

Gathering, analysing and presenting effective data

ACHPER Queensland

15 August, 2019

Acknowledgement of Country

I acknowledge the Traditional Owners of the
lands on which we gather.

I pay my respects to their Elders, past, present
and emerging.

Learning intentions

- model effective data gathering and presentation techniques for assessment
- inform strategy design and enable observation of key concepts



Success criteria

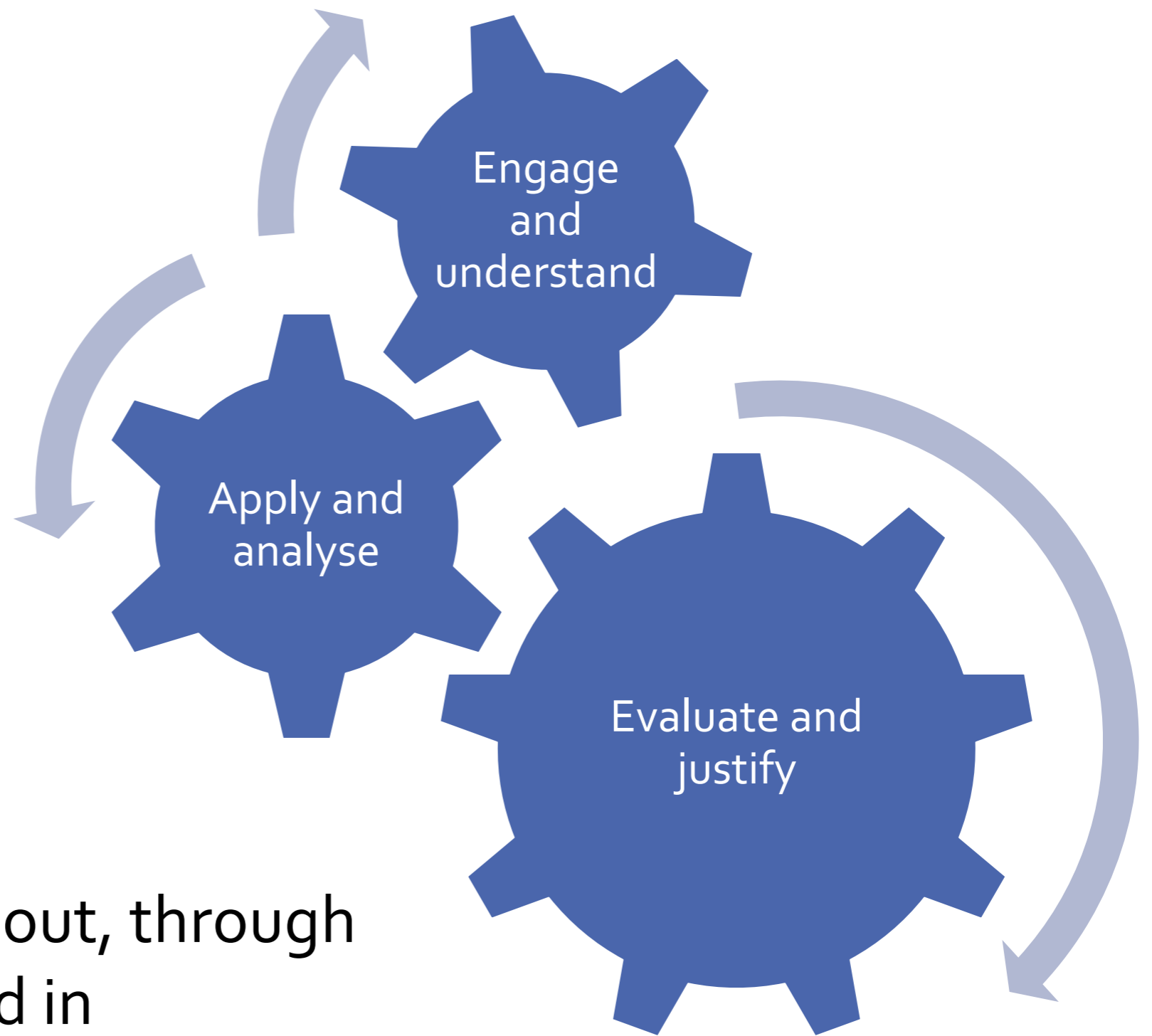
You will know if you are successful if you:

- can develop data gathering strategies using different methodologies
- can model processes of analysis, synthesis and evaluation



Inquiry approach in Physical Education

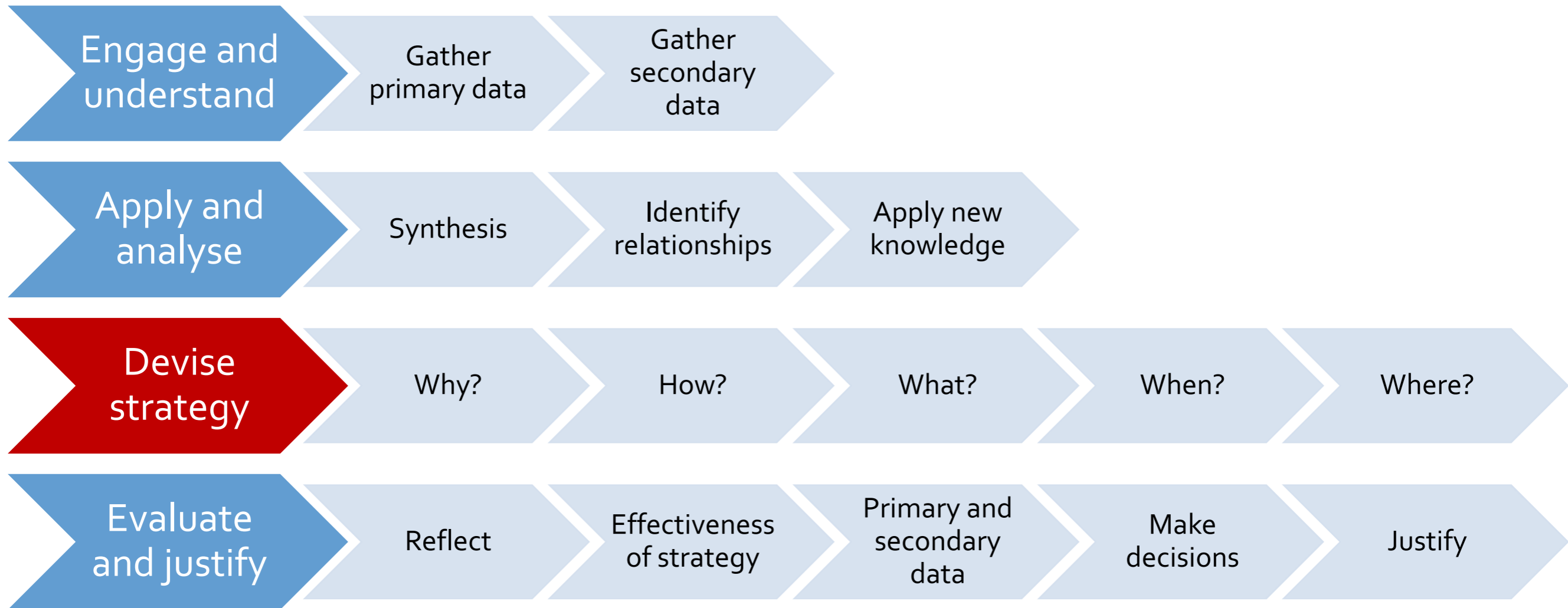
Inquiry and integration of movement – a non-linear process



