Andy Penaluna

INTRINSIC

Ways to teach and assess enterprise and entrepreneurship education at HE institutions in Europe

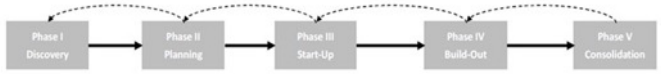
3/12/2020

Previous inspiration from Intrinsic:

Universität Vechta
University of Vechta

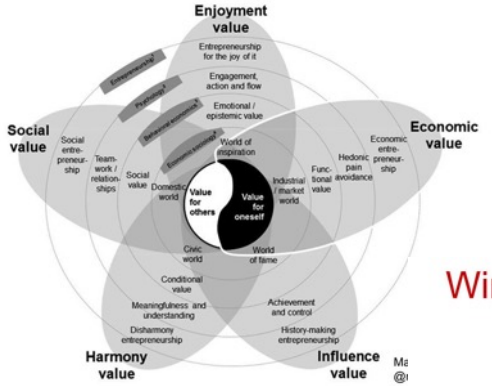
Key competencies in sustainable entrepreneurship

- Recently, Foucrier and Wiek (2019) have developed a "Process-Oriented Framework of Competencies for Sustainability Entrepreneurship". With this framework they describe sustainability entrepreneurship competencies and link them to the actual phases of entrepreneurship.

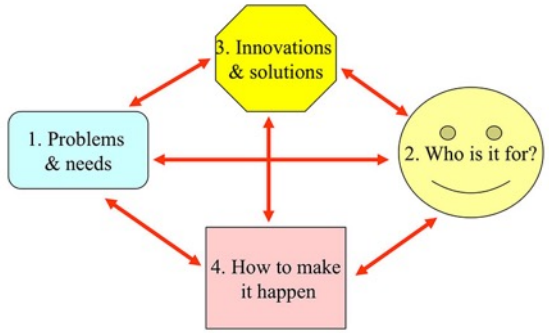


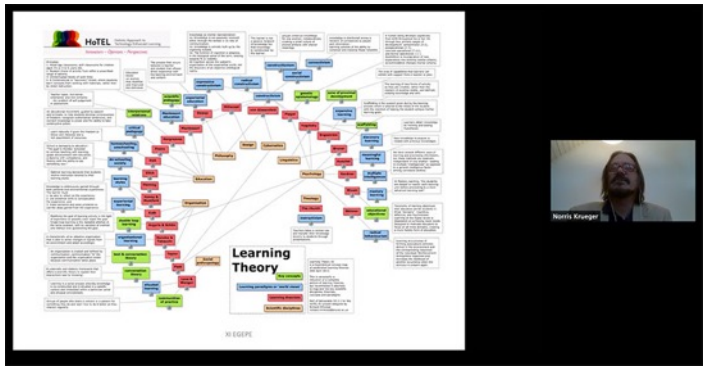
Background: (Entrepreneurship) Educatic
(EE) in Estonia

- Various EE programmes between 2006-2020 are initiatied, both:
  - Curricular and
  - Extra-curricular
- Life-Long Learning (LLL) Strategy 2020 states the importance of applying contemporary learning approach considering the development of learners' *individual, social, entrepreneurial mindset* (LLL Strategy 2020, 2018, p. 7).
- As part of LLL 2020 strategy Edu & Tegu EE progamme. was initated 2016-2020 (cont. in general & vocatinal education until 2022)
  - aim is to systematically implement entrepreneurship competencies at all levels of education, and that EE should become a natural part of education (HTM, Edu & Tegu, 2018).
- As a result of the programme "Framework for EE", including Entrepreneurship Competence Model, in Estonia was developed.



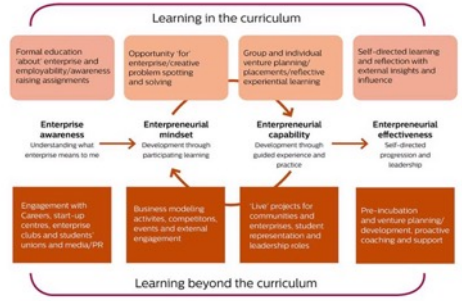
Winning ideas > opportunities





Me

Learning – formal and experiential



QAA

Ontologically speaking…

- I trained as a **designer**, so I am used to wicked problems, definitional flexibility and solution finding in situations of ambiguity and risk.
- As a **researcher I need my definitions** or I can't test or measure things – so there is a mismatch there.
- I am an **educator** who moves past insight towards foresight and future orientation. (Where are the good **research papers** on guessing **what might happen**?)
- I am a **freelancer** who has run his own businesses since I was 22, from **hand drawn design** to **virtual reality**, the **thinking hasn't changed**, just the context.

Ontologically speaking…

- As a 1970's design student I was assessed and graded in two dimensions.

From dependency (on the educator) to Demonstrated autonomy of action and thought

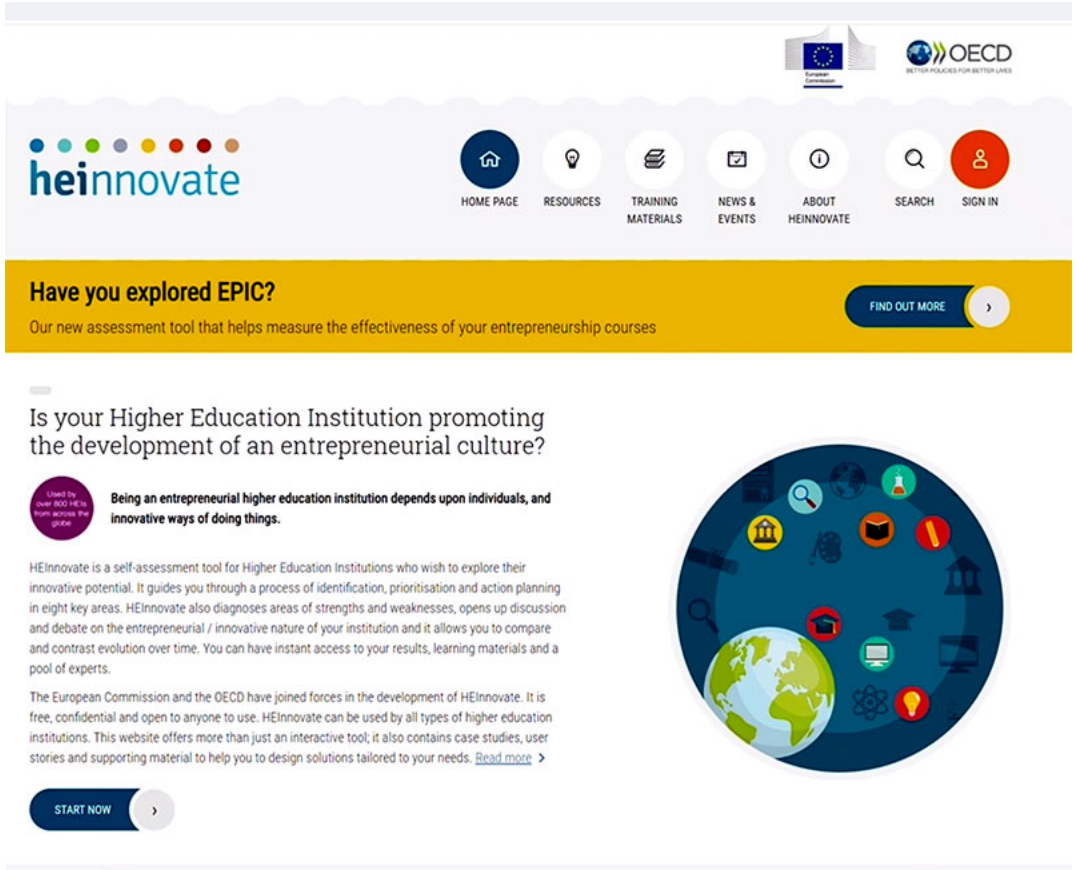
Within simple tasks to Ambiguous and complex Tasks

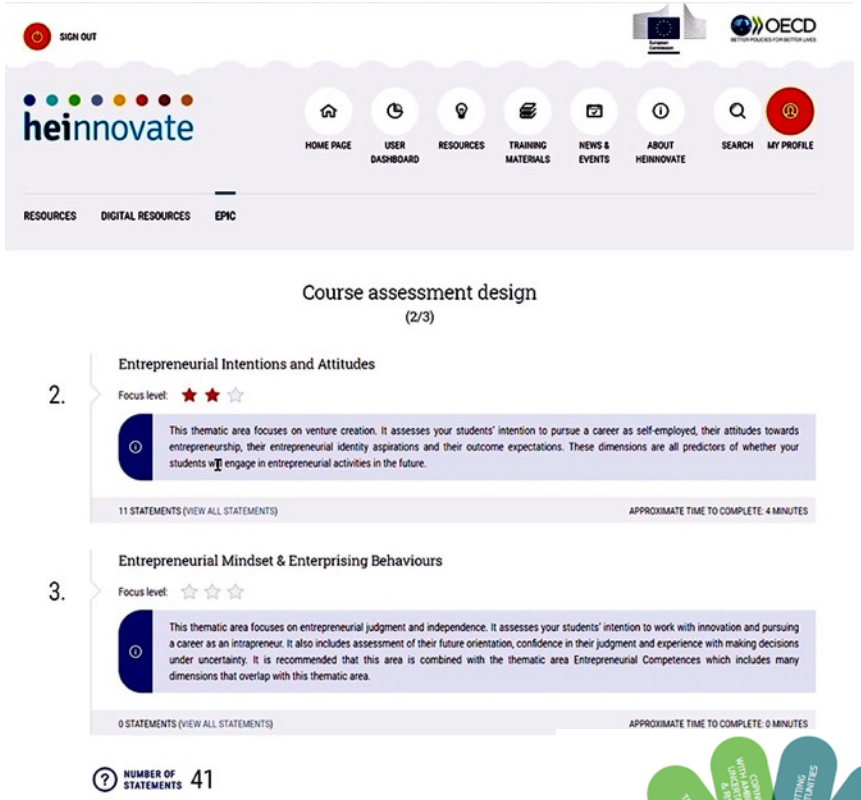
This closely mirrors what I now understand to be:

Pedagogy – teacher led
Andragogy – negotiated learning
Heutagogy – learner led

Go compare ;-)

Ontologically speaking…

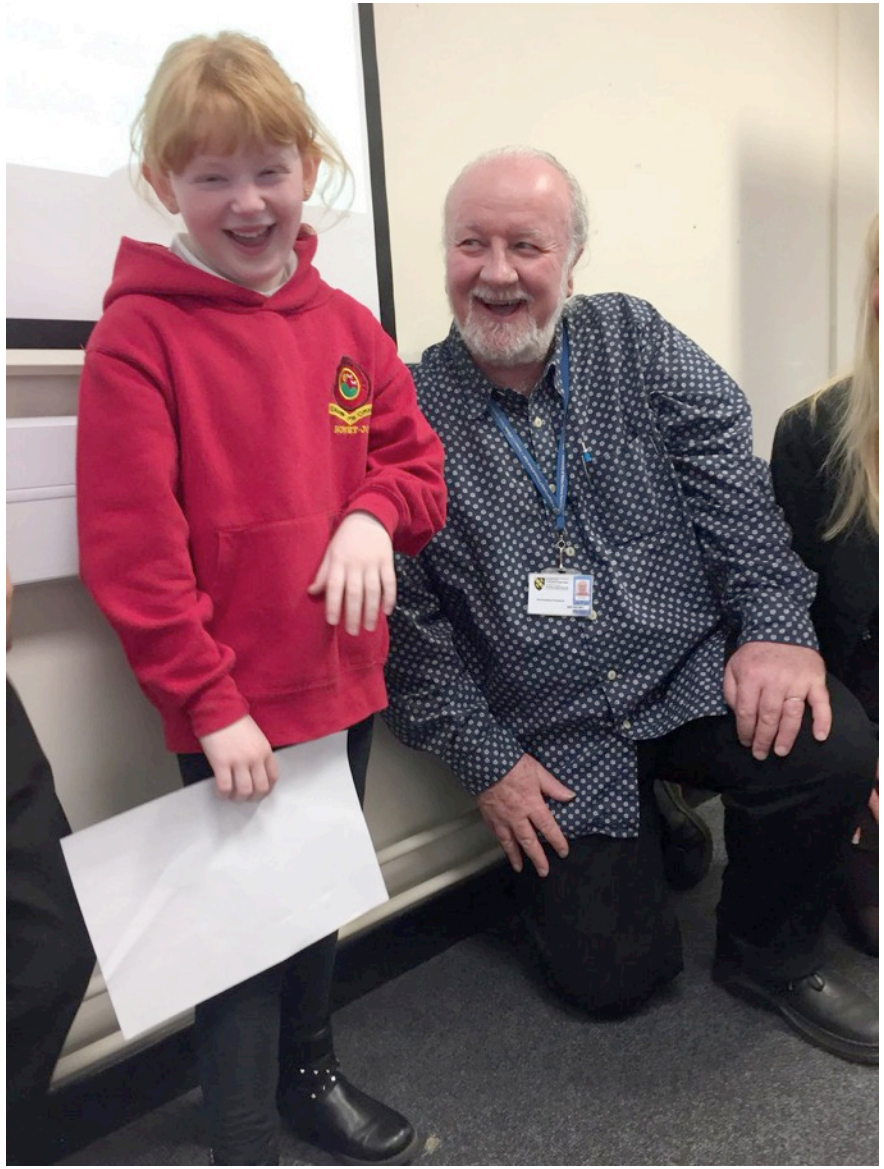




Go compare ;-)

1996 - international publishing / exhibitions

Assessment of curiosity?



vodafone UK 4G 16:32

Menu

Craigfelen Primary @CraigfelenP · 2h
@AndyPena @UWTSD @AdBranddesign thank you we will ask him

Craigfelen Primary @CraigfelenP · 2h
@AndyPena can you helps put the shop to gevu? nd

Craigfelen Primary @CraigfelenP · 2h
@AndyPena my idia is seling Jijbredman. LP

Craigfelen Primary @CraigfelenP · 2h
@AndyPena do you own a company? are you good at computers?
can you help us with our shop?
can you help us get a sign?

Craigfelen Primary @CraigfelenP · 2h
@AndyPena ar you creative? SU

Craigfelen Primary @CraigfelenP · 2h
@AndyPena can you tel us to mack pop_up in nuth wsays? RT

Craigfelen Primary @CraigfelenP · 3h
@AndyPena can yiw help us wiv awa shop? CK

Craigfelen Primary @CraigfelenP · 3h
@AndyPena do you thingc selling CDs is a good idea? GS

386 24

Pupils teaching teachers

ENTRECOMPEDU

Learn from the most creative people

PRIFYSGOL CYMRU
Y Drindod Dewi Sant
UNIVERSITY OF WALES
Trinity Saint David

Assessment of thinking?

