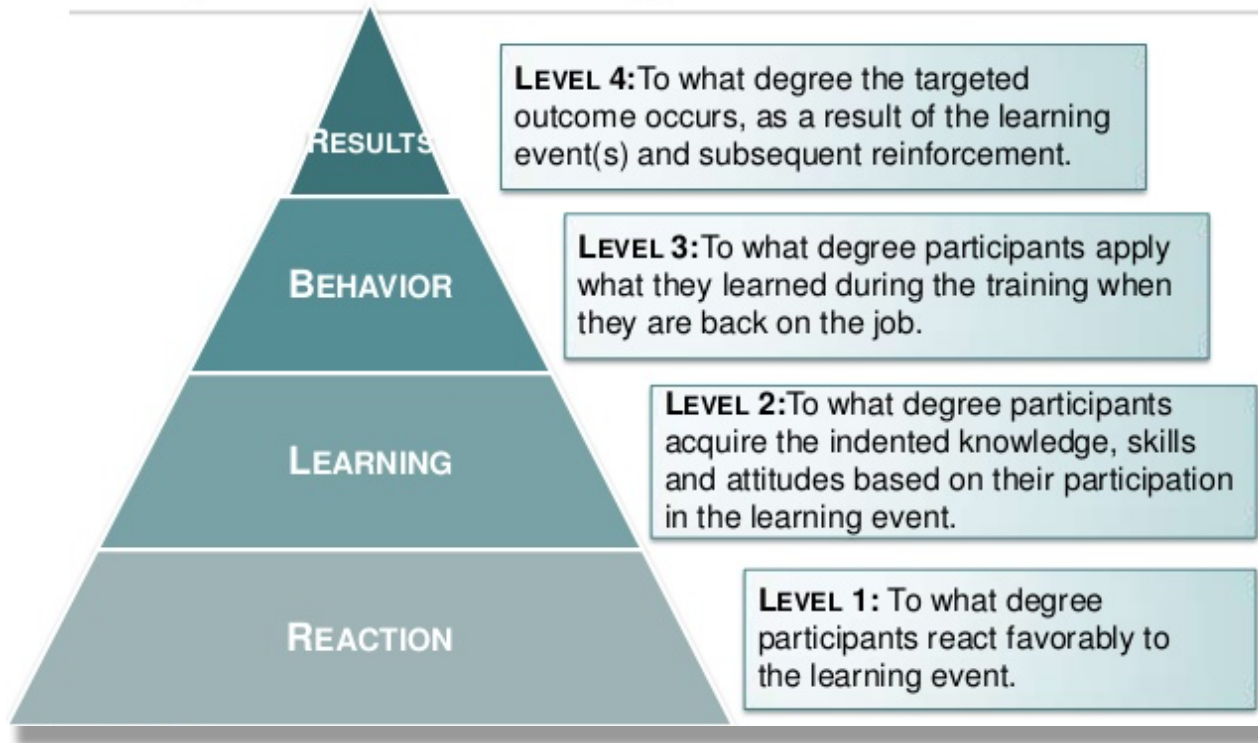
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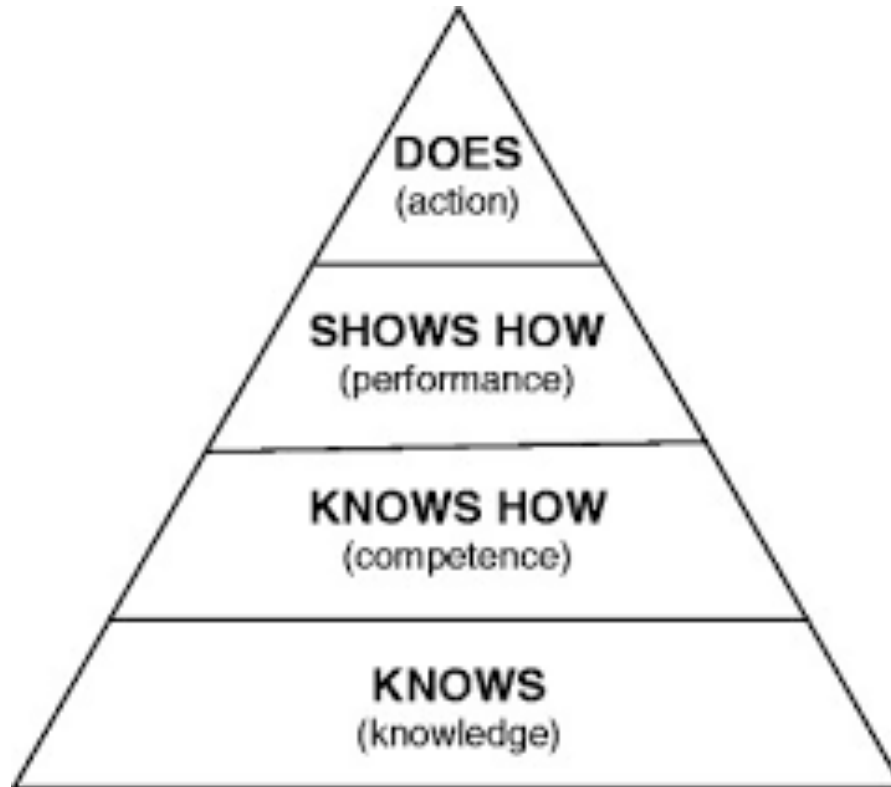
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# Outcome Frameworks

