Creatures of adaptation: considering and responding to contexts for better implementation

Sobia Khan

Knowledge Translation Program
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About me

Sobia Khan
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Li Ka Shing Knowledge Institute, St. Michael's Hospital

- Implementation specialist in the KT Program
- 10 years of experience in applied research at a multitude of health settings
- PhD candidate, Institute for Health Policy, Management and Evaluation, University of Toronto; MPH, University of Waterloo

About the Knowledge Translation (KT) Program

- Based at the Li Ka Shing Knowledge Institute at St. Michael's Hospital

- Our goal:
  - To provide tailored support and capacity building to stakeholders who are synthesizing and implementing evidence

- We collaborate with clinicians, managers, policy makers, researchers, patients, and citizens

About the Knowledge Translation (KT) Program

Director: Dr. Sharon Straus

Knowledge Synthesis	Implementation	Capacity Building
Help stakeholders synthesize evidence	Help stakeholders facilitate the uptake of evidence in practice	Help stakeholders build their skills in KT science and KT practice

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KTP: Courses and Workshops

- Systematic review course (online)
- KT basics workshop (2 days)
- Developing an Evidence-informed, Theory-driven program
- Planning for implementation and sustainability workshop (3 days)
- Practicing KT course (3 months)
- End-of-grant KT workshop (1 day)
- Partners in Research course (online)

More info: knowledgetranslation.net/capacity-building/our-courses

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About you

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Today's KTE CoP session

- What does it mean to adapt?
- Why adapt?
- How do we adapt?
- Who makes adaptations?
- How do we monitor adaptations?
- What are the implications of adaptation?
- How do we make a system more adaptive? (if there's time)

Please note that I welcome questions and discussion throughout!

What does it mean to adapt?

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What does adaptation mean to you?

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Adaptations occur at multiple levels

- Program level
- Context /system level

In the first part this session we will talk about program adaptations,

We will talk about the adaptiveness of the system/context (time-pending or interest-pending) towards the end of the session.

Making program adaptations

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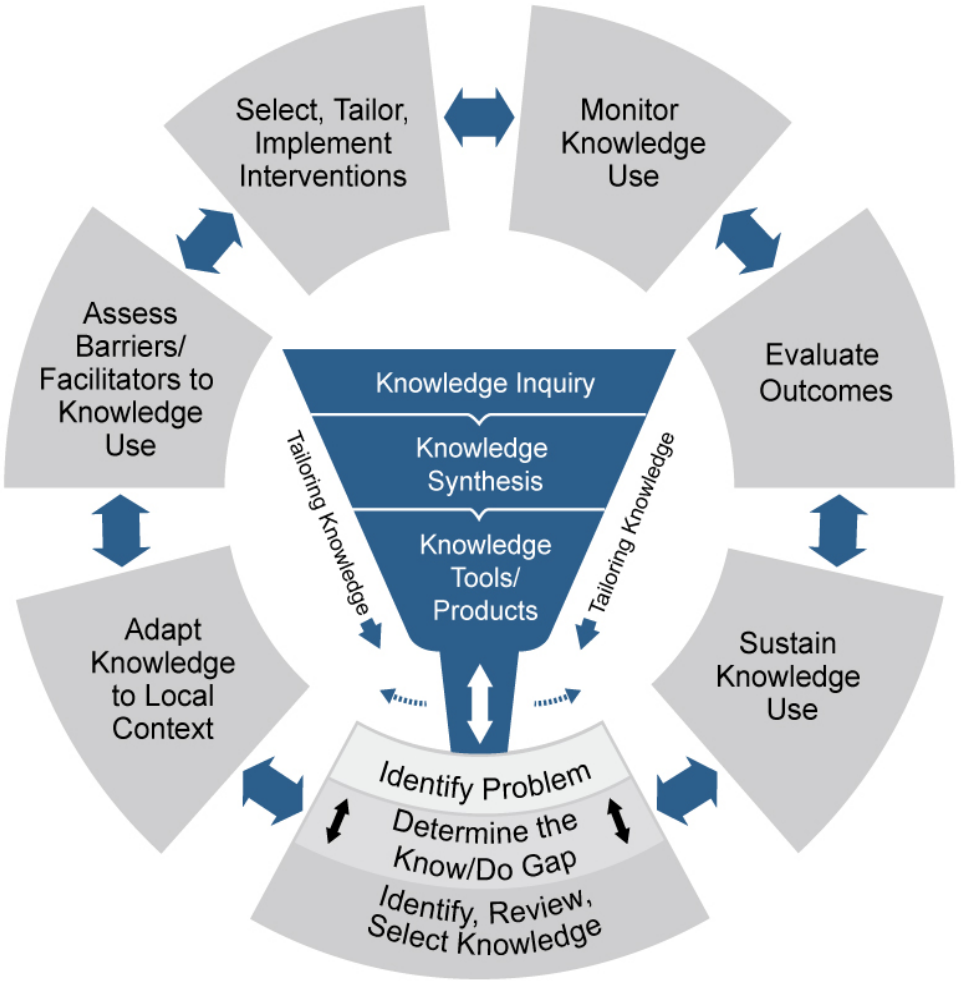
The program perspective: adapting and tailoring in the KTA model



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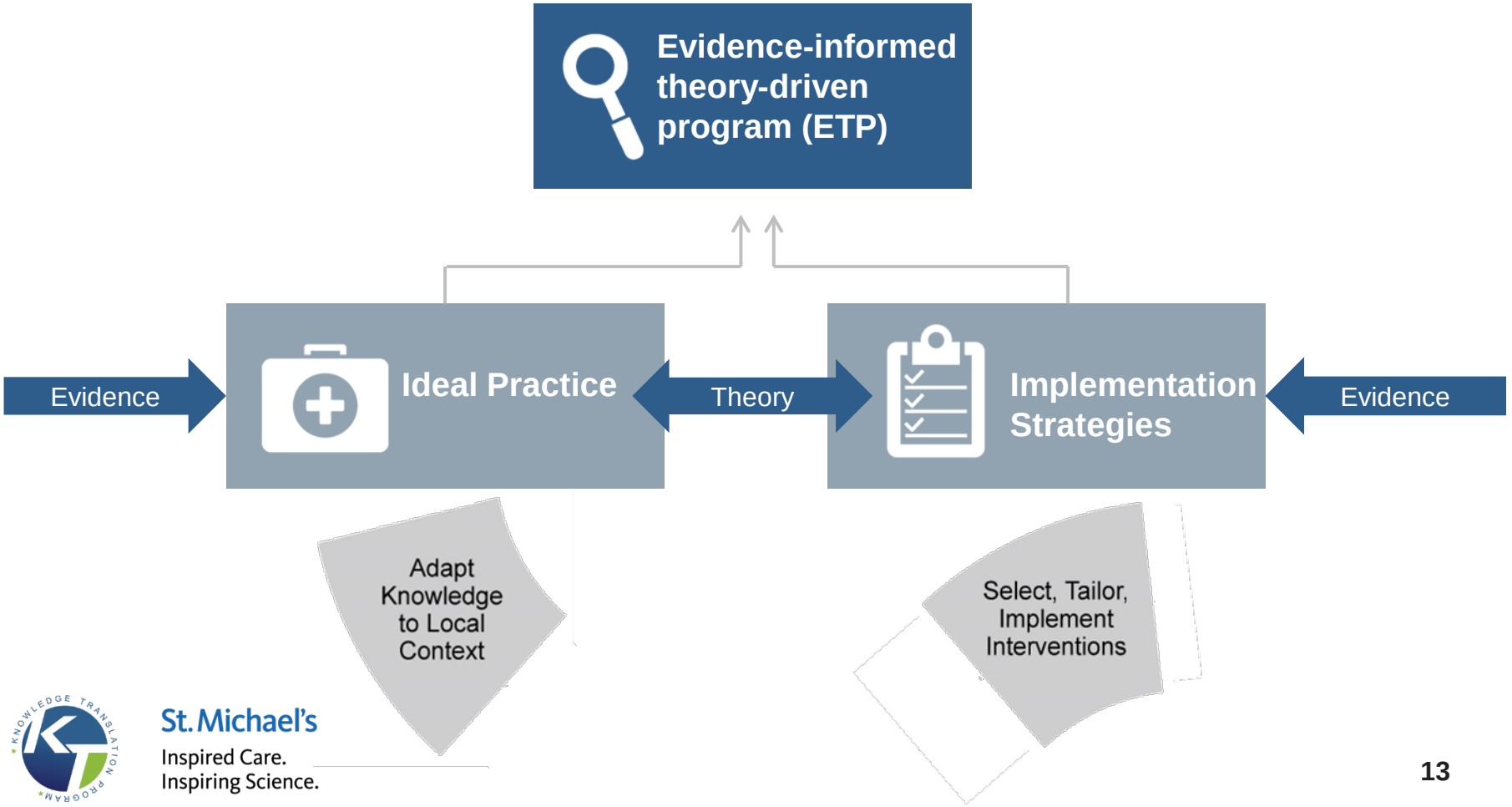
Adapting and tailoring at the program level



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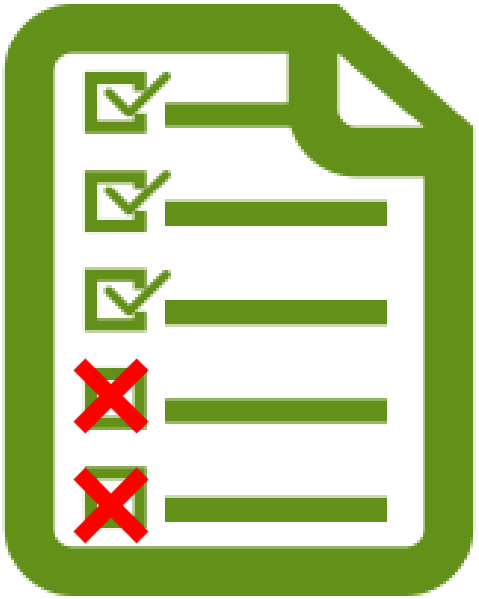
So are we adapting or tailoring?

At the program level, “adapting” and “tailoring” achieve the same thing, which is to customize the ideal practice and implementation strategies (i.e., the program) to fit the context of the implementation setting.

We love to adapt…

- Between 23% and 81% of implementation strategies may be omitted during implementation.

Durlak, 1998



Why do we adapt?

