Ready or not? Why readiness is a key component of structural integrity in program implementation, scale and sustainability: AES Brisbane 2023

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Faculty of Education

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Agenda for today

Session	Speaker
Introduction - Implementation models and program life course - Readiness to implement - Mediators of implementation - Structural integrity	Janet Clinton Ruth Aston
Case study #1: Measuring readiness in a multi-year education program evaluation	Nadine Rissik
Case study #2: Relationships between multiple education initiatives	Ruth Aston
Program implementation trajectories and predicting structural integrity	Janet Clinton

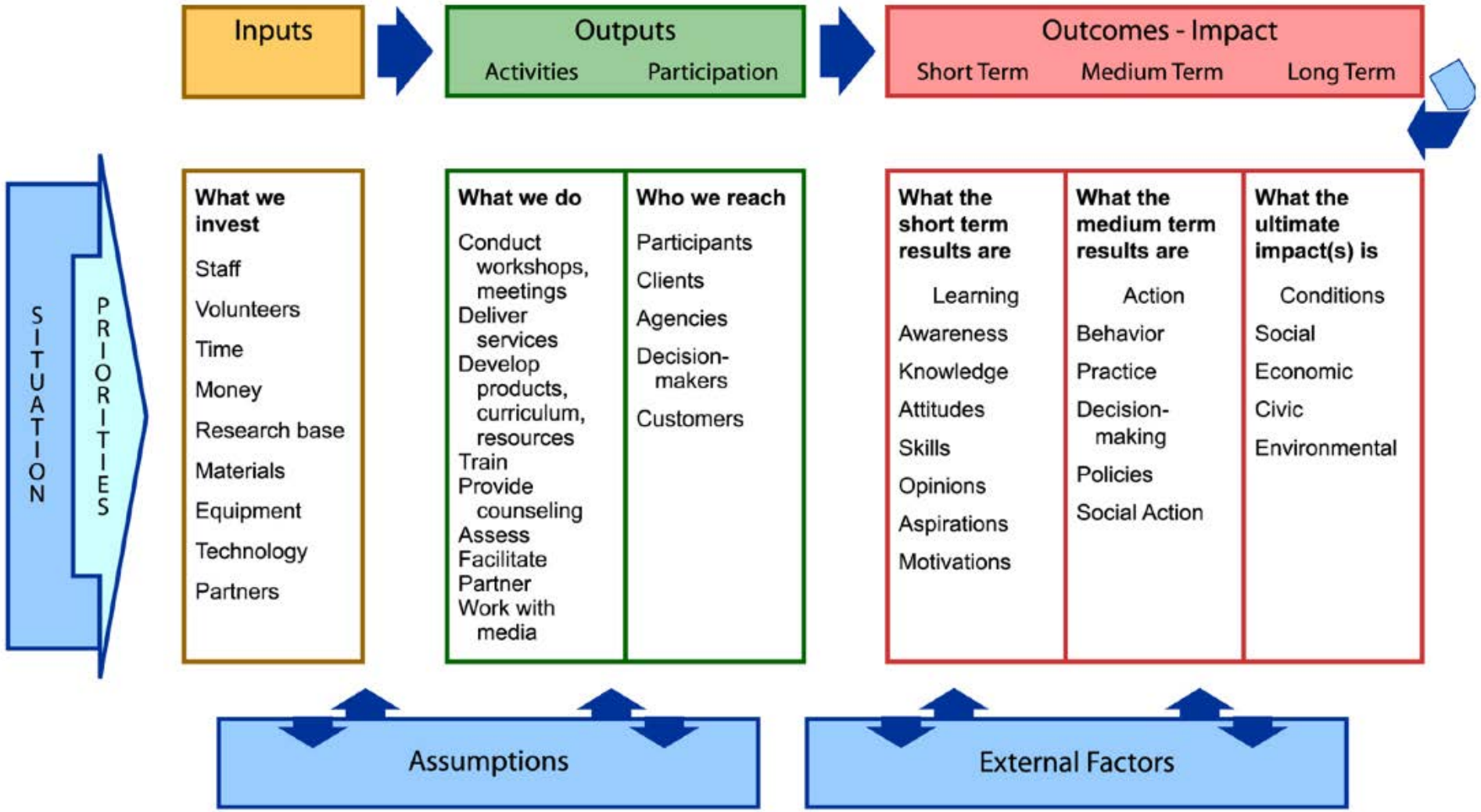
Presentation framing

- Theory driven evaluation approach
- Application to multiple contexts
- Drawing on evaluation case studies of large-scale education initiatives

Theory-driven evaluation

- Generative causation
- Identifying mechanisms that explain implementation & impact through theory of change
- Gathering evidence to test theory of change

Theory of change and measurement model



What needs to be measured?

Why?	Design & initial implementation	Ongoing implementation progress + outcomes
Rationale (idea), informed by values, needs, current evidence	Input-process-product	• Sustainability • Worth going to scale

Assumptions

Context

Success factors

Need to include the contributors to success

Program

- KPI
- Adaptation
- Degree of implementation

Outcome

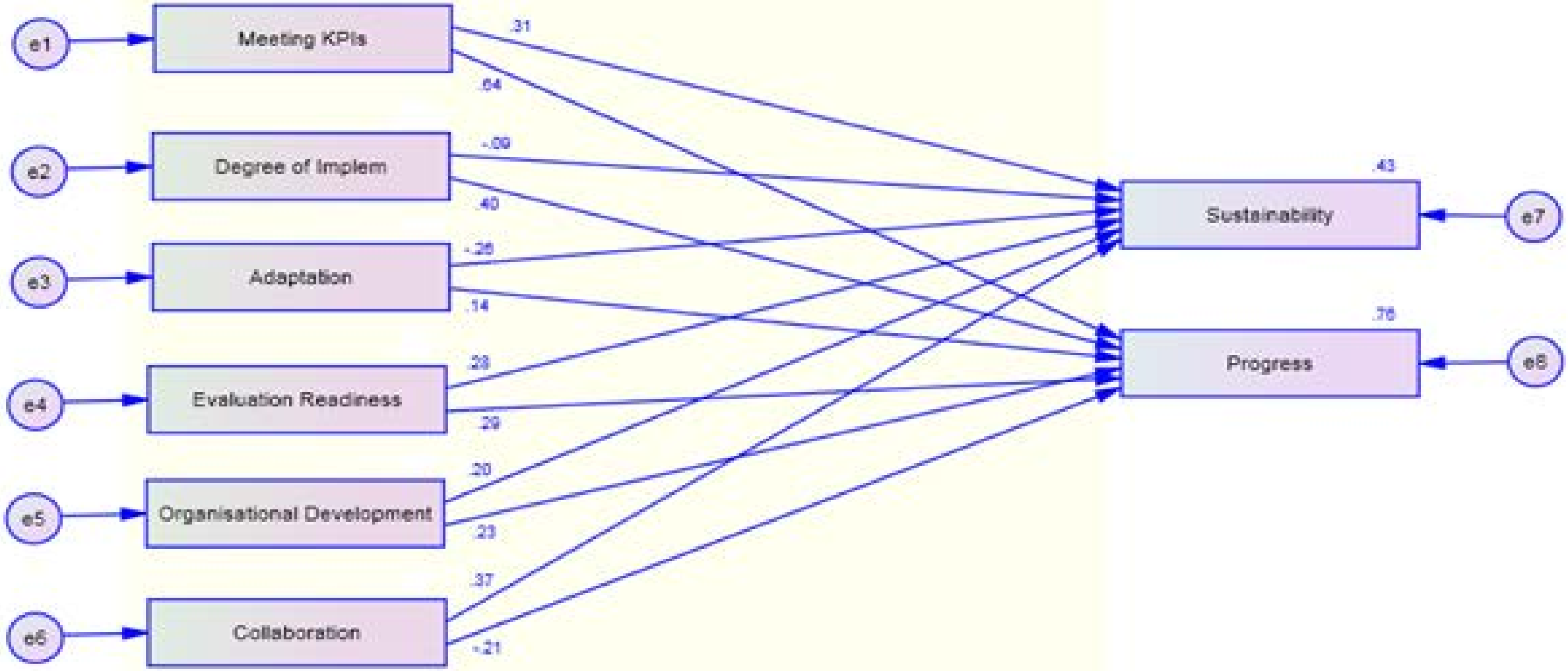
- Progress
- Sustainability

Process

- Organisational development
- Collaboration
- Evaluation Engagement

Credit: Dreamstime

The model of evaluation impact



An evaluation heuristic

$$\frac{(\text{IDEA} + \text{IMPLEMENTATION})^2 \times (\text{STRUCTURAL} + \text{EVALUATION})^2}{(\text{CONTEXT-PUSH \& PULL}) \times (\text{EXISTING STRATEGIES})}$$

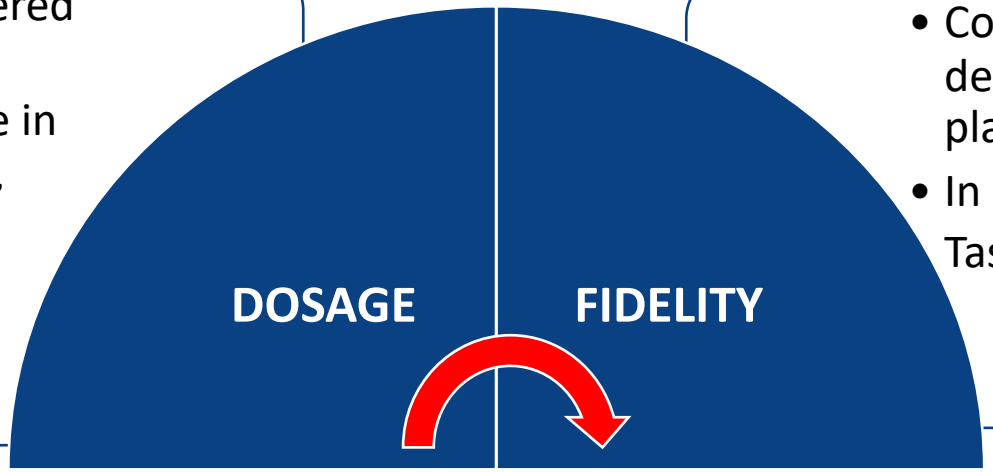
- Theory of action & a theory of implementation
- Getting the balance of evidence right

Implementation model

- % of plan delivered over time
- Amount of time in minutes, hours, days

- Components are deliver according plan
- In sequence

Tasks completed



IMPLEMENTATION

- Adjustment for context occurs
- Variation to delivery plan

Approach to task is at standard

- Engagement in task as designed

- How well you implement?
- Is it ready for implementation in all contexts?
- Can it carry the load of possible barriers?