Interdisciplinary

Transforming leading academic researchers into successful innovators

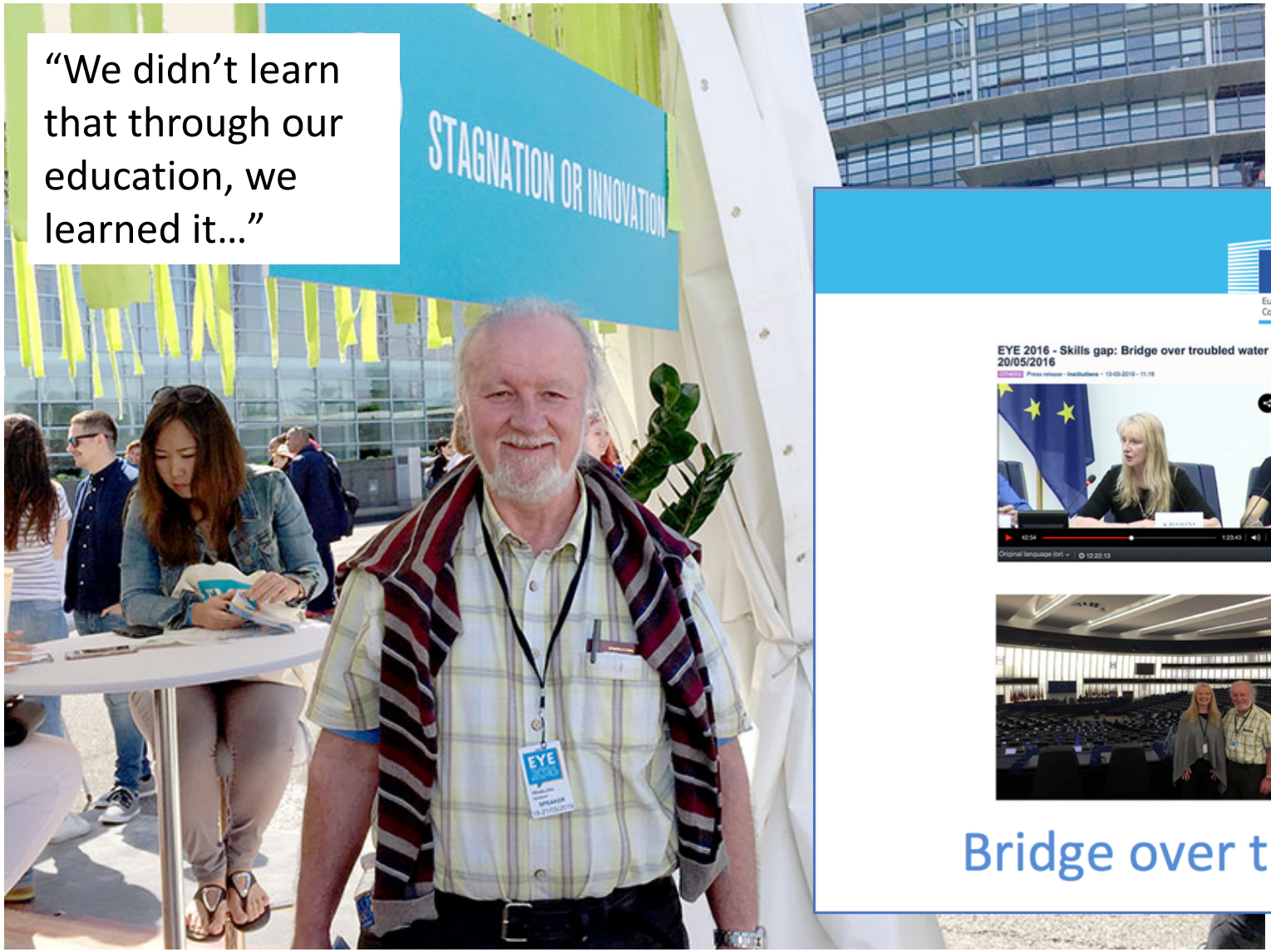
SETsquared PARTNERSHIP
Universities of Bath, Bristol, Exeter, Southampton & Surrey

Researcher to INNOVATOR

https://www.setsquared.co.uk

The SETsquared Partnership is the global no. 1 business incubator and enterprise partnership comprising five research-intensive universities.

International



"We didn't learn that through our education, we learned it…"

International

2012-2019 HE Quality

UIIN BLOG

QAA

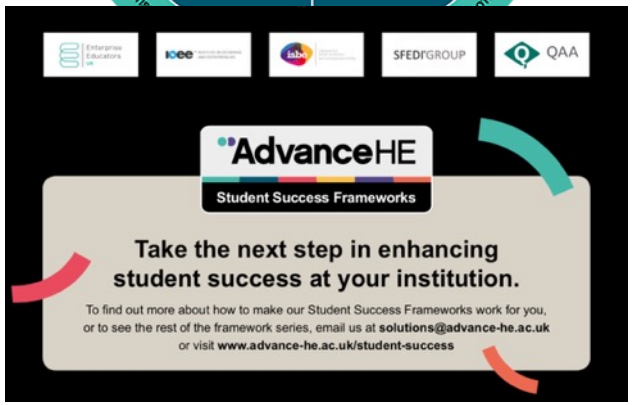
New Guidance for Entrepreneurial Educators Receives International Approval

QAA are responsible for assuring academic quality and standards. AdvanceHE drive positive change in learning and teaching.

ETC TOOLKIT
ENHANCING THE CURRICULUM

http://www.etctoolkit.org.uk/about/

AdvanceHE

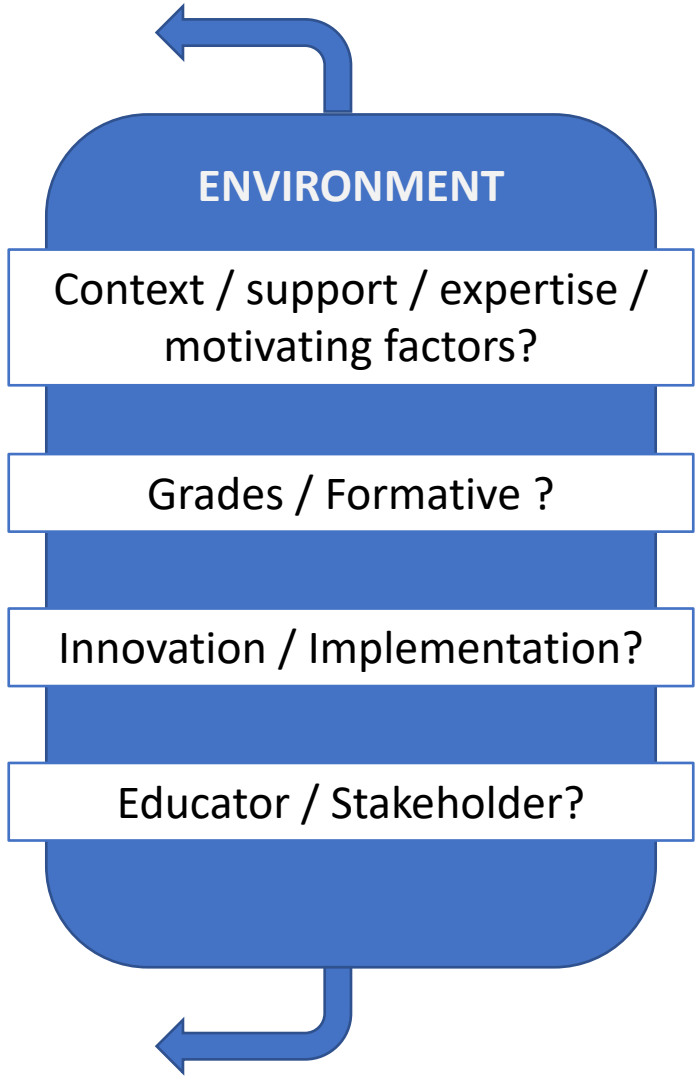


(Educators) Professional Standards Framework

https://www.advance-he.ac.uk/knowledge-hub/framework-enterprise-and-entrepreneurship-education

What are we assessing?

Learner performance?	Educator performance?
Short, medium or long term?	Short, medium or long term?
Clear goals or general intent?	Clear goals or general intent?
Who sets criteria – subject or entrepreneurship specialist? Internal or external stakeholders?	Who sets criteria for evaluation?
	Can alumni evaluate?

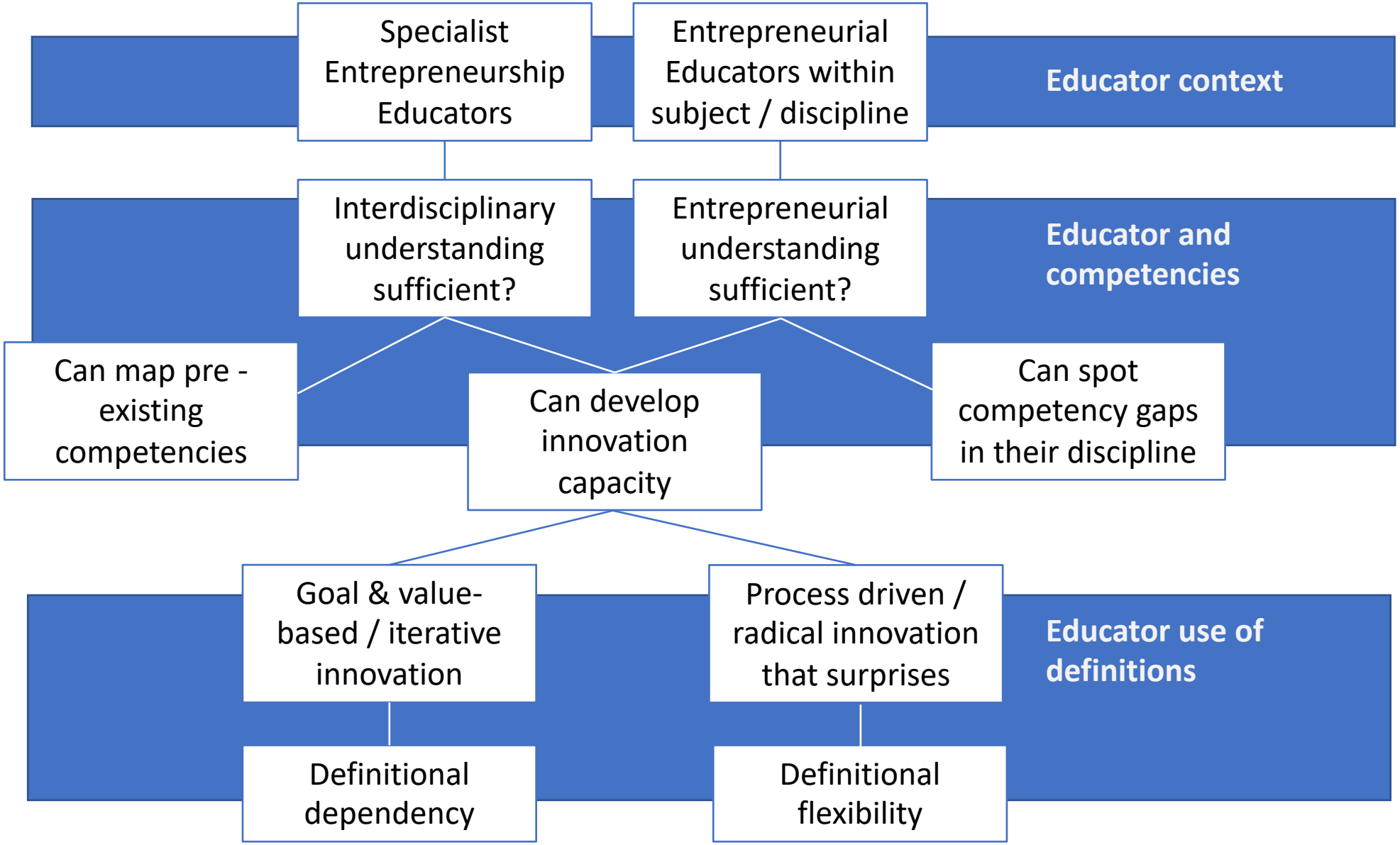


Type of Assessment?

Type	Advantage	Disadvantage
Short term, e.g. end of module	Quick, clean and responds to educational requirements	Limited insights and tendency towards knowledge, not behaviour
Medium term, e.g. end of course	Meets educational summative ‘results’ criteria	Seen as an end goal in itself
Long term, e.g. 5, 10 or 20 years later	Real insights in contexts beyond education	Tracking alumni and institutional support needs resources.

Type of Assessment?

Goals	Advantage	Disadvantage
Clear goals based on definitional stances?	Good for research and measurement	Limited insights based on (educator) predicted outcomes
General aim or intent?	Allows for variance or interpretation over time	Makes measurement difficult
Subject based?	Real and very relevant to learner	Subject expertise required
Entrepreneurship based?	Specialist insights	May lack relevance to learner

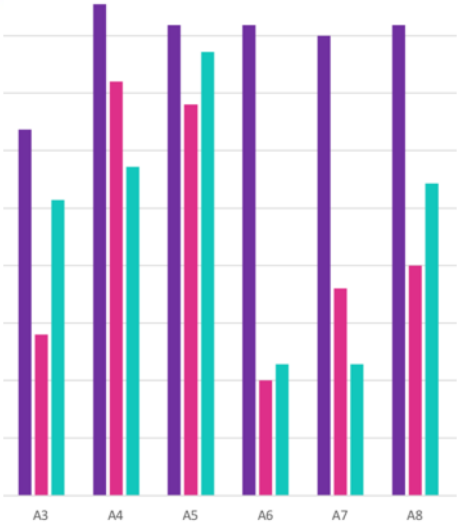


Penaluna & Penaluna, isbe, 2019

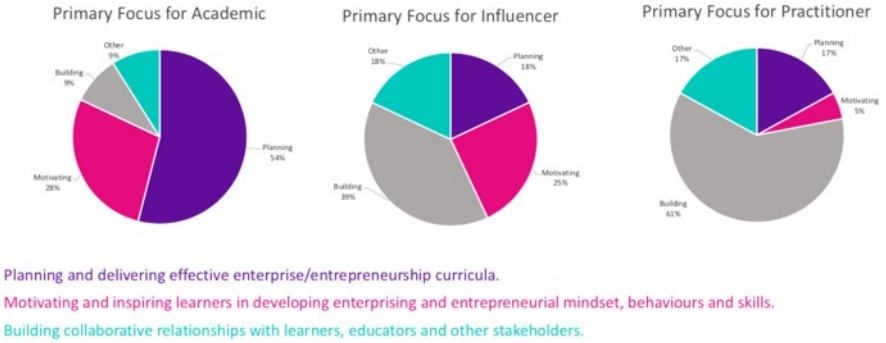
Enterprise Educators

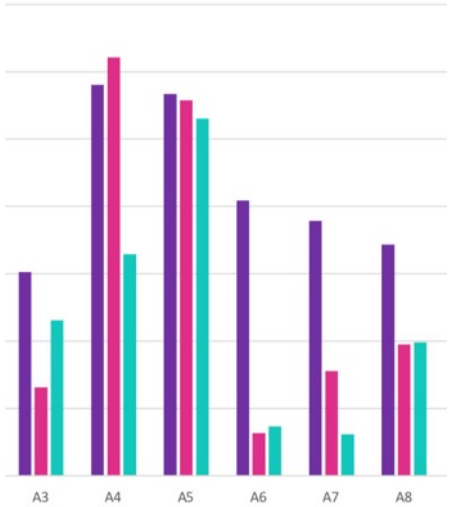
UK insights into assessment

Standards Competency



The academics are more focused and give more time to assessment.