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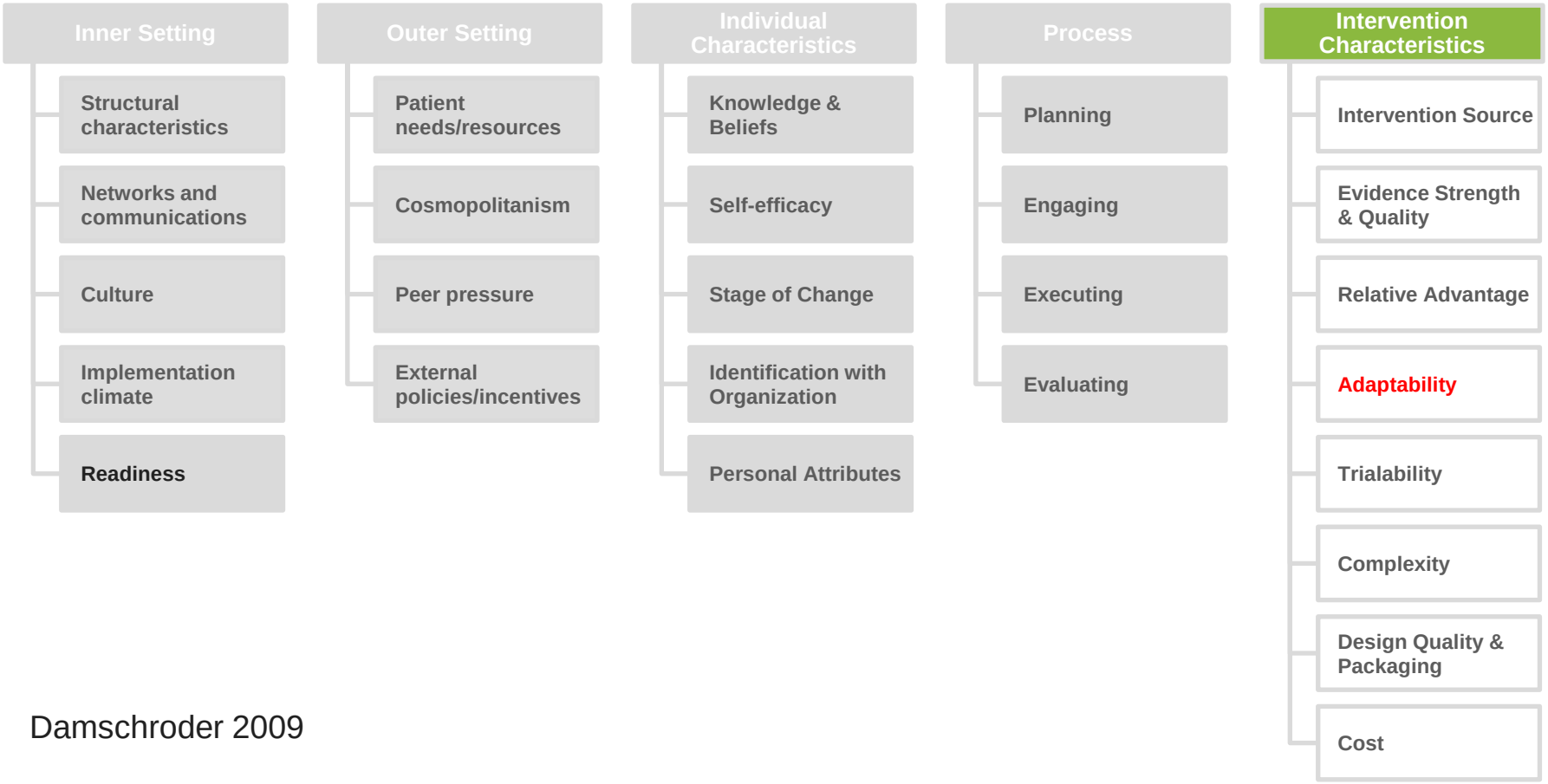
Adaptability is a key factor in the decision to adopt a program



Damschroder 2009

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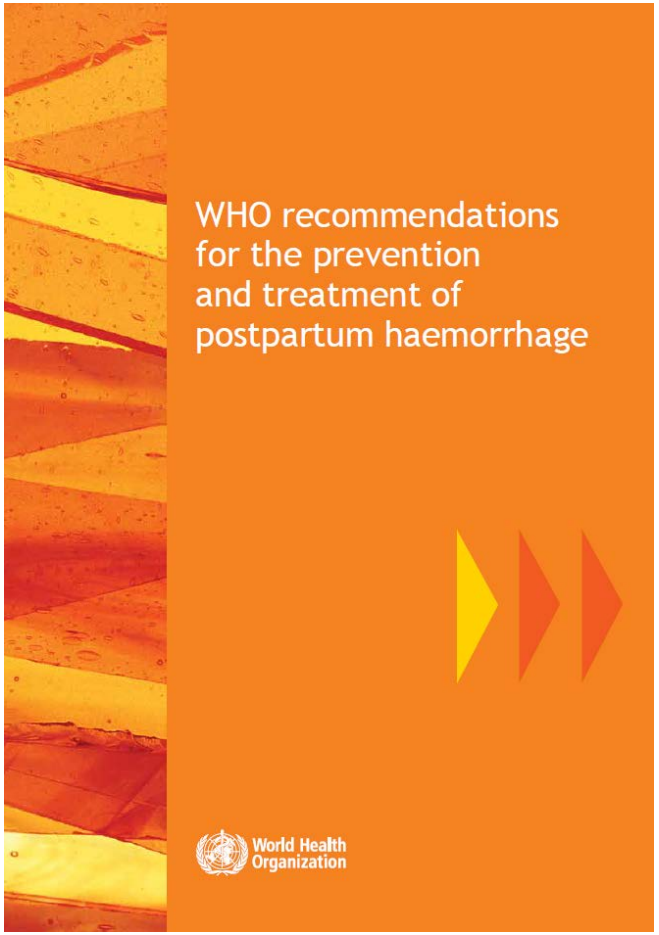
An example of adapting the ideal practice



Box A: Recommendations for the prevention of PPH

1. The use of uterotonics for the prevention of PPH during the third stage of labour is recommended for all births. (Strong recommendation, moderate-quality evidence)
2. Oxytocin (10 IU, IV/IM) is the recommended uterotonic drug for the prevention of PPH. (Strong recommendation, moderate-quality evidence)
3. In settings where oxytocin is unavailable, the use of other injectable uterotonics (if appropriate ergometrine/methylergometrine or the fixed drug combination of oxytocin and ergometrine) or oral misoprostol (600 µg) is recommended. (Strong recommendation, moderate-quality evidence)
4. In settings where skilled birth attendants are not present and oxytocin is unavailable, the administration of misoprostol (600 µg PO) by community health care workers and lay health workers is recommended for the prevention of PPH. (Strong recommendation, moderate-quality evidence)
5. In settings where skilled birth attendants are available, CCT is recommended for vaginal births if the care provider and the parturient woman regard a small reduction in blood loss and a small reduction in the duration of the third stage of labour as important (Weak recommendation, high-quality evidence)
6. In settings where skilled birth attendants are unavailable, CCT is not recommended. (Strong recommendation, moderate-quality evidence)
7. Late cord clamping (performed after 1 to 3 minutes after birth) is recommended for all births while initiating simultaneous essential newborn care. (Strong recommendation, moderate-quality evidence)
8. Early cord clamping (<1 minute after birth) is not recommended unless the neonate is asphyxiated and needs to be moved immediately for resuscitation. (Strong recommendation, moderate-quality evidence)
9. Sustained uterine massage is not recommended as an intervention to prevent PPH in women who have received prophylactic oxytocin. (Weak recommendation, low-quality evidence)
10. Postpartum abdominal uterine tonus assessment for early identification of uterine atony is recommended for all women. (Strong recommendation, very-low-quality evidence)
11. Oxytocin (IV or IM) is the recommended uterotonic drug for the prevention of PPH in caesarean section. (Strong recommendation, moderate-quality evidence)
12. Controlled cord traction is the recommended method for removal of the placenta in caesarean section. (Strong recommendation, moderate-quality evidence)

An example of adapting the implementation strategies

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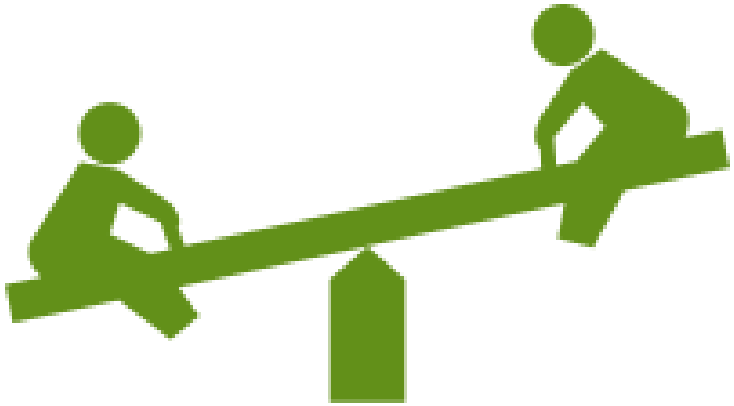
Adaptation may (or may not) have advantages over fidelity

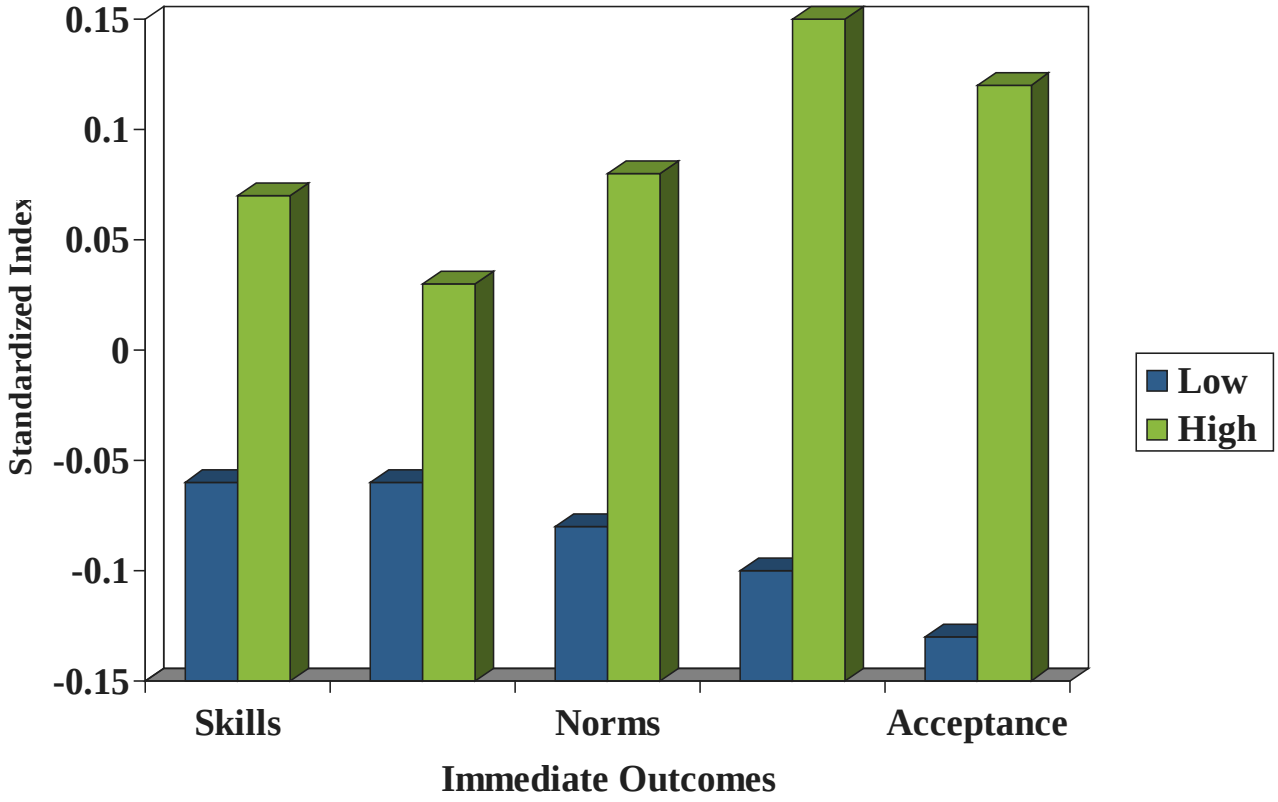
Fidelity
The extent to which the program/strategy/approach corresponds to the originally intended program/strategy /approach (e.g., adherence, compliance, integrity)