About, through
and in
movement

Unit objective	IA1	IA2
1. <u>recognise</u> and <u>explain</u> tactical awareness and <u>ethics</u> and <u>integrity</u> concepts and principles about selected physical activities	•	•
2. <u>demonstrate specialised movement sequences</u> and <u>movement strategies</u> in the selected <u>physical activity</u> .	•	
3. <u>apply</u> concepts to specialised movement sequences and movement strategies in the selected physical activity	•	
4. <u>analyse</u> and synthesise <u>data</u> to <u>devise</u> strategies about tactical awareness and ethics and integrity	•	•
5. <u>evaluate</u> tactical, ethics and movement strategies	•	•
6. <u>justify</u> tactical, ethics and movement strategies	•	•
7. <u>make decisions</u> about and use language, conventions and mode-appropriate features for <u>particular</u> purposes and contexts.	•	•

Unit objectives – Unit Three



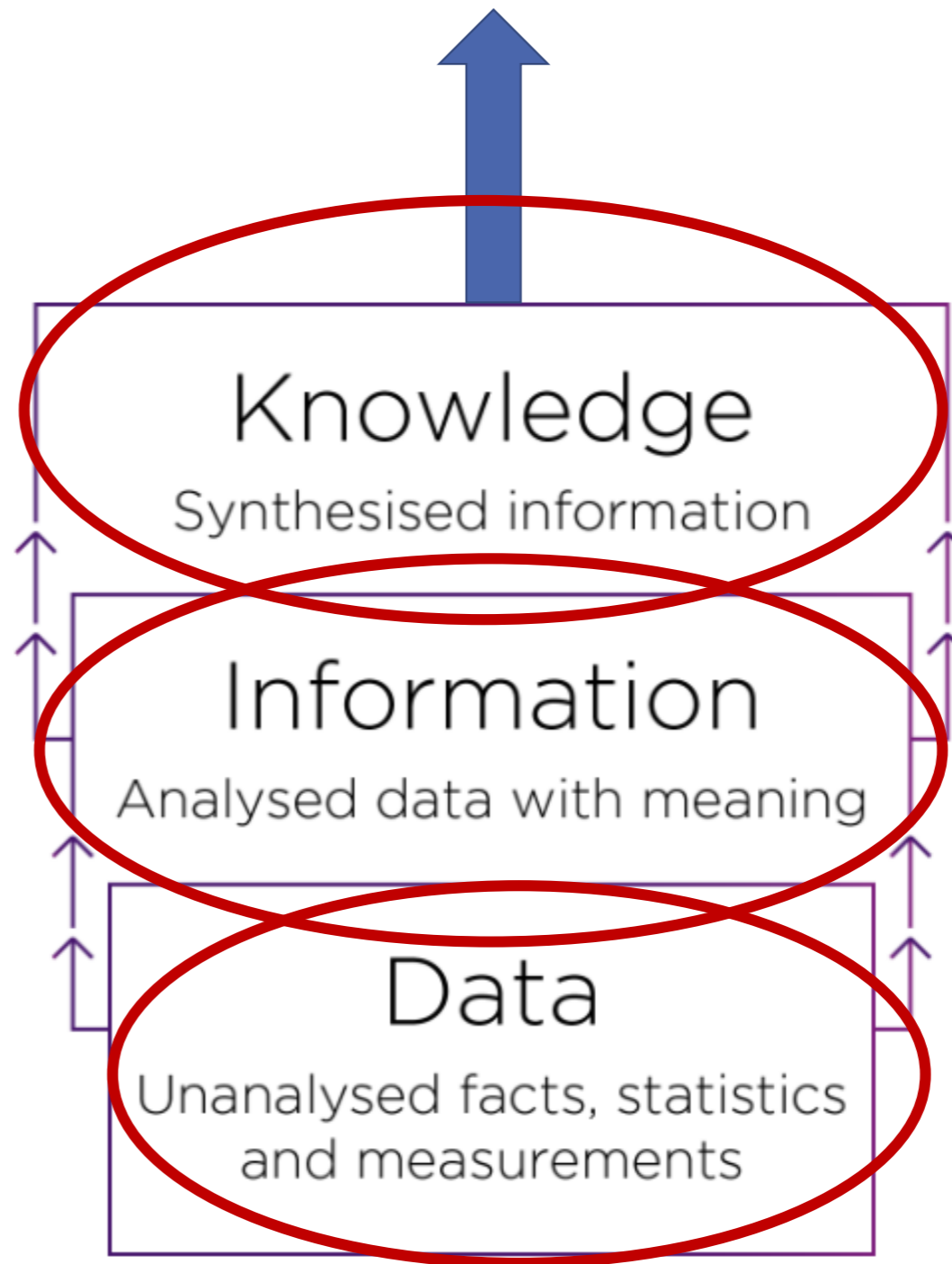
Inquiry and
integration
foster deep
learning

- Relate new ideas and concepts to prior learning
- Integrate knowledge
- Look for patterns
- Evaluate new ideas
- Critically evaluate
- Reflect on learning

(Sawyer, 2006)

A process...

Devise a strategy
– a course of
action



Over to you

Reflect on the implementation of your most recent topic in Physical Education (2019)

How effectively did your students use inquiry to devise a strategy?

Planning
integrated learning
experiences in
Physical Education

Devising an integrated learning experience

1. Identify the limitation

2. Gather data (pre-test)

3. Devise a strategy

4. Gather data (post-test)

5. Evaluate and justify using primary and secondary data

1. Identify the limitation

- Which syllabus subject matter is being investigated?
- What do your students want to find out?
- What's the research question?
- What's the issue?

2. Gather data (pre-test)

- primary
- secondary

- How will you gather the data?
- What does the data say about the limitation?
- What patterns and trends in data might inform the strategy?

3. Devise a strategy

- What's the course of action?
- How will the strategy impact the limitation?
- How will the intervention bring about a determined outcome?