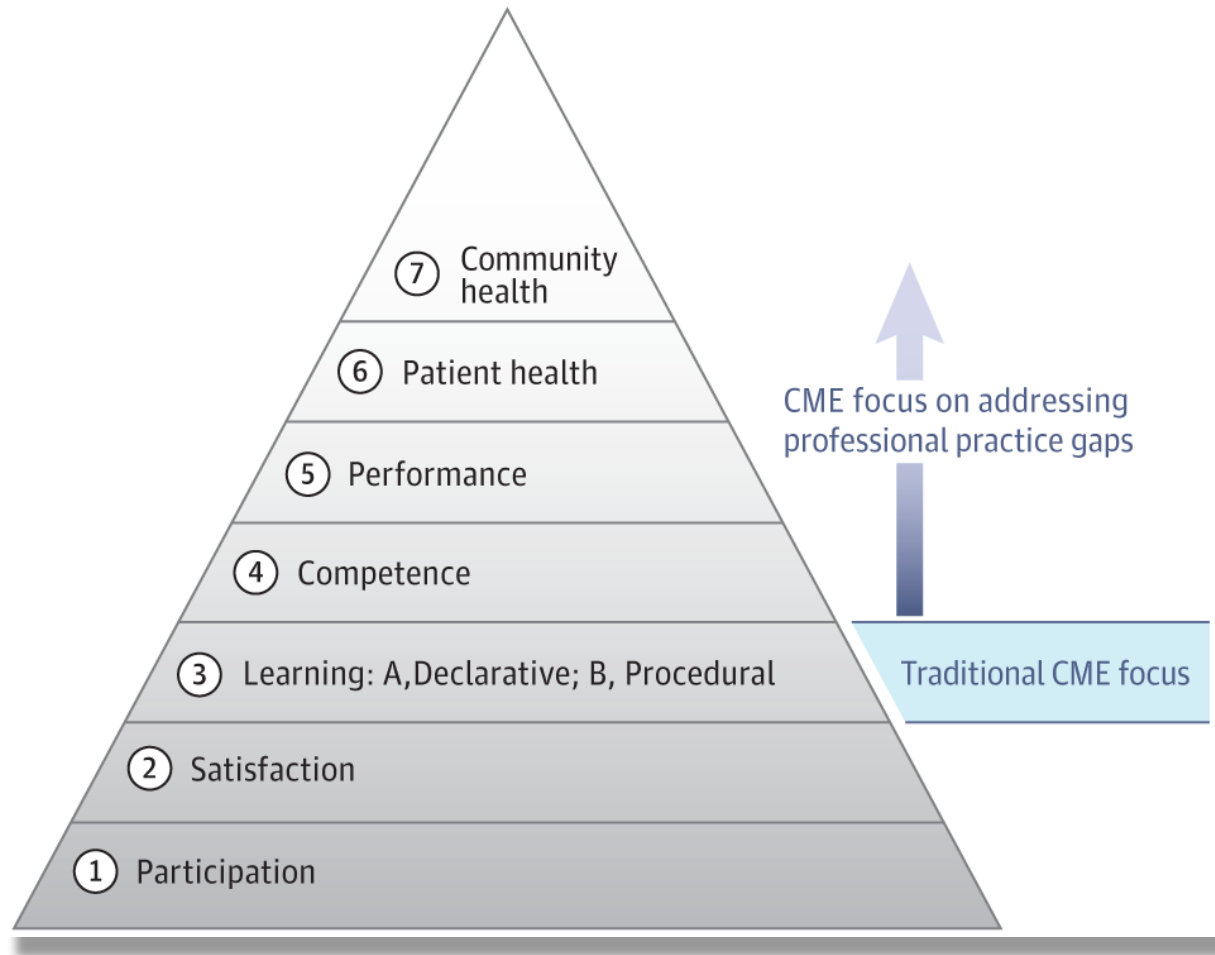
## Kirkpatrick's Training Evaluation Model