VS

Adaptation
Changes made to the original program to tailor it to the needs of the program recipient (e.g., tailoring, program modification, reinvention)



Higher fidelity = better outcomes



Rohrbach, Graham, & Hansen (1993, Adolescent Alcohol Prevention Trial)

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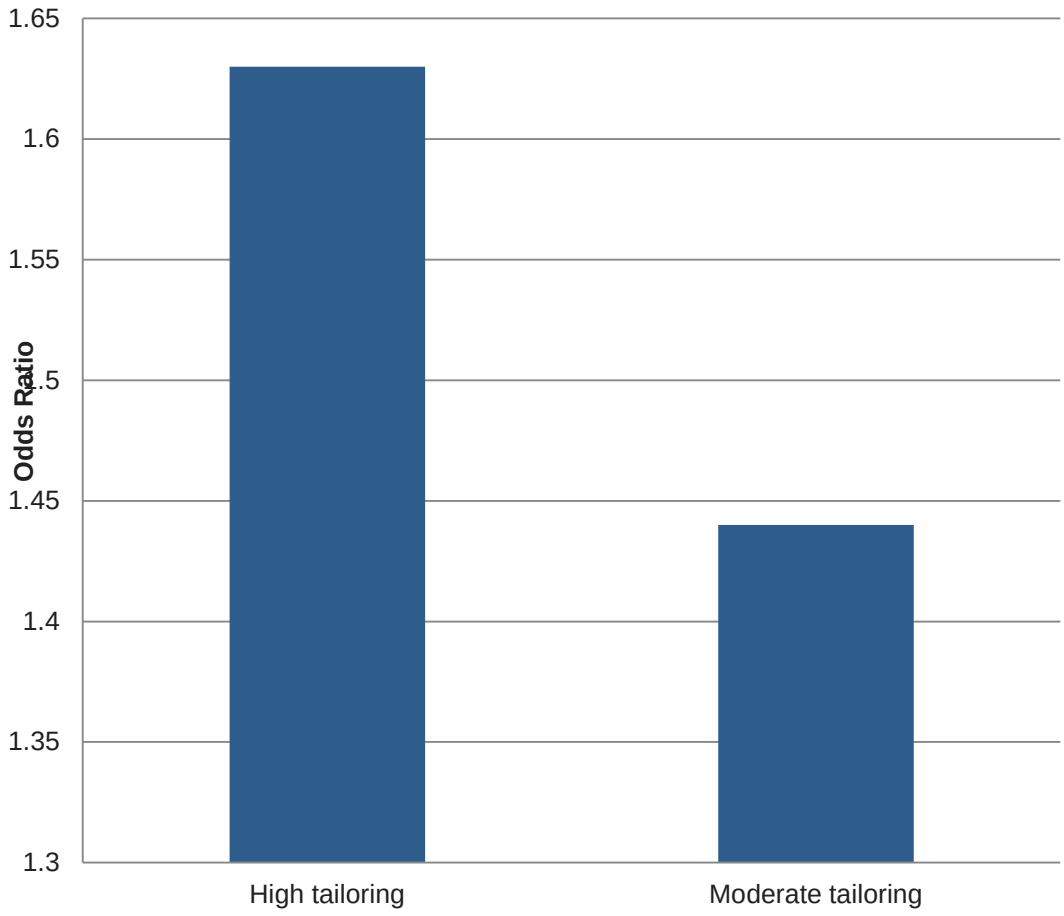
But…more adaptations = better outcomes



Baker et al., 2010

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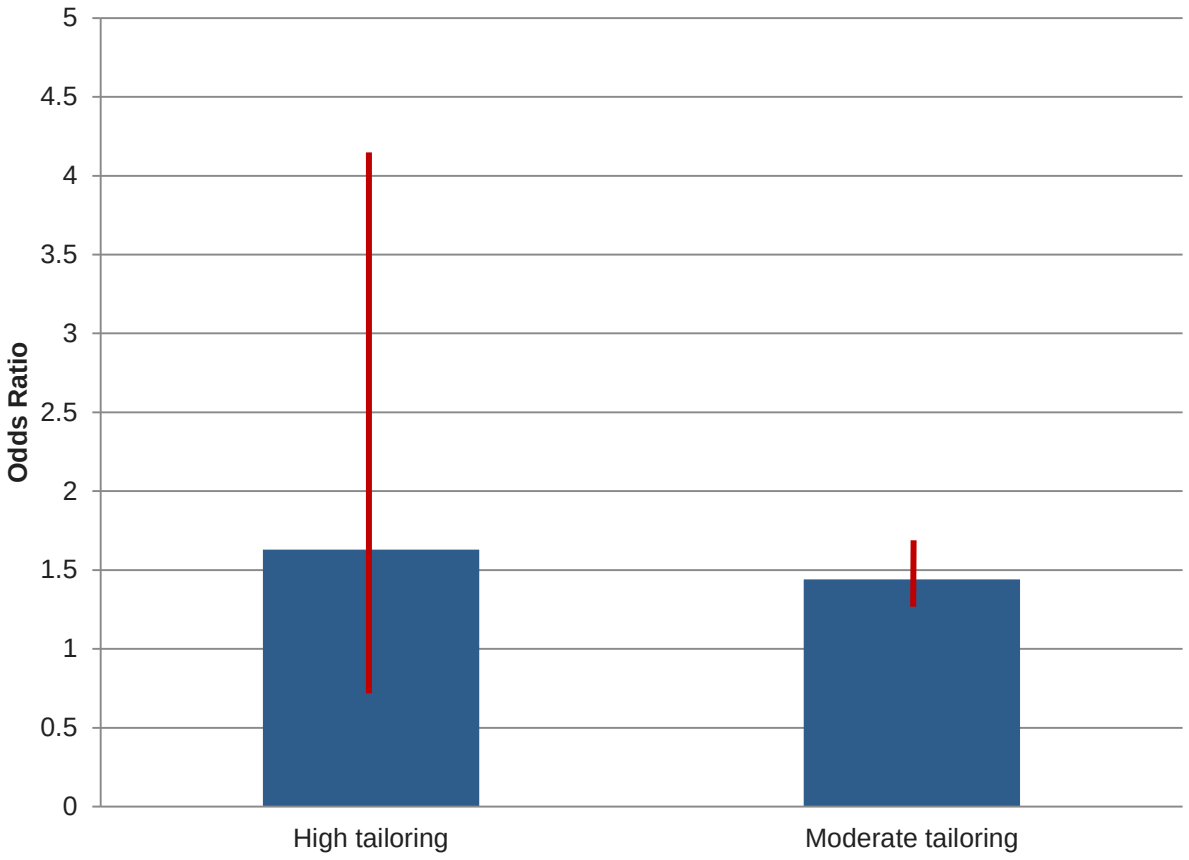
Can both be true?



Baker et al., 2010

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Two faces of adaptation

Adaptation has the potential to positively influence outcomes

Adaptation has the potential to negatively influence outcomes

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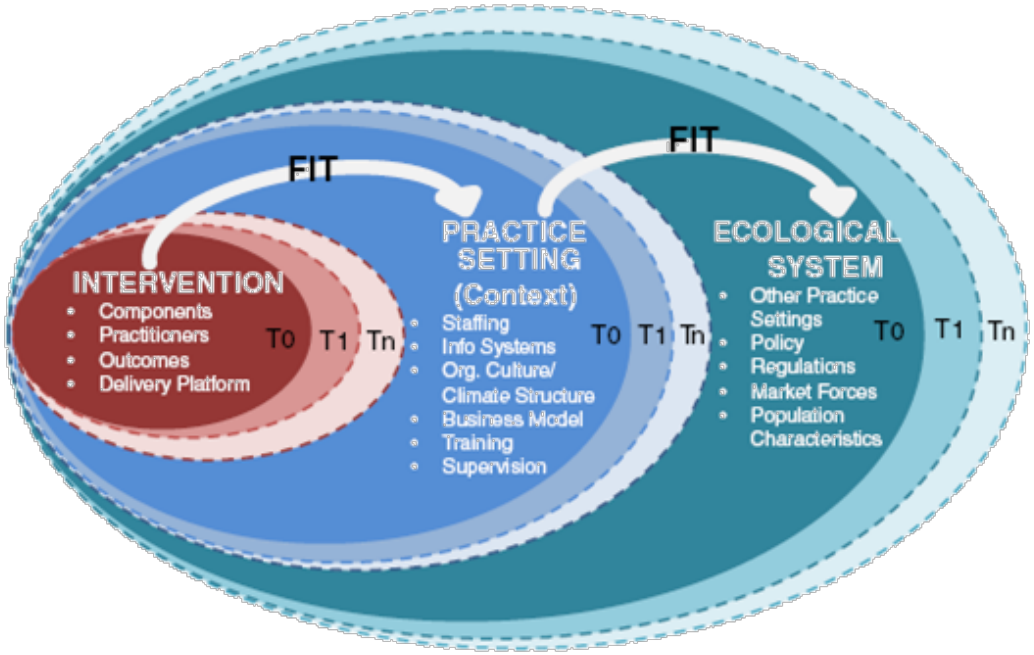
Adaptation may be a key part of sustainability



Chambers et al. (2013) Implementation Science 8:117 doi: 10.1186/1748-5908-8-117.

Principles of dynamic sustainability

- Intervention does not have to be optimized prior to implementation
- Ongoing improvement of the intervention is key
- Use practical and relevant measures of progress
- Intervention effects do not have to drop over time
- Programs are more likely to be maintained when they fit the context
- Organizational learning should be a core value of the implementation setting
- Ongoing stakeholder engagement leads to better sustainability

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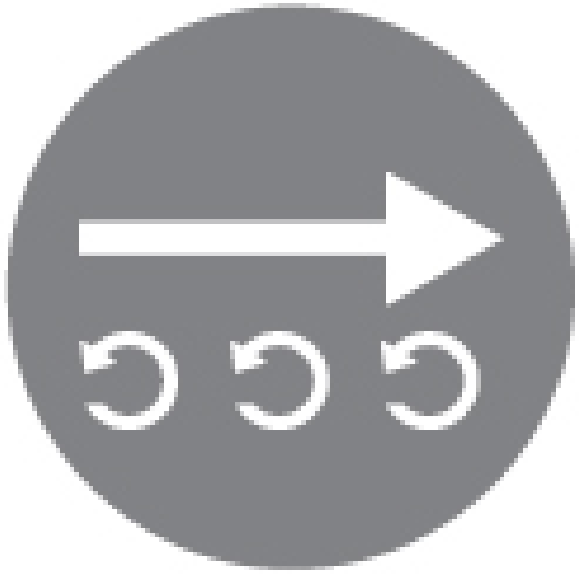
Adaptation may be a key part of sustainability

1. After a defined period of time
2. a program or implementation strategies continue to be delivered;
3. behavior change aligned with ideal practice is maintained;
4. the implementation strategies (2) and ideal practice (3) **may evolve or adapt**,
5. while continuing to produce benefits for individuals/systems.