4. Gather data (post-test)

- primary
- secondary

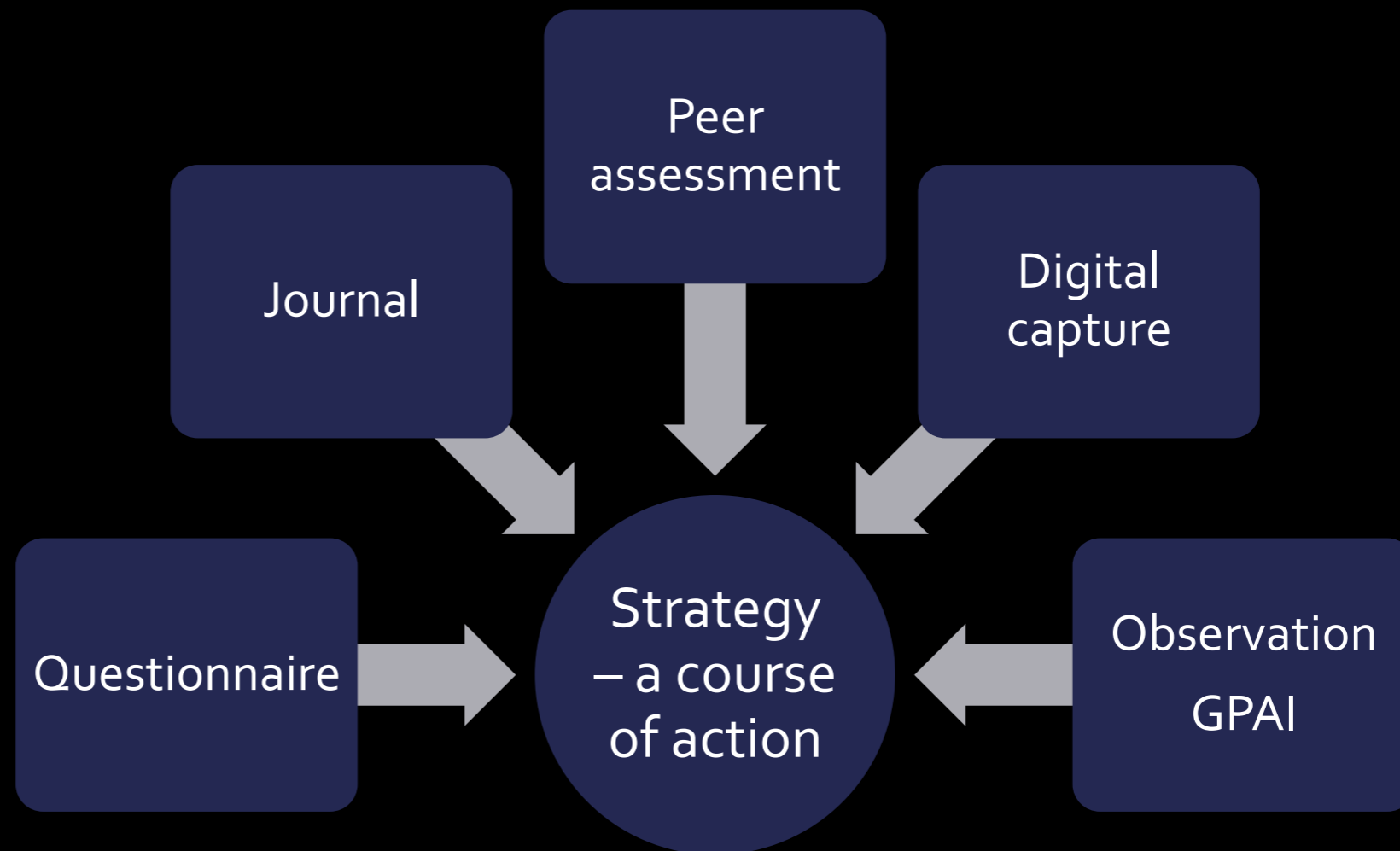
- Is the strategy producing the intended outcome?
- Why or why not?
- Does the strategy need to be adapted or modified?

5. Evaluate and justify

-primary data
-secondary data

- What evidence can be used to support the strategy?
- Does the strategy need to be adapted or modified?

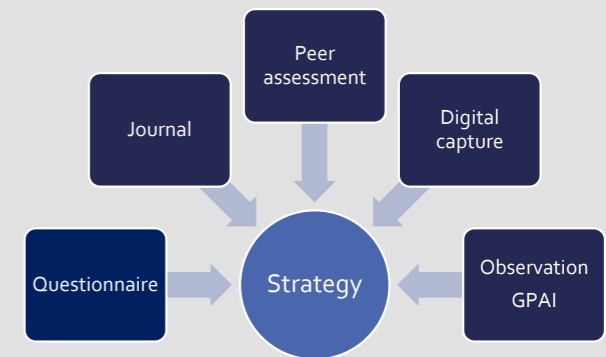
Primary data collection



Unit objective	IA1	IA2
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7. <u>make decisions</u> about and use <u>language, conventions</u> and mode-appropriate features for <u>particular</u> purposes and contexts.	•	•

Unit objectives – Unit Three

Reflection - journal



Reflection – journal

- Useful tool for all units
- Potential for transfer of learning between topics – deep learning
- Developing effective questions and prompts is essential
- Danger of becoming descriptive rather than reflective

Gathering data: Reflective writing

- Reflection **IS NOT** simply a recall of an experience.
- making sense of experience
- reimagining future experience

Ryan, M and Ryan, M. (2015). A model for reflection in the pedagogic field of Higher Education. In: Ryan, ME (Ed). Teaching reflective learning in Higher Education: A systematic approach using pedagogic patterns. Springer.

What outcomes did the strategy have on your performance? What evidence makes you say that?

Give an example of how your strategy impacted on your own performance. What patterns do you observe from the data?

What are the next steps to improve the implementation of your strategy?

How might you implement the next steps? What do you need to do to act?

What did you learn about the concept you are investigating?

What new knowledge have you learned from this week regarding your psychological strategy and performance.

Was your strategy achieved? What evidence do you have?

List the findings of one secondary source which supports the implementation of your strategy.

Another framework

The 4 R's	Deeper reflection
Reporting and responding	Report the issue. Why is it relevant? Make observations – use evidence Ask questions
Relating	Make connections between issue and your own skills e.g. subject matter, expertise, syllabus knowledge? Do I have expertise to deal with this? Do I require any assistance?
Reasoning	Highlight significant factors about the issue. Consider different perspectives. Refer to evidence to support your reasoning.
Reconstructing	How will I deal with this next time? What might work and why? Reframe future practice

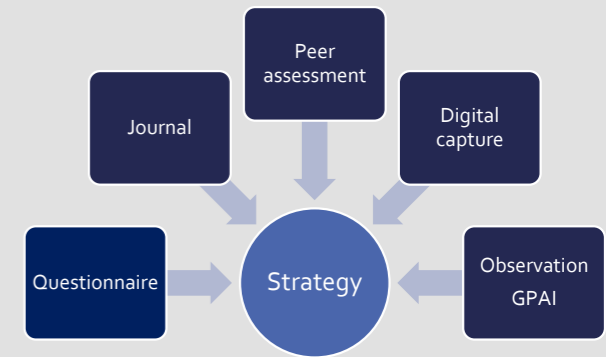
(Adapted from QUT, 2019)

Where to from here?

- Why is reflection important as a primary data gathering tool?
- In which topics might reflection be a valuable data source?

Share with a partner.