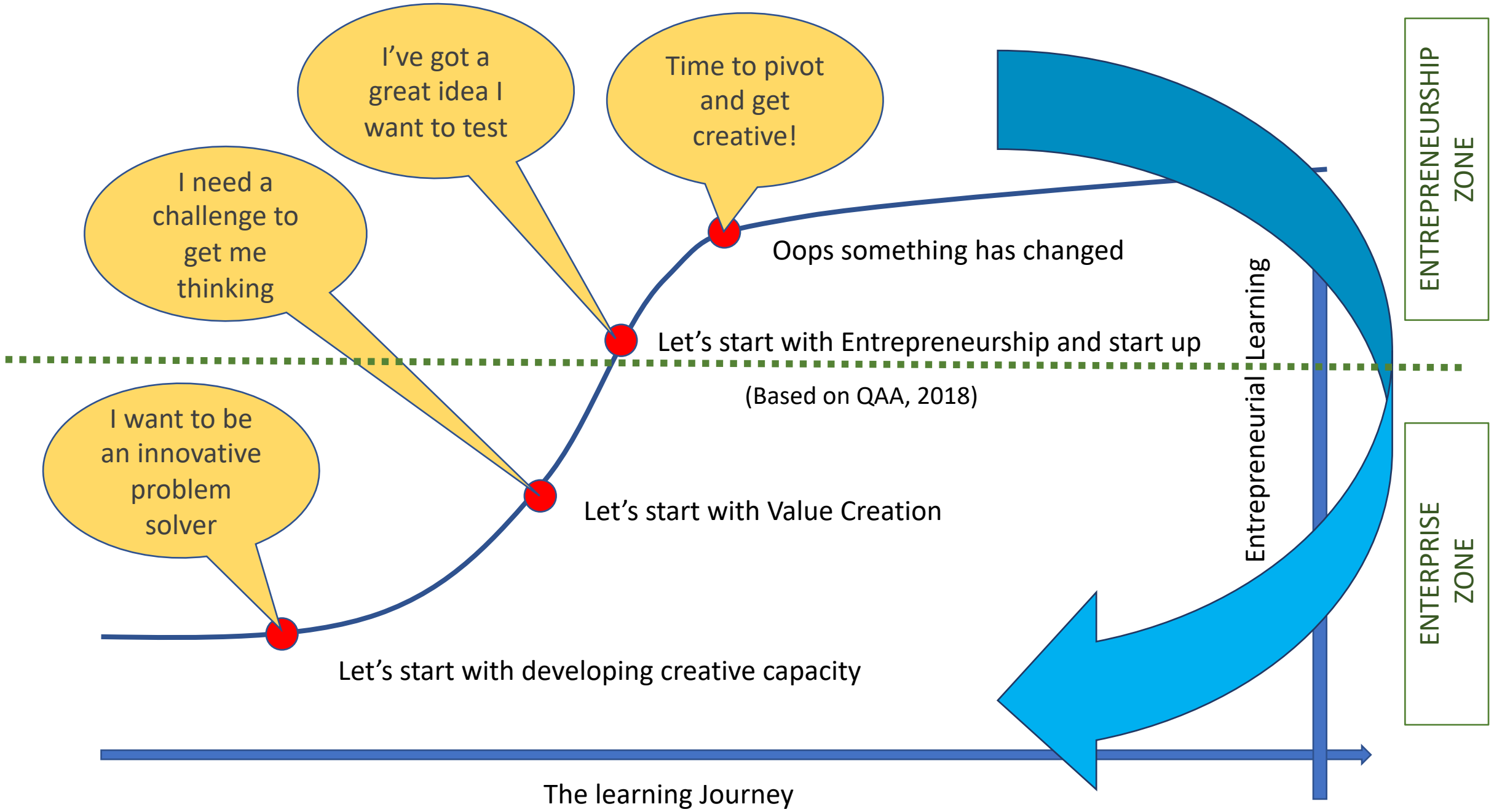


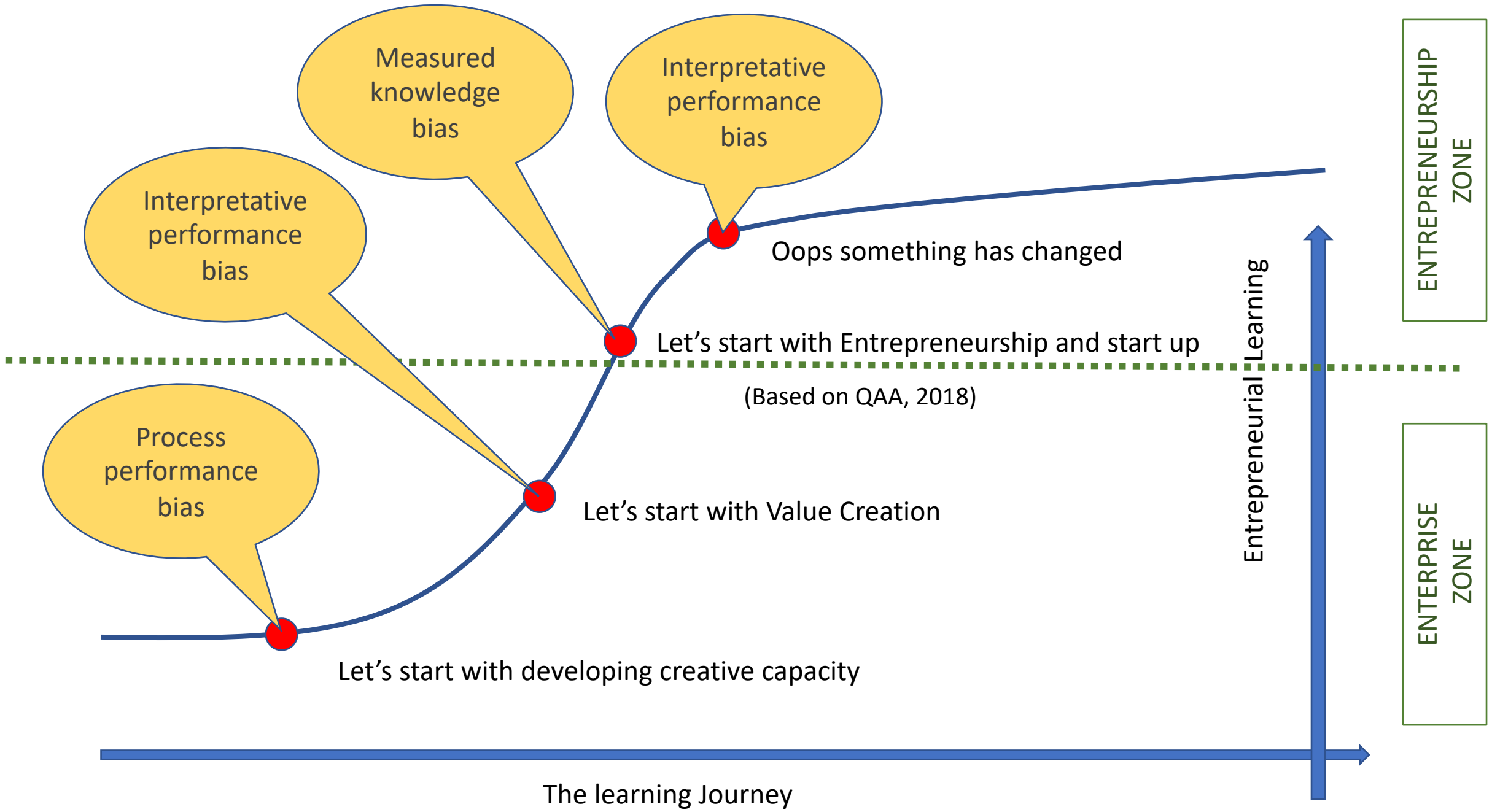
Time allocated

A3. Demonstrate constructive alignment in enterprise and entrepreneurship education (CFASEE03)
A4. Develop and prepare resources for learning and development (LSILADD05)
A5. Deliver an effective enterprise and entrepreneurship education experience (CFASEE05)
A6. Apply appropriate methods of assessment in enterprise and entrepreneurship education (CFASEE06)
A7. Provide constructive and timely feedback in assessing learning of enterprise and entrepreneurship (CFASEE07)
A8. Evaluate the learner experience of enterprise and entrepreneurship education (CFASEE08)

Academic Practitioner Influencer

Courtesy of Dr Emily Beaumont (ongoing research)


I've got a great idea I want to test
Time to pivot and get creative!
I need a challenge to get me thinking
Oops something has changed
Let's start with Entrepreneurship and start up
(Based on QAA, 2018)
I want to be an innovative problem solver
Let's start with Value Creation
Let's start with developing creative capacity
The learning Journey
Entrepreneurial Learning
ENTREPRENEURSHIP ZONE
ENTERPRISE ZONE


Measured knowledge bias
Interpretative performance bias
Interpretative performance bias
Process performance bias
Oops something has changed
Let's start with Entrepreneurship and start up
(Based on QAA, 2018)
Let's start with Value Creation
Let's start with developing creative capacity
Entrepreneurial Learning
The learning Journey
ENTREPRENEURSHIP ZONE
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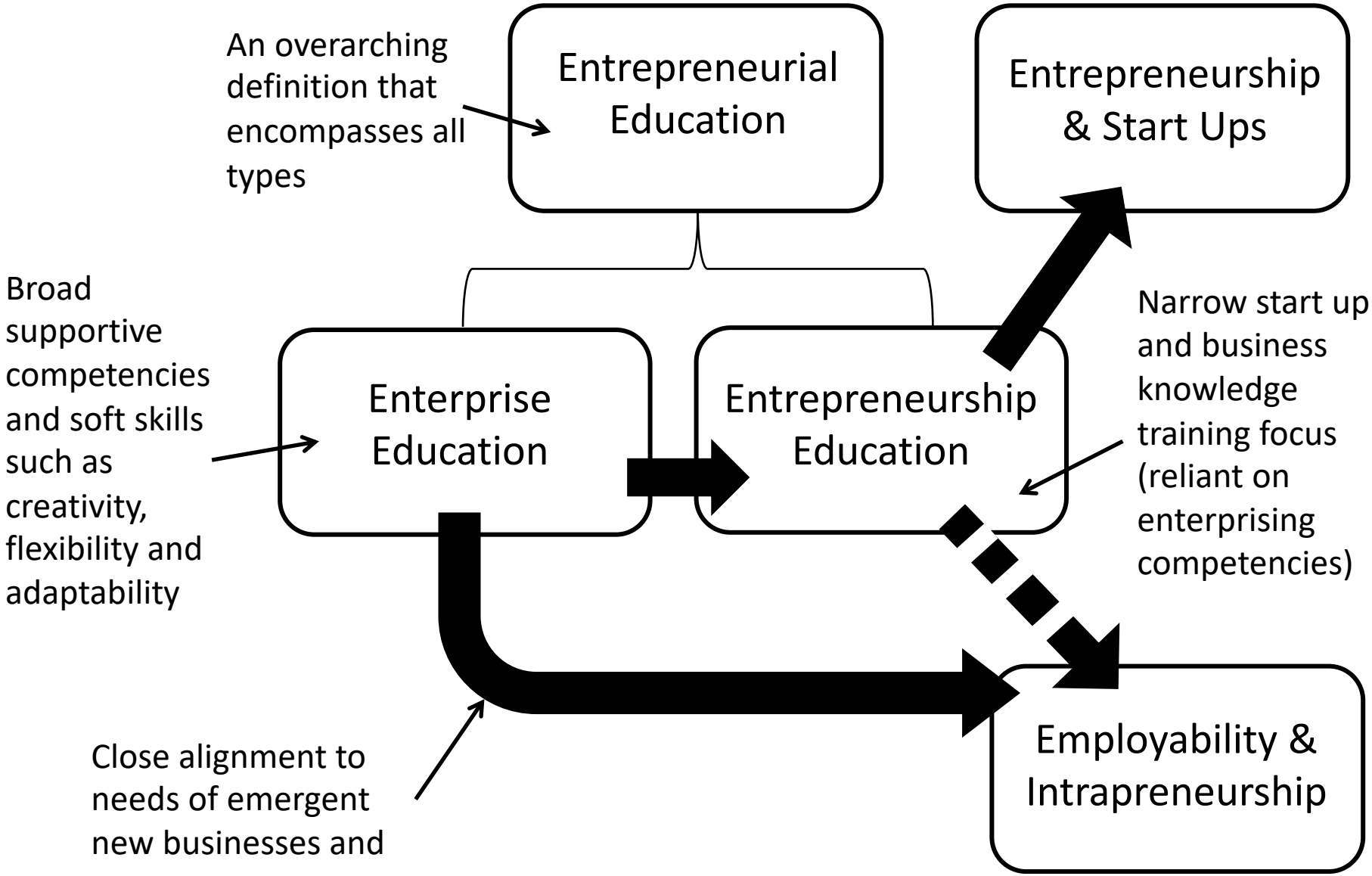


Penaluna & Penaluna (2020) Based on QAA EntEd definitions (2018)

Enterprise Definition?

…combines creativity, originality, initiative, idea generation, design thinking, adaptability and reflexivity with problem identification, problem solving, innovation, expression, communication and practical action. (QAA, 7)

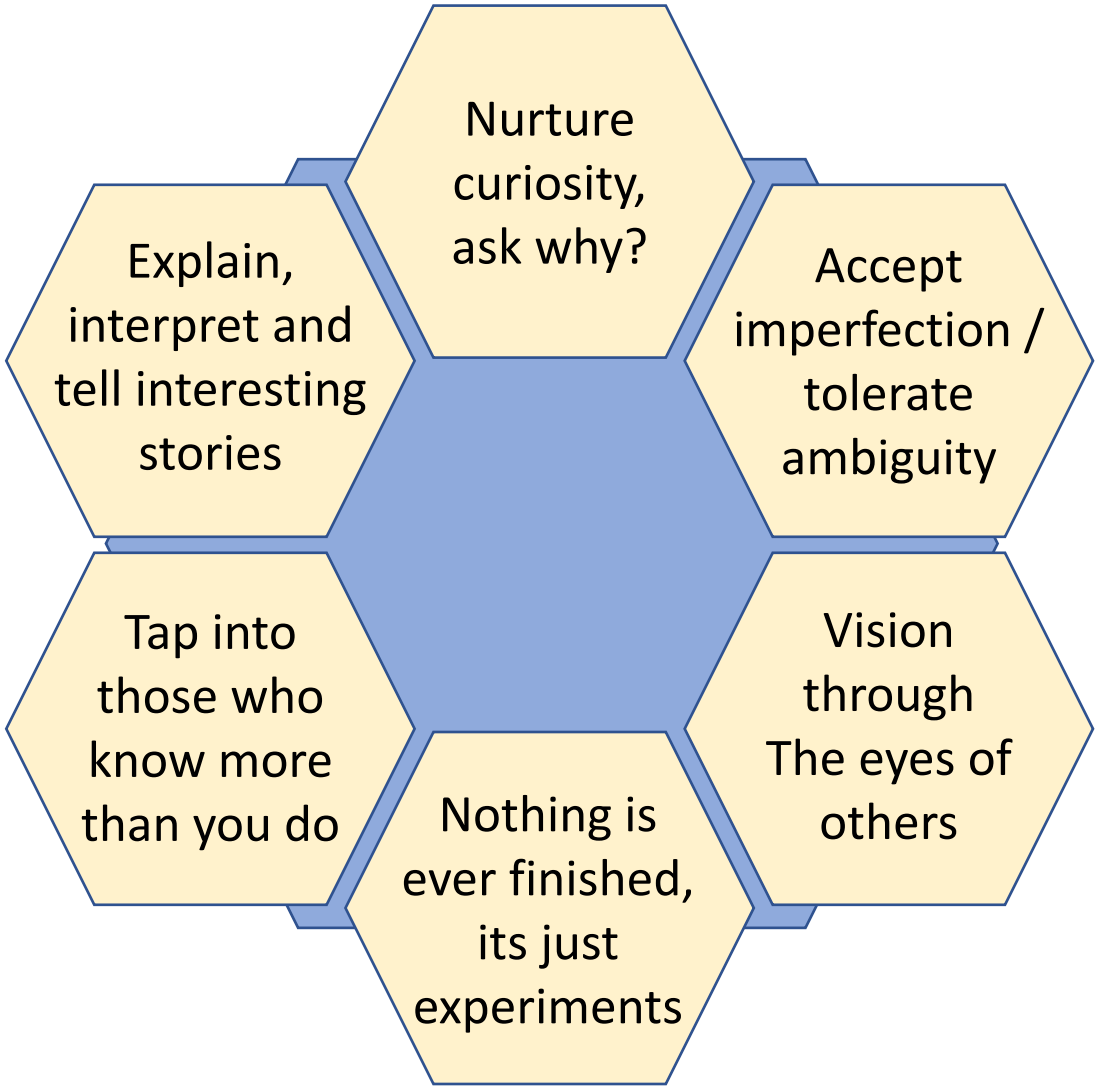
Entrepreneurship Definition?

