



INTRINSIC

## INnovative educaTion foR sustainable eNtrepreneurShIP In Life sCIences

**Main Goal:** To empower Life Science University Teachers to develop their students' Sustainable Entrepreneurship Competences. Focus on development of elements and modules to be included in existing courses, teacher training and networking -> [www.intrinsic.eu](http://www.intrinsic.eu) (newsletter, webinars)!



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Erasmus+

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# ***How & what do people learn effectively through entrepreneurship education as a process?***

*Professor David Rae*  
*E: David.rae@dmu.ac.uk*  
*@CEntIntDMU*  
*@Warycat*

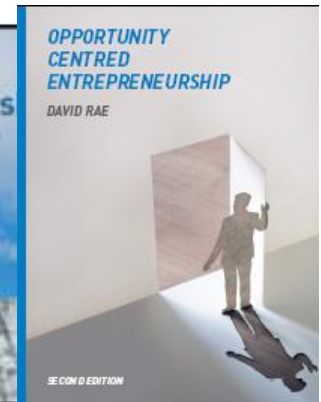
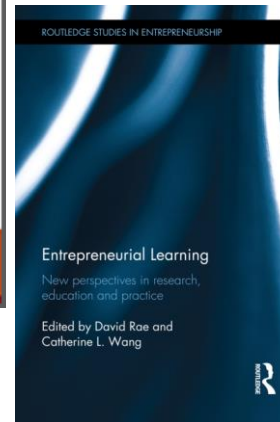
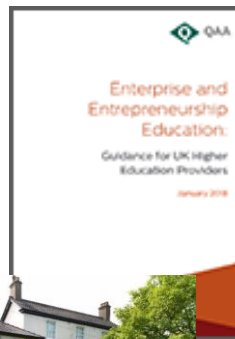


**CENTRE FOR ENTERPRISE  
AND INNOVATION**



# Professor David Rae

- Careers in small business consultancy, government & higher education
- Entrepreneurship researcher, advisor, educator & writer
- Entrepreneurial learning: PhD & publications 1999-2019
- Developed 'Opportunity-centred entrepreneurship' learning approach
- Dean, Shannon School of Business, Cape Breton University, Canada
- Exec. Dean Research & Knowledge Exchange, Bishop Grosseteste University, UK
- Professor of Enterprise, De Montfort University, UK
- Ex-Vice-president, Institute of Small Business & Entrepreneurship, UK
- Director, Enterprise Educators UK
- **Optimist**, based on human creativity & potential for learning





## Agenda

- Definitions for entrepreneurship education
- Some recent & some useful models
- Entrepreneurial mindset, capability & effectiveness
- Entrepreneurial education & learning
- Creating opportunities and value
- Questions & discussion

# Session aims....

- Appreciate concepts & definitions of entrepreneurship education
- Recognise useful frameworks for learning
- Distinguish between entrepreneurship education & experiential learning
- Appreciate entrepreneurship education as a process with valued outcomes
- Experience creative opportunity generation as a structured process
- Reflect on your teaching & learning approaches

# Definitions

**Enterprise:** *the generation and application of ideas, set within practical situations.*

**Entrepreneurship:** *‘the pursuit of opportunities for the creation of cultural, social or economic value’  
the application of enterprise behaviours, attributes and competencies for creation of cultural, social or economic value.*

**Enterprise Education:** *the process of developing students to enhance their capacity to generate ideas, and the behaviours, attributes, and competencies to make them happen.*

**Entrepreneurship Education:** *developing the enterprising potential and capabilities of students to identify and develop opportunities, innovations and ventures.*

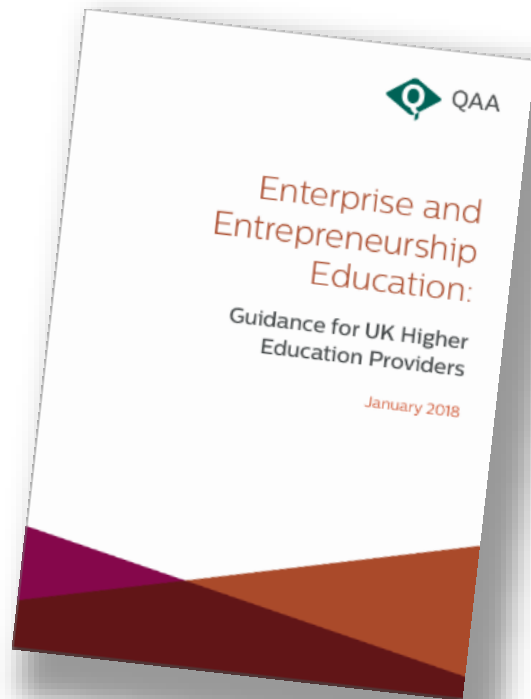
# Aims and effects

Enterprise and Entrepreneurship Education is been shown to:

- be inclusive and support wider participation
- have a positive influence on students' creativity, flexibility and the innovation process
- have a positive impact on behaviour change and active citizenship
- have positive impacts on learning attainment and grades
- significantly improve stakeholder engagement
- enhance career opportunities and employability
- significantly increase start-up rates.

# Enterprise and Entrepreneurship Education: Guidance for UK Higher Education Providers

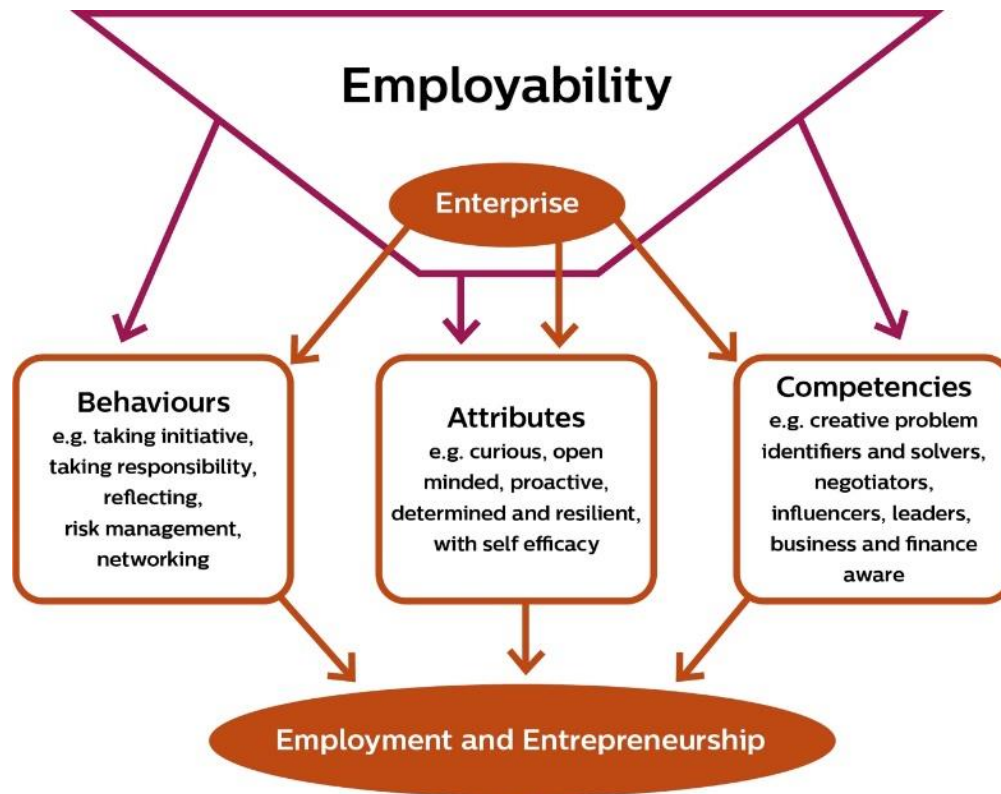
[www.qaa.ac.uk/en/Publications/Documents/Enterprise-and-entrepreneurship-education-2018.pdf](http://www.qaa.ac.uk/en/Publications/Documents/Enterprise-and-entrepreneurship-education-2018.pdf)





# Connecting employability and enterprise:

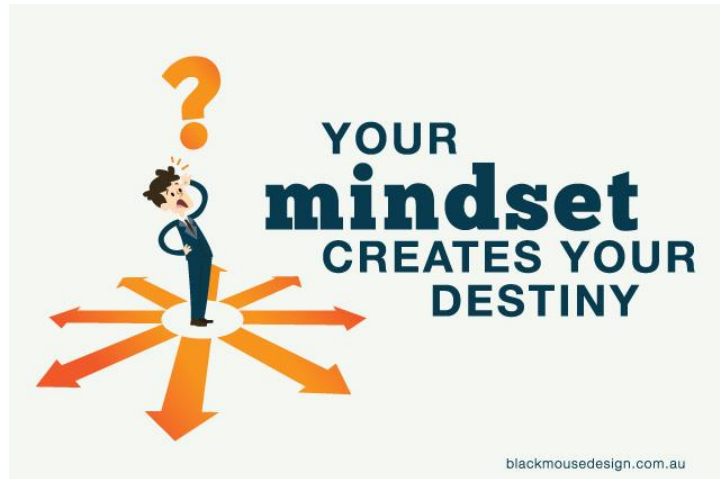
## *Links and competencies for employment*