Readiness

- Made up of multiple constructs
  - Motivation
  - General capabilities
  - Innovation-specific capabilities

$$R = MC^2$$

- Important throughout implementation (including at the design stage)

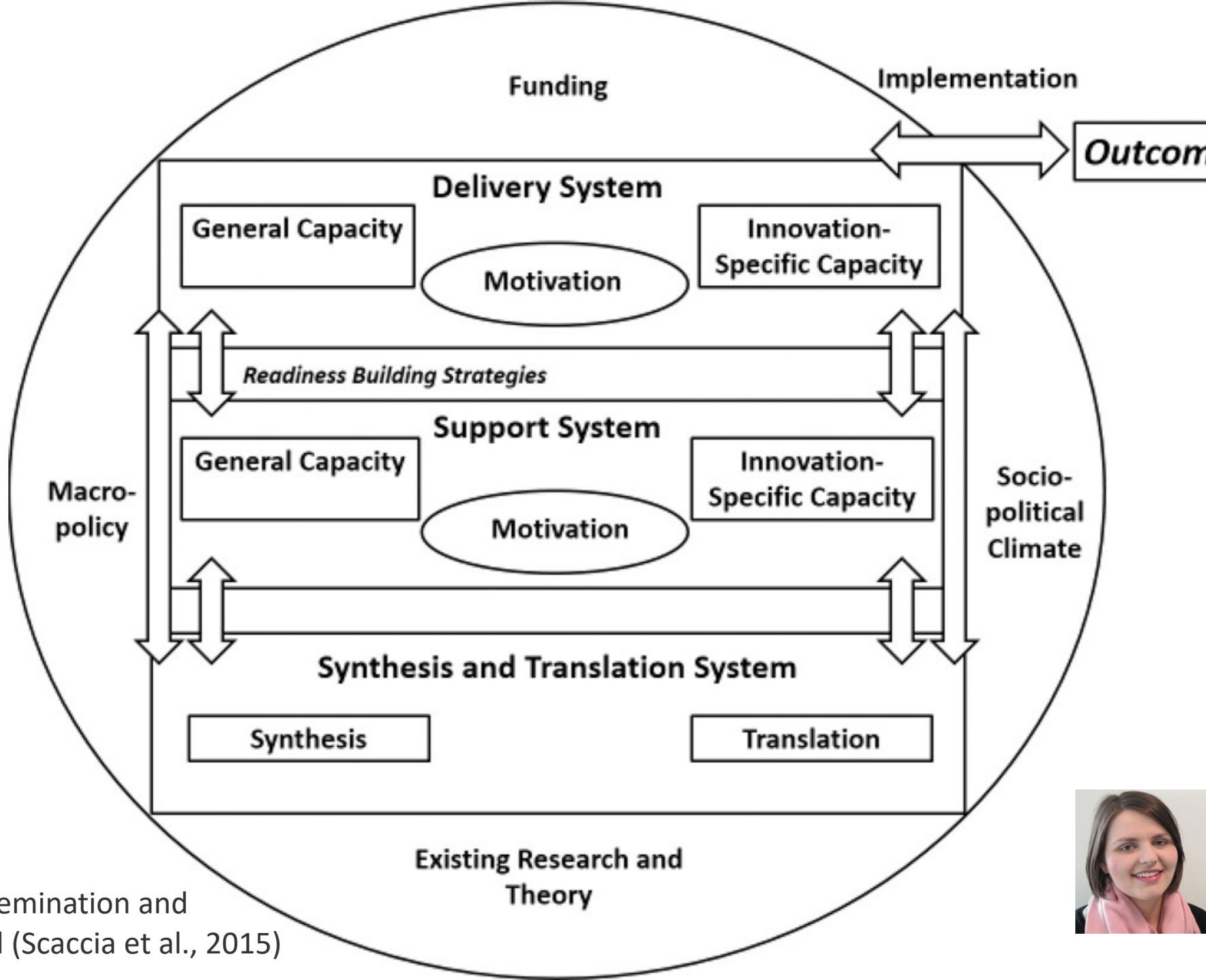
- Can be improved

Wandersman Center (n.d.)

Scaccia, J., et al. (2015).

Readiness

- Program readiness (design)
- Evaluation readiness (engagement in evaluation, use of evaluation)
- Implementation readiness (implement a change OR a new program)



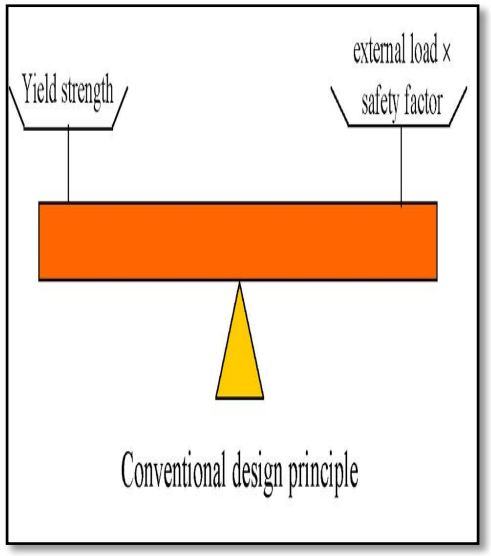
Interactive Systems Framework for Dissemination and Implementation with Motivation Added (Scaccia et al., 2015)

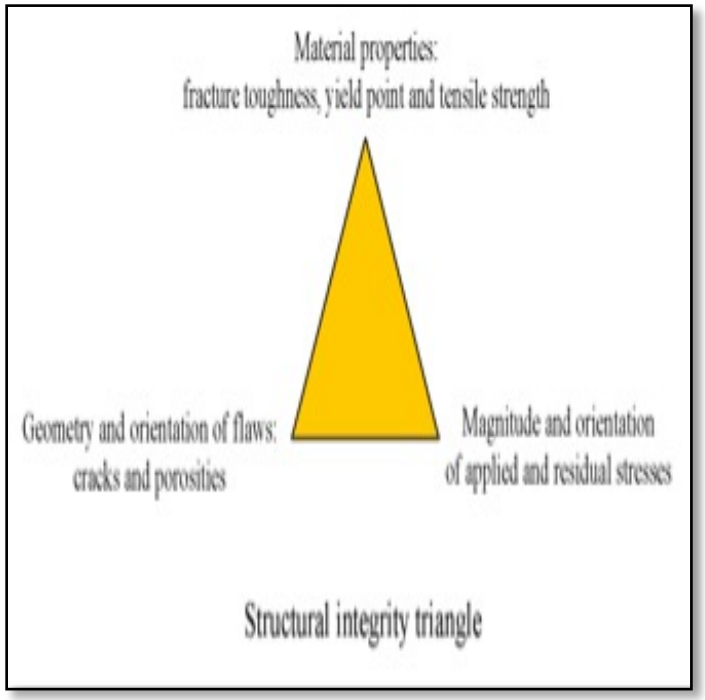
Structural integrity

What is structural integrity?

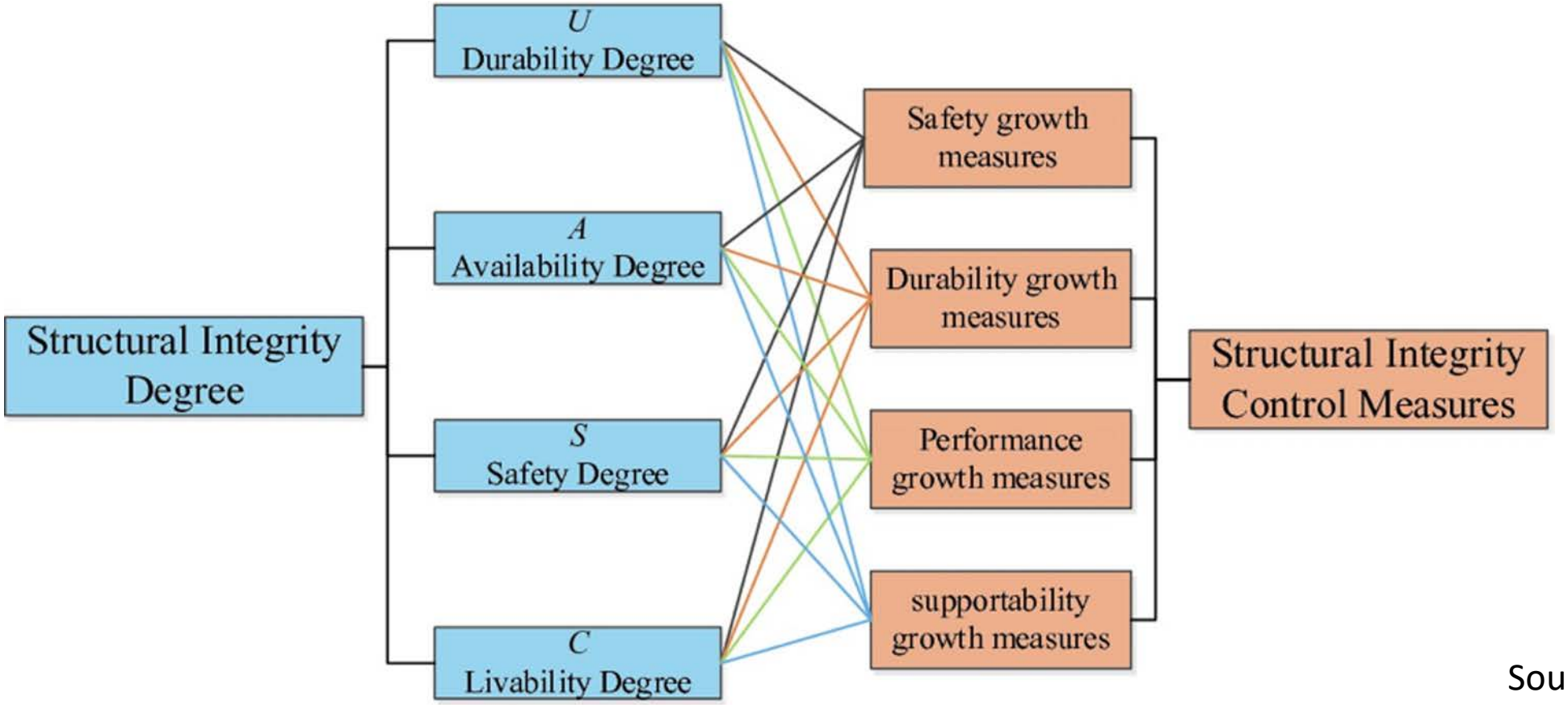
- The ability of a structural component or a structure to hold together under a load, including its own weight, without breaking or deforming excessively.
- It ensures that it is fit for purpose under normal operational conditions and is safe even if conditions exceed that of the original design.
- It assures that the construction will perform its designed function during reasonable use, for as long as its intended lifespan.
- It needs to be maintained for the life of a structure. This requires inspection and maintenance at periodic intervals.