…the application of enterprise behaviours, attributes and competencies into the creation of cultural, social or economic value. This can, but does not exclusively, lead to venture creation… private, public and third sectors, and in any hybrid combination of the three
(QAA, 7)

https://www.qaa.ac.uk/docs/qaas/enhancement-and-development/enterprise-and-entrpreneurship-education-2018.pdf?sfvrsn=15f1f981_8

QAA

"Rookie problem solvers show you their analytic process and mathematics to convince you that they are clever. That's sometimes called APK, the anxious parade of knowledge. But seasoned problem solvers show you differently. The most elegant problem solving is that which makes the solution obvious."



What new question have you asked today?

What is a 'fact'?

Whose shoes have you walked in?

What was wrong with the best you could do at the time?

What did you learn from others recently

What's your best story?

Based on Charles Conn and Robert McLean. *McKinsey Quarterly, September 2020*

Biases inherent in assessment

- **Measurement bias** – includes tests and examinations where answers are known in advance (relies on notion of correctness).
- **Interpretative performance bias** – includes educator opinions, peer reviews and the perspectives of outsiders' (relies on opinion and judgement).
- **Process performance bias** – includes portfolio assessments and demonstration of development (relies on reflective thinking strategies and argumentation).

Data driven biases inherent in assessment

- Includes a reliance on the volume of response rates within artificial / abstracted constructs – often in an attempt to measure.
- Limitations usually relate to the ontological positioning of the assessor, and can often result in ‘blind spots’ and unseen limitation factors. Reductionist abstraction never fully reflects reality, just the elements the researcher wishes to investigate.
- Critical analysis is usually the goal, and critical synthesis is effectively overlooked.

Critical Synthesis in Entrepreneurial Education

- Includes an ability to join and connect in complex ways and explain critical pathways of intent.
- Includes seeing opportunities to connect things in new and different ways.
- Incudes seeing new things to connect, ‘spotting the dots that others have yet to see’, they are future oriented.
- Relies on ‘insightful’ as opposed to ‘analytical’ thinking – aha moments as opposed to constructed pathways of intent.

Critical Synthesis in practice - learning

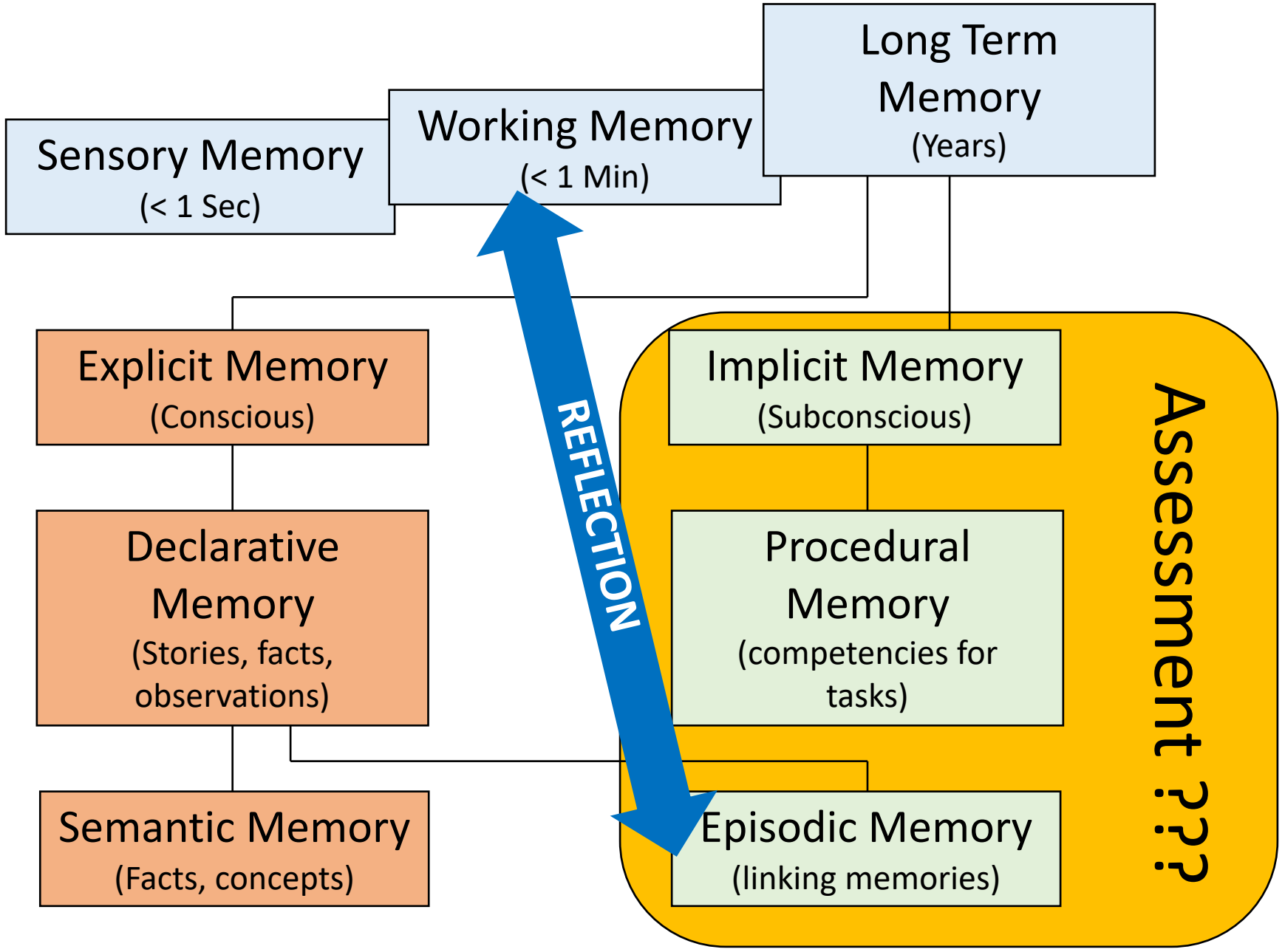
- Requires Curiosity-Based learning. Typically scenario-driven where students elicit the problems that need to be solved (they are not told the problems – they discover them themselves – based on the scenario).

- Requires disruptions where things change and new knowledge is incorporated into the learning journey. Nothing is clear from outset.

- Relies on deep reflection – so that students can communicate how their new ideas came to mind, e.g. what stimulated the idea, where did it come from and when did it occur?

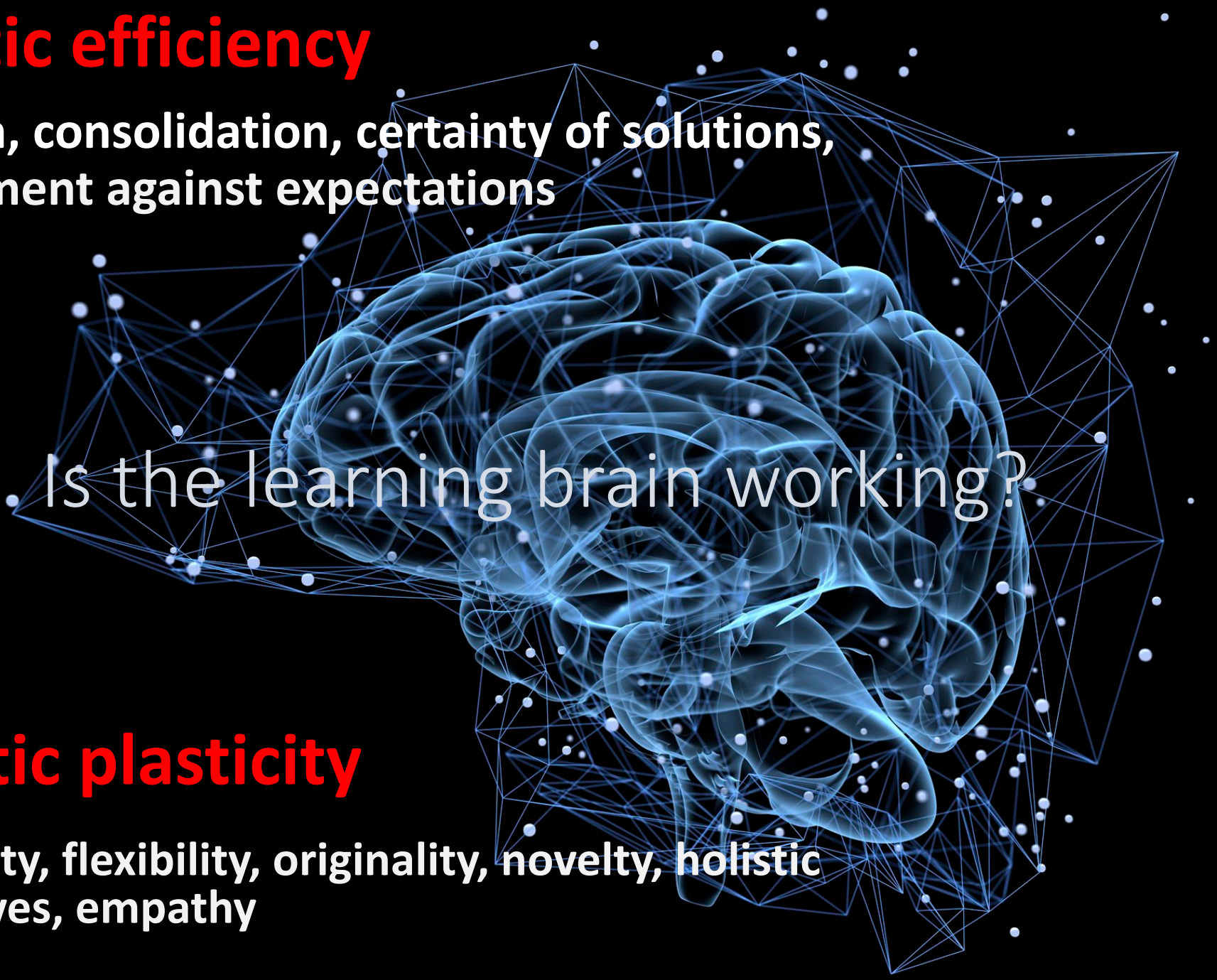
Critical Synthesis in reflection and memory

- The type of memory we employ impacts on what we remember and can ‘bring to mind’.
- Analytical thinking is the easiest to track as it is step by step and requires frequent rethinking using the same process. Rote learning typifies the extreme end of this.
- Insightful Thinking is by its very nature fleeting. New thought needs recorded as soon as possible to capture it. The new synapse connection needs to move from inhibitory to excitory / somatic markers created.


Long Term Memory
(Years)
Working Memory
(< 1 Min)
Sensory Memory
(< 1 Sec)
Explicit Memory
(Conscious)
Declarative Memory
(Stories, facts, observations)
Semantic Memory
(Facts, concepts)
REFLECTION
Implicit Memory
(Subconscious)
Procedural Memory
(competencies for tasks)
Episodic Memory
(linking memories)
Assessment ???

Synaptic efficiency

repetition, consolidation, certainty of solutions, measurement against expectations



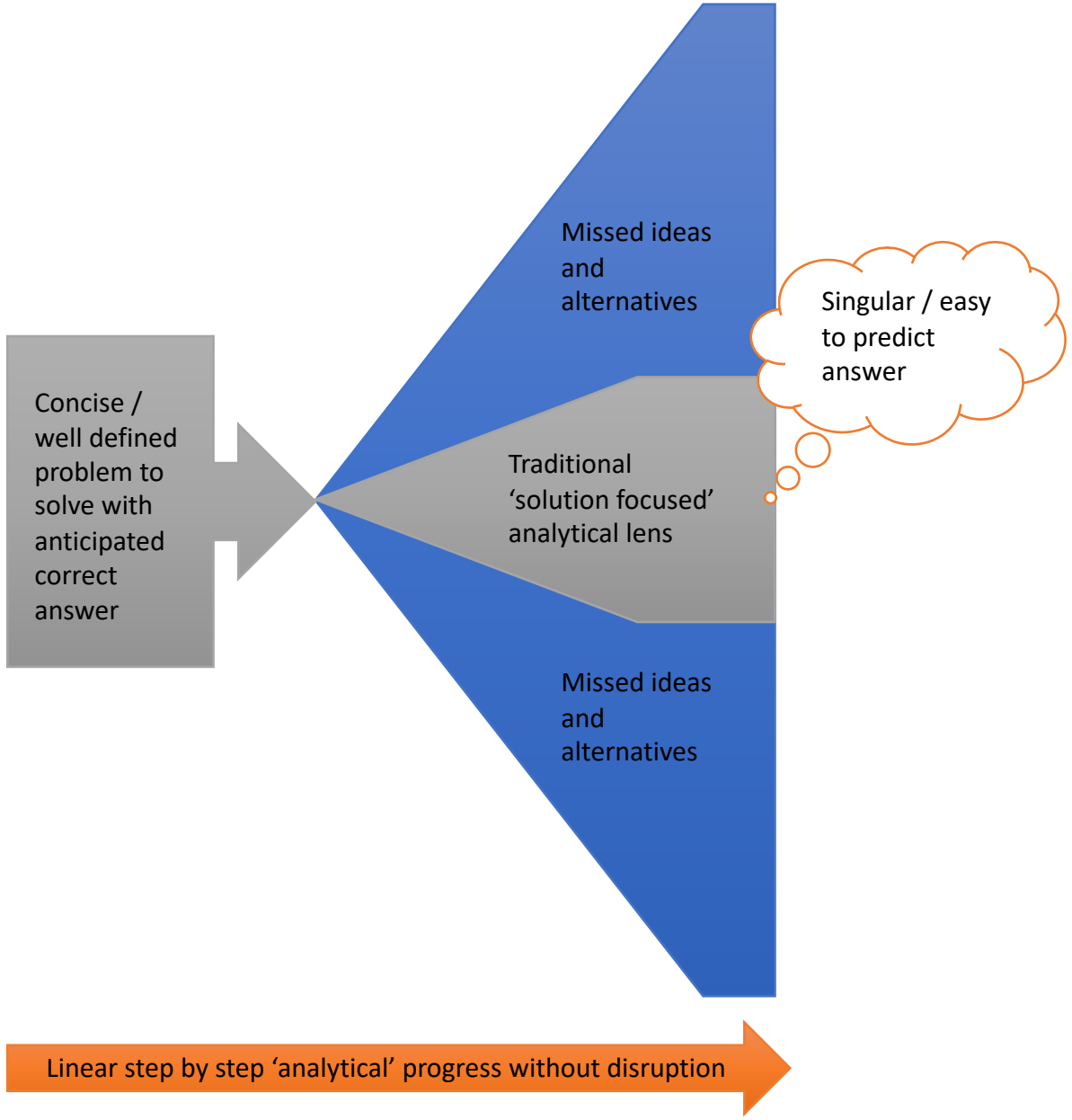
Is the learning brain working?