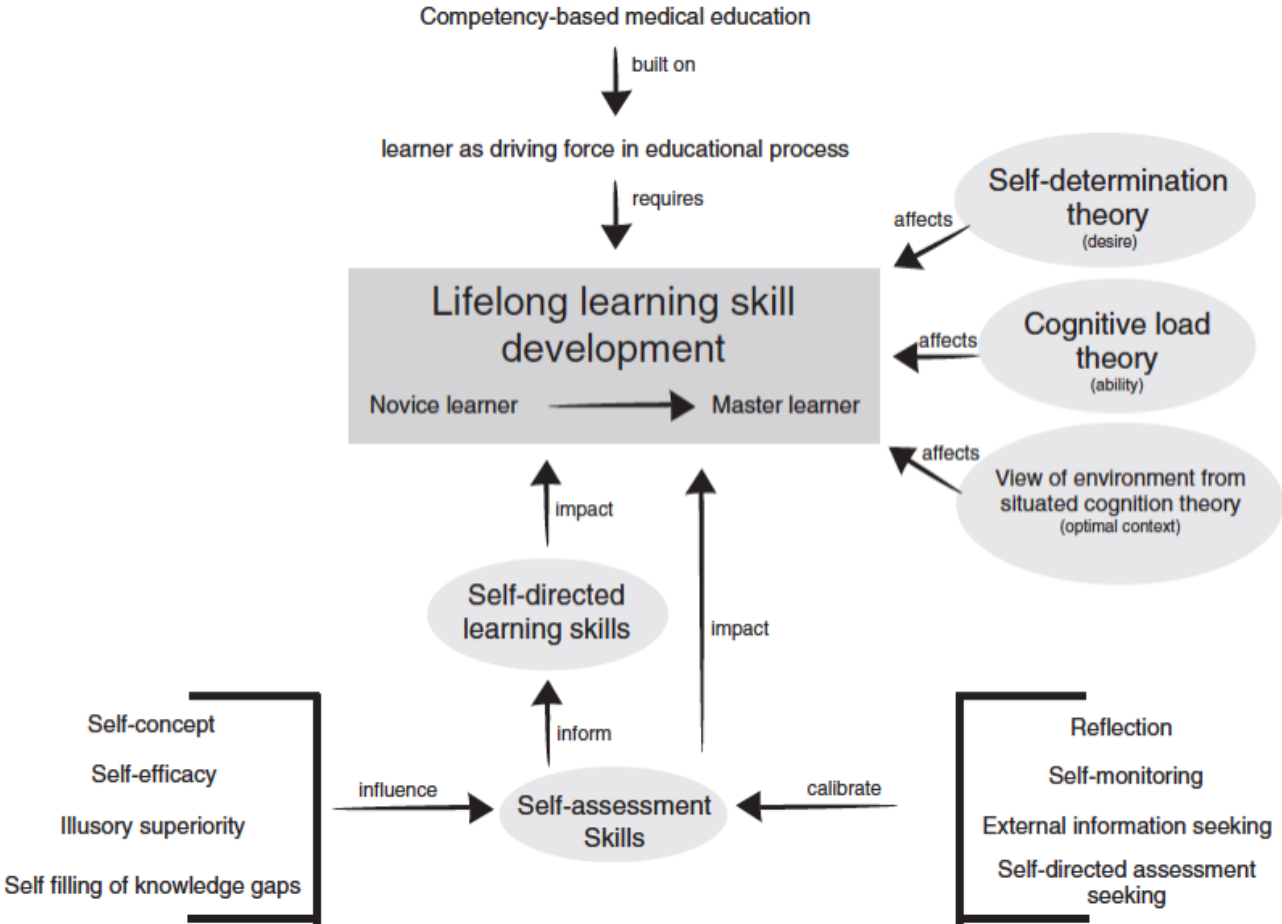
# Outcome Frameworks



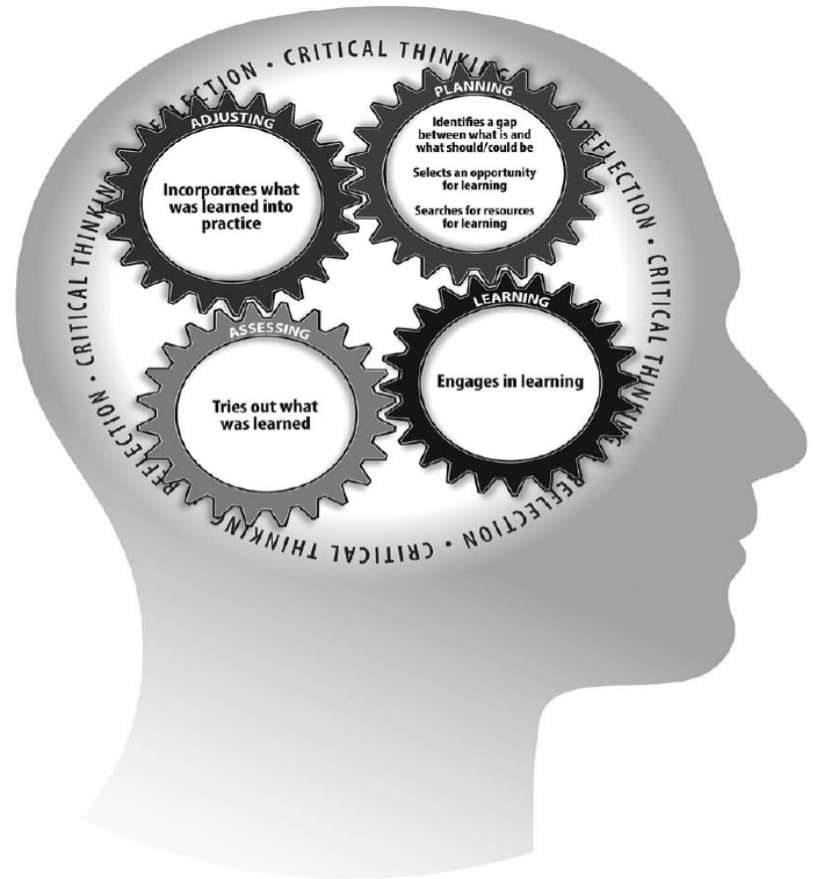