Observation - GPAI



Leadership in game play



Developing
a GPAI

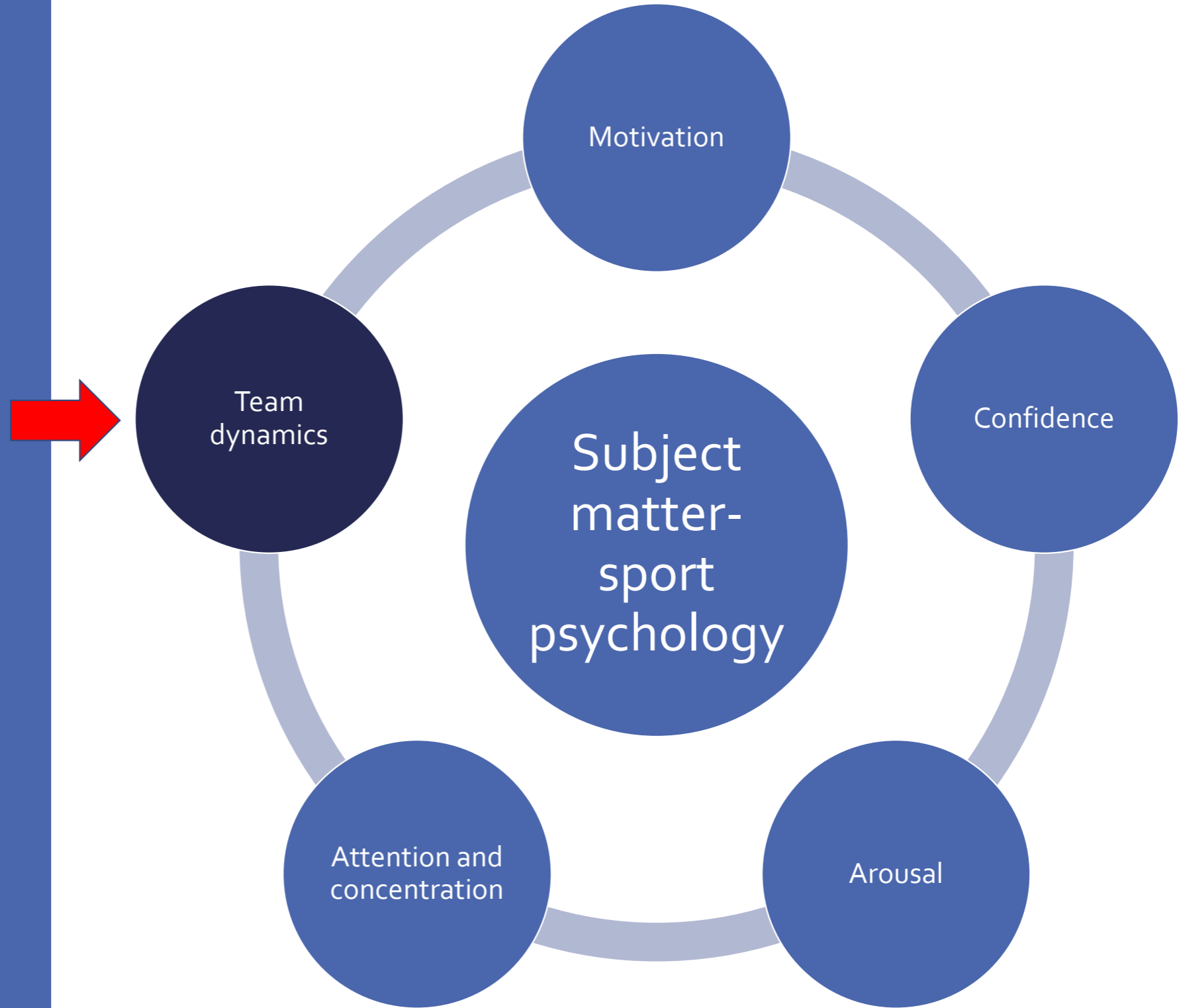
How can this be observed?

What are we trying to find out?

Developing a
GPAI –
not one size
fits all

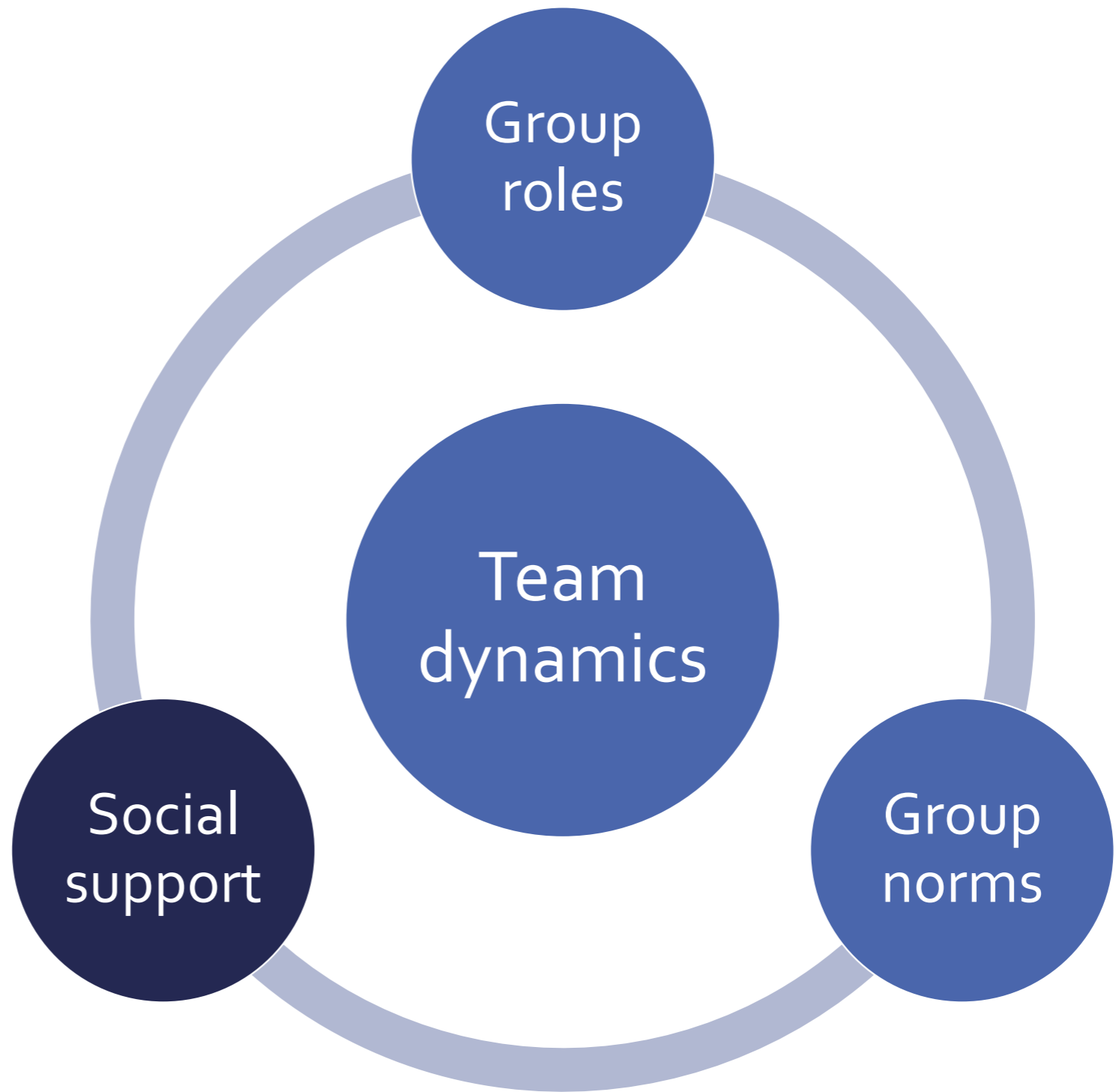
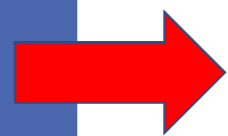
- What do you want to observe?
- What **CAN** be observed?
- How will these observations be quantified?
- What are you trying to find out?
- Why is this important?
- What do we already know?

Game Performance Assessment Instrument

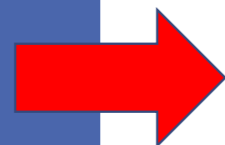


(Adapted from Mitchell, Oslin and Griffin, 2006; Amezdroz et.al., 2016)

Game
Performance
Assessment
Instrument



Behaviours
defined and
observed



Developing a
GPAI –
not one size
fits all

- What do you want to observe?
- What **CAN** be observed?
- How will these observations be quantified?
- What are you trying to find out?
- Why is this important?
- What do we already know?