Synaptic plasticity

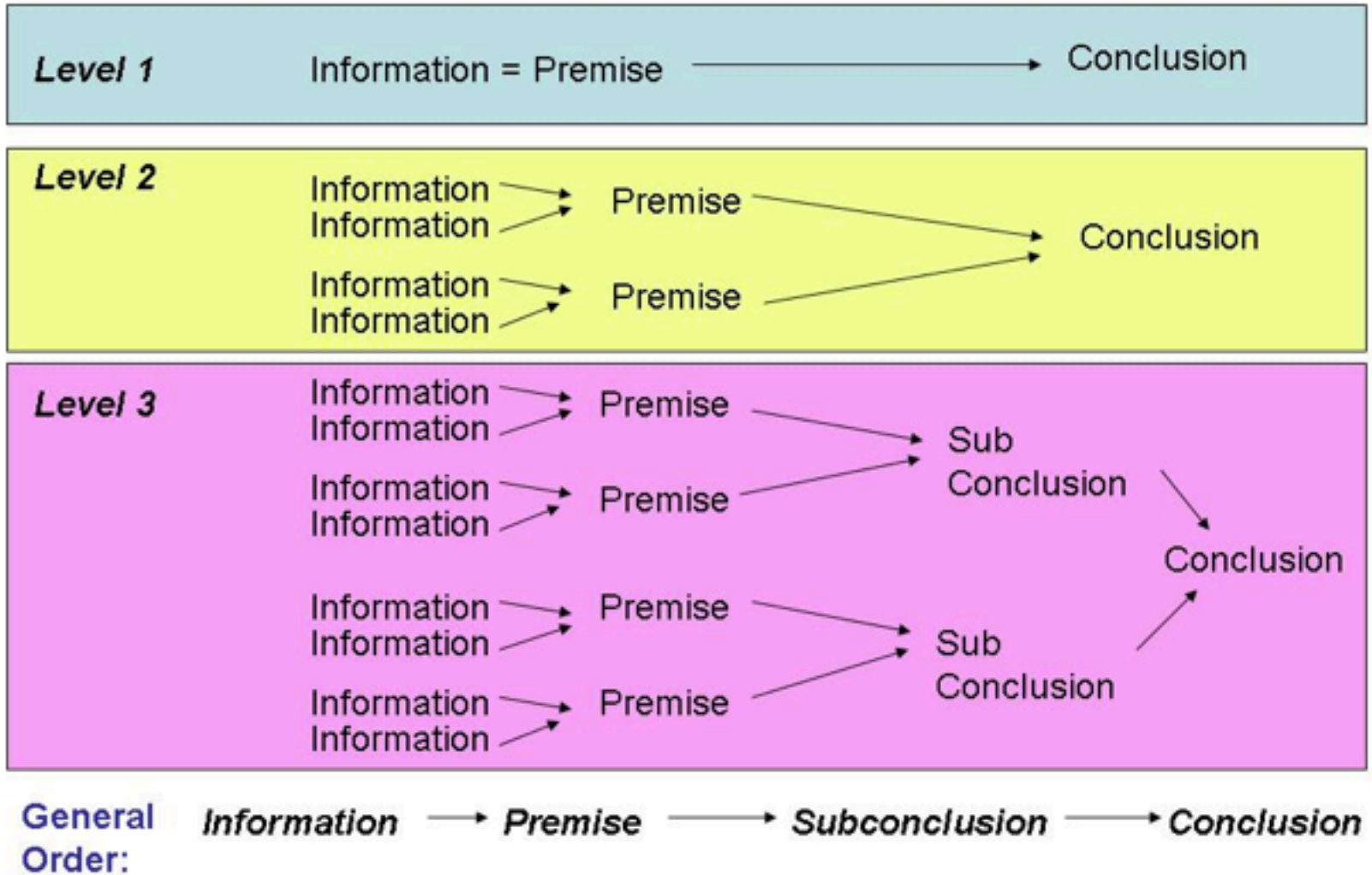
adaptability, flexibility, originality, novelty, holistic perspectives, empathy

Gestalt - what do you really ‘know’?

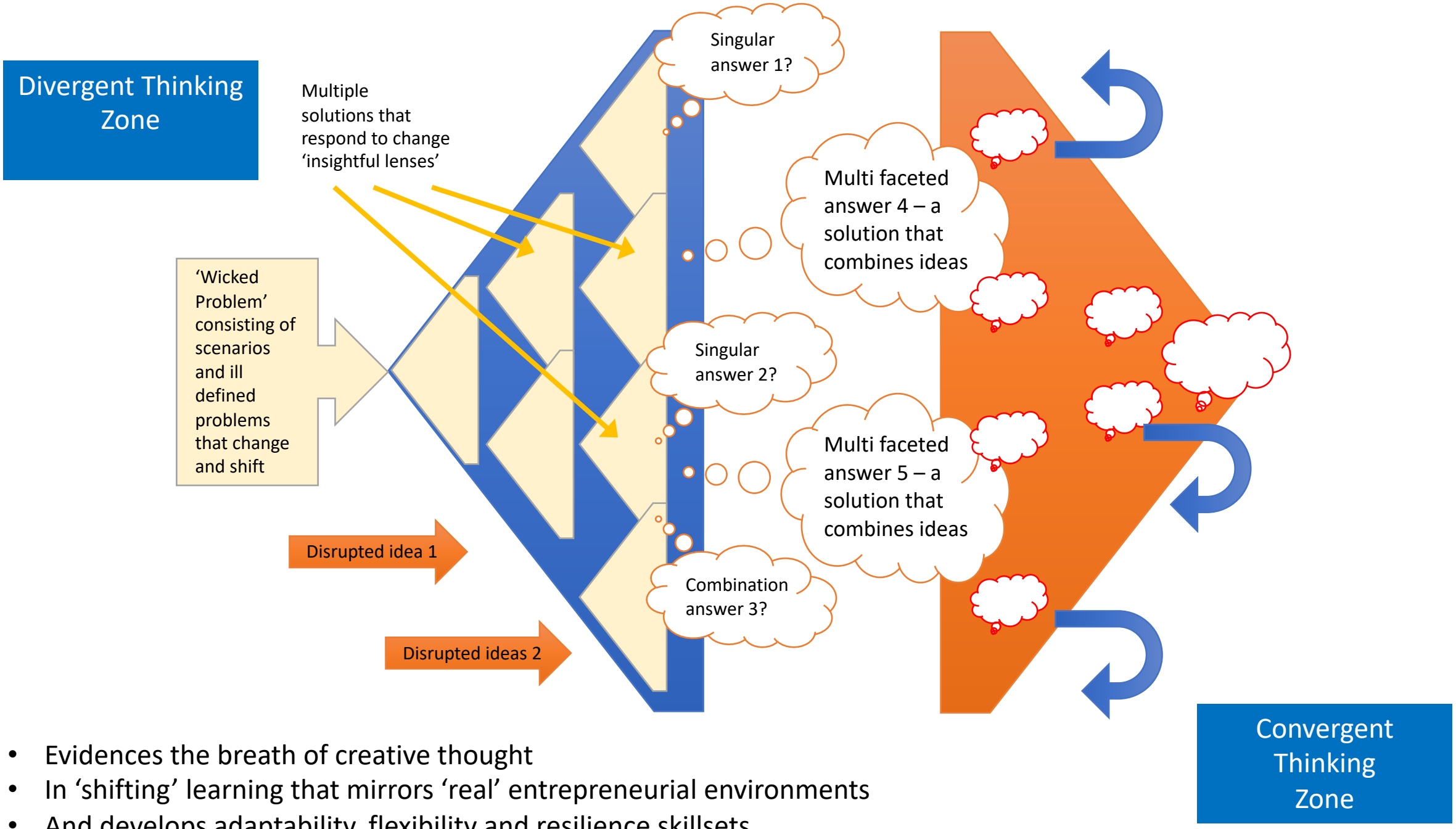
Subconscious is saying...


Concise / well defined problem to solve with anticipated correct answer
Missed ideas and alternatives
Traditional 'solution focused' analytical lens
Missed ideas and alternatives
Singular / easy to predict answer
Linear step by step 'analytical' progress without disruption

Levels of Argument Complexity

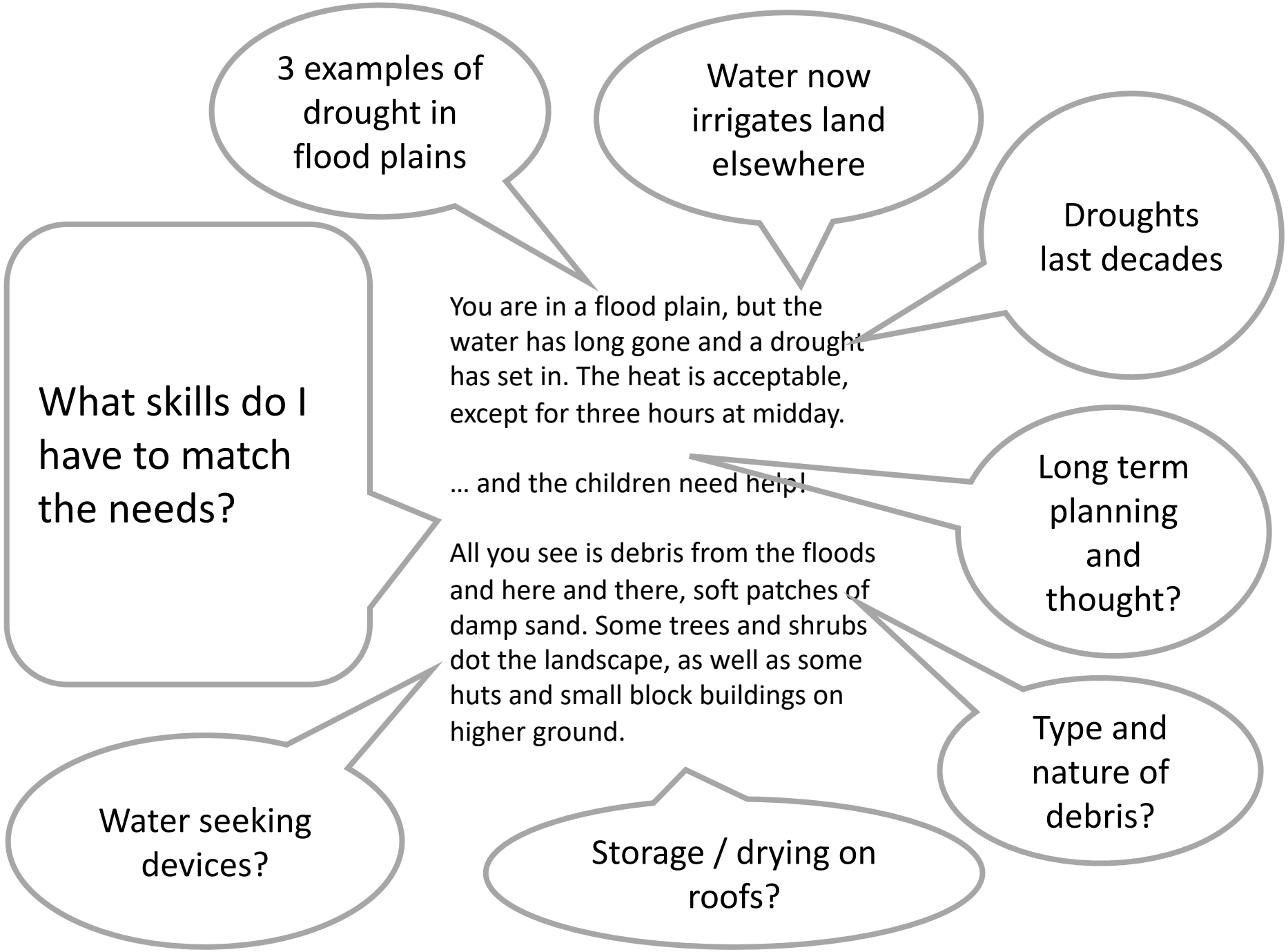


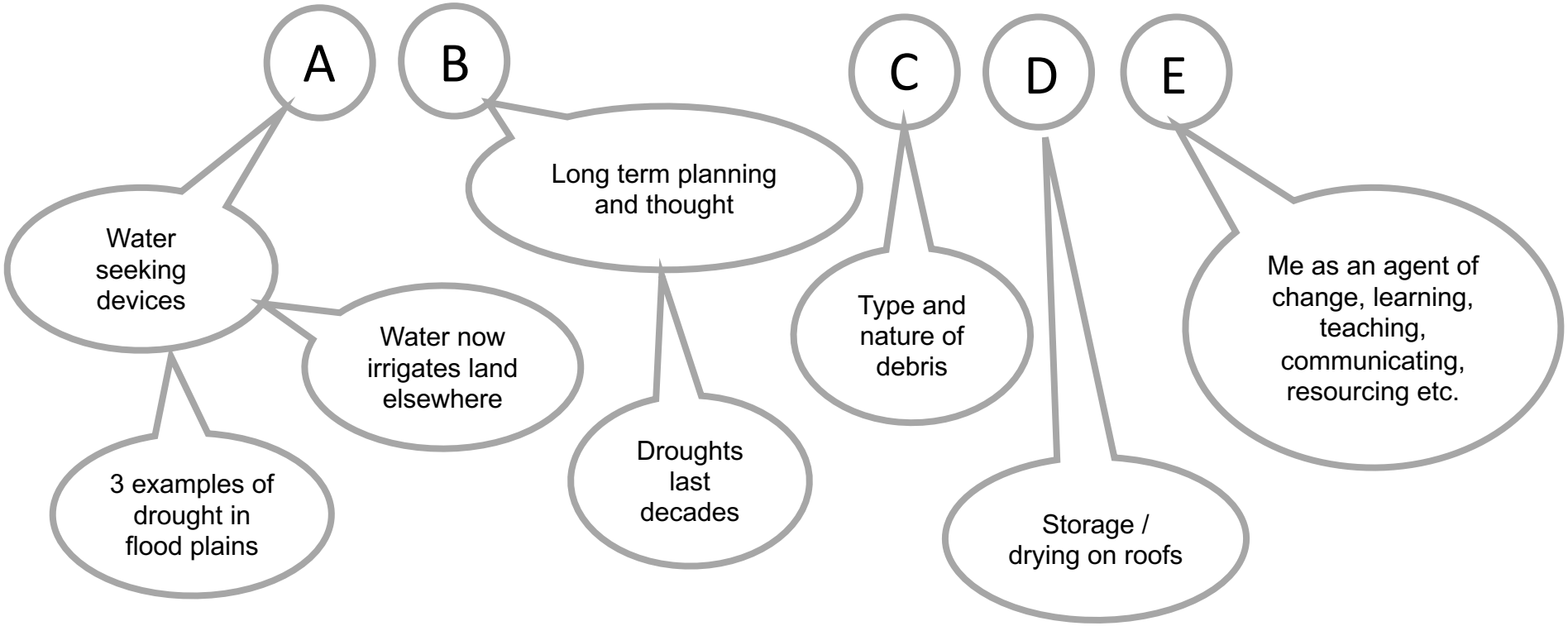
General Order: *Information* → *Premise* → *Subconclusion* → *Conclusion*