# Outcome Frameworks



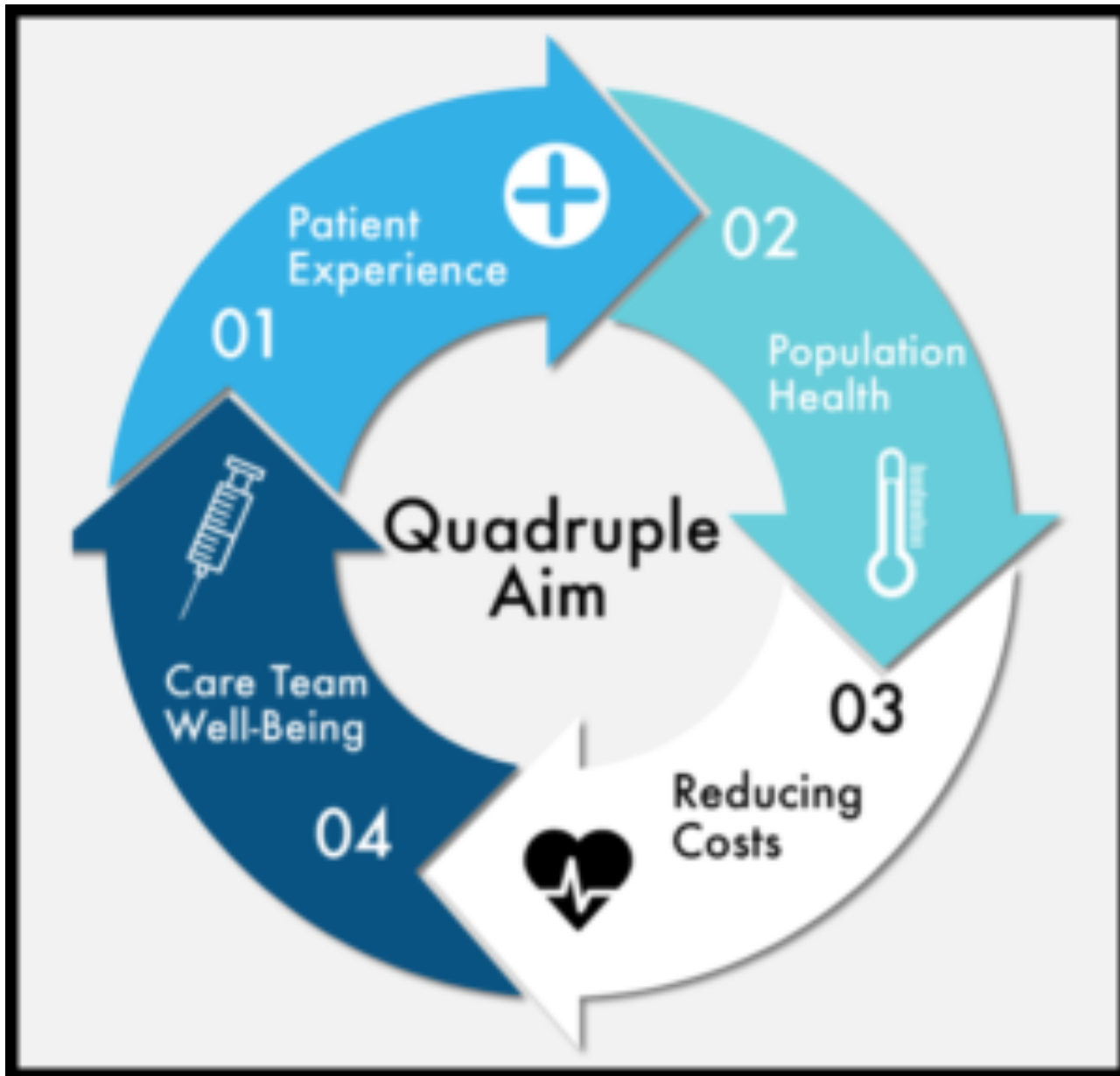
# Framework for Developing Master Learners in Competency Based Education