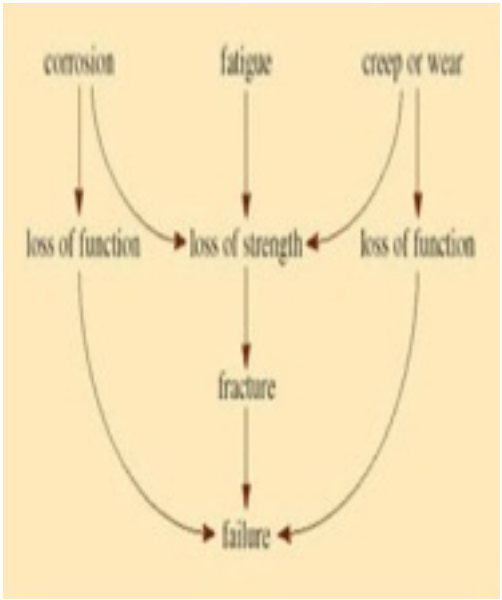
Source: TWI LTD (The Welding Institute UK peak body)





Measuring structural integrity





Source: He et al. (2020)

Predicting Structural integrity

Can the program stand up to political, social, economic, cultural & climate issues?

- The push & pull factors
- Levels of resistance
- Predicting the pressures of an eco-system to perform over time

Monitoring those factors that hinder and enable implementation and success
What's in control and beyond control?

The Wobble Effect

The goal is to understand what contributes to success

- Impact
- Sustainability
- Capacity for scale

$$Impact = \frac{(ToC + F)^2 \, x \, (OD + E)^2}{(C + R)^2 \, x \, Ep}$$

- Evaluation positioning to make a judgement if its on track
- Follow the life course

Life course

- Thinking about evaluation from this perspective, allows you to consider the life course of a program
- Clearer picture of enablers and barriers
- Can predict patterns using life course
- Clearer picture of progress – readiness to impact, readiness to implement. Doesn't meant that we don't start evaluating

What are the key factors for progress?
Readiness is the new baseline?
Can it carry the load of the unexpected?

Life course model of implementation

Driving Forces

Leadership, champions of change

Targeted resourcing

Organisational structures & systems

Implementation environment

Monitoring & evaluation

Sustainable school improvement

1

2

3

4

5

Scalable activity

Awareness & attitudes

Knowledge

Intention to engage

Activity

Sustaining Activity

Mobilisation

Implementation

Embedded

Readiness

Context

History

Mindset

Change fatigue

Resisting Forces

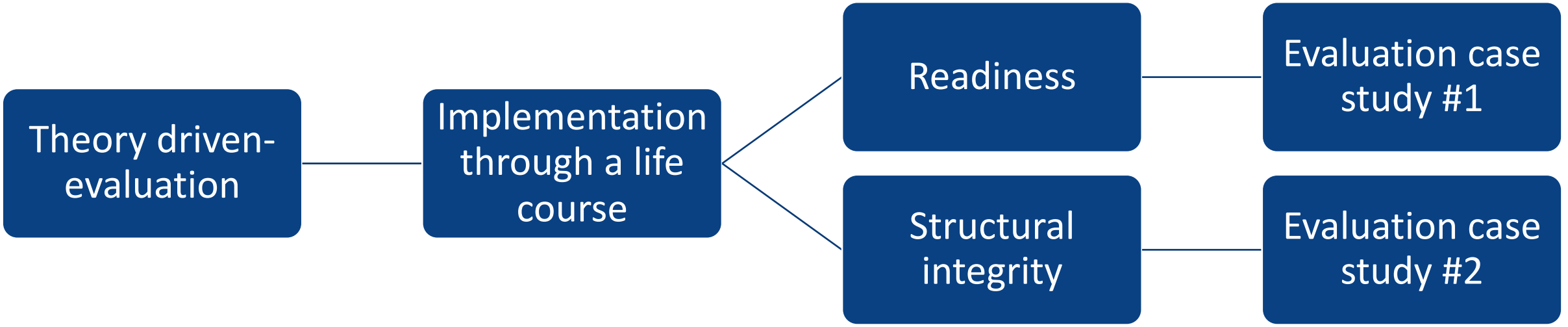
1 = July 2018

2 = Nov 2018

3 = Dec 2019

4 = Dec 2020

5 = Dec 2021


Theory driven-evaluation
Implementation through a life course
Readiness
Structural integrity
Evaluation case study #1
Evaluation case study #2

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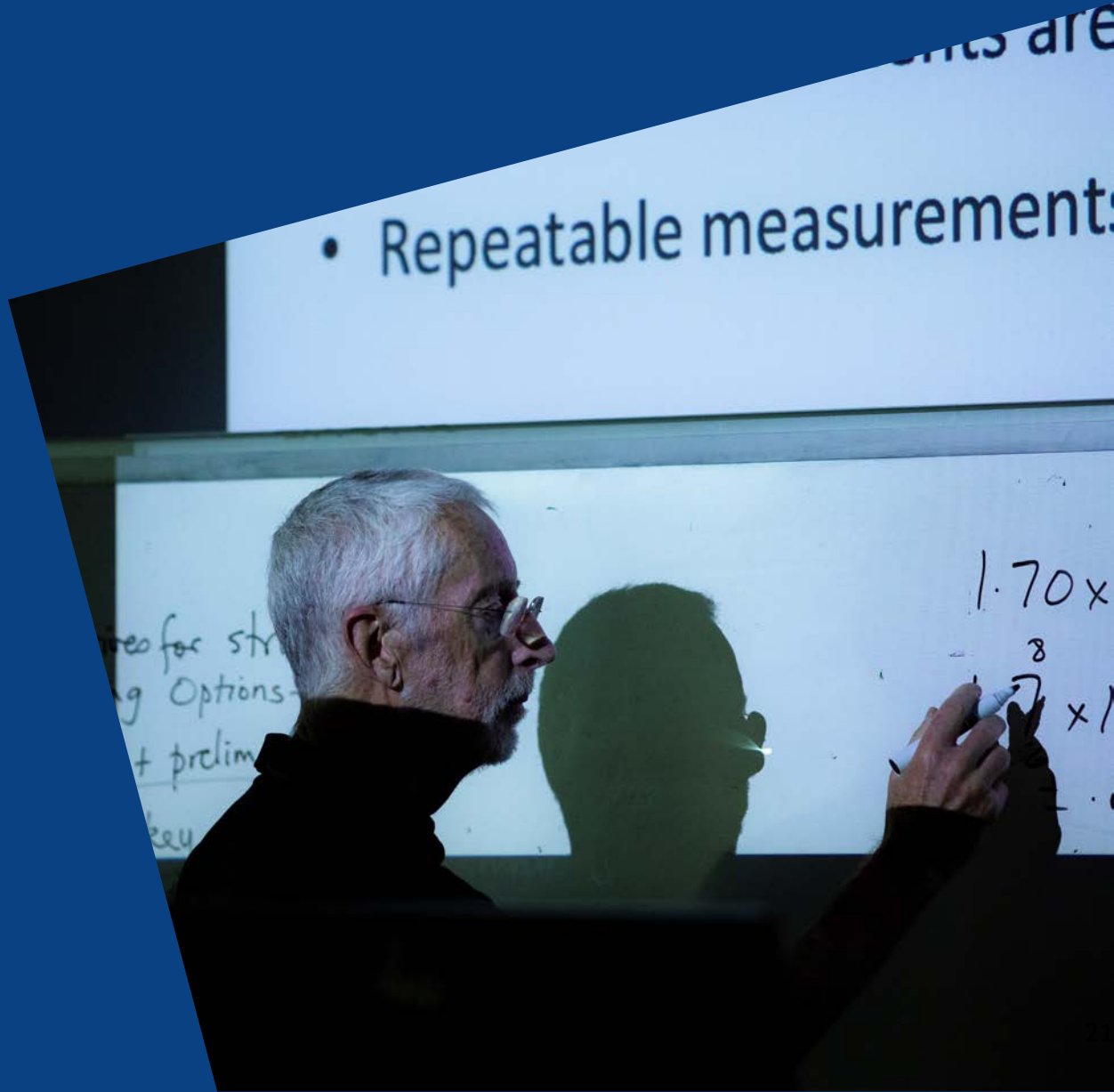
Differentiated Support for School Improvement Initiatives (DSSI):

Implementation and measurement



Evaluation aims

The evaluation aimed to investigate:

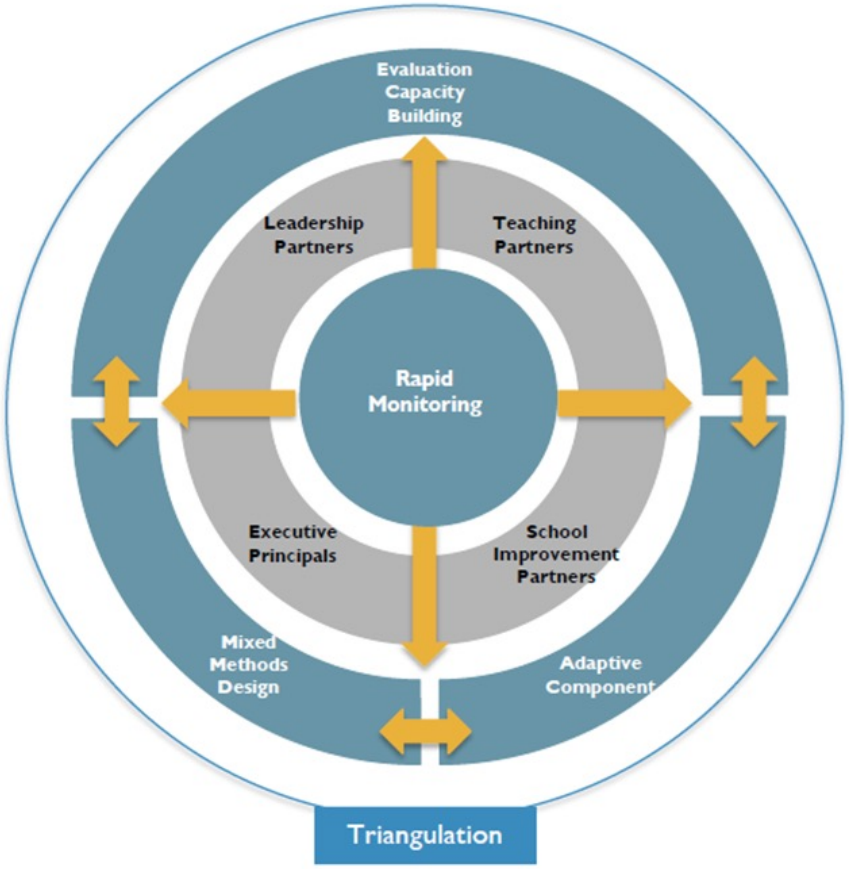
- The process of implementing DSSI
- The impact of DSSI on teaching and leadership practices and school operations
- The impact of DSSI on school improvement
- The sustainability of school improvement practices