## Entrepreneurial mindset:

The set of attitudes, skills and behaviors that students need to succeed academically, personally and professionally

Thinking as an entrepreneurial person

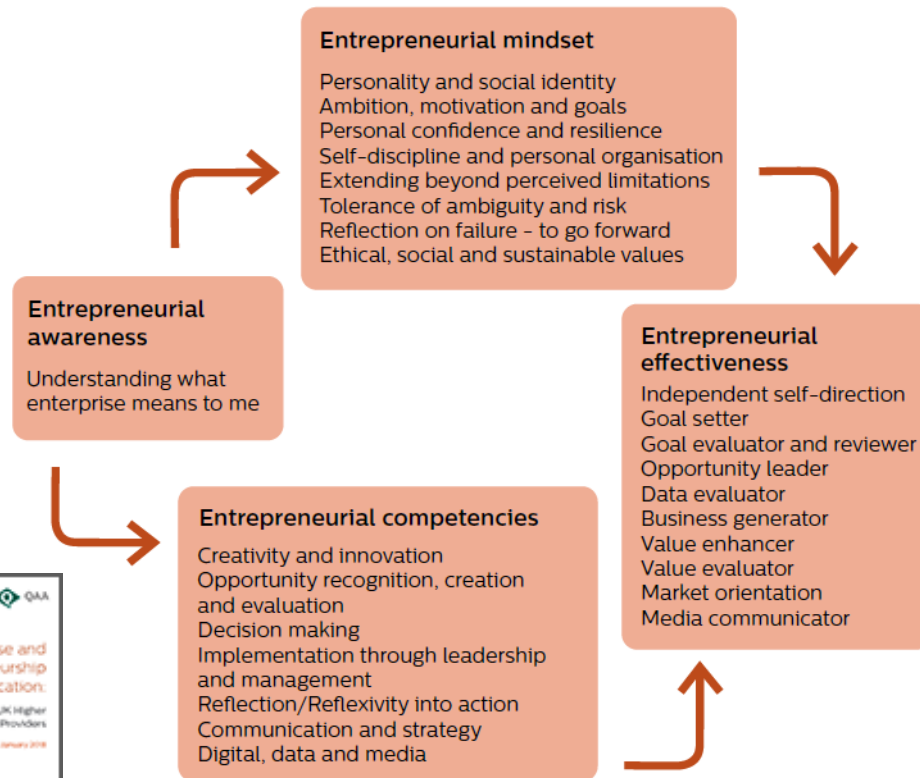


# Entrepreneurial learning: mindset & capability

- Enterprise & entrepreneurship are increasing in all educational subjects and levels.
- Learned experientially, but hard to 'teach'.
- Entrepreneurial learning centres on creating, discovering and acting on opportunities.
- Connects personal emergence (confidence, identity & mindset) with capability development (skills & behaviours).
- Moments of unplanned 'discovery', 'insight', 'crisis' & 'decision' occur in a naturalistic approach to entrepreneurial learning



# Entrepreneurial mindset, competencies and effectiveness



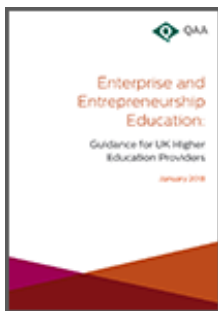
A learning process towards effectiveness

Entrepreneurial mindset: thinking in new ways

How can you develop your mindset?

What competences do you have?