- Evidences the breath of creative thought
- In 'shifting' learning that mirrors 'real' entrepreneurial environments
- And develops adaptability, flexibility and resilience skillsets

Agents of change


3 examples of drought in flood plains
Water now irrigates land elsewhere
Droughts last decades
What skills do I have to match the needs?
You are in a flood plain, but the water has long gone and a drought has set in. The heat is acceptable, except for three hours at midday.
… and the children need help!
All you see is debris from the floods and here and there, soft patches of damp sand. Some trees and shrubs dot the landscape, as well as some huts and small block buildings on higher ground.
Long term planning and thought?
Type and nature of debris?
Water seeking devices?
Storage / drying on roofs?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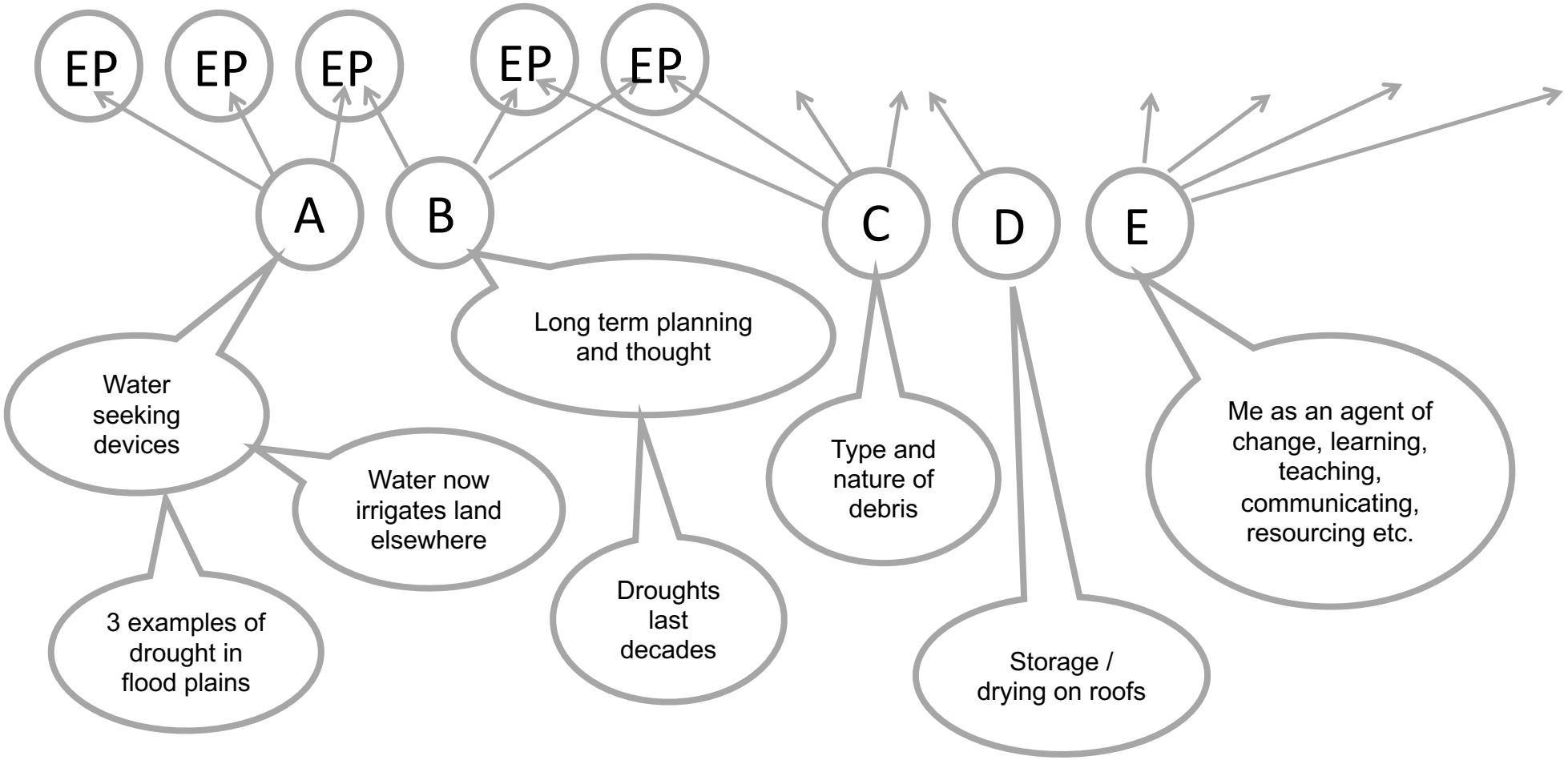
B
C
D
E
Water seeking devices
Water now irrigates land elsewhere
3 examples of drought in flood plains
Long term planning and thought
Droughts last decades
Type and nature of debris
Storage / drying on roofs
Me as an agent of change, learning, teaching, communicating, resourcing etc.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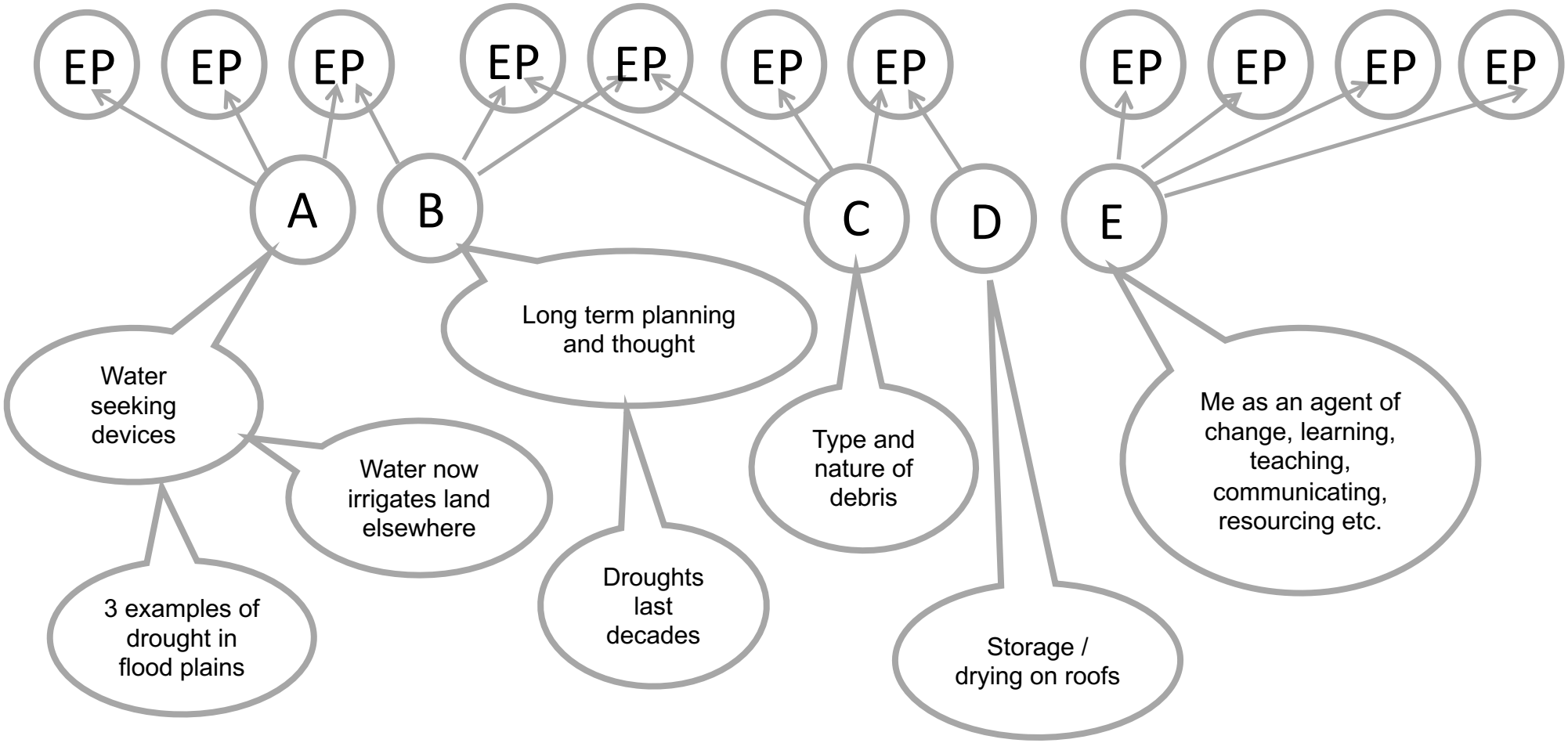
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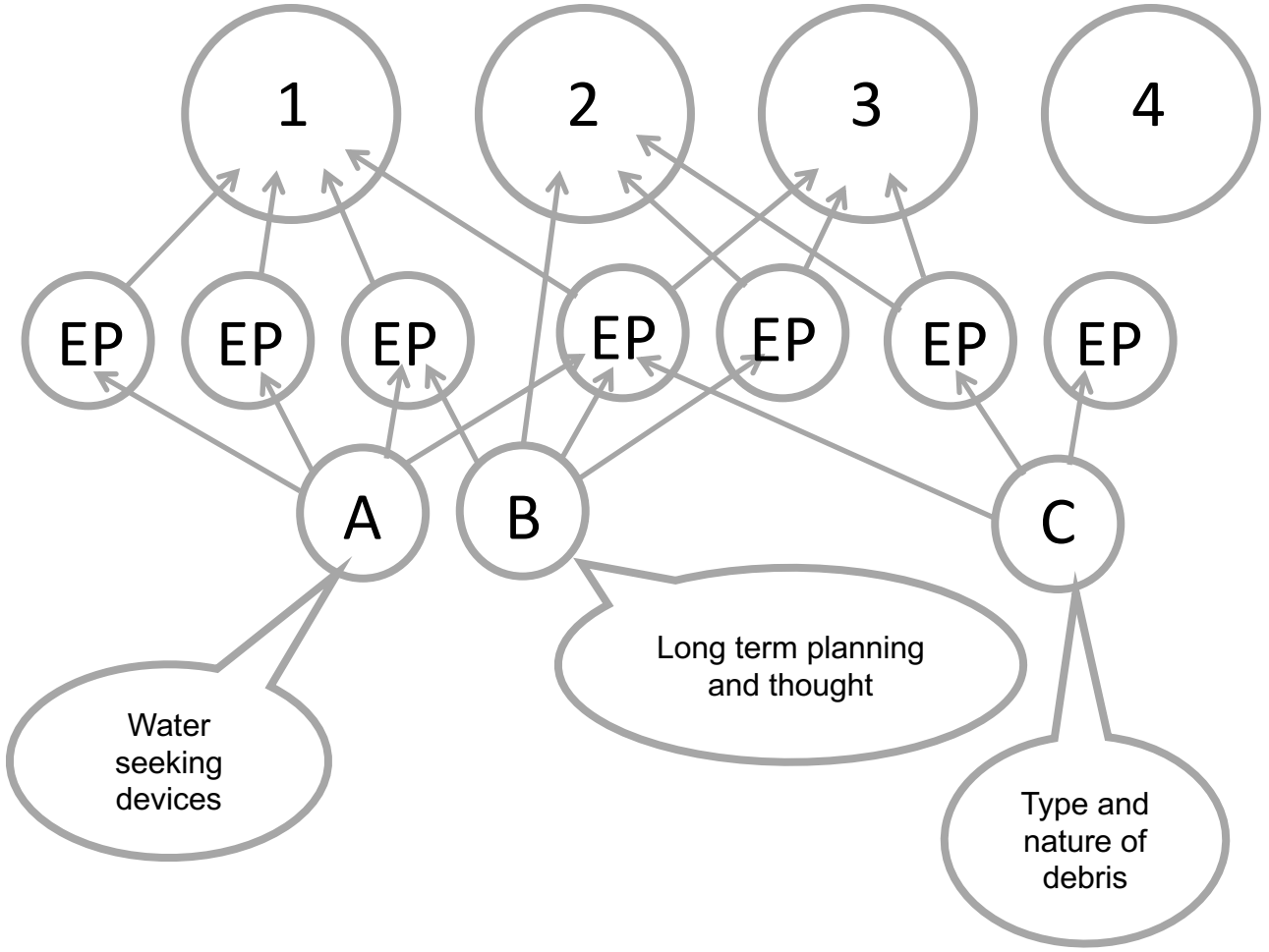
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A
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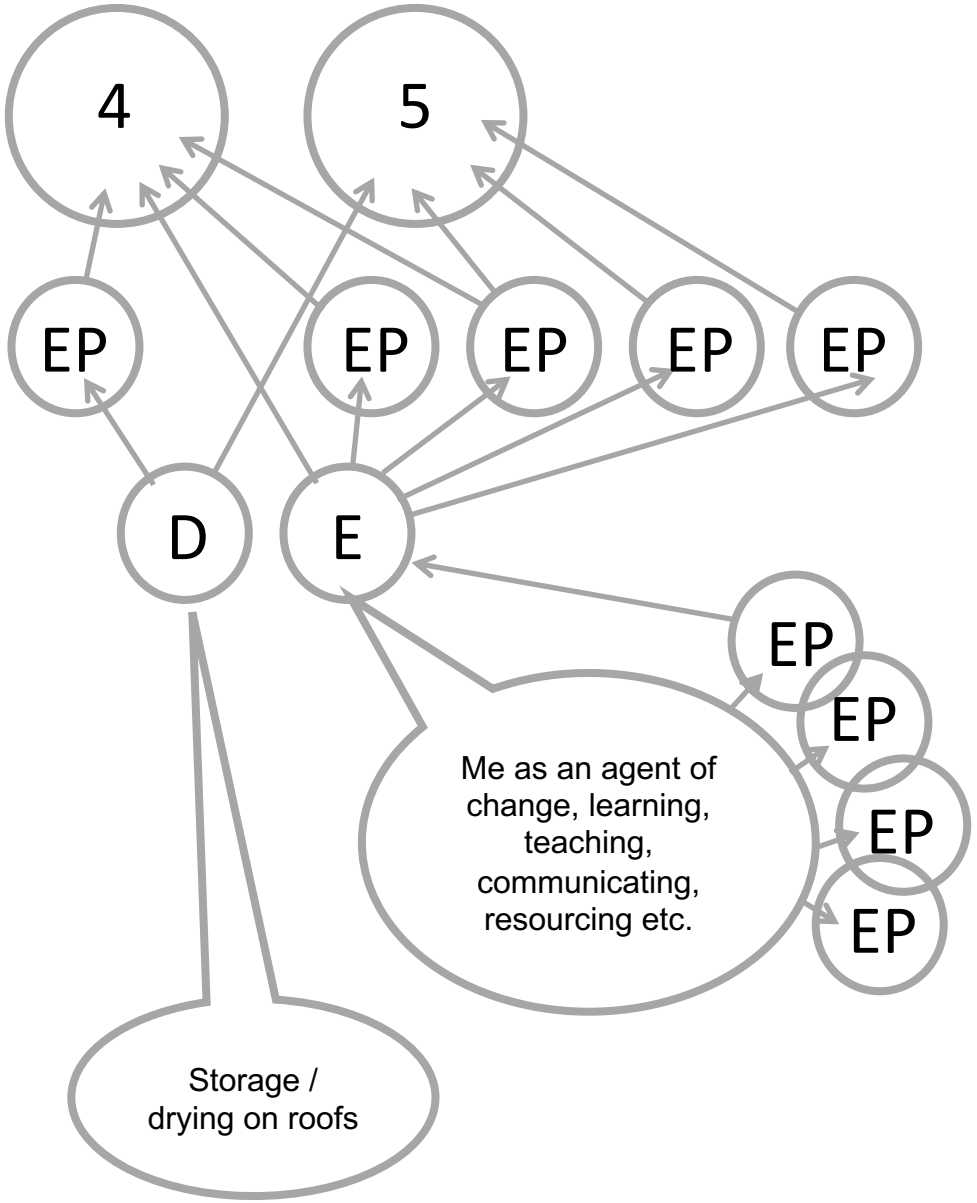
Water seeking devices
Long term planning and thought
Type and nature of debris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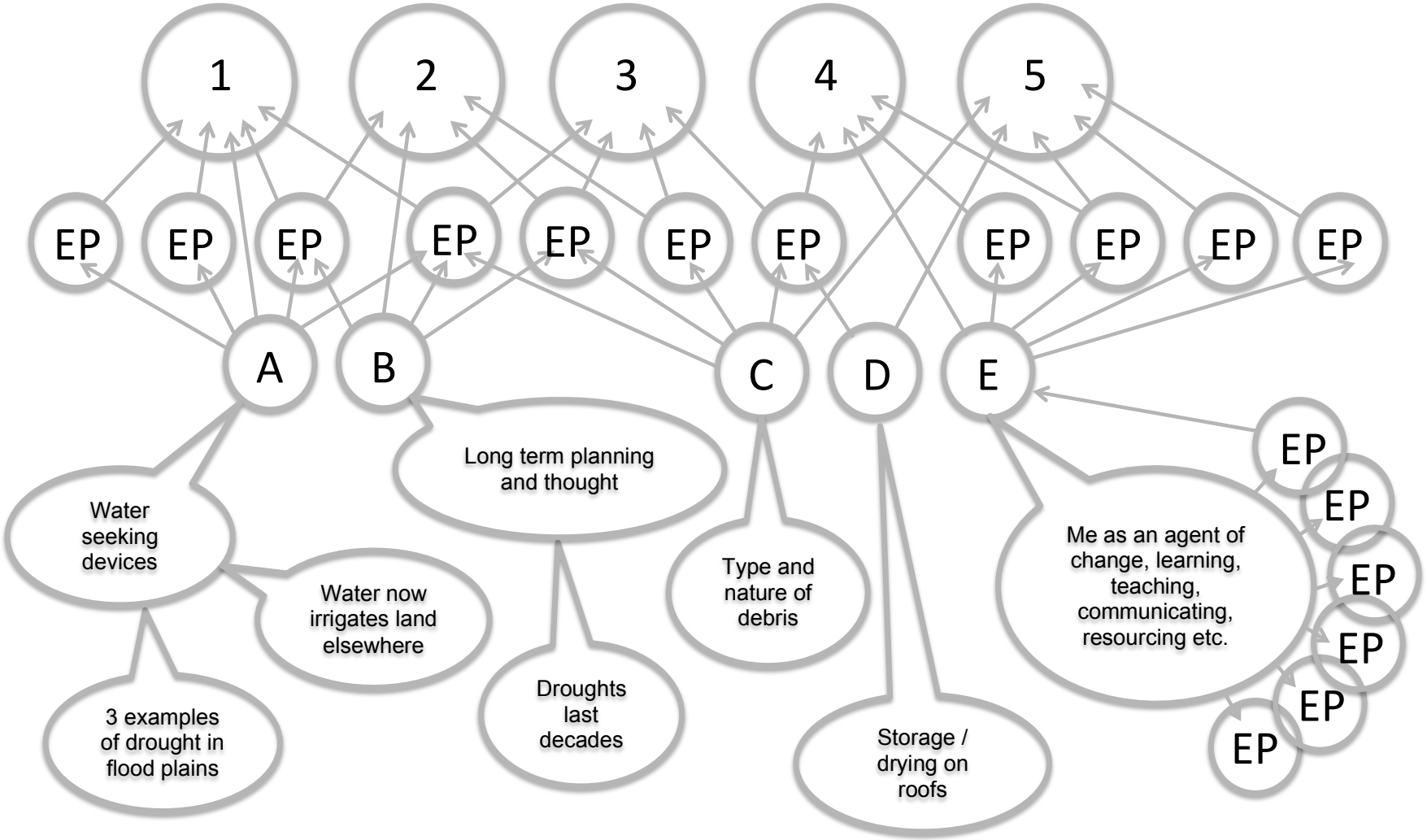
Me as an agent of change, learning, teaching, communicating, resourcing etc.
Storage / drying on roofs