Moore et al., 2017



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Let's discuss…

- Can you describe examples of program adaptations you have made in the past?
- We talked about the benefits of adapting. When might fidelity be a better strategy?

How do we adapt?

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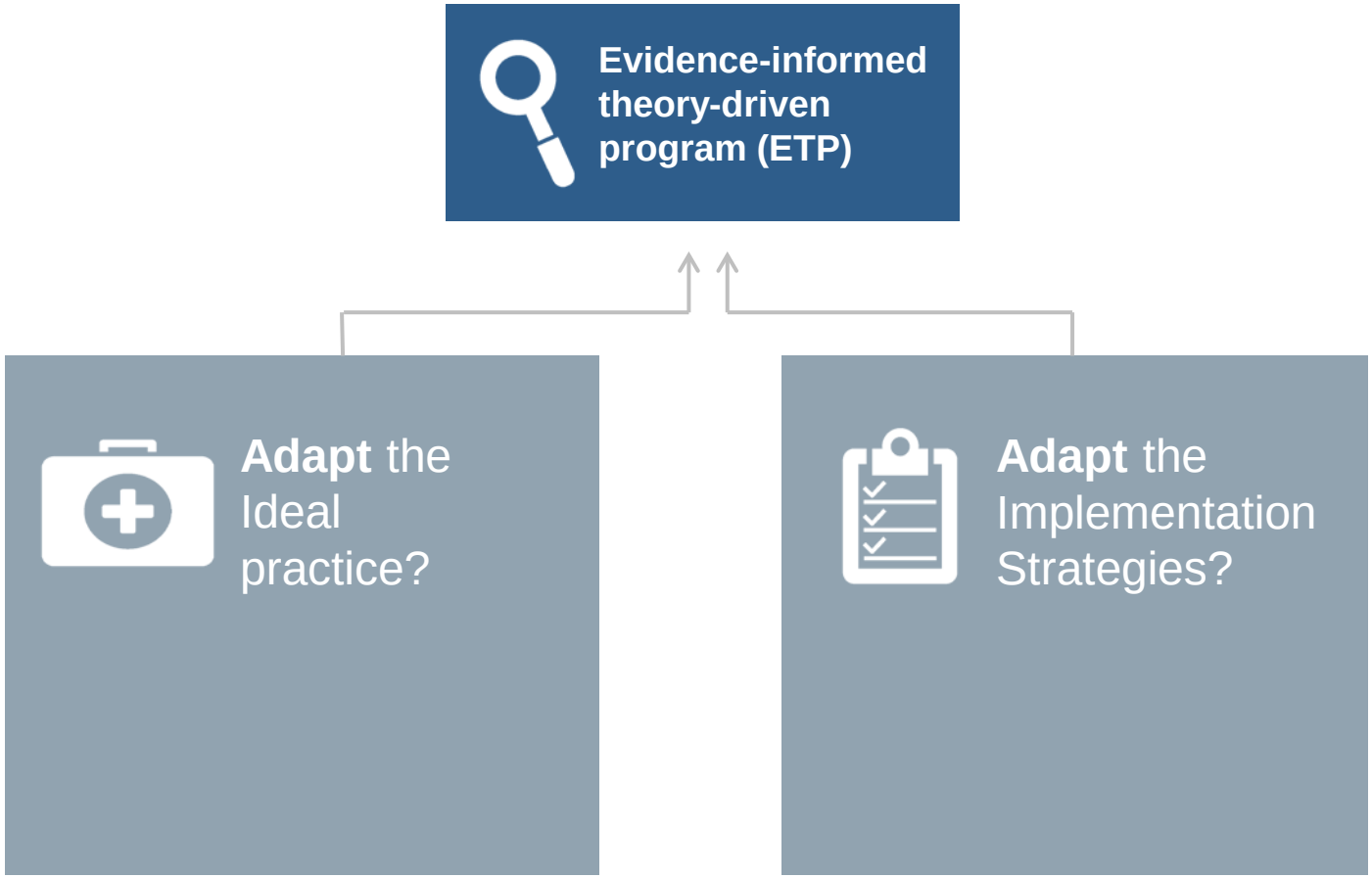
1. Identify what parts of the program might require adaptations



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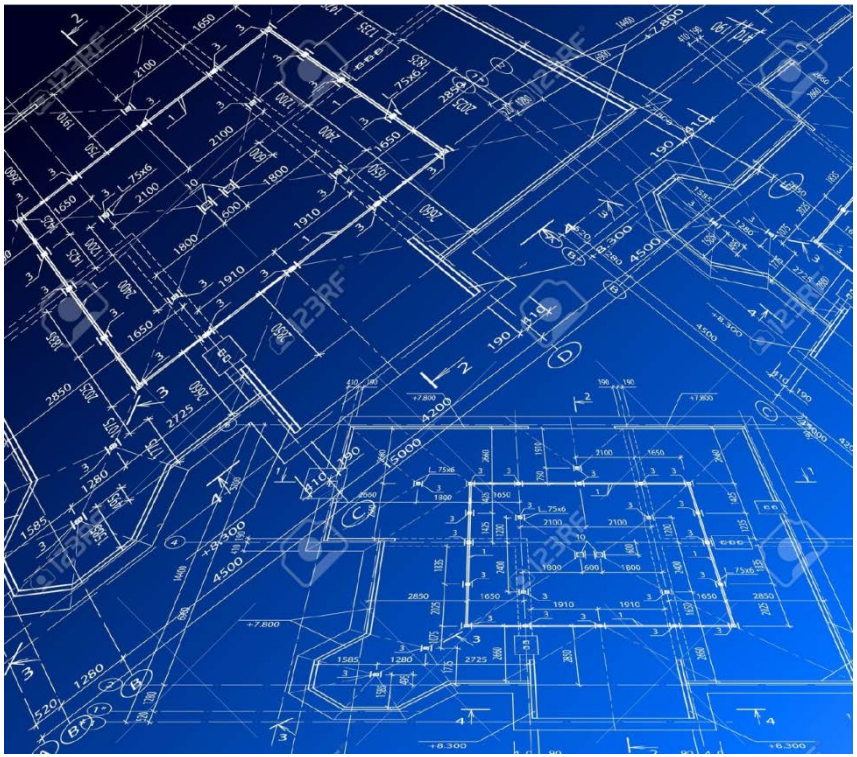
Consider core vs peripheral components



Outcomes of adapting the core and peripheral components (valence)

Positive:

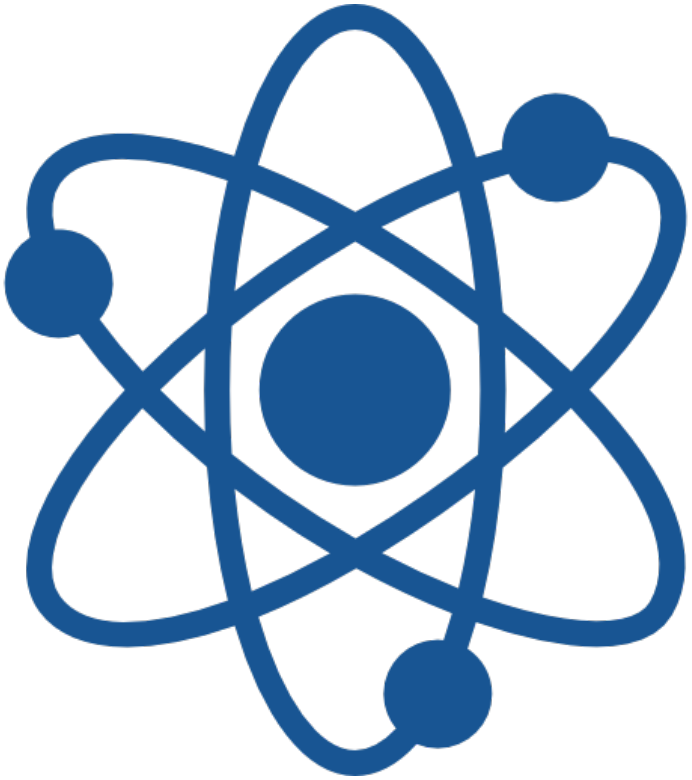
- positive impact on program effectiveness

Neutral:

- no impact on program effectiveness

Negative:

- negative impact on program effectiveness



Moore et al., 2013

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What do you think is the most common *valence* of adaptations?

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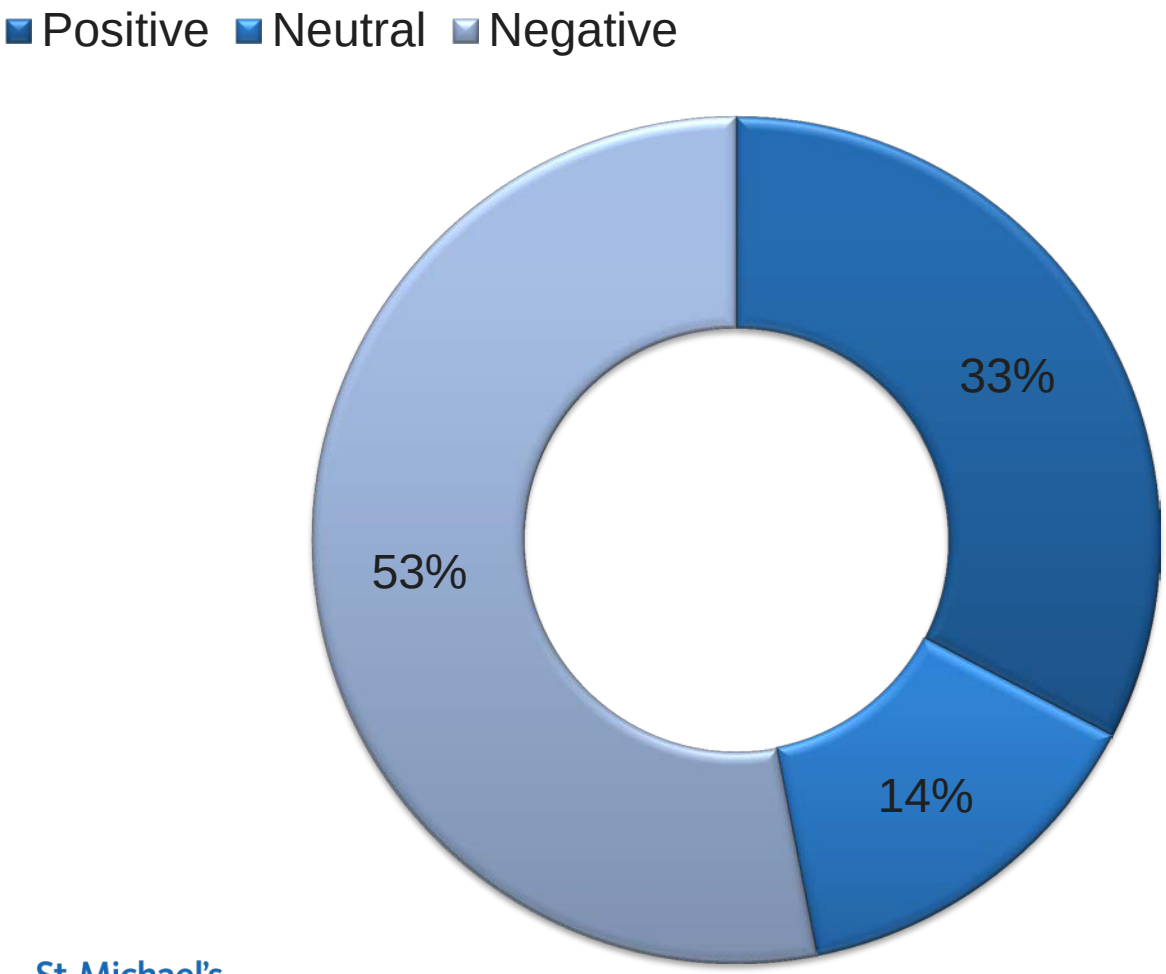
In one study, the majority of adaptations were predicted to have a negative effect on outcomes