Leadership in game play

- What evidence could we look for?
- What can be observed?
- Discuss with a partner.

Leadership in Game play –

Secondary data as evidence

- High number of interactions with others (Lee, Coburn, and Partridge, 1983)
- Perceived high levels of competence displayed (Moran and Weiss, 2010)
- Demonstrate high levels of competitiveness, responsibility, acceptance, dominance, aspiration, willingness to be daring (Klonsky, 1991)
- Display creativity and intelligence, focus and commitment, problem-solving (Glenn, 2003)
- Lead by example (Moran and Weiss, 2011)

Leadership in Game play –

Analysis? Evidence?

- High number of interactions with others (Lee, Coburn, and Partridge, 1983)
- Display high levels of competence (Moran and Weiss, 2010)
- Demonstrate high levels of competitiveness, responsibility, acceptance, dominance, aspiration, willingness to be daring (Klonsky, 1991) Questionnaire
- Display creativity and intelligence, focus and commitment, problem-solving (Glenn, 2003) Questionnaire
- Lead by example (Moran and Weiss, 2011) Questionnaire

Design a GPAI to observe:
Social support

Leadership

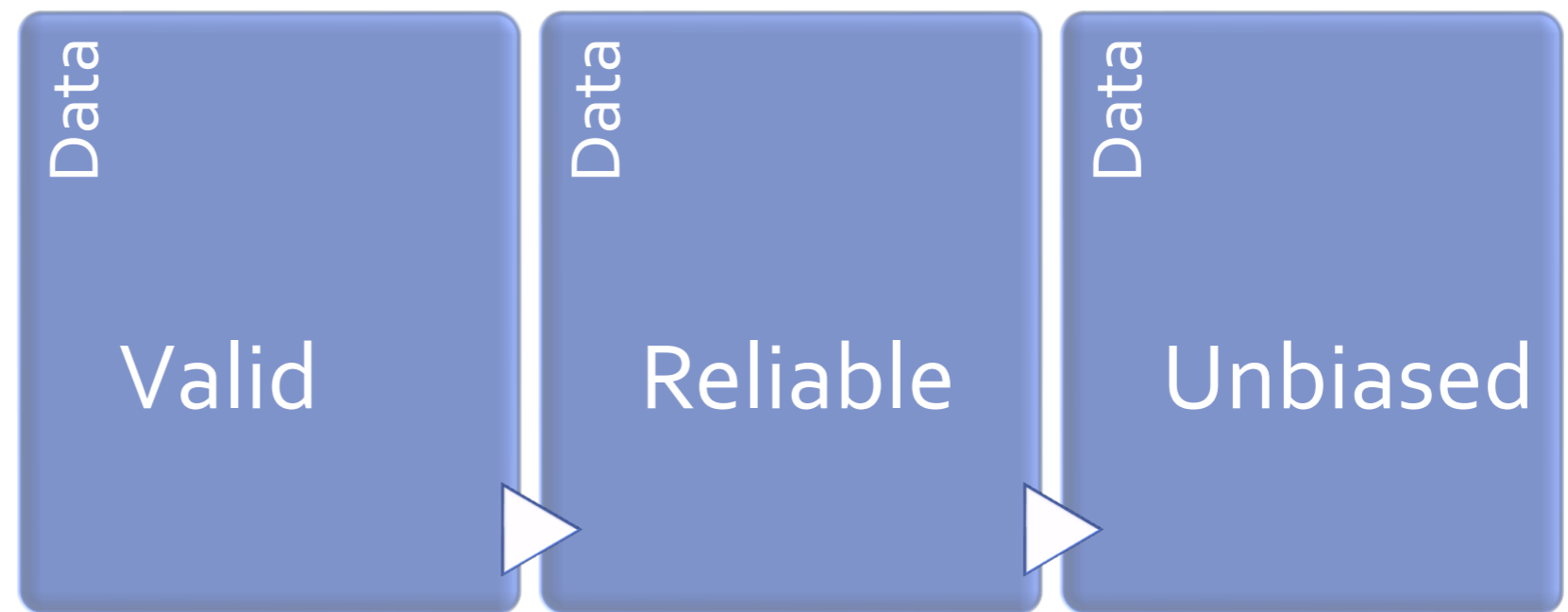
Interactions:

- Evident
- Not evident

Competence:

- Successful
- Not successful

Quality data



Leadership behaviour	Interactions		Competence	
Occurrence	Evident	Not	Success	Not
Tally				

GPAI – leadership characteristics



(QCAA, 2018)

Leadership behaviour	Interactions		Competence	
Occurrence	Evident	Not	Success	Not
Tally				