# Developing Master Adaptive Learners







Quadruple AIM, Institute for Healthcare Improvement

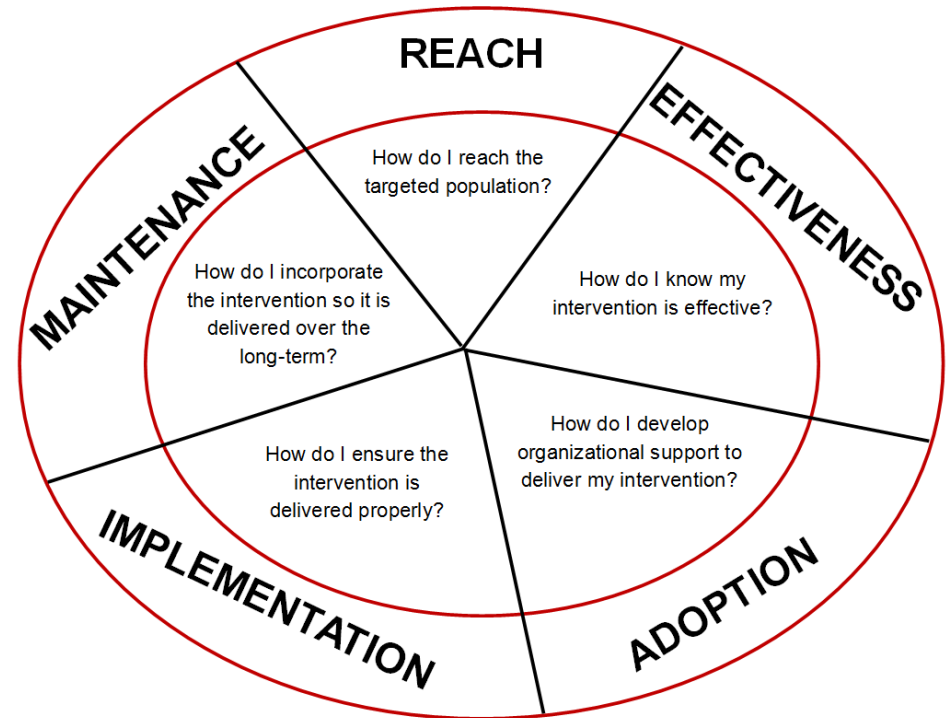
# Quintuple Aim



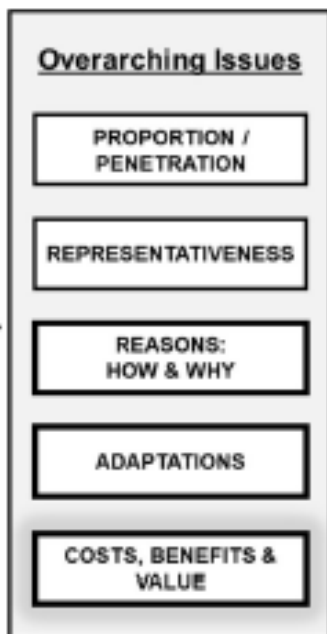
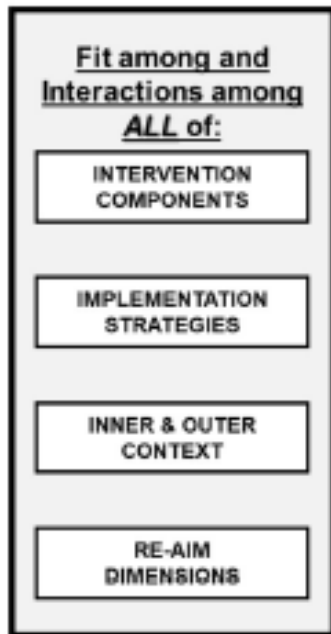
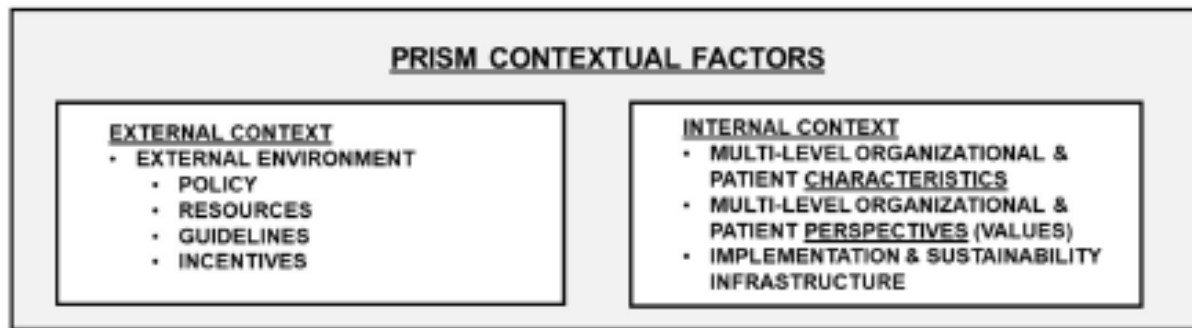
**FIGURE S-1** | Advancing to the Quintuple Aim  
SOURCE: Developed by publication editors

## Original RE-AIM 1999

- First publication in 1999
- Initially used to evaluate prevention and health behavior change programs
- RE-AIM Trivia: was going to be called ARIEM (actual order of the RE-AIM 'steps')



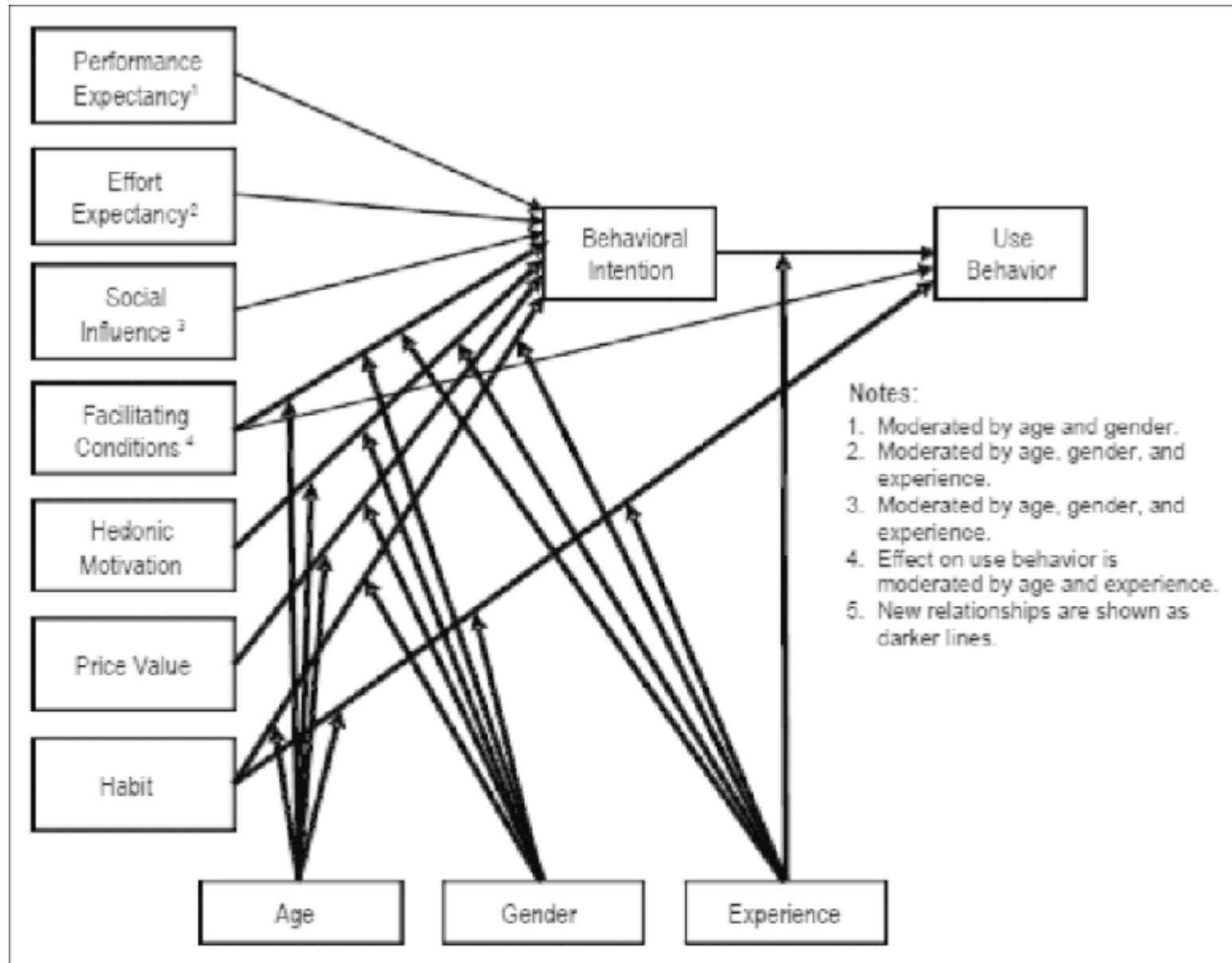
Develop and translate research and practice-based interventions that can:  
be *adopted (and adapted)* and delivered broadly,  
have the ability for *sustained* and consistent *implementation* at a reasonable cost  
*reach* large numbers of people especially those who can most benefit,  
produce *replicable* and *long-lasting implementation and population outcomes*