Moore et al., 2013

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2. Explore the fit of the program within the implementation setting

Philosophical Fit

- *Values and culture* do not align with the needs of the population receiving the program
  - (e.g., safe abortion guidelines in religious societies)

Logistical Fit

- Consider the *context* in which the intervention is being delivered
  - (e.g., Curriculum has more content than teachers can deliver in a typical class period)

Moore et al., 2013

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What do you think is the most common *type* of adaptation?

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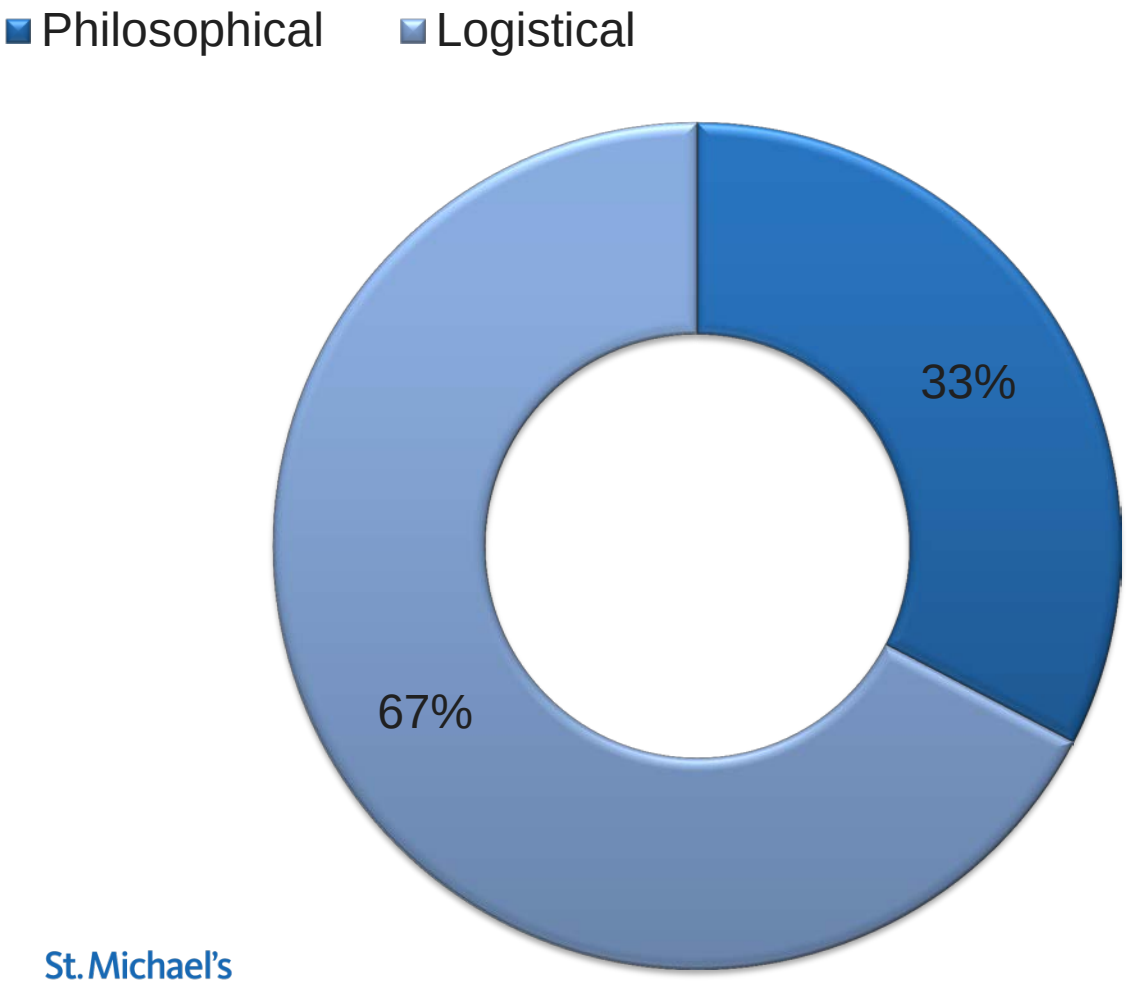
In one study, the majority of adaptations were made because of issues of logistical fit



Moore et al., 2013

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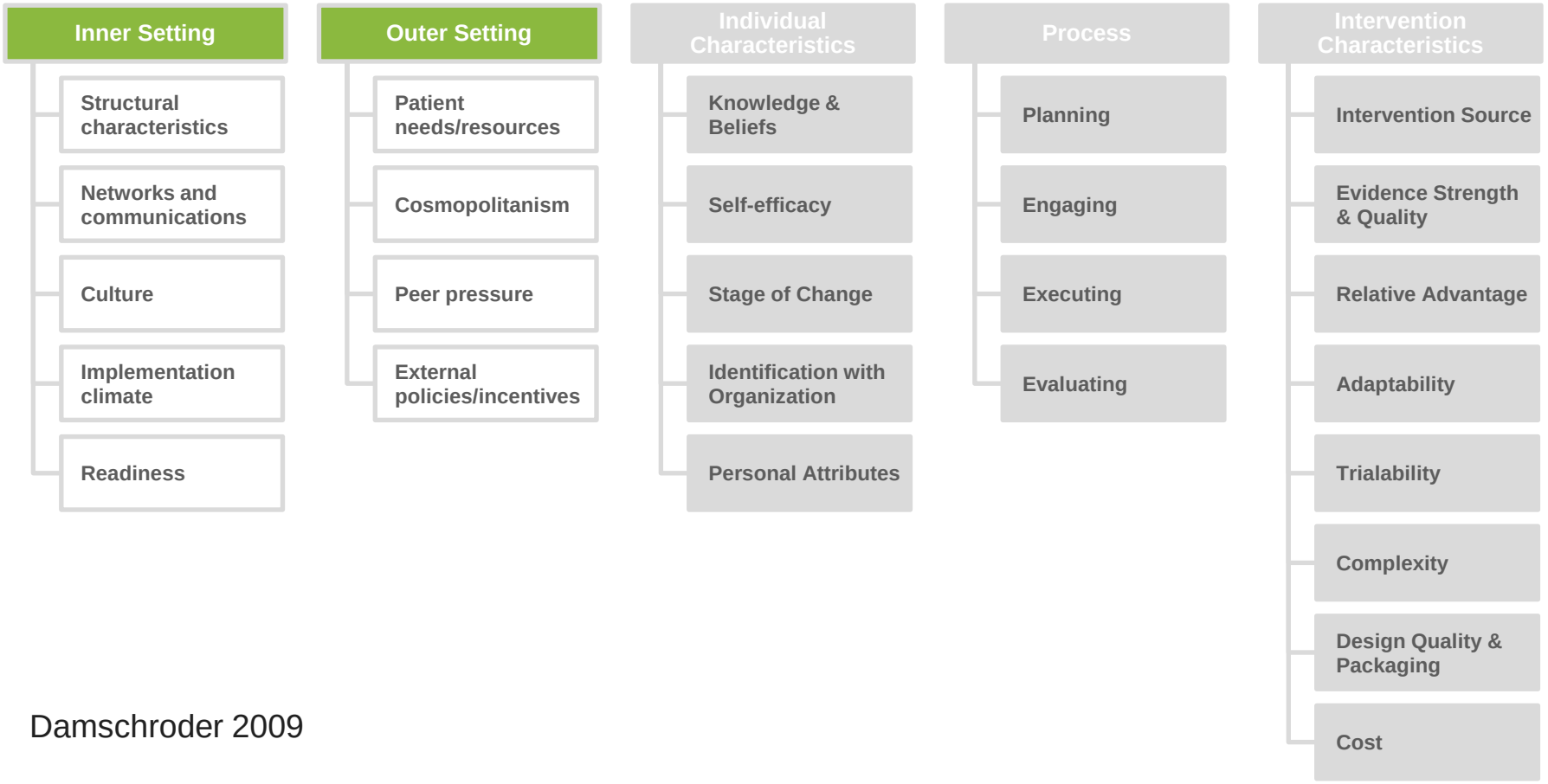
The CFIR is one framework that can be used to explore fit within implementation settings



Damschroder 2009

3. Try to be as proactive as possible

- **Proactive**
  - anticipate potential problems and make adaptations before implementation.
- **Reactive**
  - Occur during implementation and often occur due to unanticipated

Moore et al., 2013

When do you think adaptations are most commonly made?