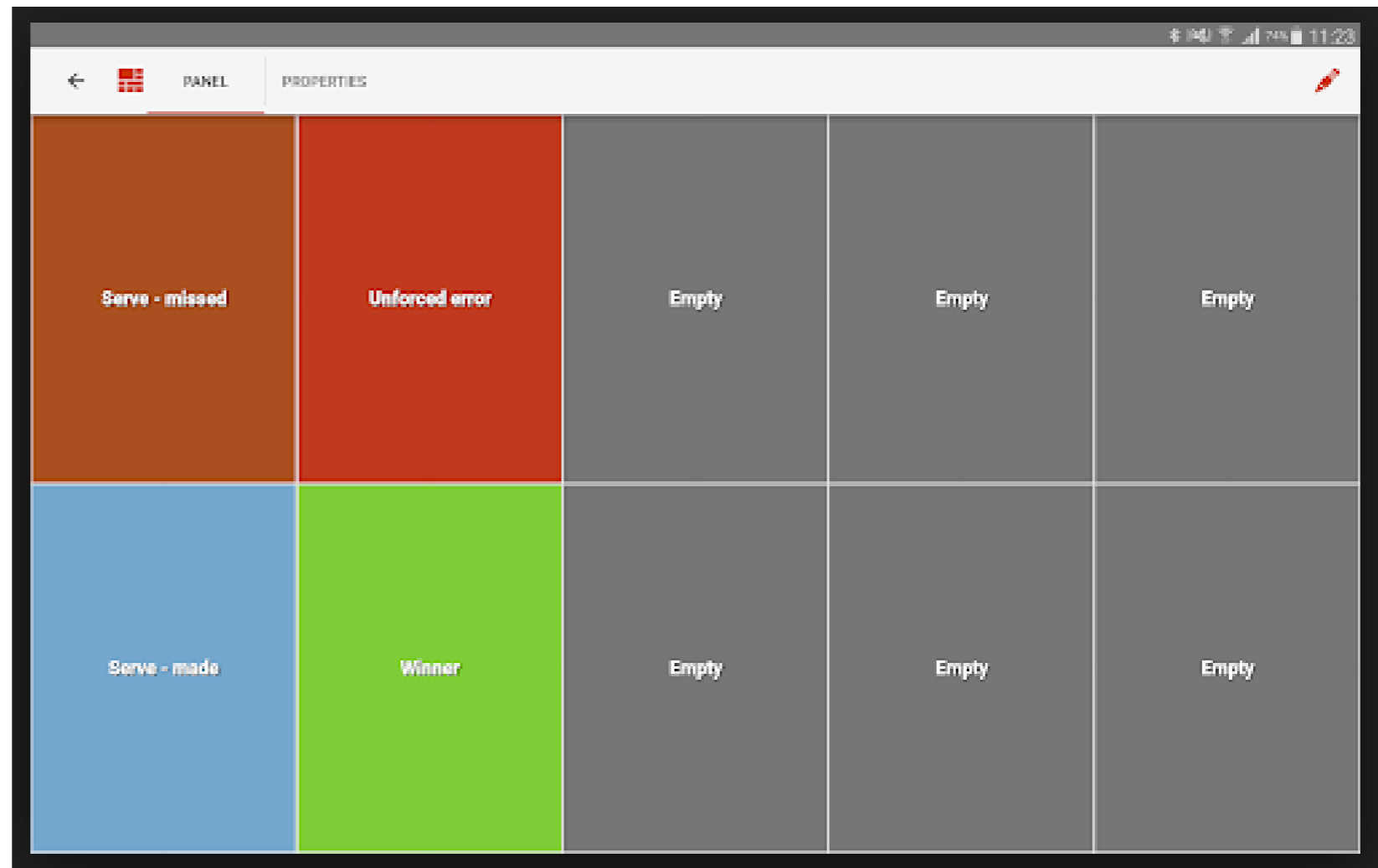
Share your findings with a partner

GPAI – leadership characteristics



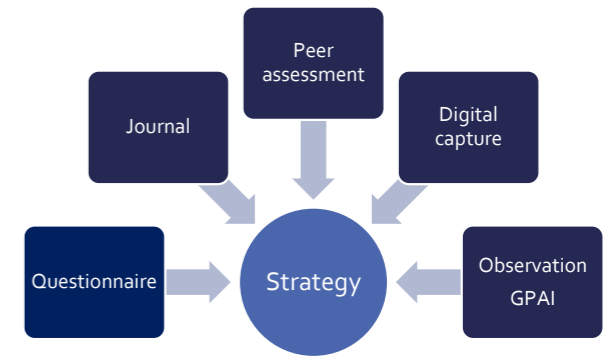
Dartfish Easytag Note app (\$7.99)

ICT
assistance



Check for Understanding

- What's your takeaway message about constructing GPAs?
- Share with a partner



Questionnaire: Values and physical activity

Survey: adapted from Whitehead, Telfer and Lambert, 2015

Values in Youth Sport and Physical Education, Oxfordshire:
Routledge

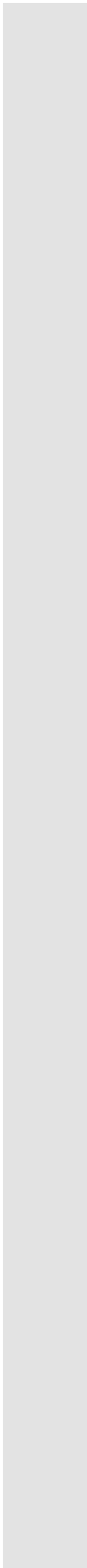

Value	Description	Importance				
Being fair	I am fair and don't cheat	1	2	3	4	5
Companionship	I am there with my friends	1	2	3	4	5
Compassion	I am concerned about the people around me in my sport	1	2	3	4	5
Conformity	I try to fit in with the group	1	2	3	4	5
Conscientious	I am reliable and give 100% when playing or competing	1	2	3	4	5
Contract maintenance	I don't spoil the game or competition	1	2	3	4	5
Enjoyment	I enjoy myself and have fun	1	2	3	4	5
Health and fitness	I get fit and healthy through sport	1	2	3	4	5
Obedience	I do what I am told	1	2	3	4	5
Personal achievement	I put in the best performance I can	1	2	3	4	5
Public image	I like to look good to others	1	2	3	4	5
Self-actualisation	I get a buzz or feel really good when playing	1	2	3	4	5
Showing skill	I do the skills or techniques well	1	2	3	4	5
Sportsmanship	I am well mannered, play with honour, and think it's important to play by the rules	1	2	3	4	5
Team cohesion	I lift the team when things are difficult	1	2	3	4	5
Tolerance	I try to get on with other people in my sport, even if I don't like them	1	2	3	4	5
Winning	I like to win or beat other people	1	2	3	4	5

Mean value rankings

(n=1891)

(male = 47%)
(female = 53%)

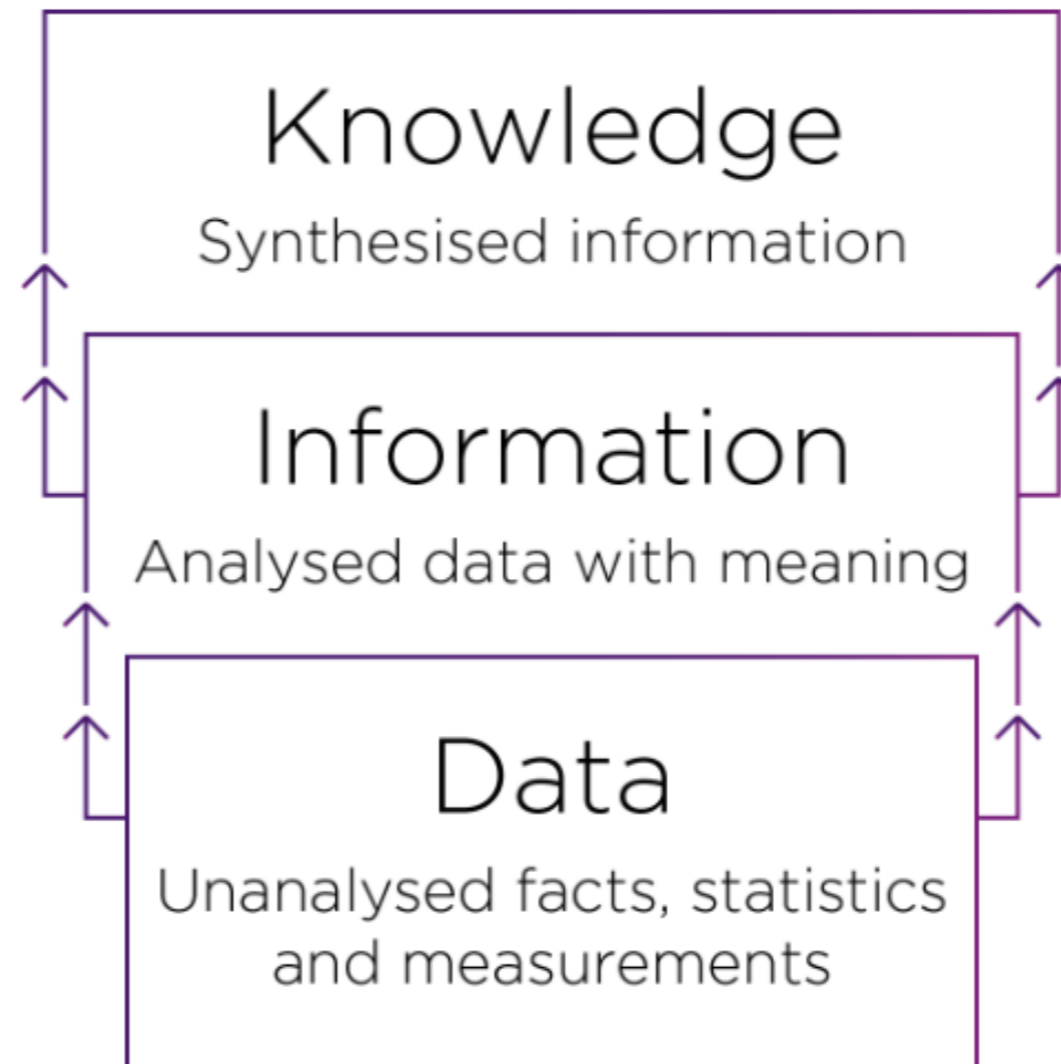
Rank	Value	Mean
1.	Enjoyment	4.22
2.	Personal achievement	4.04
3.	Sportsmanship	3.90
4.	Contract maintenance	3.89
5.	Being fair	3.73
18.	Winning	1.27



Modelling analytical processes

A process...