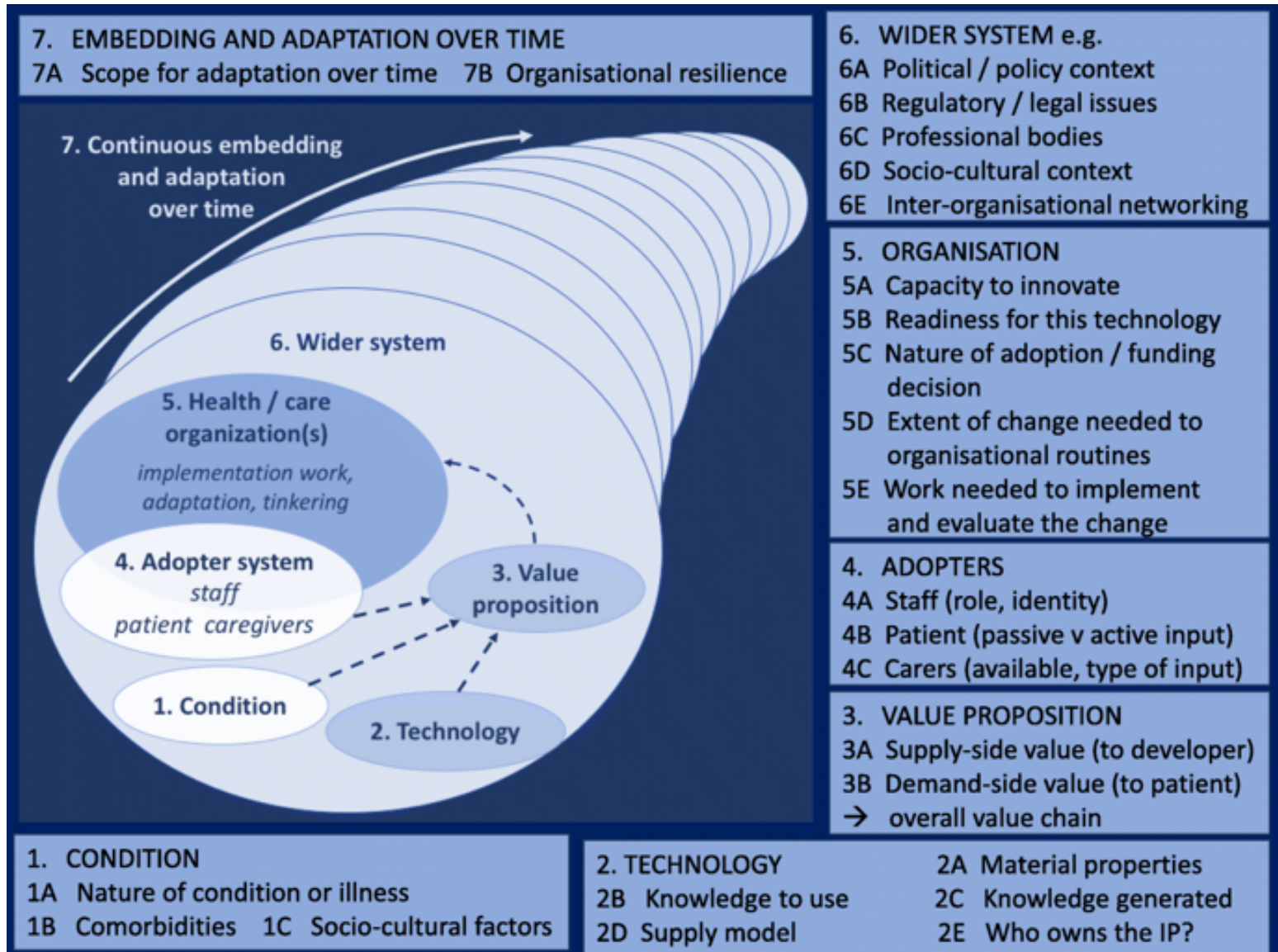
PRISM = Pragmatic Robust Implementation and Sustainability Model.  
 Feldstein & Glasgow (2008). *Joint Commission Journal on Quality & Patient Safety*, 34: 228-243.

**FIGURE 1** | Revised, enhanced RE-AIM/PRISM 2019 model.

# UTAUT2



# NASSS Framework: Non Adoption, Abandonment, Scale-Up, Sustainability and Spread



# Core Principles

- The shift to online interventions creates new opportunities to assess impact and outcomes.
- Existing outcomes frameworks still play an important role in the development and implementation of the evaluation.
- The evaluation question and context will determine the selection of the appropriate framework.
- The frameworks should focus not only on the benefits but also on challenges of the technology.
- The online delivery creates new opportunities for data collection, before, during and post intervention and this data can help guide both the learner and the educator.
- The frameworks need to evolve to consider the context of key issues such as equity, diversity and inclusion.



# Reflecting on the Case Study

- The evaluation framework needs to include:
  - The longitudinal aspects of learning;
  - The different modalities of learning;
  - The impact of different interactions;
  - The user experience and its the impact on learning;
  - The ability to provide feedback through the online experience;
  - The social aspects of online learning;
  - The unintended consequences and unintended benefits.