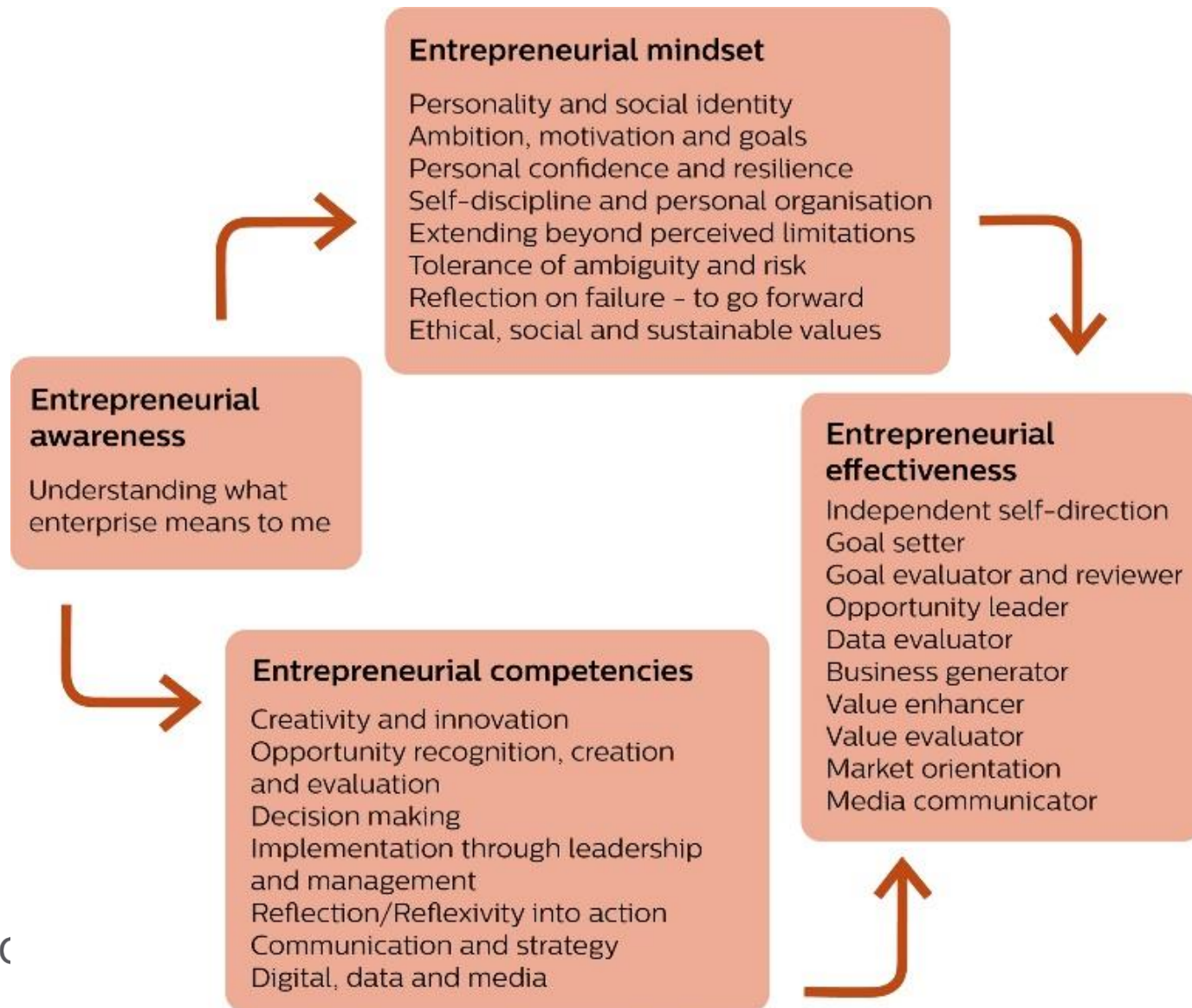
How can you work towards effectiveness?



QAA 2018

<http://www.qaa.ac.uk/en/Publications/Documents/Enterprise-and-entrpreneurship-education-2018.pdf>