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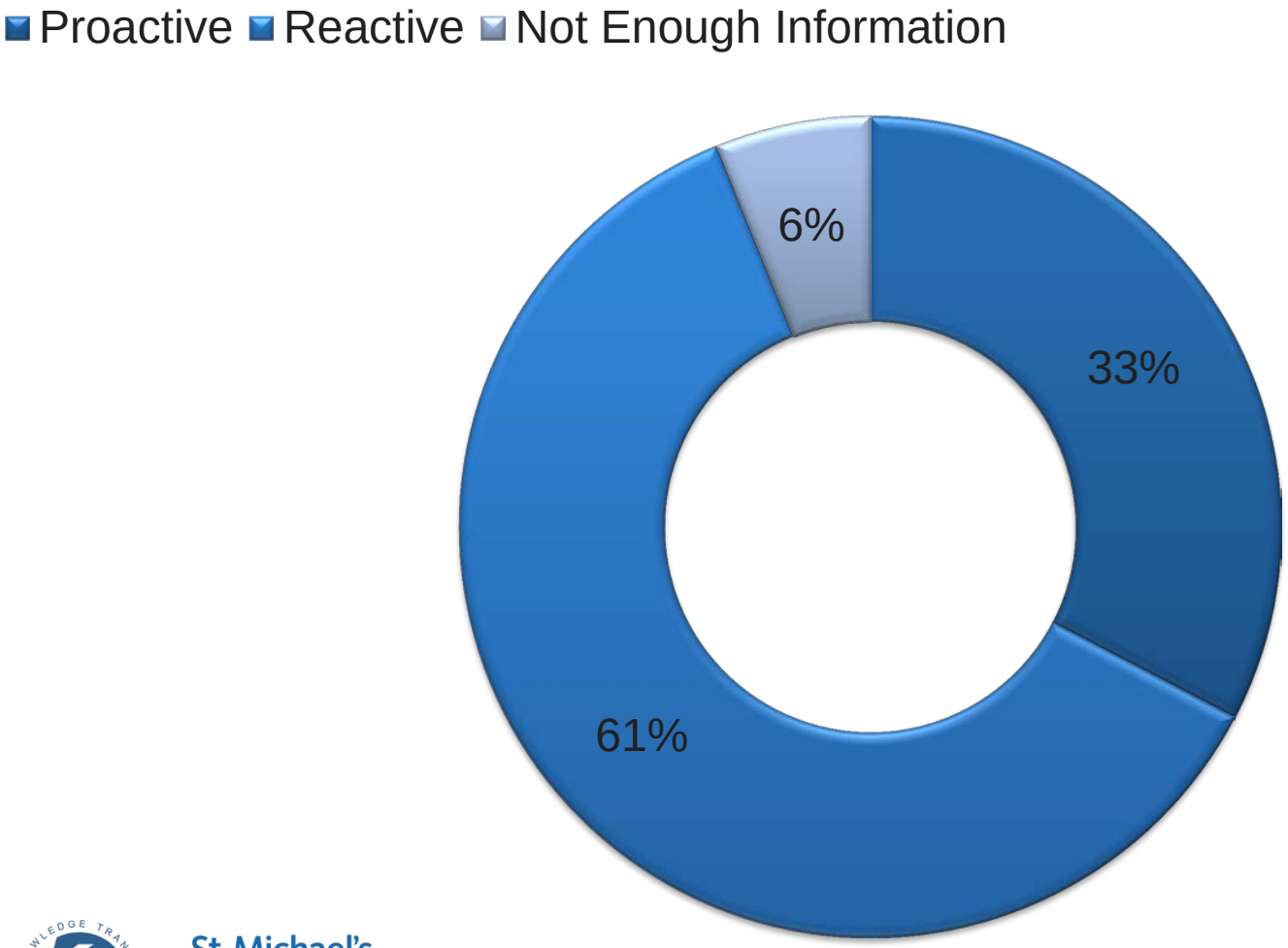
In one study, the majority of adaptations were made reactively in response to barriers



Moore et al., 2013

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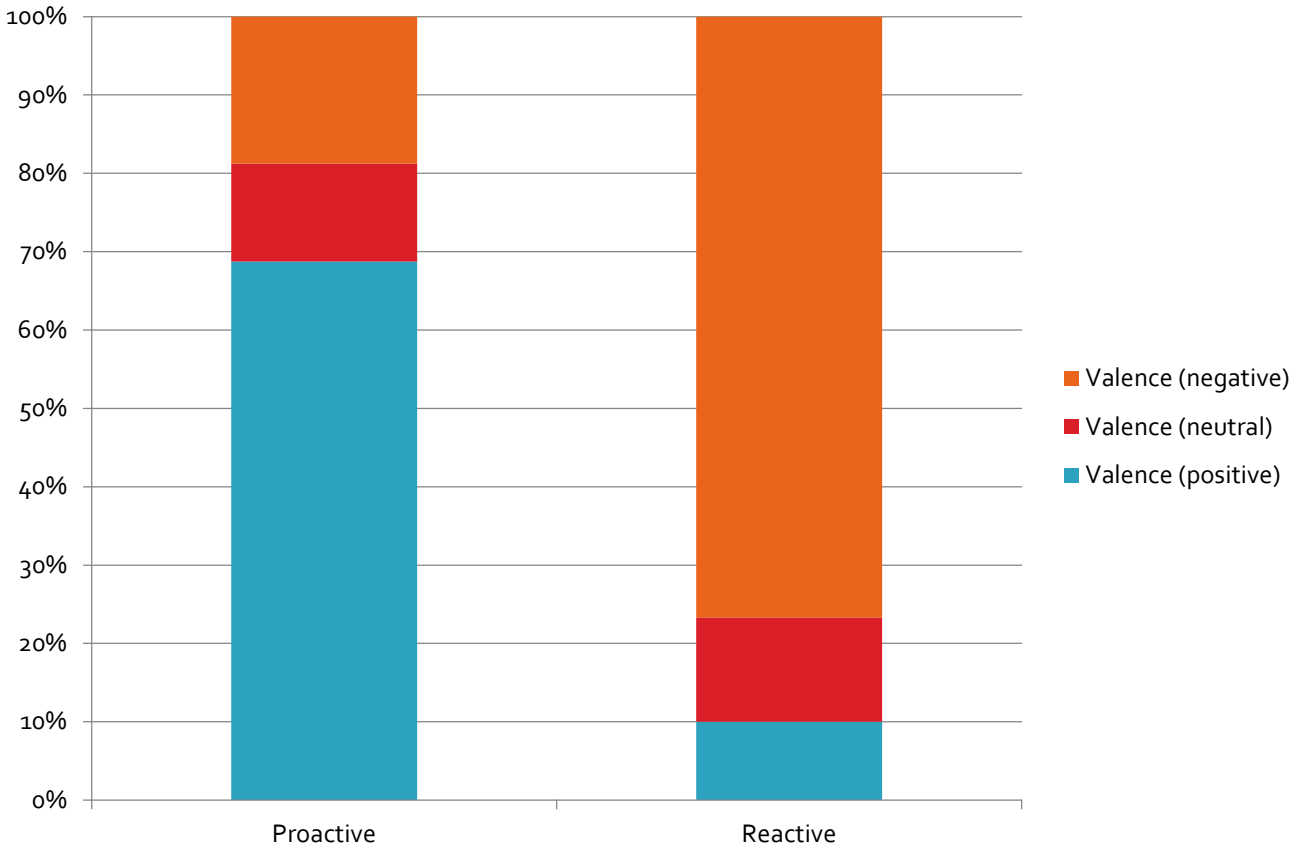
Timing of adaptations in relation to impact on outcomes



Moore et al., 2013

Let's discuss…

- Can you describe a time when you had to make a philosophical adaptation in your program?
- Can you describe any proactive adaptations you made to your program? Which part of your program (ideal practice or implementation strategies) were these adaptations made to?

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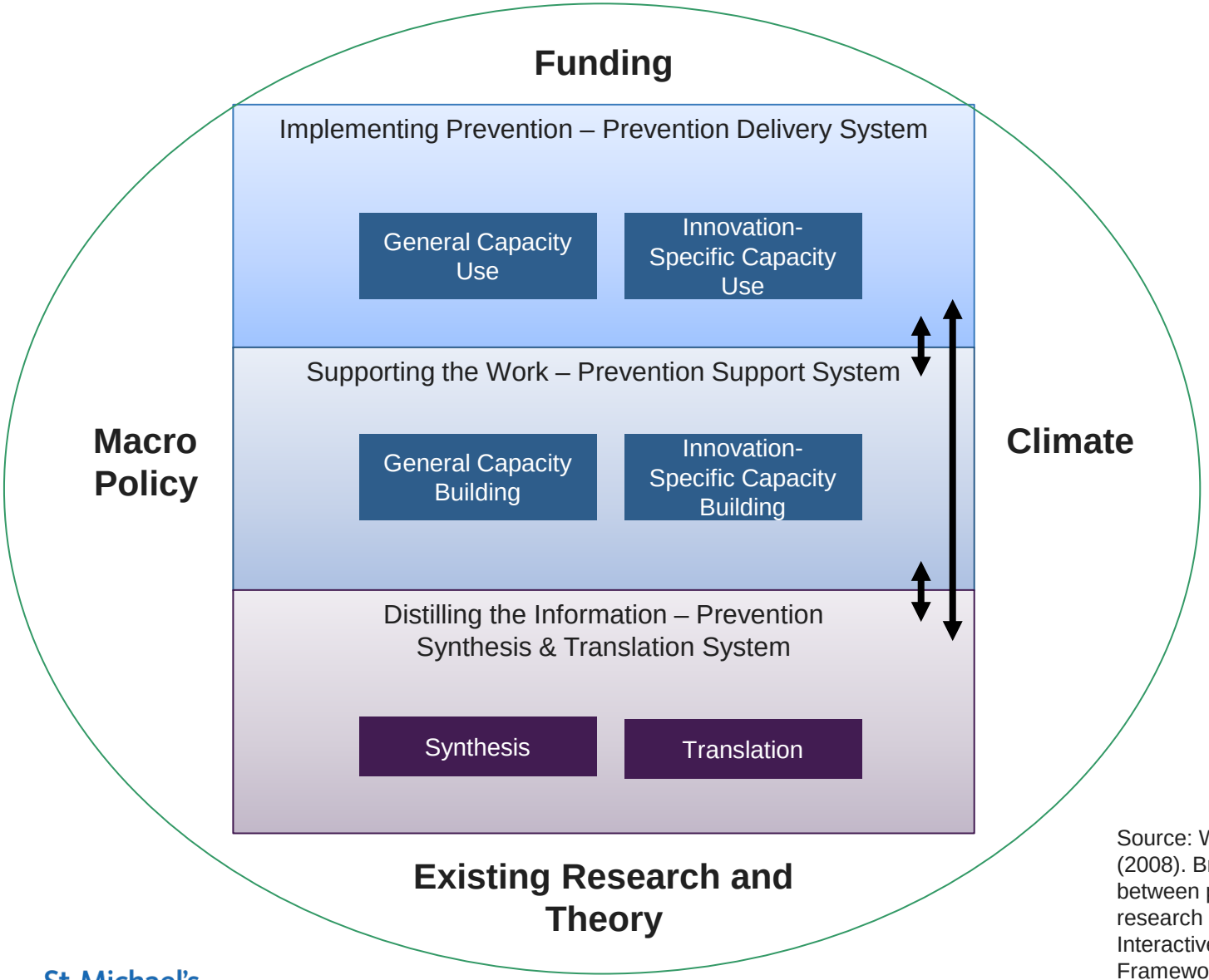
Who makes adaptations?



Source: Wandersman et. al (2008). Bridging the gap between prevention research and practice: The Interactive Systems Framework for dissemination and implementation. American Journal of Community Psychology, 41, 171- 181.

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How do we monitor adaptations?