# **Why** those OUTCOMES?

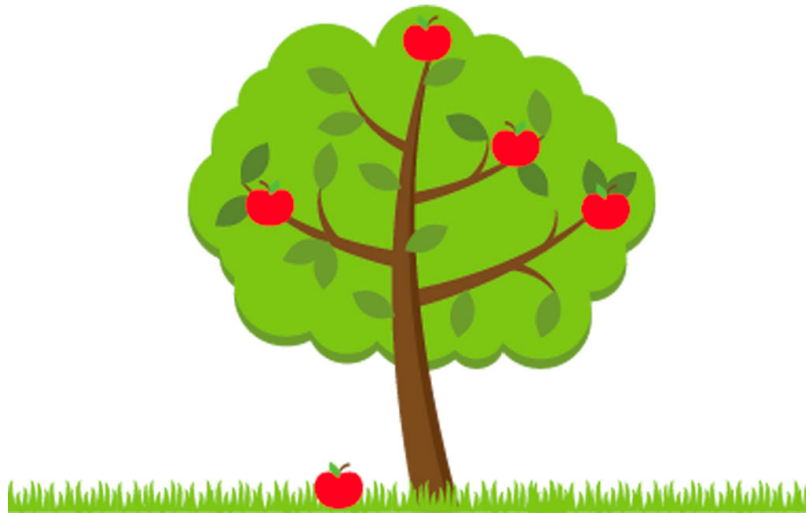
How might we optimize or think about that differently?

# The Role of **Theoretical Frameworks**

How might we better optimize or think about outcomes?

# The Role of **Theoretical Frameworks**

- When the focus is intended to be on WHY a program is succeeding or failing
- Helps to identifying mechanisms that mediate between program processes and intended outcomes

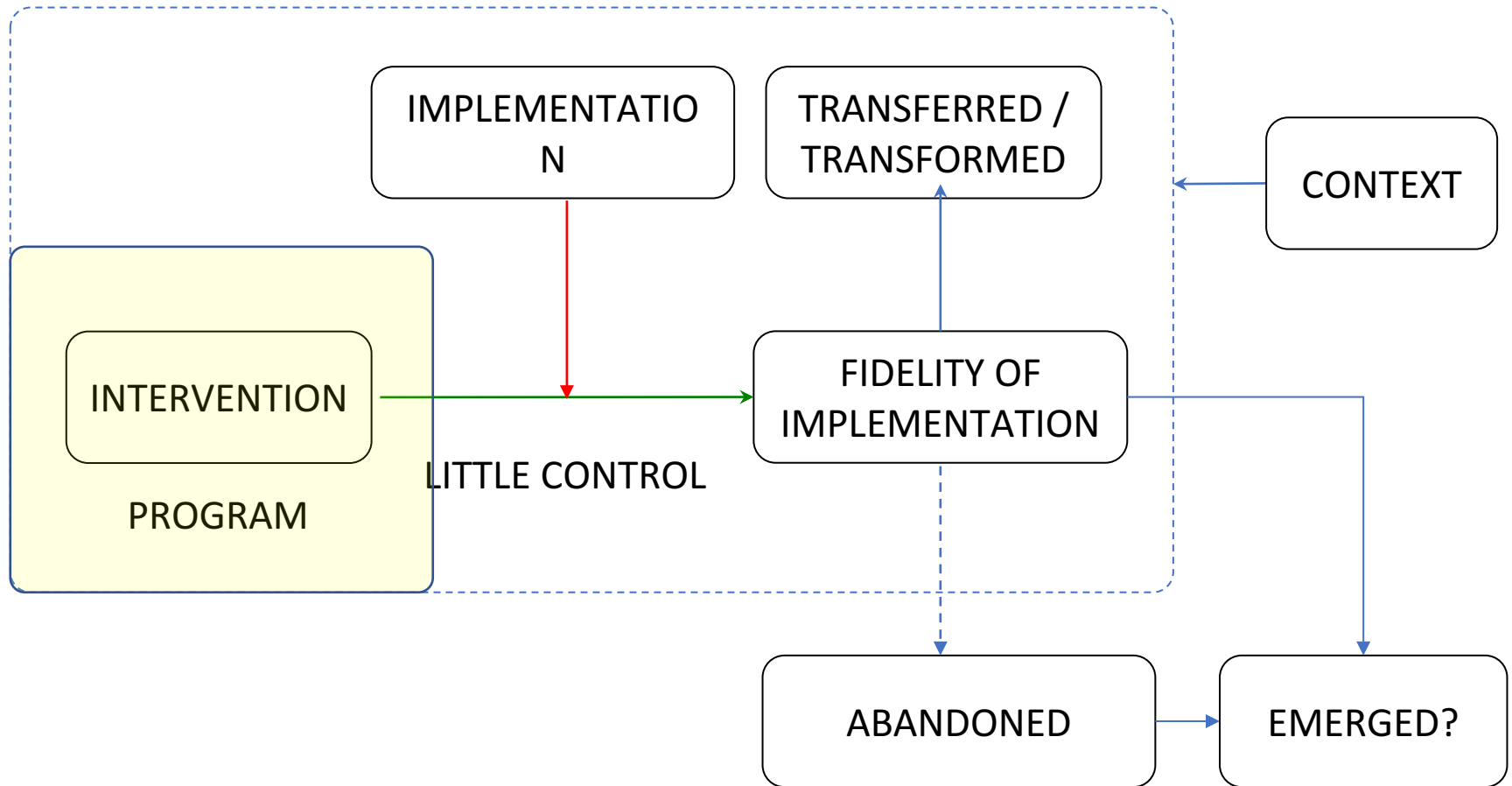


“To generate understanding of why programs operate the way they do, evaluators must articulate a plausible and defensible conceptual framework (i.e, theory) that explains the mechanism by which program processes lead to outcomes” Haji et al., 2013

# The Role of **Principles**

How might we better optimize or think about outcomes?