If it makes sense, it works!



Extracted from:

Penaluna, A., Penaluna, K and Diago, I., 2014. *The Role of Creativity in Entrepreneurship Education*. Chapter 13, "Handbook of Research on Entrepreneurship and Creativity" Sternberg, R & Krauss, G. (Eds) Cheltenham / Northampton MA: Edward Elgar Publishing Limited

Critical Synthesis – feel real & match to realities

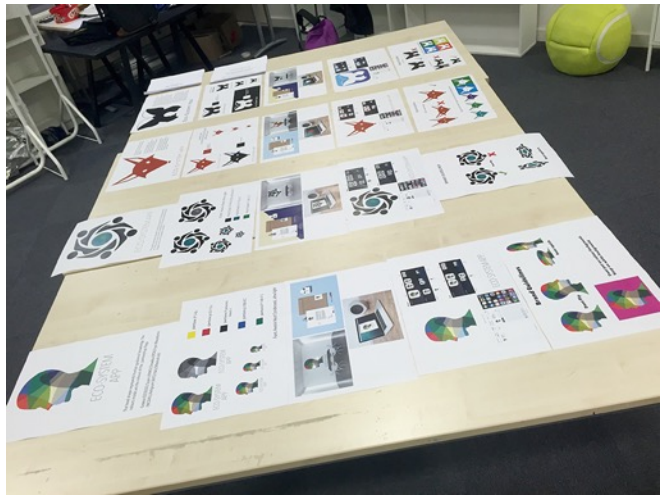
Working in the Philippines on the Smokey Mountain dumpsite, the King's College London SIFE team developed livelihood projects that aimed to enable families living on the dumpsite to move away from this life. "Born in Manila" is a jewellery making enterprise that uses rubbish and thrown away items in innovative and creative ways.

The project supported mothers, through training, to develop a sustainable income and job security. It has seen profits of £22,132 in one year and 44 families are now supported by the business

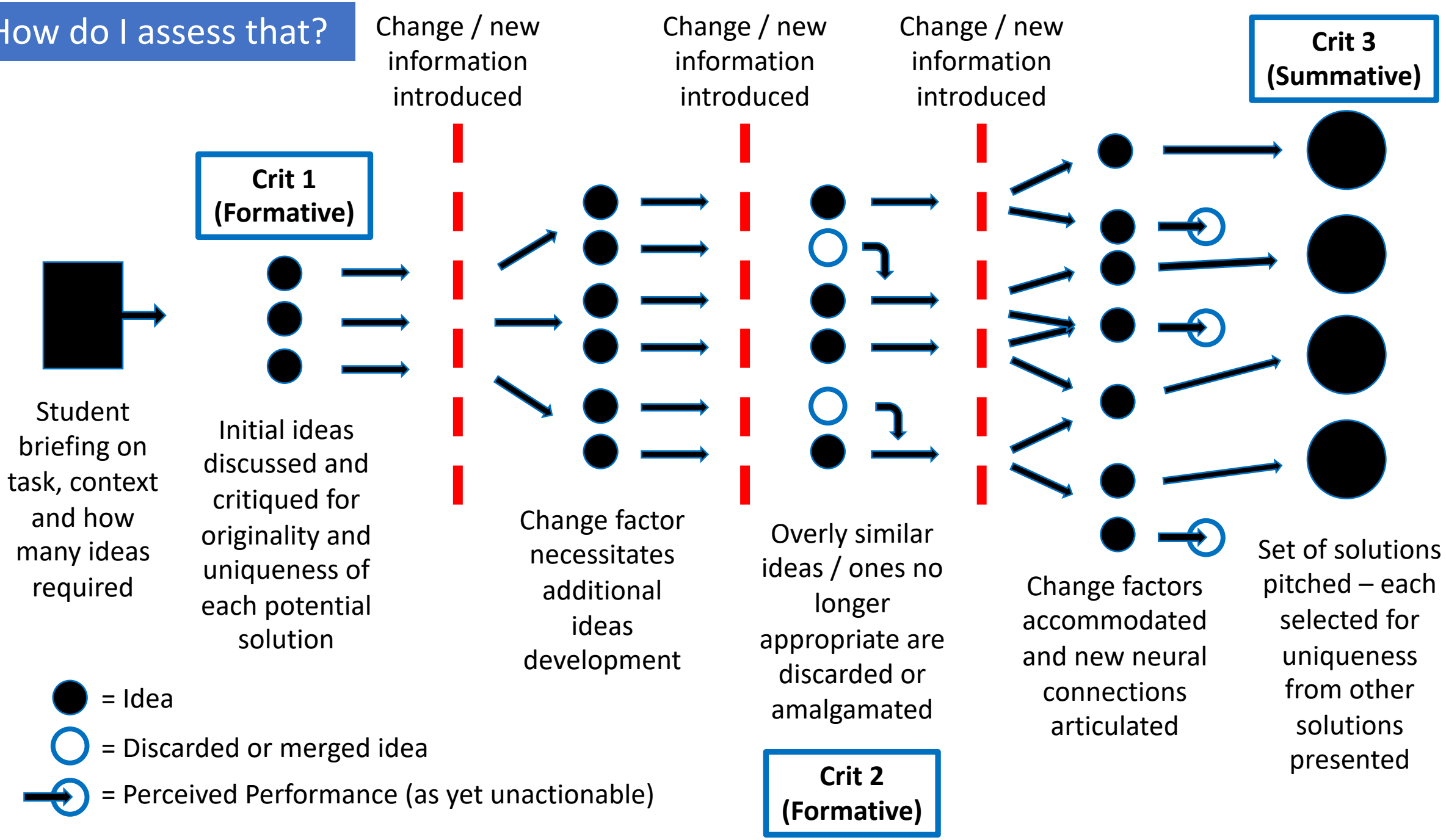
SIFE UNITED KINGDOM

Critical Synthesis – example from design

Eco Systems App

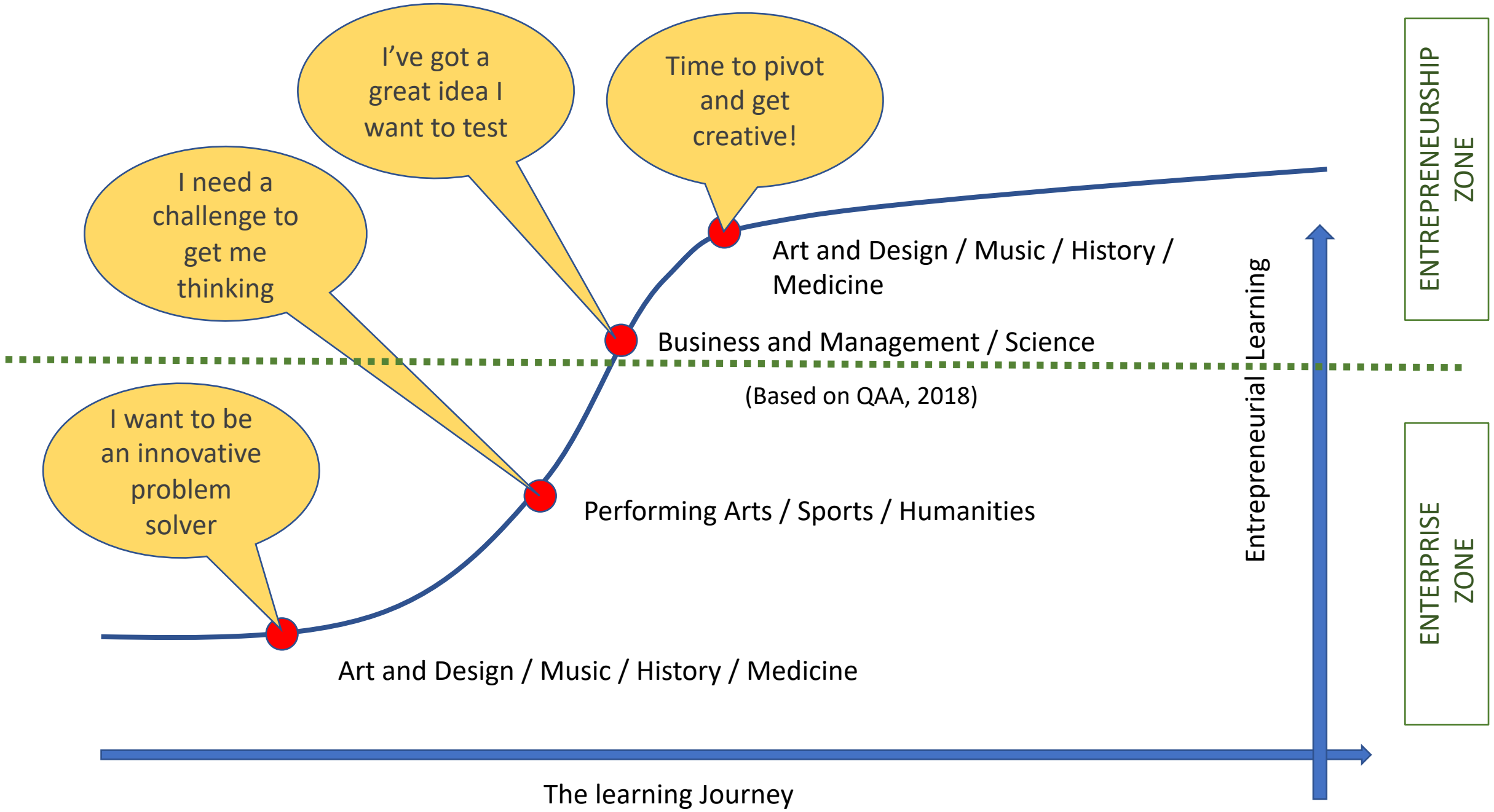


How do I assess that?