Devise a strategy:
a course of action



Organising



Interpreting

Classifying

Synthesising

Communicating

The process of analysis

Step 1

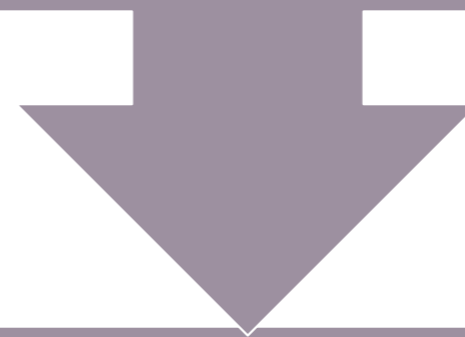
How will you
organise the
data?

- Collect all the relevant data that you have gathered
- Sort the data into different categories
- Use those categories to identify the essential elements

Step 2

What are the similarities and differences?

Examine the fundamental parts and their relationships to each other.



This step can take a number of forms, including:

tallying data from different categories

taking note of any similarities (what does the data indicate?)

comparing and contrasting any differences within and across categories

identifying similarities within and across categories

identifying any relationships that may exist between categories.

Step 3

Quantitative and qualitative data



Quantitative data (numbers) can be presented using tables or graphs.



Qualitative data (descriptions) can be specific examples, case studies or scenarios.

Step 4

Synthesise the data

When data is synthesised, different elements are combined to form new ideas or information.

Information is put back together again to look for connections.

Synthesis helps to link evidence, and develop and draw logical conclusions about the data.

This stage uses techniques such as:

combining the different categories of the data into a whole

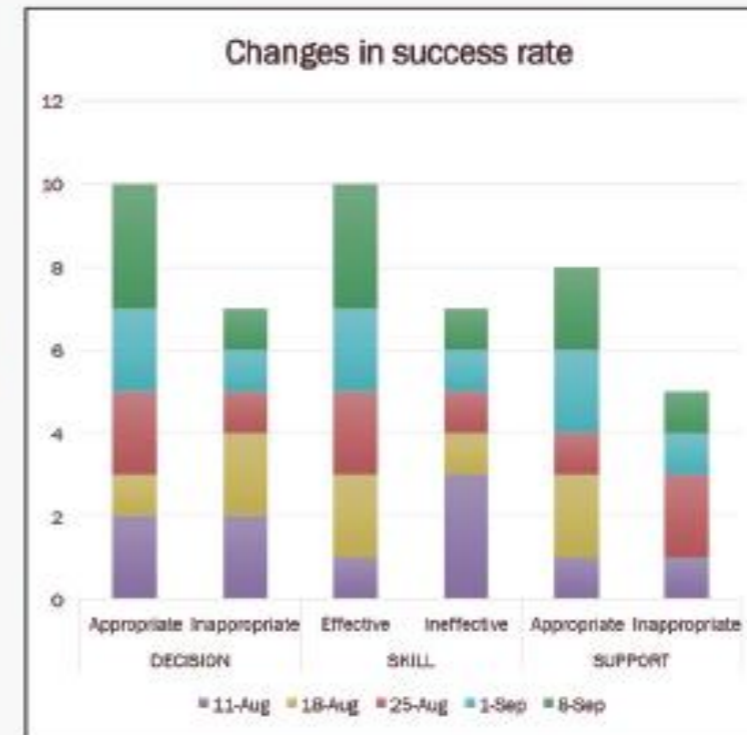
creating information from the data

examining for trends and new information.

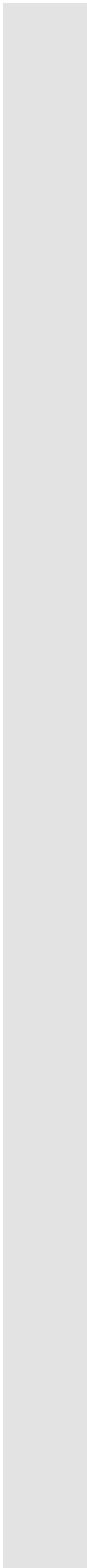

PRIMARY DATA ANALYSIS

- I gathered primary data of my performance implementing the strategy over a period of five weeks.
- My analysis shows the change in success rate for three aspects of my performance.

	DECISION-MAKING SUCCESS RATE	SKILL EXECUTION SUCCESS RATE	COMMUNICATION SUCCESS RATE
11 August	50%	25%	50%
18 August	33%	88%	100%
25 August	66%	66%	33%
1 September	66%	66%	66%
8 September	75%	75%	66%