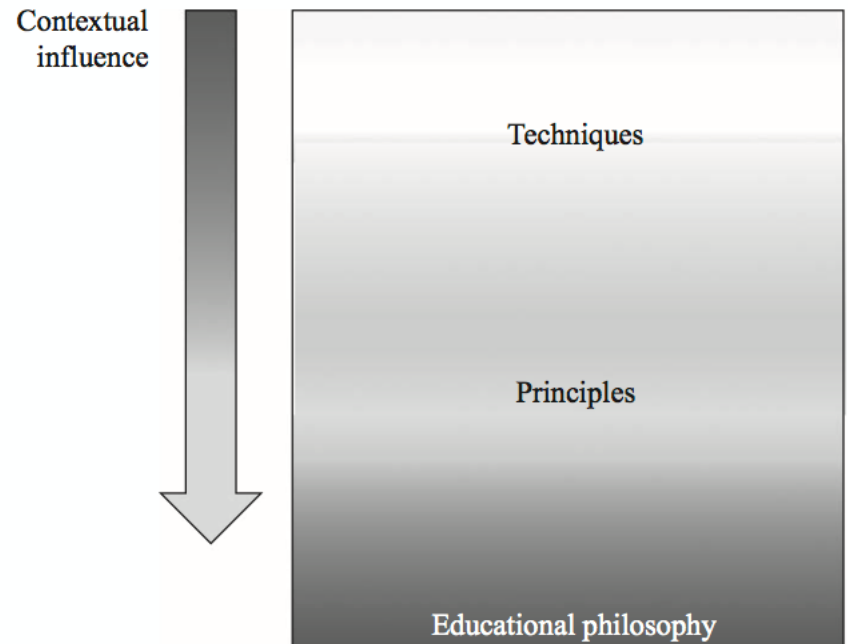
# OPERATIONALIZATION

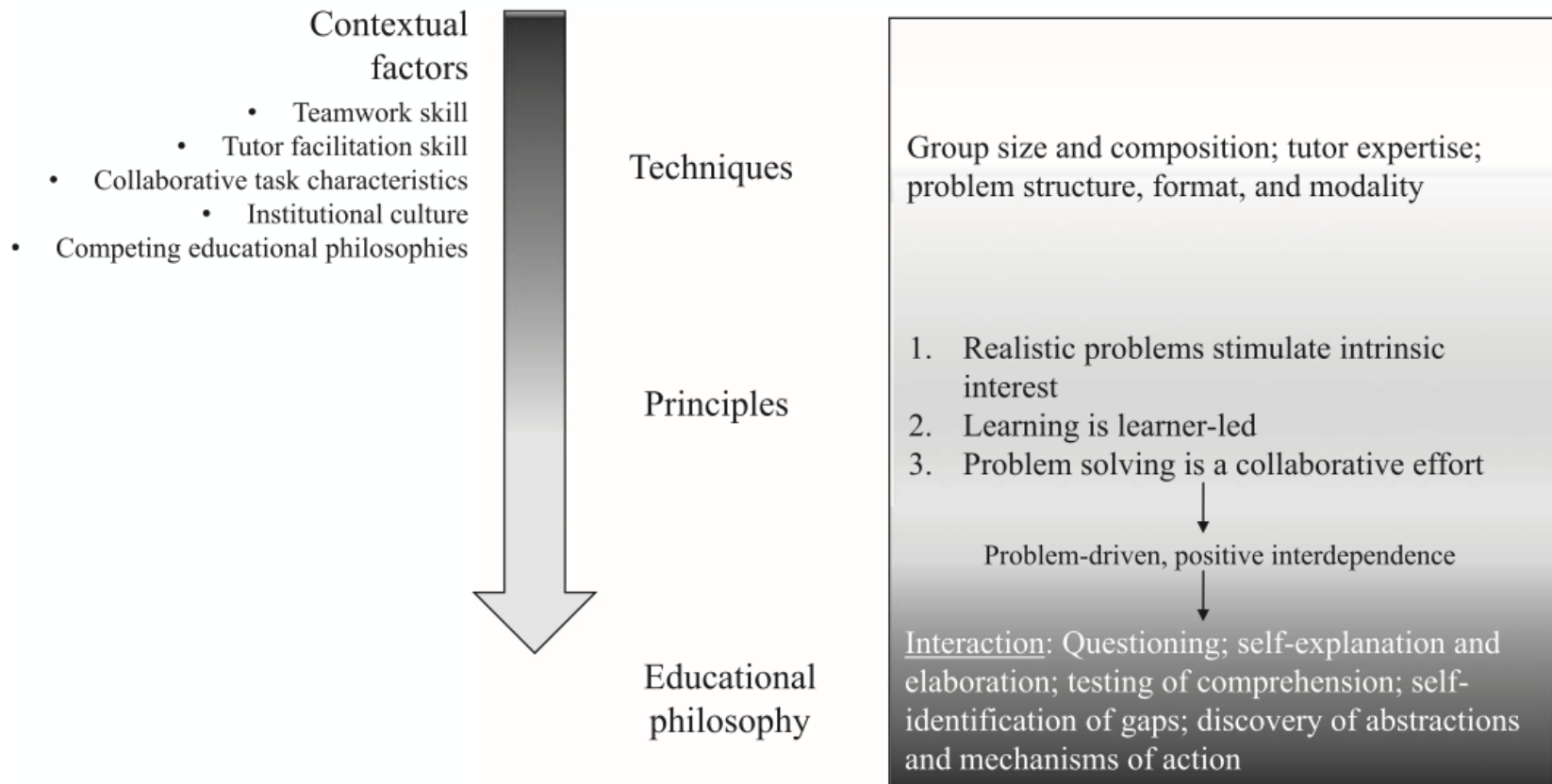


# The Role of Principles

How might we better optimize or think about outcomes?

- Techniques at the surface
  - Contextual factors that can be tailored to local settings
- Principles in the middle
  - Generalizable and relatively stable approaches to establishing learning conditions
- Philosophy at the core
  - The learning conditions that must hold for the intervention to be what its designer claims it is





## In closing....

More than “working” or “not working”....circumstances under which different approaches to online education meets intended purposes at different levels, and why.



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Thoughts / Questions?

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