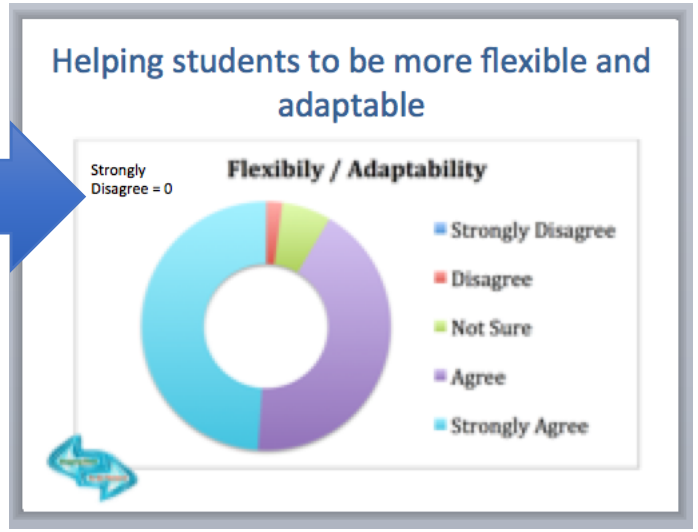
Critical Synthesis in assessment - help

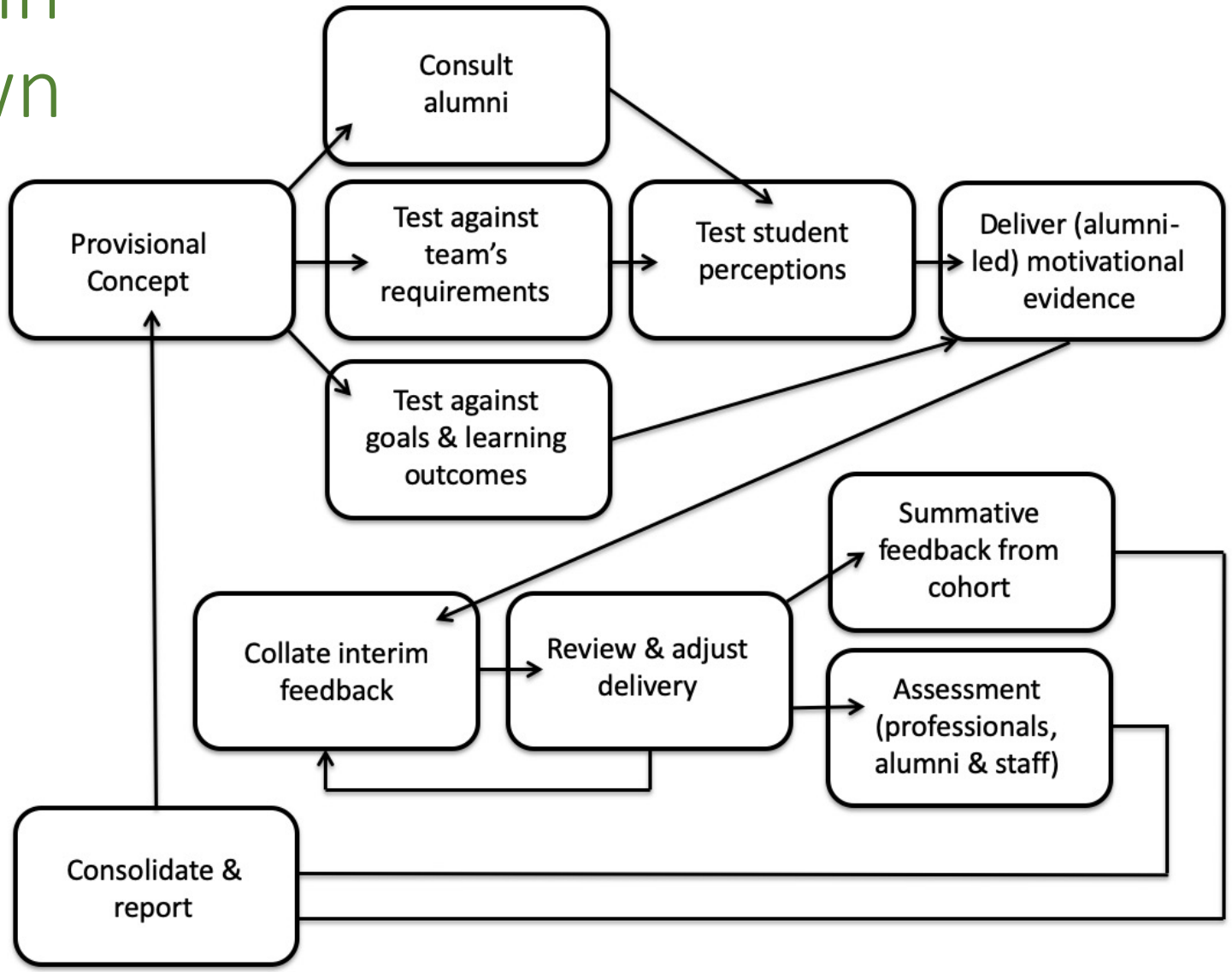
- QAA's first 2012 Enterprise and Entrepreneurship Education guidance drew on the expertise of 32 Subject Benchmark Statement – we looked for expertise in the disciplines – who did what best? Who had most experience?
- We discovered many claims for newness pre-existed in other disciplines.
- Critical Synthesis in assessment is easily supported when you simply look outside of the 'entrepreneurship box' and its associated literature.


I've got a great idea I want to test
Time to pivot and get creative!
I need a challenge to get me thinking
I want to be an innovative problem solver
Art and Design / Music / History / Medicine
Business and Management / Science
(Based on QAA, 2018)
Performing Arts / Sports / Humanities
Art and Design / Music / History / Medicine
Entrepreneurial Learning
ENTREPRENEURSHIP ZONE
ENTERPRISE ZONE
The learning Journey

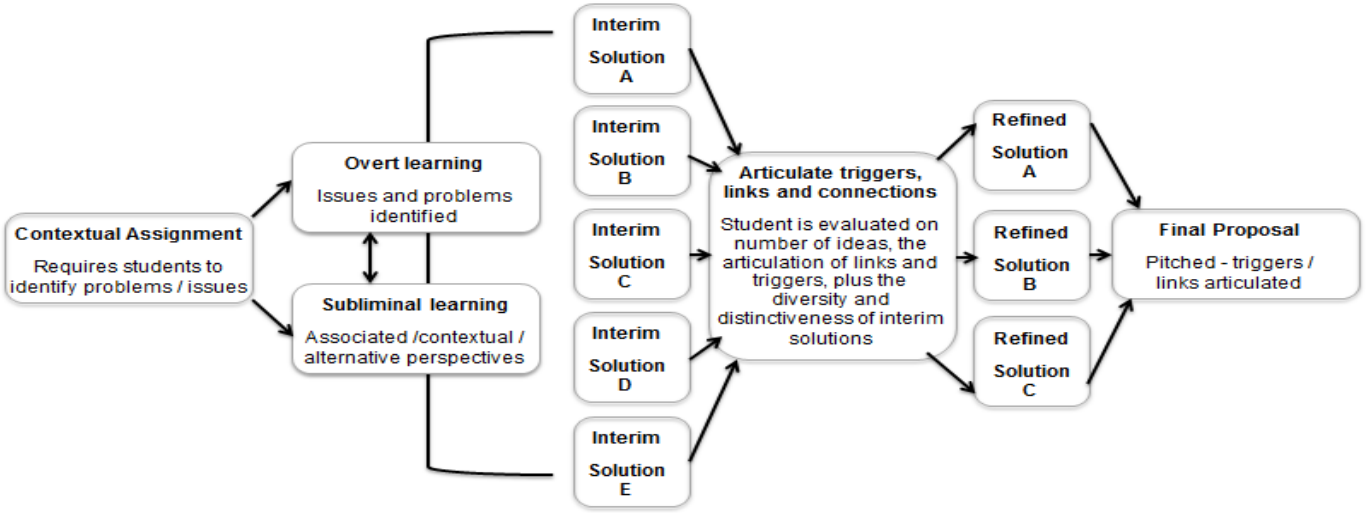
Critical Synthesis in evaluating our own performance

Continuous Conceptual Review Model





Penaluna and Penaluna, 2008



"The creativity of an education system cannot surpass the creativity of its teachers… We need a disciplined creativity, informed by and generating the best possible evidence."

https://www.thersa.org/action-and-research/creative-learning-and-development/creative-educators/

John Kounios @JohnKounios · Mar 29

@AndyPena @Cyndiburnett Then perhaps we should all get design training!

1

View conversation

Some thoughts to consider

If this debate remains unresolved in the literature, there is a potential disconnection with current and evolving practice / opportunities to assist those who are charged with developing national and international policies and guidance may be missed.

Entrepreneurial Education is not advancing through logic of causality and prediction, more through a logic of what can I control and how can I influence.

Do we need more entrepreneurial subject specialists, or more entrepreneurship educators? These different goals will require different developmental approaches.

Creative Mindsets. Entrepreneurial Futures –

EXTRA EXTRA READ IT ALL ABOUT IT…

Penaluna, A. and Penaluna, K. 2015. *Entrepreneurial Education in Practice, Part, 2 – Building Motivations and Competencies*, Entrepreneurship 360 Thematic Paper, Organisation for Economic Co-operation and Development (OECD) and the European Commission (DG Education and Culture).

Penaluna, A., Penaluna, K and Diago, I., 2014. *The Role of Creativity in Entrepreneurship Education*. Chapter 13, "Handbook of Research on Entrepreneurship and Creativity" Sternberg, R & Krauss, G. (Eds) Cheltenham / Northampton MA: Edward Elgar Publishing Limited

Penaluna, K. Penaluna, A., Usei, C. and Griffiths, D. 2015. *Enterprise Education Needs Enterprising Educators: A Case Study on Teacher Training Provision*, Education +Training, Emerald, Vol 57, 8/9, 948-963

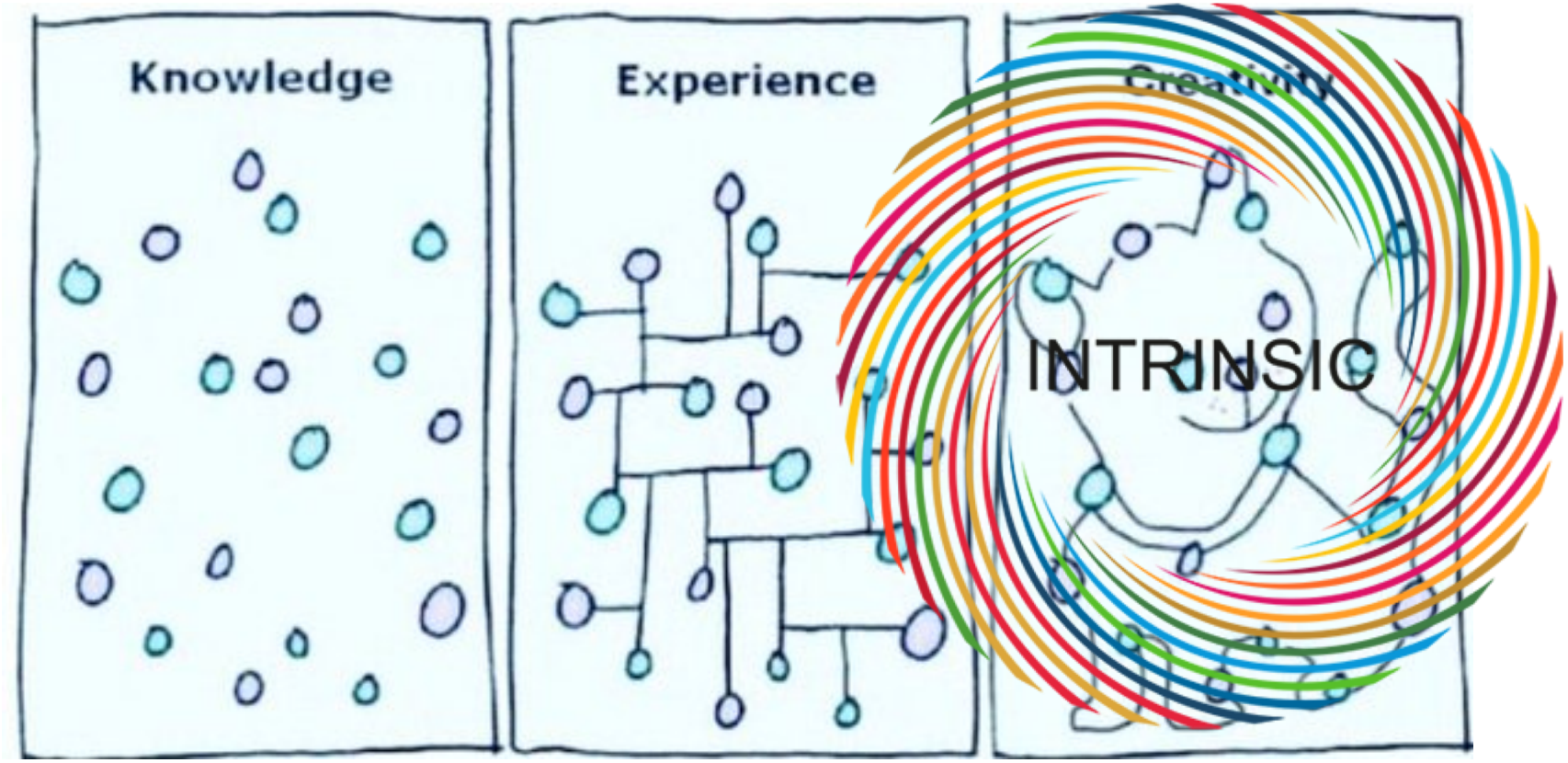
Penaluna K., Penaluna A., Jones C. and Matlay H., 2014. *When did you last predict a good idea? Exploring the case of assessing creativity through learning outcomes*. Industry & Higher Education, Vol. 28, No 6, December 2014, pp. 399-410.

Penaluna, A. and Penaluna, K (2020) In search of entrepreneurial competencies: Peripheral vision and multidisciplinary inspiration. Industry & Higher Education, Vol. ahead of print Online: https://journals.sagepub.com/doi/full/10.1177/0950422220963796

Jones, C., Penaluna, K and Penaluna, A (2020) Value creation in entrepreneurial education: towards a unified approach. Vol. ahead of print – Online : https://www.emerald.com/insight/search?q=Jones%2C+C.%2C+Penaluna%2C+K+and+Penaluna%2C+A+%282020%29+Value+creation+in+entrepreneurial+education%3A+towards+a+unified+approach+&showAll=true

Curtiss, V, Moon, R and Penaluna, A. 2020. Active entrepreneurship education and the impact on approaches to learning: Mixed methods evidence from a six-year study into one entrepreneurship educator's classroom. Industry & Higher Education, Vol. ahead of print Online: https://journals.sagepub.com/doi/full/10.1177/0950422220975319

Ways to teach and assess enterprise and entrepreneurship education at HE institutions in Europe



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