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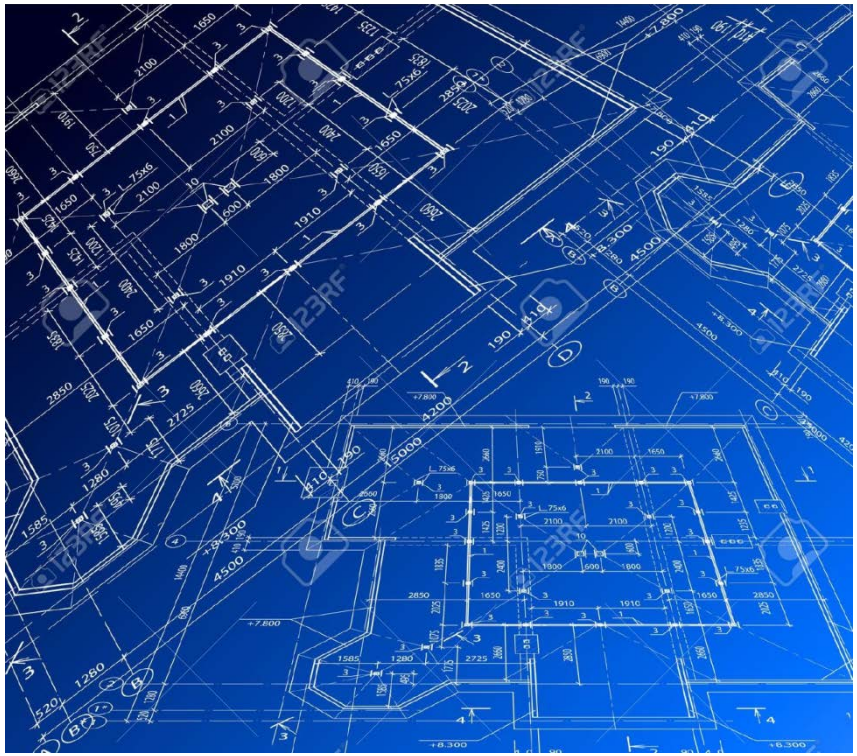
Adaptations should be monitored

- Need to know what was implemented
- Need to know if you what you implemented was adapted
- Need to know why what you implemented was adapted

Assessing implementation quality is required!

Measuring implementation quality can allow you to document adaptations

IQ is the degree to which a program is delivered as intended by the developer in a particular setting.



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Implementation quality overlaps with process evaluation

Process evaluation:

What does it show?	Why is it useful?	When is it done?
• How much a program adheres to its intended delivery	• Allows programs to evaluate how well their plans, procedures, activities, and materials are working and to make adjustments before logistical or administrative weaknesses become entrenched	• As soon as the program begins

Source: Introduction to program evaluation for public health programs: Centers for Disease Control and Prevention, 2011. http://www.cdc.gov/eval/guide/cdcevalmanual.pdf

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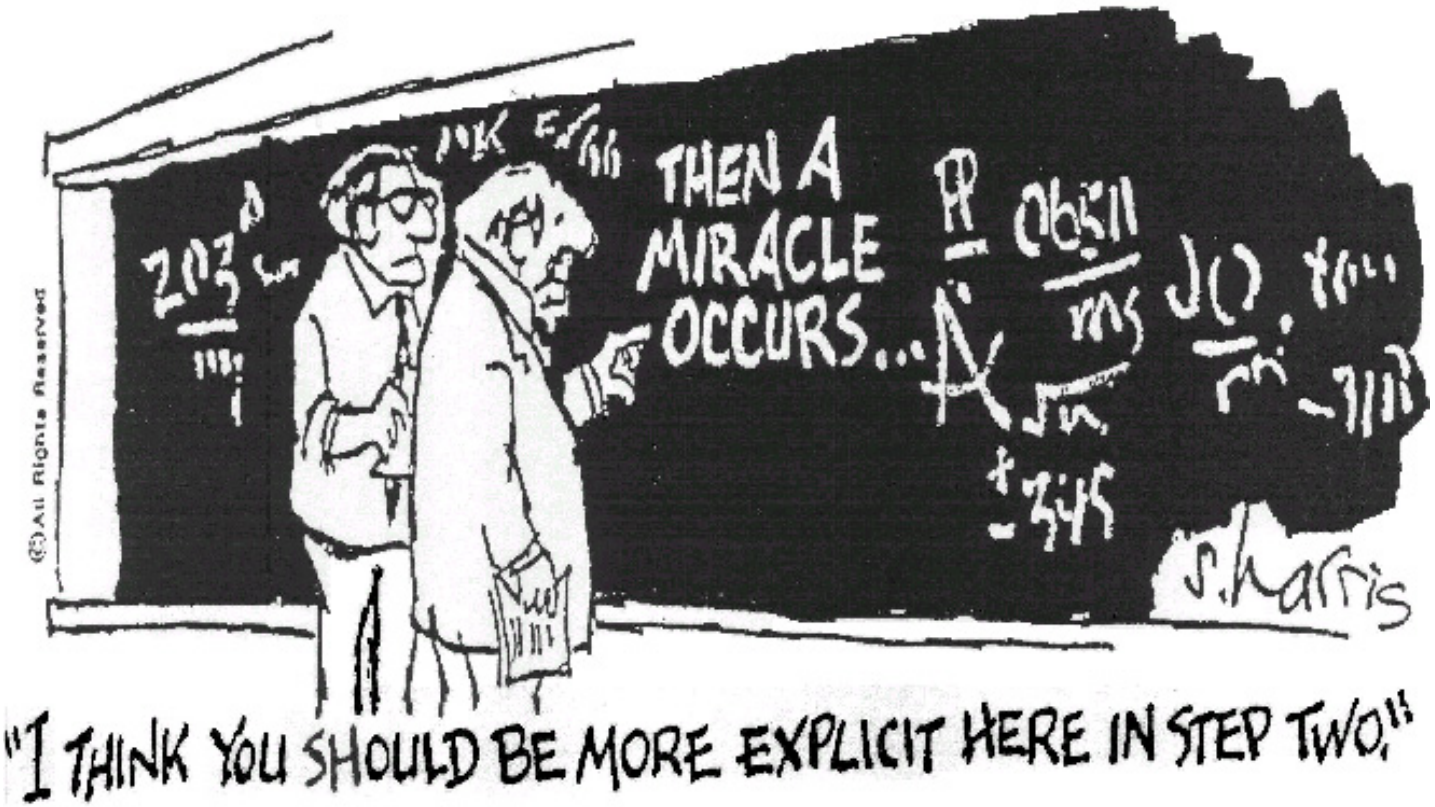
Implementation quality sheds light on the black box of implementation



There are various components of implementation quality

Dosage	• How much of the original ETP was delivered?
Adherence/Fidelity	• How close was the implementer to the intended ETP in its original form and according to its underlying theory?
Adaptation	• What changes were made in the original ETP during the implementation process (program modification, reinvention)?
Quality of delivery	• How well was the ETP delivered (affective quality)?
Participant responsiveness	• How interested and receptive were the participants?
Program reach	• Who is being reached by the ETP (how representative they are of the target audience)?
Program differentiation	• How well can the underlying theory and practices be distinguished from other programs (distinctiveness, uniqueness)?
Monitoring of control/comparison	• What was the nature and amount of services received by the control/comparison group (usual care, alternative services/programs)?

Source: Durlak & DuPre (2008).

How do we collect data to measure implementation quality?

Observation

Examples:
Trained observers watch the program be delivered and complete a form assessing how well the program was implemented and all core components delivered

Advantages:
Most objective and reliable measure

Disadvantages:
Time consuming and more expensive

Implementer Self-Report

Examples:
Implementers report what components of the program were implemented, how often the program was implemented, what went well or not, how the program was adapted

Advantages:
Easy to collect, not time-consuming, can collect more data (e.g. a form can be completed for every session)

Disadvantages:
Possible implementer bias

Administrative Documents

Examples:
Sign-in sheets, time logs

Advantages:
These forms may already exist, easy to collect and not time-consuming

Disadvantages:
May not tell a very complete picture

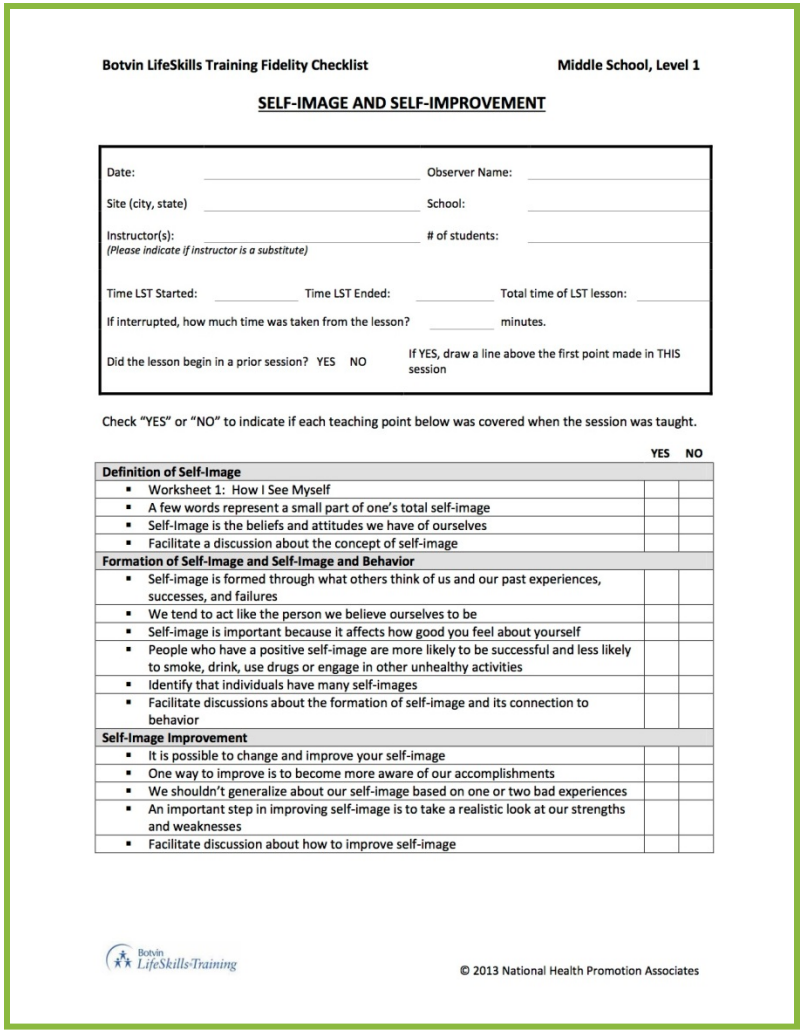
Participant Self-Reports

Examples:
Participants report what components of the program were interesting, engaging, relevant, what they enjoyed and what they did not enjoy

Advantages:
Easy to collect and not time-consuming

Disadvantages:
May be biased

Life Skills Training fidelity assessment checklist



Botvin LifeSkills Training Fidelity Checklist **Middle School, Level 1**

SELF-IMAGE AND SELF-IMPROVEMENT

Date: _____ Observer Name: _____

Site (city, state) _____ School: _____

Instructor(s): _____ # of students: _____
(Please indicate if instructor is a substitute)

Time LST Started: _____ Time LST Ended: _____ Total time of LST lesson: _____

If interrupted, how much time was taken from the lesson? _____ minutes.