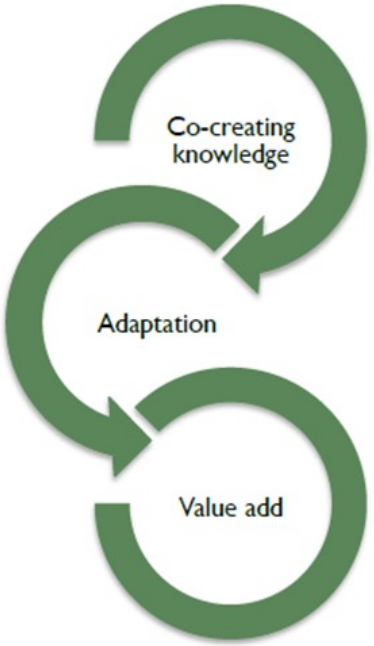
Evaluation questions

Targeted support	• To what extent does the implementation of DSSI initiatives support school improvement? • To what extent do the DSSI initiatives provide support that is targeted and specific to the improvement needs of the schools?
Impact	• How much do the DSSI initiatives (individually and collectively) contribute to improved school leadership practice, teaching practices, school performance and student outcomes?
Barriers & enablers	• What factors act as barriers to school engagement and implementation of the DSSI initiatives? • What factors act as enablers for school engagement and implementation of the DSSI initiatives?
Variation	• In what ways does implementation of the DSSI initiatives in participating schools vary? How does this variation change over time?
Sustainability	• To what extent are improvements in school performance, school leadership, teaching practice and student outcomes associated with DSSI initiatives sustainable?

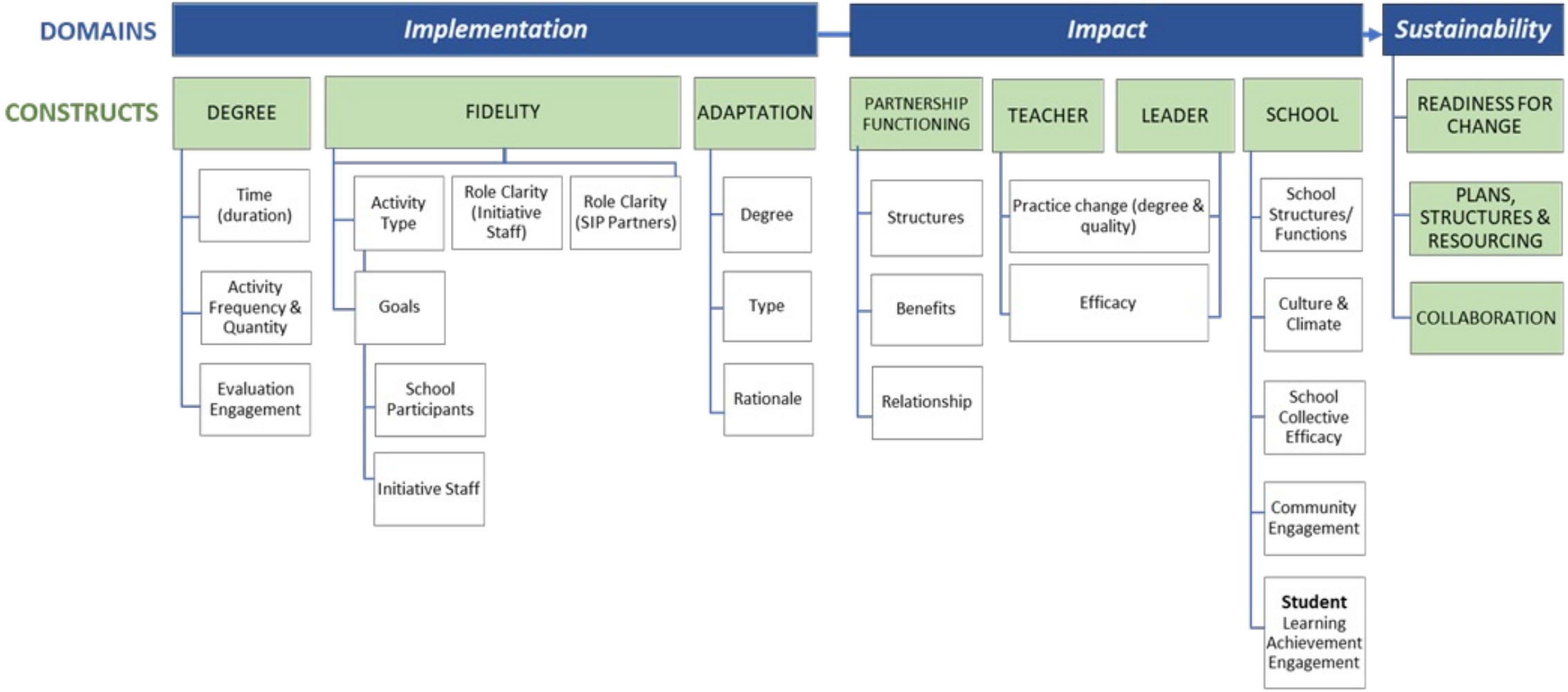
Overarching design & principles

- Defensible & evidence-informed
- Generate rapid, relevant information
- Inform implementation
- Support evaluation use
- Responsivity
- Future-proofed