Step 5 Communicating new information

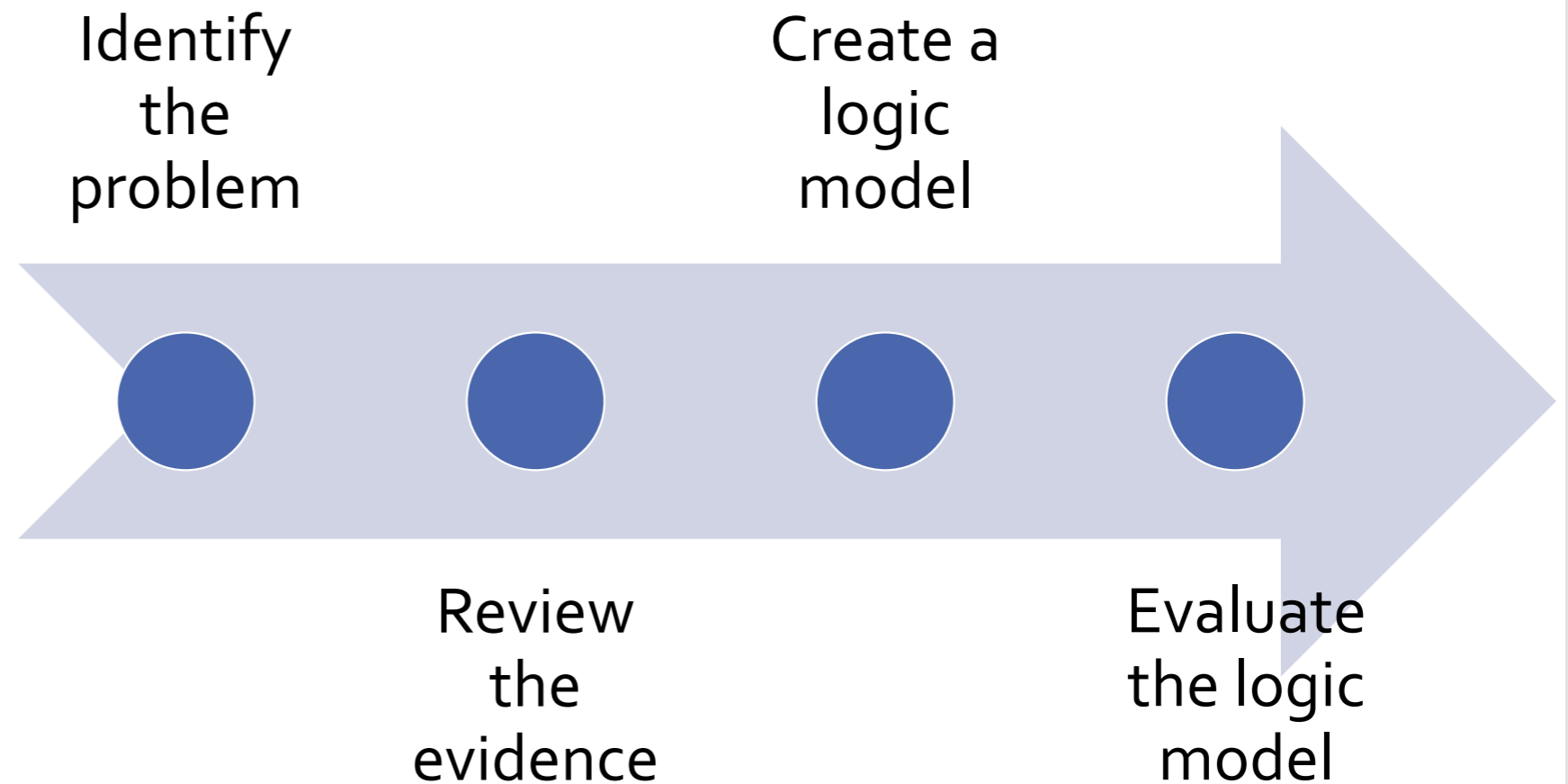


Modelling synthesis and evaluation processes

Synthesis and
evaluation to
inform strategy
design

Steps in
evaluation –
a continuous
process

'Begin with
the end in
mind'
(Covey, 2006)



Step 1:

Identify the
problem

What's the
problem I'm
trying to solve?

Why is this
problem
important?

What's the aim
of the
strategy?

Strategy – what are we doing?	Evidence – why are we doing this?

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Step 2:

Review the evidence

Step 3:

Create a logic model

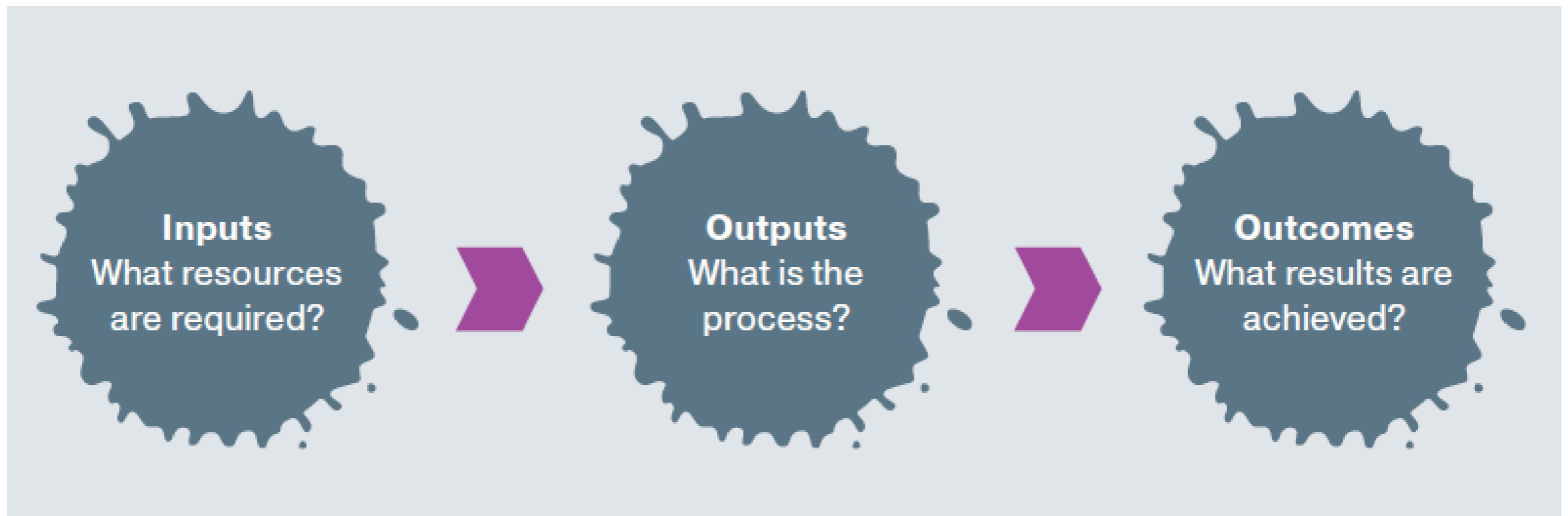
A logic model is a step-by-step process that indicates:

a) **RESOURCES** you will need (**INPUTS**)

b) the **PROCESS** you are going to use

c) what you are hoping to achieve (**OUTCOMES**)

This logic model will help you to consolidate the design of your strategy.

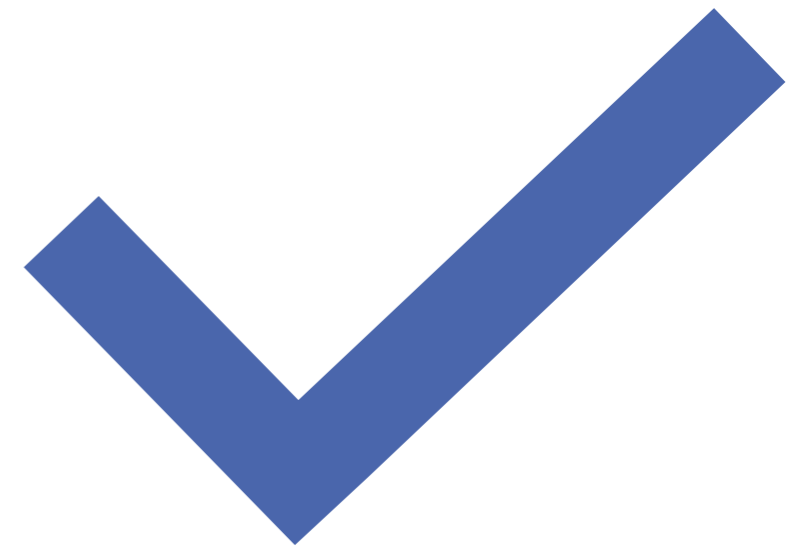


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The logic model

A well-structured strategy...

- A well-structured strategy includes:
 - evidence-based activities
 - a clear understanding of purpose
 - structured and sequenced activities
 - data collection opportunities
 - a clear understanding of concepts



Step 4:

Monitor the logic model

- Once you develop your logic model, you need to gather relevant primary data to test the viability of your strategy.
- This step should be ongoing throughout your entire investigation.

Step 4:

Monitor the logic model

Evidence may include:

- feedback from your partner or peers about what the strategy provided

- what was most or least useful about the strategy

- whether or not the strategy was able to be completed by the user

- observations of enhanced outcomes when using the strategy.

Step 5:

Evaluate the logic model

- What does the data tell me?
- Why am I observing these results?
- How can I enhance outcomes?
- Does anything about the strategy need to be changed?

3:2:1 Task

- 3 things you were reminded of
- 2 things you learned
- 1 thing you still have a question about



Thank you.

Contact details:

g.amezdroz@movinglearning.com.au

Twitter: [@GAmezdroz](https://twitter.com/GAmezdroz)