Did the lesson begin in a prior session? YES NO If YES, draw a line above the first point made in THIS session

Check "YES" or "NO" to indicate if each teaching point below was covered when the session was taught.

	YES	NO
Definition of Self-Image		
▪ Worksheet 1: How I See Myself		
▪ A few words represent a small part of one's total self-image		
▪ Self-Image is the beliefs and attitudes we have of ourselves		
▪ Facilitate a discussion about the concept of self-image		
Formation of Self-Image and Self-Image and Behavior		
▪ Self-image is formed through what others think of us and our past experiences, successes, and failures		
▪ We tend to act like the person we believe ourselves to be		
▪ Self-image is important because it affects how good you feel about yourself		
▪ People who have a positive self-image are more likely to be successful and less likely to smoke, drink, use drugs or engage in other unhealthy activities		
▪ Identify that individuals have many self-images		
▪ Facilitate discussions about the formation of self-image and its connection to behavior		
Self-Image Improvement		
▪ It is possible to change and improve your self-image		
▪ One way to improve is to become more aware of our accomplishments		
▪ We shouldn't generalize about our self-image based on one or two bad experiences		
▪ An important step in improving self-image is to take a realistic look at our strengths and weaknesses		
▪ Facilitate discussion about how to improve self-image		

Botvin LifeSkills Training

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MOVE process evaluation log

1. Your site selected the interventions listed below to implement as part of the MOVE AB project. For each intervention implemented to date, please fill in the columns based on your site's activities over the last four weeks i.e. only indicate your activity over the four weeks prior to the current date. If you have made changes to your plan for implementing each of the interventions used to date, please list the reasons why you have made these changes in the last column. If you have not made changes to your implementation plan, please write N/A in the last column. If you have not yet implemented an intervention on the list below, please indicate N/A for each of the columns pertaining to that intervention.

Intervention Activity	Date implemented (ie. Date intervention started)	Date completed (if intervention is still being implemented to date, please write "present")	Length of intervention (if applicable)	Number of times delivered (if ongoing, please write "ongoing')	Approximate number of people reached by profession type (e.g. 20 RNs, 12 PTs)	Individuals involved in delivering the intervention and their roles	Reason(s) changes were made to the plan

2. If you added an intervention that was not in your original plan, pl
the last column, please indicate why you added this intervention.

Intervention Activity	Date implemented (ie. Date intervention started)	Date completed (if intervention is still being implemented to date, please write "present")	Length of intervention (if applicable)	Number of times delivered (if ongoing, please write "ongoing')	Approximate number of people reached by profession type (e.g. 20 RNs, 12 PTs)	Individuals involved in delivering the intervention and their roles	Reason(s) intervention was added

3. If you are no longer planning to implement an intervention that was in your original plan (listed above in question 1), please indicate which interventions you will not be implementing any longer, and the reason why you team has decided to remove this intervention from the plan.

Intervention	Reason(s) intervention is being removed

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Let’s discuss…

What are some other ways that we can capture program adaptations?

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What are the implications of adaptation?

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Adaptations pose challenges to replication

Reporting Guidelines: TIDieR

- **Better reporting of interventions: template for intervention description and replication (TIDieR) checklist and guide**

- Purpose
  - Describing interventions in sufficient detail to allow their replication.

- Instructions:
  - http://www.equator-network.org/reporting-guidelines/tidier/

Adaptations make it difficult to ascertain the core components

- When there is *too much* variation/adaptation before the efficacy of a program has been established, it is hard to understand what is making the program work

- Might need minimal adaptation in the first iterations of implementation, and good research/evaluations if implementation (Fixsen, 2013)

Let’s discuss…

- How much adaptation is too much adaptation?
- At what point is the program not the program you originally implemented?
- If you are still achieving outcomes…does it matter?

How do we make a system more adaptive?

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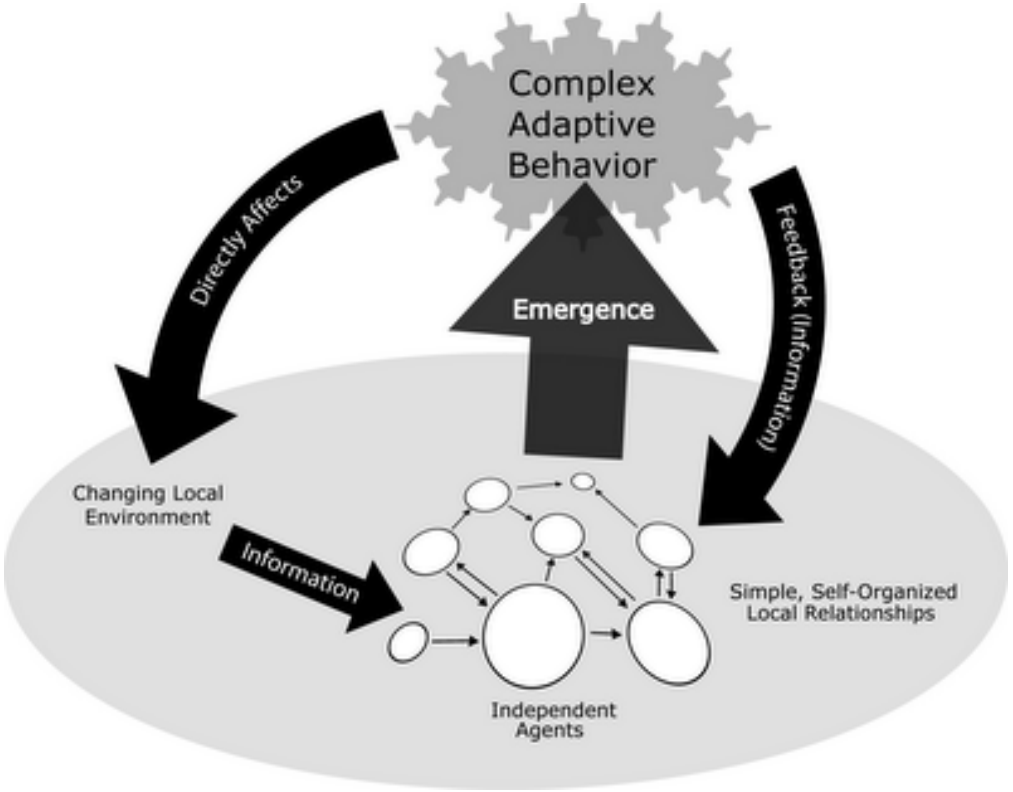
Adapting at the context/system level

Adaptations at the context/system level reinforce capabilities of the system to manage and respond to change.

At this level, “adaptation” is a quality of the system (“adaptiveness”) that creates an enabling context for change, rather than a set of specific activities.

Complex adaptive systems



http://daniel-mclaughlin.com/wp/tag/complex-adaptive-systems/

Stimulating an adaptive context

Creating the capacity to deal with “unknown unknowns”

Create dedicated spaces for ongoing monitoring and generating ideas for responding to external pressures

Encourage individuals to be more adaptive

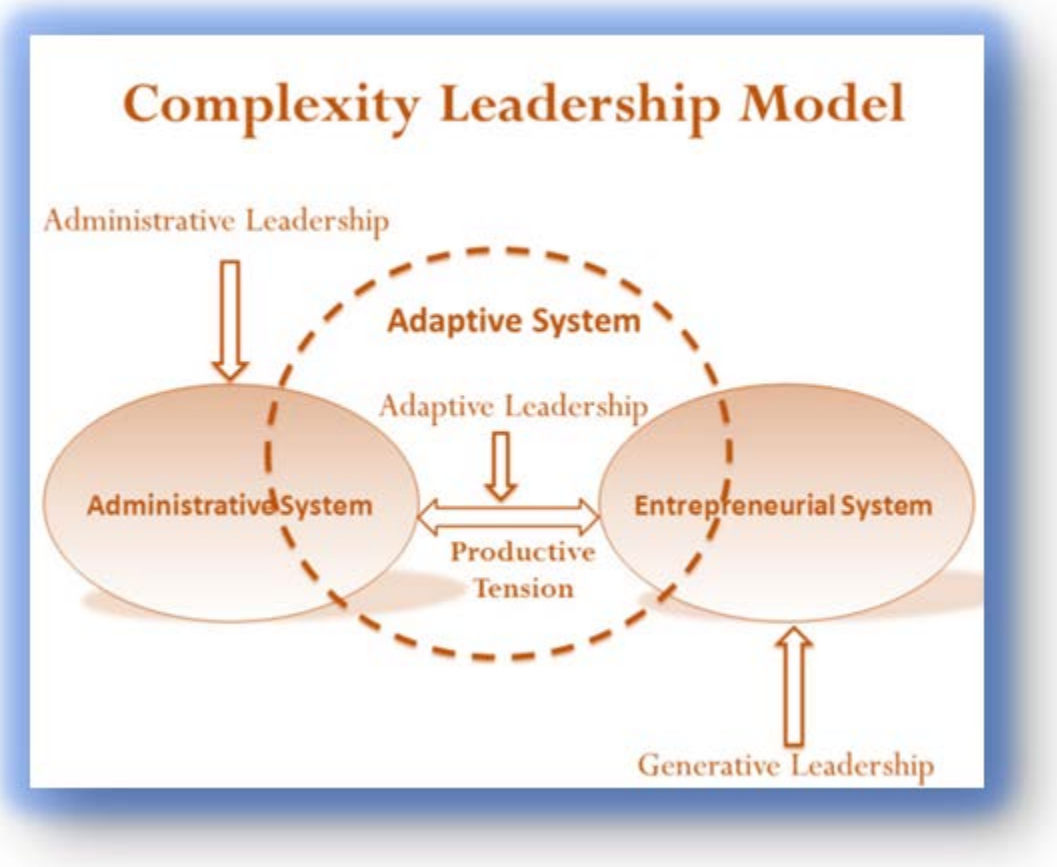
Adaptive leadership occurs in response to adaptive (complex) challenges (i.e., those with no clear solution).

Adaptive leadership emphasizes distributed leadership rather than hierarchical norms.

Task	Technical	Adaptive
Direction	Provide problem definition & solution	Identify the adaptive challenge; frame key questions & issues
Protection	Protect from external threats	Disclose external threats
Order Orientation	Orient people to current roles	Disorient current roles; resist orienting poeple to new roles too quickly
Conflict	Restore order	Expose conflict or let it emerge
Norms	Maintain norms	Challenge norms or let them be challenged

(Heifetz, 2009)

Create adaptive spaces within implementation contexts



(Uhl Bien and Arena, 2017)

Summary

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Key messages

- Adaptations occur at multiple levels
- Adaptations/tailoring at the program level is a set of activities meant to change the fit of the program to the context
- Adaptations can be planned proactively to make a program more likely to be adopted
- Adaptations should be monitored so we know what was adapted and why
- Adaptiveness is a system property that renders it capable of managing and responding to change
- Ongoing adaptations can be made as a response to new system pressures, as part of a dynamic response to sustainability threats

Questions?

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Thank you!