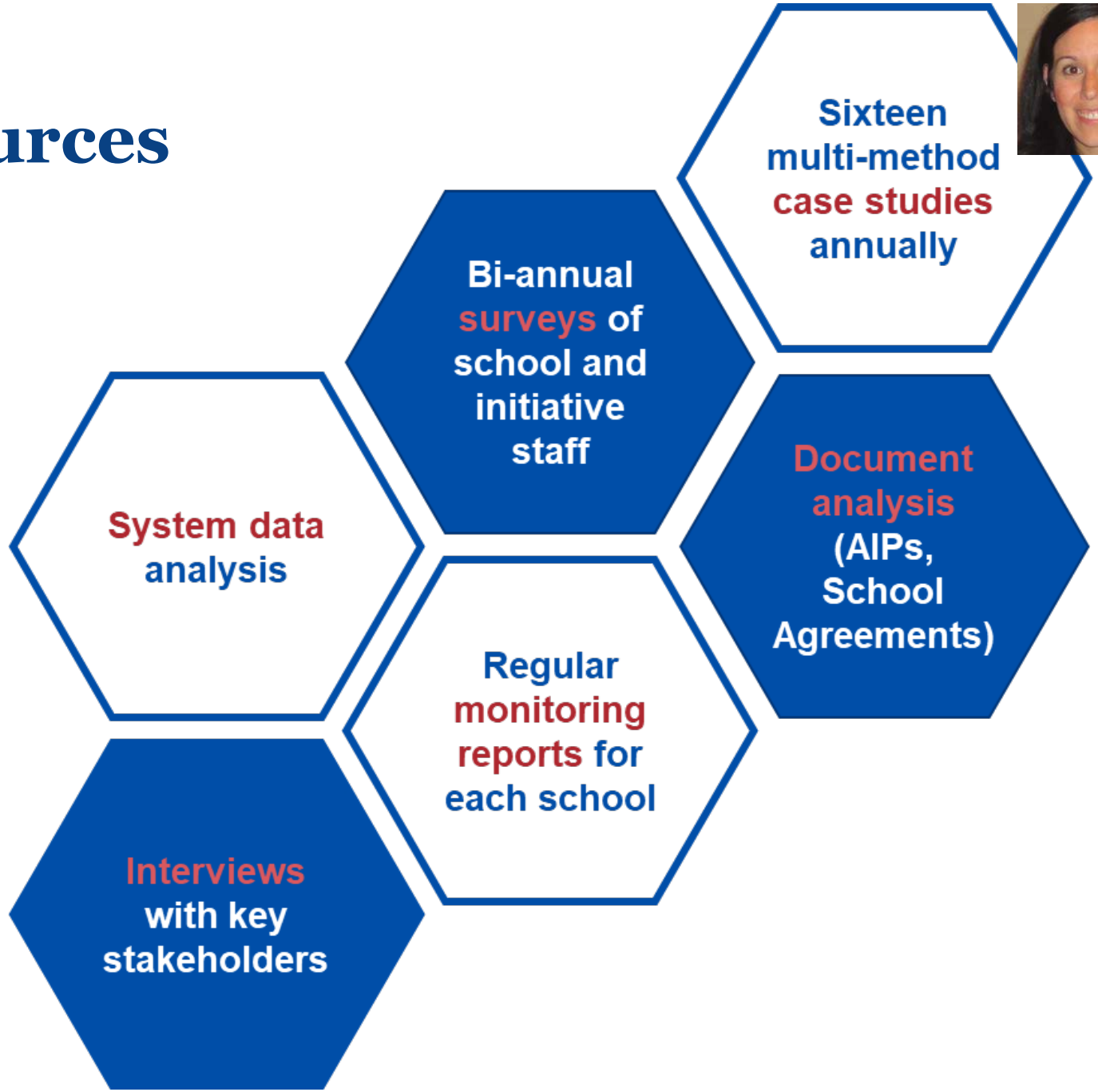




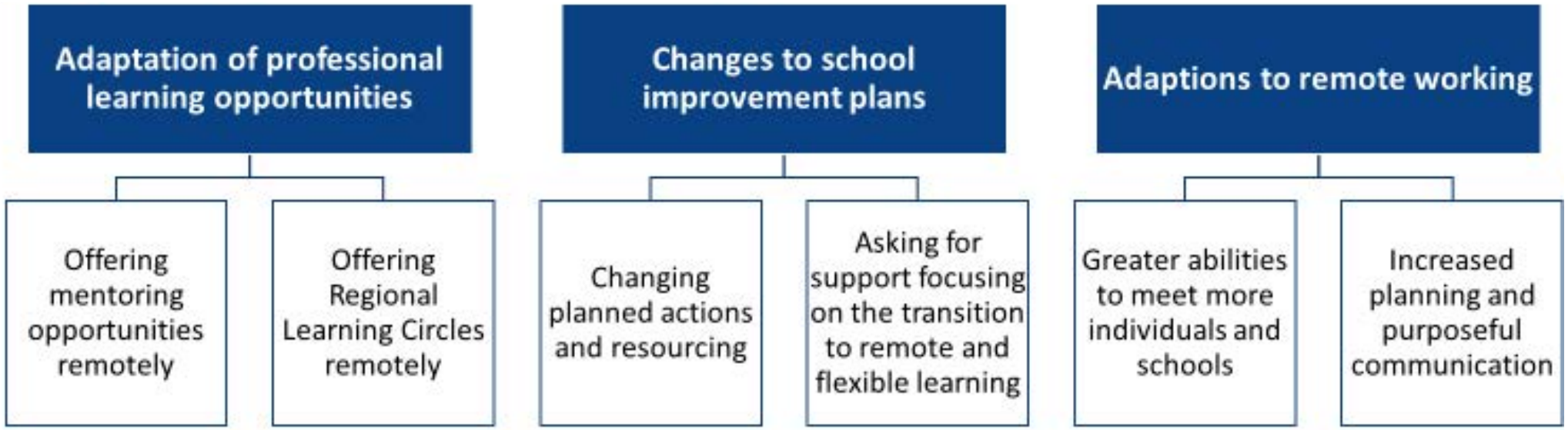
Identifying variables to measure that will enable the generation of actionable findings



Multiple data sources



Implementation adaptation



"[R]ather than focusing on the goals of DSSI specifically, many schools will have pivoted the kind of support that they need to instead be around that transition to remote, flexible learning. However, I know that for example …[One region] did this work with all of their SIPs to say, in light of COVID, do we need to change your action and resource plans? If so, how? What do they look like now? What are your end of year goals? How will you know you achieved them? Where do we need to change your resourcing plan? What money you're hoping to spend? What will support you best now? "

(DET Central staff 1)

Readiness as a predictor of progress

Figure 1. Three factors predicting leaders' perceived impact of the DSSI initiatives in 2018

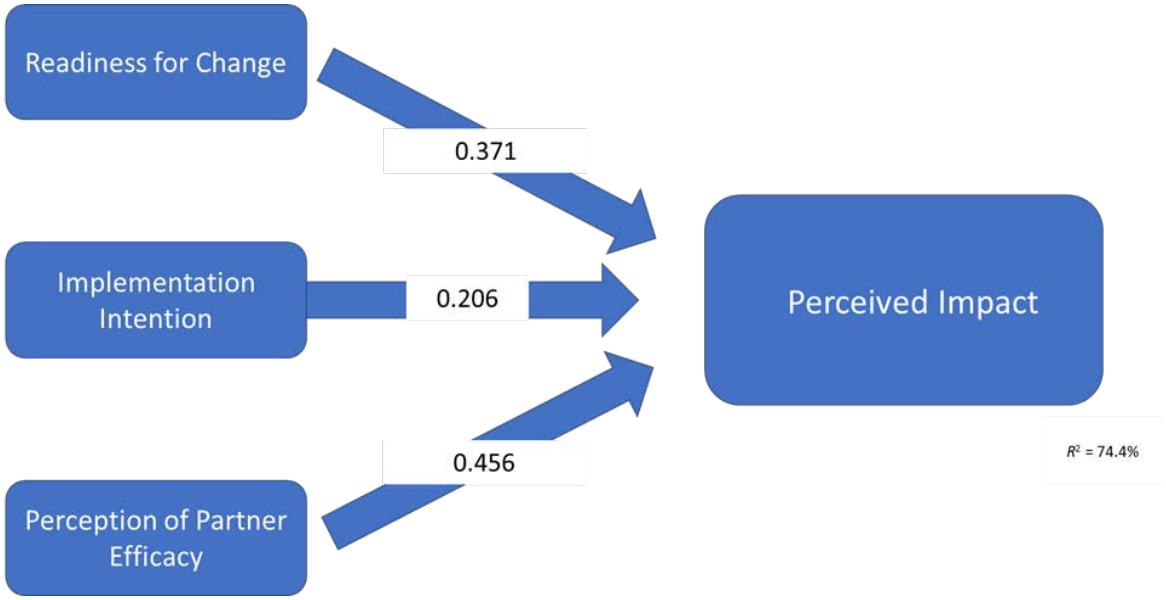
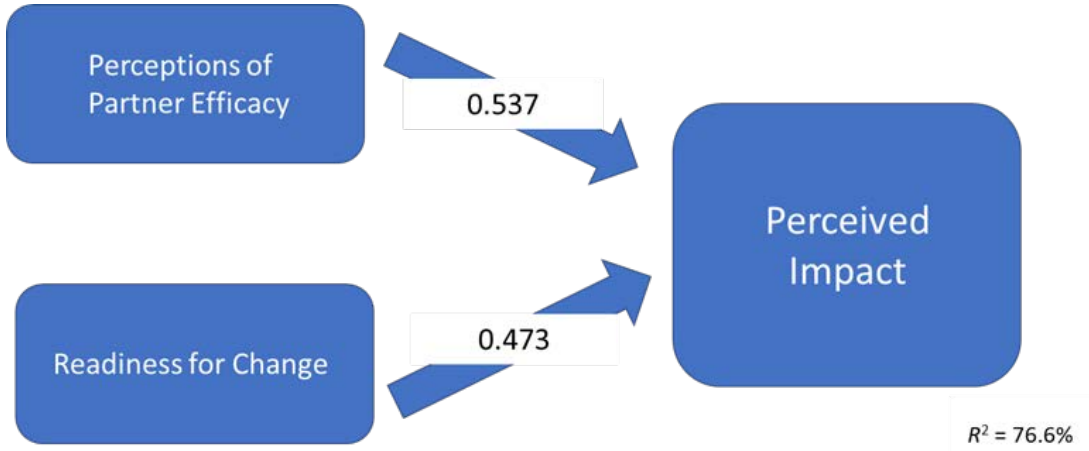


Figure 2. Two factors predicting leaders' perceived impact of the DSSI initiatives in 2019



PLC & structural integrity – case study #2

Evaluand – processional learning communities

Professional learning communities (PLCs) are an approach to school improvement where groups of teachers work collaboratively at the school level to improve student outcomes.

Initiative commenced in 2016, two evaluations conducted with second ending in 2022

Initiative design was defined as ‘tight but loose implementation’ – lots of opportunity for participating schools to adapt and choose the ‘what’ the PLC would focus on, but the ‘how’ it was to be done was consistent. PLCs were referred to as the architecture for school improvement where schools were encouraged to utilise the PLC structure to implement other initiatives.

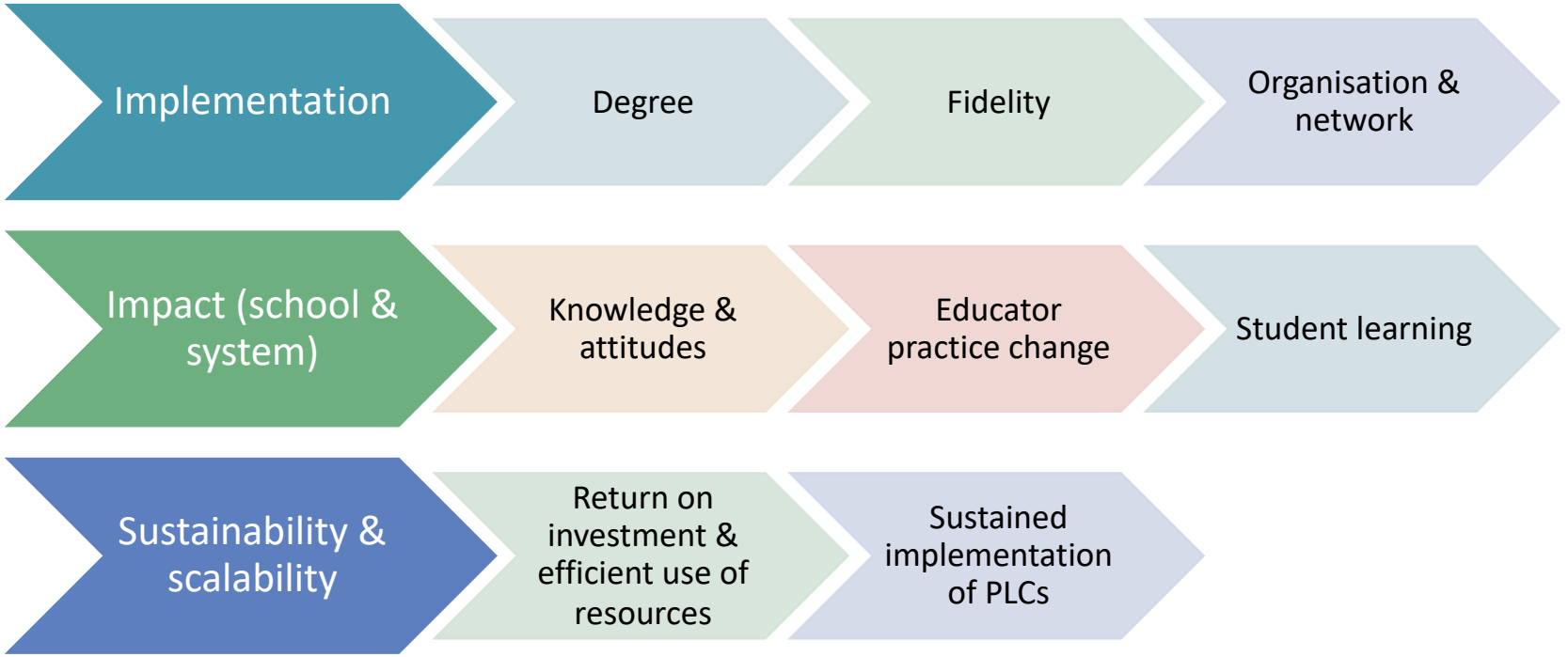
In 2022, 800+ schools were implementing the initiative.

Key evaluation questions

Developmental	Appropriateness	• To what extent are planned and implemented activities supporting the development of PLCs? (inclusive of all levels)
	Effectiveness	• To what extent are chosen PLC practices designed to achieve the goals of the initiative?
	Implementation	• What is the fidelity of implemented PLC practices across participating schools, areas and regions?
Impact	System changes (central and regional)	• To what extent have attitudes towards PLCs changed amongst participating staff at central and regional levels?
	PLC knowledge and attitude changes	• To what extent is knowledge of PLCs and effective PLC practices changing amongst participating school leaders, teachers and instructional leaders?
	Classroom practice changes	• To what extent are changes to classroom practices among participating instructional leaders and teachers observable?
	Student outcomes and growth	• What, if any changes can be observed in student outcomes in participating PLC schools?
Economic	Economic evaluation of PLC Initiative	• What is the value (benefit) of PLCI relative to the investment (costs associated with implementation)?
Additional Components	Impacts of COVID-19	• How did the transition to remote and flexible learning during 2020, and COVID-19 in general impact the implementation of the PLC initiative?
	Interaction with other Education State initiatives	• How is the implementation of the PLC initiative interacting with other Education State initiatives?

Methodology

- Mixed methodology
- 16 data sources (combination of new, and existing data sources)



Data Sources

PLC Interaction Log (implementation monitoring)

- 2019-2021
- RMs only

PLC School Imp. Workforce Survey

- 2017-2021

System data

- All schools
- Demographic details
- NAPLAN (2016-2021, not 2020)
- SSS, AToSS (2017-2021)
- Attendance (2016-2020)

Case Studies (interviews, focus groups, document analysis)

- 7 schools
  (2 multi-campus)
- Sep-Oct, 2021
- All regions
- All intakes
  (3 from Int. 3)
- 3 Link Schools
  (Pilot, Int.1, Int. 2)
- 3 Primary,
  1 Combined,
  3 Secondary

CPL Surveys

- Intake 4 and 5 (2020-2021)

PLC Schools Survey

- 2017-2021 (not 2020)

Pivot Survey

- 2018-2021
- Only schools funded through PLCI

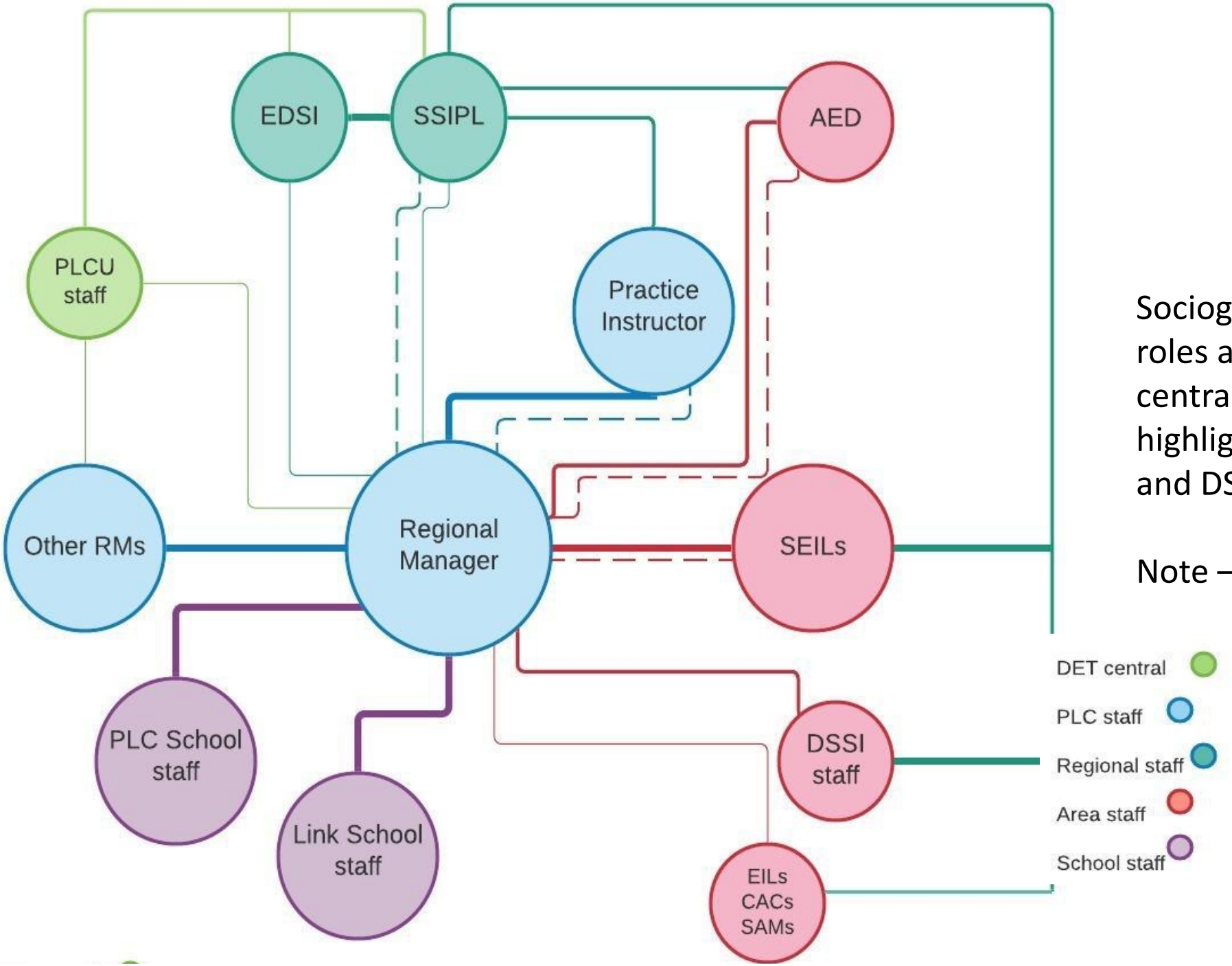
Other

- Evaluation reports
- PLC funds & budgets

Implementation: common PLC school structures

- **Goals of PLCs** – most common were *data driven inquiry* and *student literacy outcomes*
- **Size of PLCs** – most had 3-6 members, some 7-9. Some had tried bigger, but found it hard to manage.
- **Frequency of PLC meetings** – Once or twice a week. Secondary, once a week or fortnight - most found weekly hard, as not enough time with students in between meetings.
- **PLC organisation** – In primary schools usually grouped by year level or sub school. In secondary schools usually grouped by faculty/subject or cross-faculty.
- **PLC cycle length** – mostly once per term, although some were shorter. Also varied during remote learning. 5-weekly or once per term was considered ideal.

Overall – remarkable consistency in structures across highly diverse case study schools.



Sociogram of relationships between roles across initiatives in regional & central offices. Relationship highlights connection between PLC and DSSI

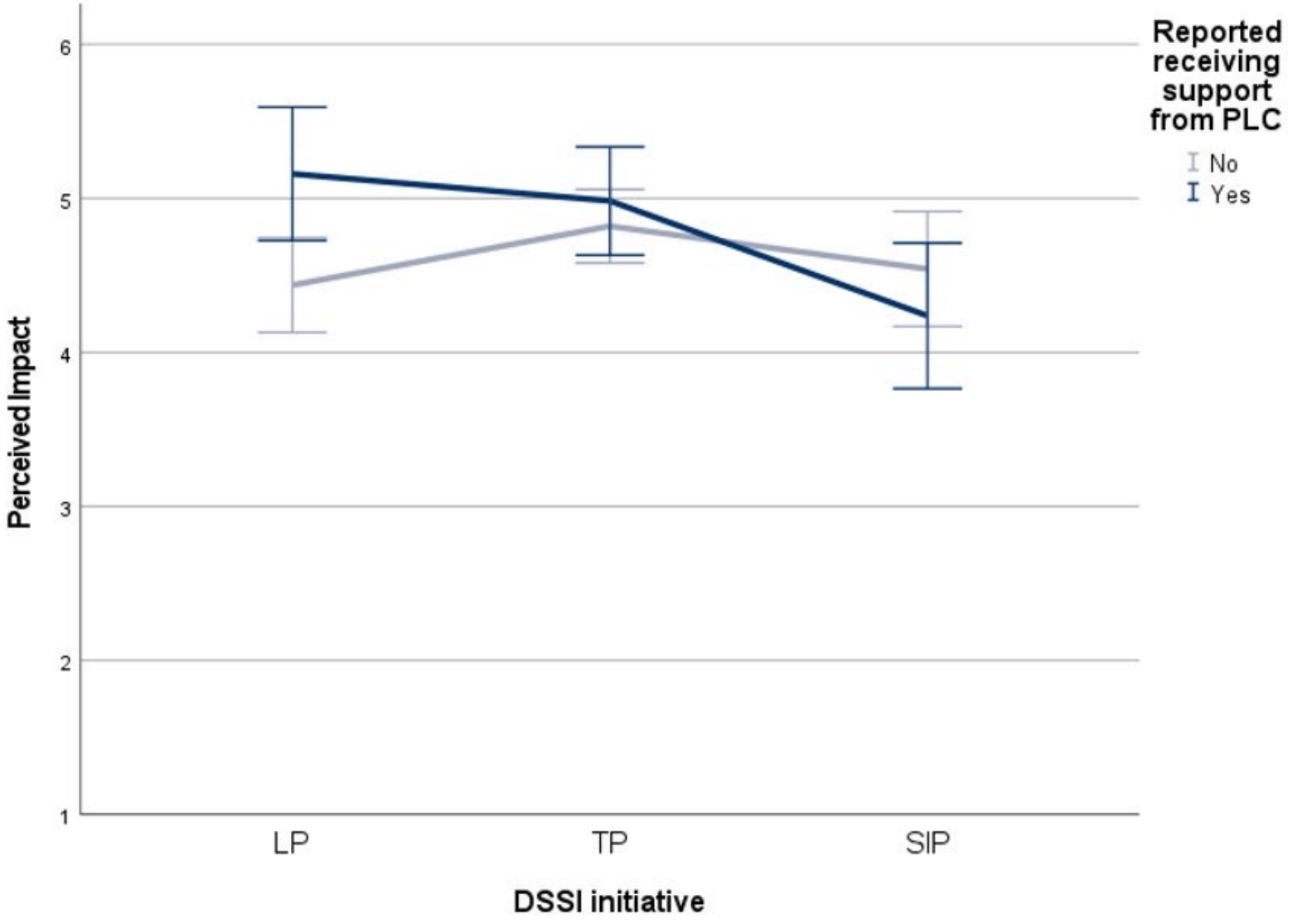
Note – based only on interviews

Results illustrated there were interactions as part of implementation with other Initiatives

- There were interactions between the implementation of PLC with many initiatives – DSSI, LNS, MYLNS, TLI
- Evidence of system-level progress where PLC was seen as the framework or architecture through which other school improvement work can be implemented.

- Biggest interaction in implementation was with DSSI :
  - Participation in PLC initiative has a positive impact on DSSI, with increased collective efficacy and overall impact
  - Interactions between PLC and DSSI explained highest proportion of variance in overall DSSI impact.

Predictors of reported DSSI impact: PLC participation



PLC - structural integrity

- Interesting relationship between PLC + DSSI
- More effective – DSSI detailed the support mindset, PLC – offered logistical structure

Questions and key factors

Where do these findings from the case studies leave us?

Can we conclude the initiatives had structural integrity? Or was it perhaps the combination that yielded stronger integrity?

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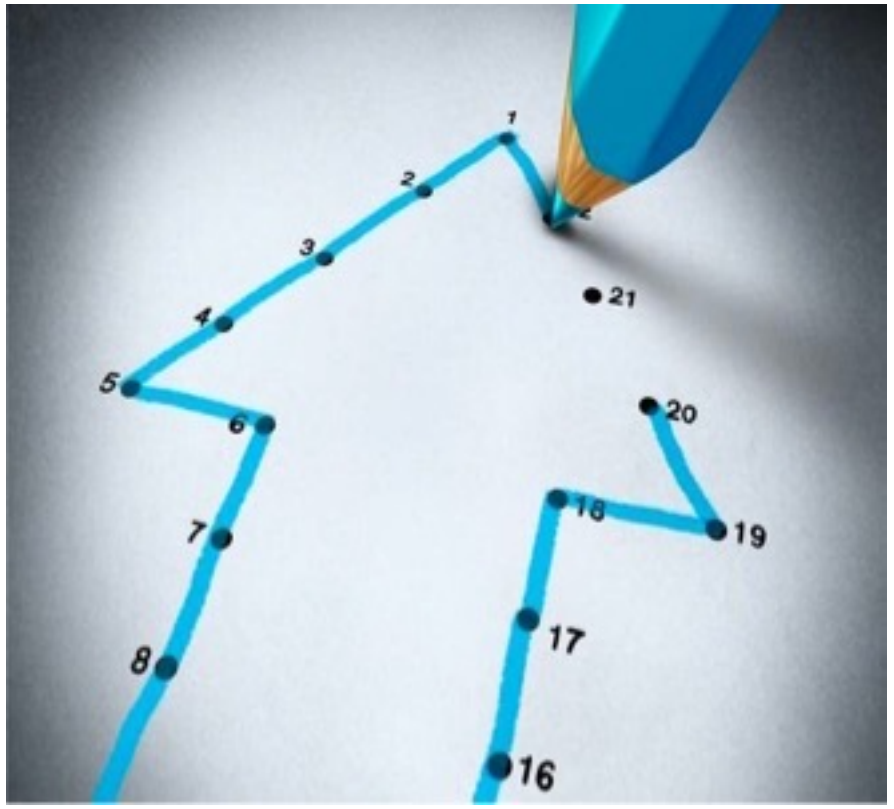
Program Implementation

Journey & Predicting Structural Integrity

Joining the dots

- Evaluators need to consider readiness & structural integrity as key factors in understanding what contributes to success
- Where is the baseline really commencing
- Consider progress along the lifecourse
- Even if the program starts with low readiness to implement it can be built to become more stable
- Expectations for measurable impact are more realistic
- Increase in the judgement about scale and sustainability



An updated evaluation heuristic

$$\frac{(\text{IDEA} + \text{IMPLEMENTATION} + \text{READINESS})^2 \times (\text{STRUCTURAL INTEGRITY} + \text{EVALUATION})^2}{(\text{CONTEXT-PUSH \& PULL}) \times (\text{EXISTING STRATEGIES})}$$

- Theory of action & the theory of implementation
- Understanding the contribution of success

Life course model of implementation

Driving Forces

Leadership, champions of change

Targeted resourcing

Organisational structures & systems

Implementation environment

Monitoring & evaluation

Sustainable school improvement

Readiness

Structural Integrity

1

2

3

1

2

5

Scalable activity

Awareness & attitudes

Knowledge

Intention to engage

Activity

Sustaining Activity

Mobilisation

Implementation

Embedded

Readiness

Context

History

Mindset

Change fatigue

Resisting Forces

What contributes to success?

Program

- KPI
- Adaptation
- Degree of implementation

Outcome

- Progress
- Sustainability

Process

- Organisational development
- Collaboration
- Evaluation Engagement

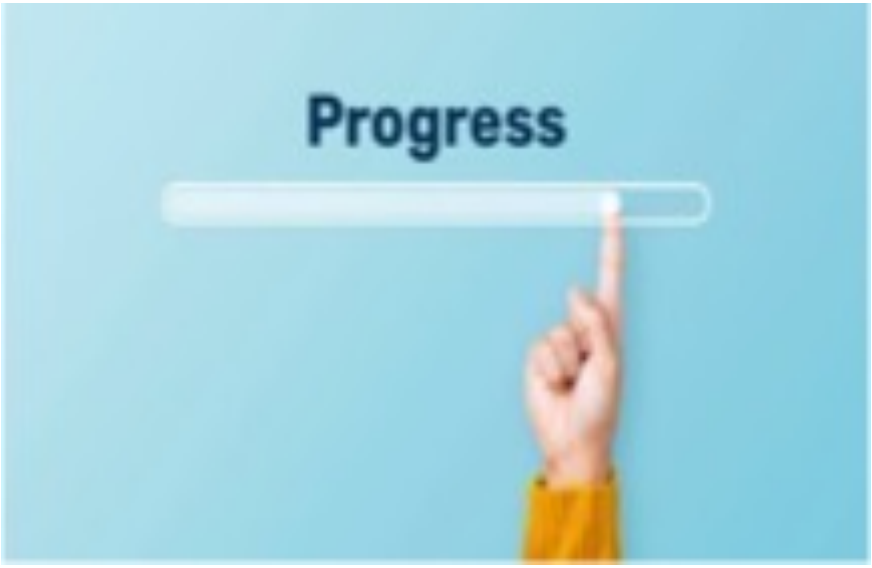
- The principles of stability
- Predictability of an initiative
- Implementation, readiness & structure
- Continuous quality assurance
- Monitoring the life course & program maturity
- Understanding Scalability
- Activating the ecosystem

Big data and data linking

- Regression
- Path analysis
- Structural equation modelling
- Hierarchical linear modeling
- Agent based modelling
- System dynamic modeling

Progressive evaluation judgement

- Opportunity to predict progress as opposed to a binary judgement about impact.
- Binary judgements provided limited actionable opportunities
- Evaluators need to consider these contributions to success



Reflection questions

- Where/when do you start thinking about structural integrity?
- Where/when do you start thinking about readiness?
- Where/when do you think about sustainability and scale?
- Could readiness be an outcome if evaluators are providing a capacity building activity?

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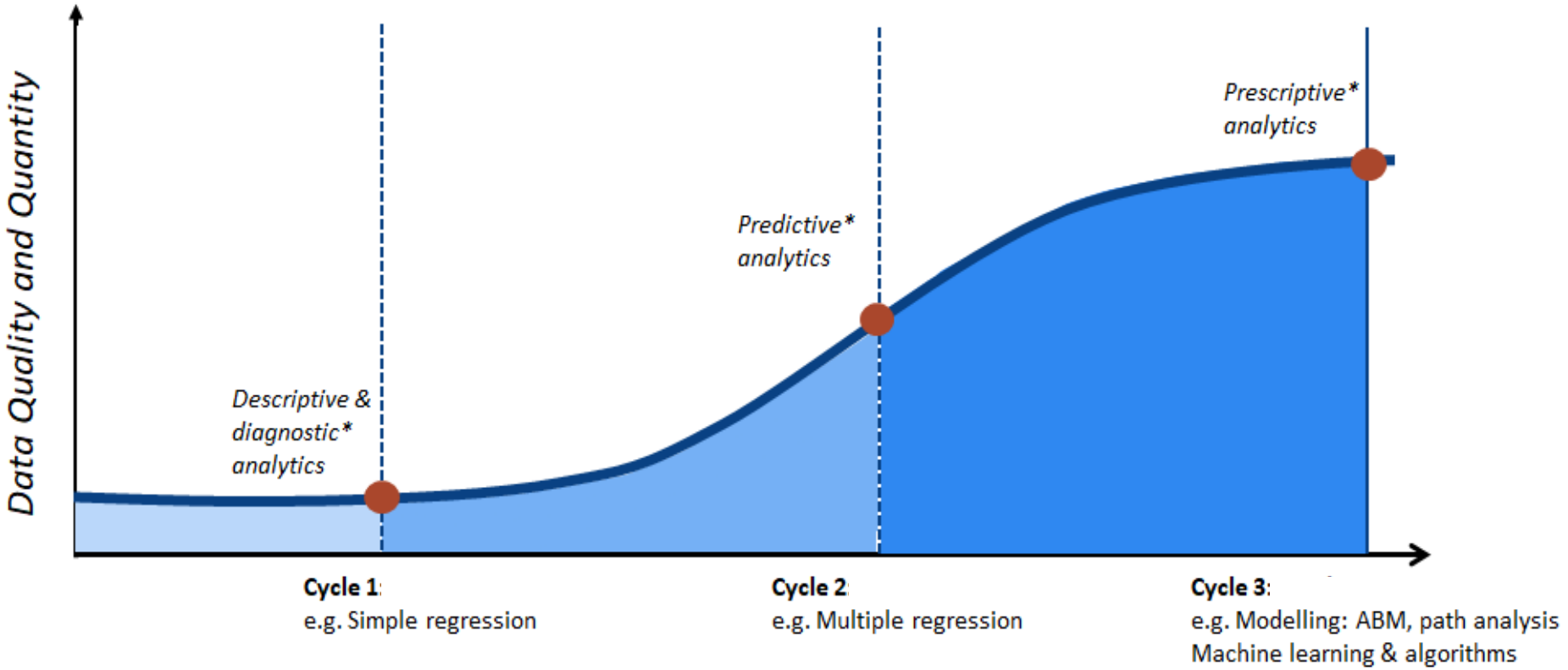
Role of Evaluation data: It matures with implementation



Assumptions Data quality can improve across the timeline • Some data can be linked • Harmonisation across sites can be achieved • Data is of a sufficient quality across most levels

Confidence in evaluative judgements

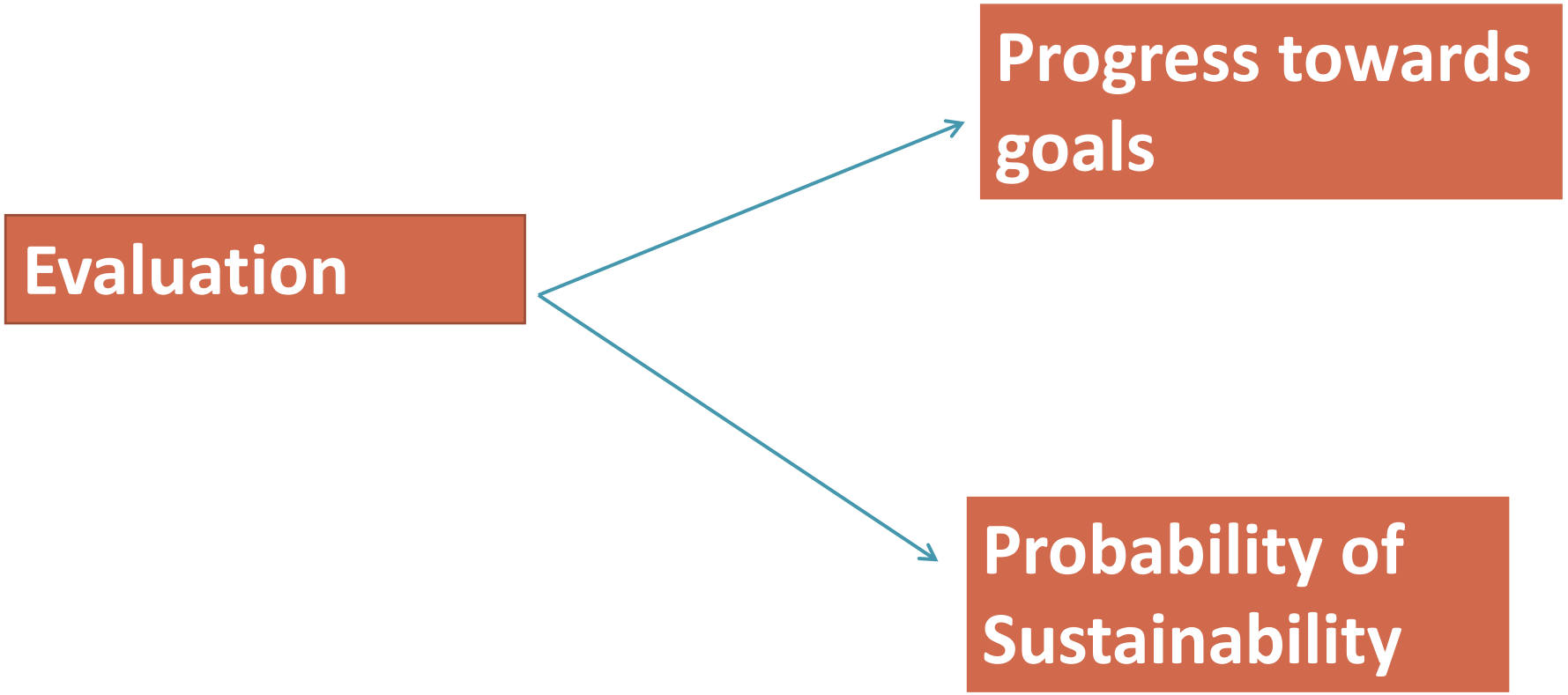
Goal	Outcomes by level				Amount of evidence	Size of effect	Maintenance of effect	Strength of evidence
	School	Leaders	Teachers	Students				
Improve data literacy	✓	✓	✓					
Development of a viable curriculum		✓	✓					
Delivery of evidence-based teaching		✓	✓					
Lead school improvement	✓	✓						
Implement an evidence based instructional model		✓	✓	✓				
Implement whole school literacy framework			✓	✓				
Implement structure	✓	✓	✓					
Improve school culture	✓	✓	✓	✓				

Key: green = high confidence, yellow= moderate confidence, red =low confidence, grey = evidence is insufficient to make a judgement

Managing structural integrity

- What are the principles of stability?
- Predictability of an initiative
- Implementation, readiness and fidelity
- Continuous quality assurance through monitoring and evaluation
- Monitoring the life course and program maturity
- Level Scalability
- Activating the ecosystem

Impact of engaging evaluation



Understanding progress: Data linking

- Regression
- Path analysis
- Structural equation modelling

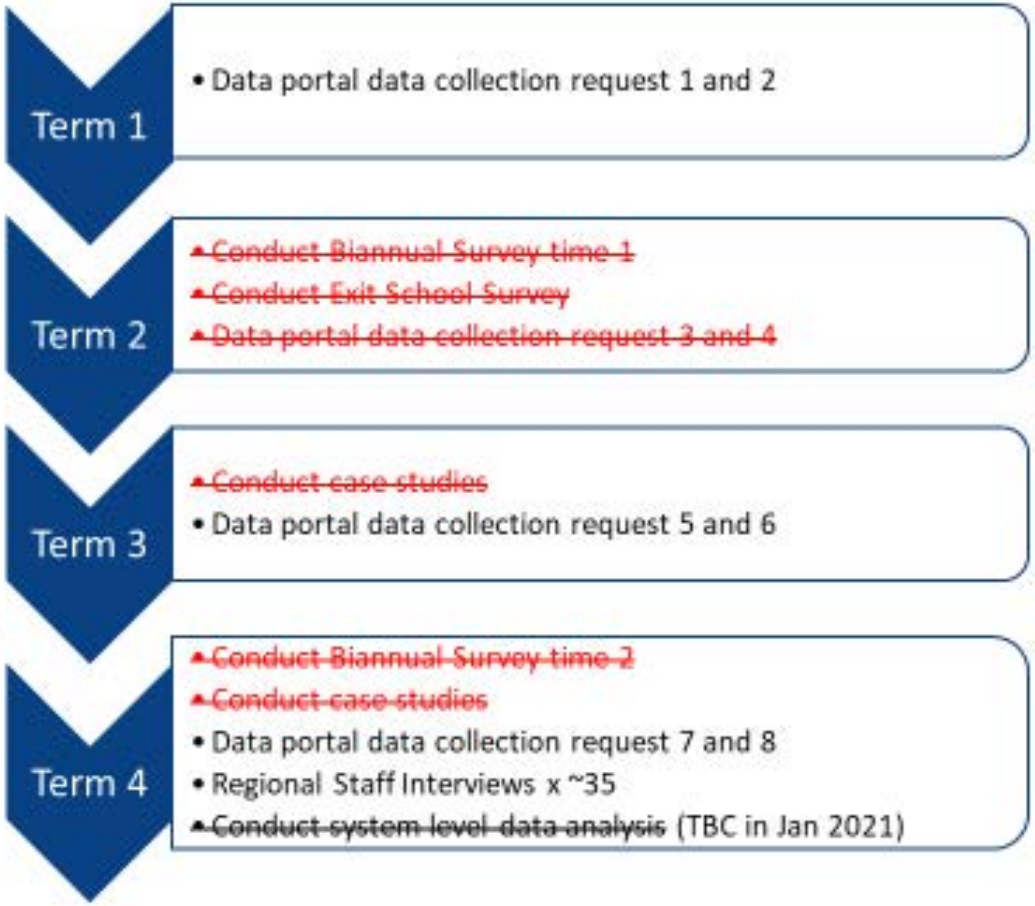
$$Impact = \frac{(ToC + F)^2 \; x \; (OD + E)^2}{(C + R)^2 \; x \; Ep}$$

Evaluation design – COVID-19 Changes

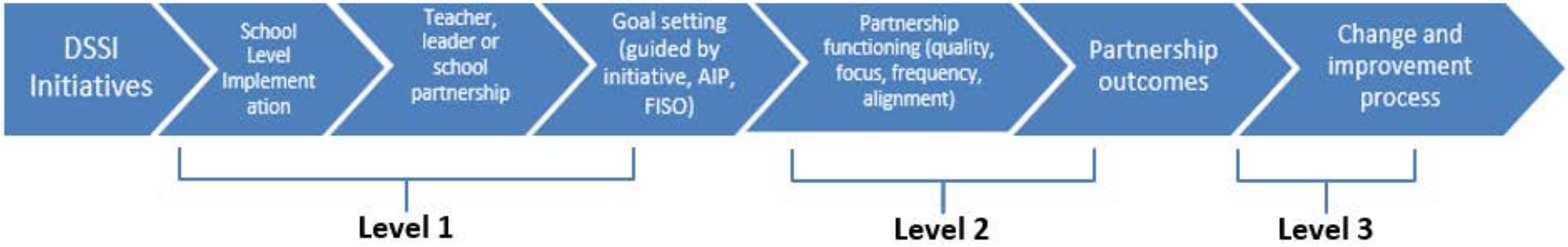
The evaluation aims to investigate the:

- Process of implementing DSSI
- Impact of DSSI on teaching and leadership practices and school operations
- Impact of DSSI on school improvement
- Sustainability of school improvement practices

Intended data collection for 2020 shown in diagram. The red strikethrough indicates all of the data collection activities that have not been able to be conducted during 2020 .



Levels of measurement



- **Level 1**: Degree and fidelity of implementation
- **Level 2**: Impact of the DSSI initiatives on teacher and leadership practices, and school improvement areas
- **Level 3**: Sustainability and scalability of change

Evaluation components

A **multiphase mixed methods design** that aimed to provide consistency to the evaluation project and address the evaluation questions on effectiveness, impact, variation and enablers. A repeated measures, quasi-experimental design was employed, using a bi-annual online survey, key stakeholder interviews, documents, system-held data, student outcome data, and school case studies.

An **ongoing monitoring system** to allow for rapid data collection and feedback, including the development of a mobile application to help schools collect and receive rapid feedback on implementation and outcomes.

An **evaluation capacity building component** to embed a structured and supportive process that helps DET and schools understand and use data, and adapt delivery.

An **adaptive component** that can be used to explore emergent questions

Knowledge brokering and communication plans to ensure timely dissemination of evaluation findings across schools and relevant stakeholders.