# Entrepreneurial mindset + competences = effectiveness

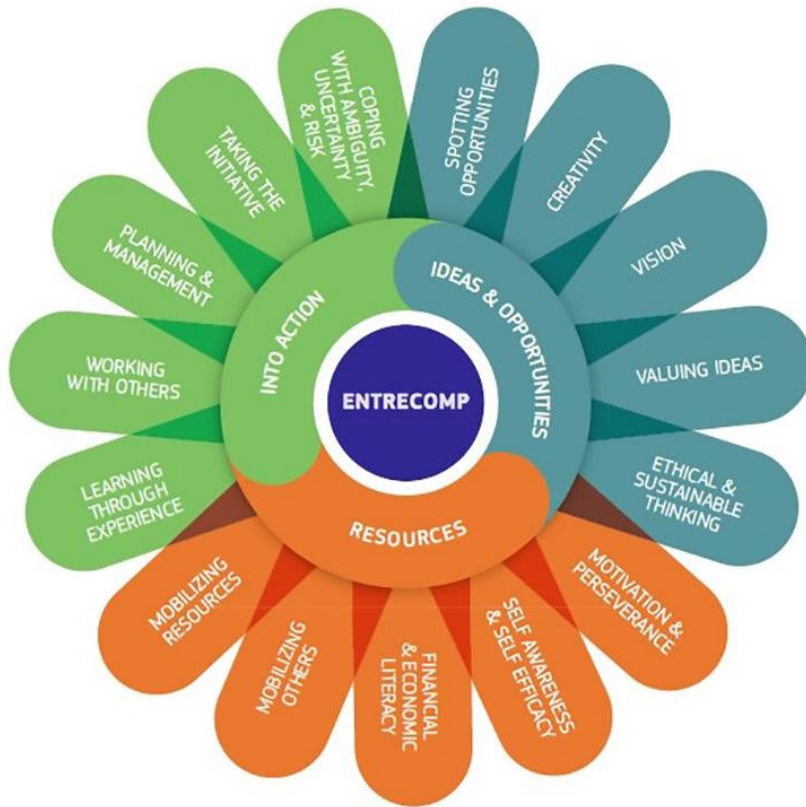




# Entrepreneurial competences

- Creativity and innovation
- Opportunity recognition, creation and evaluation
- Decision making
- Implementing ideas through leadership and management
- Reflection and reflexivity into action
- Communication and strategy
- Digital, data and media

Where are your strengths & preferences you bring to a team?  
Skills to develop?



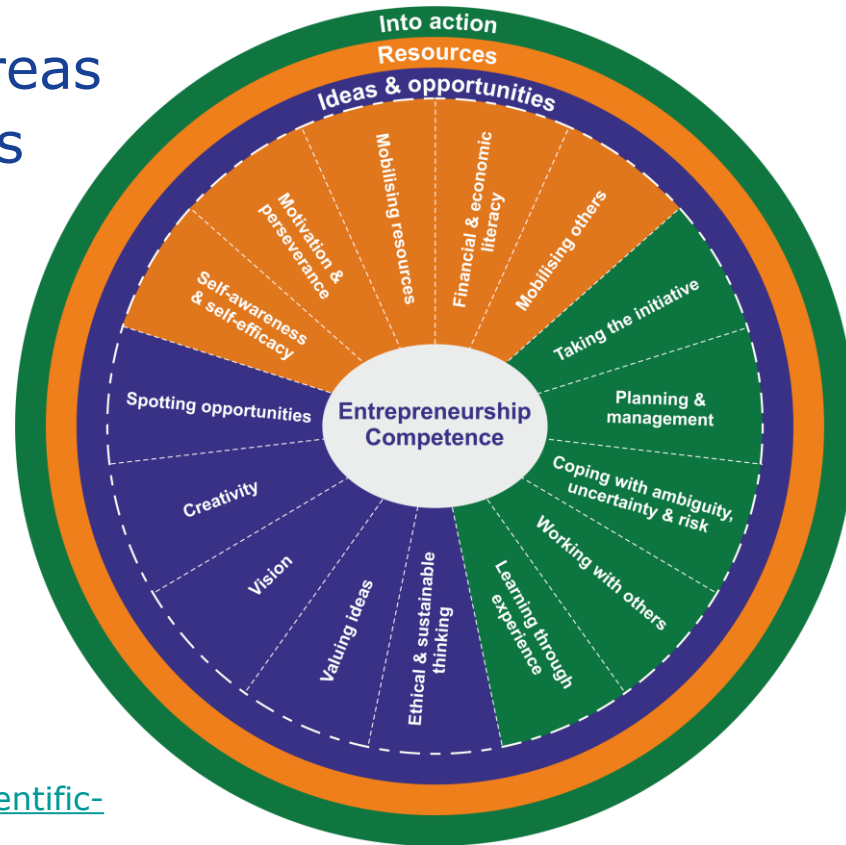
EntreComp provides a valuable competence framework for skills, behaviours & actions

## EntreComp: 3 areas & 15 competences

Each competence is accompanied by a hint and a descriptor and is further unfolded into threads.

Threads are turned into more than 400 learning outcome statements along 8 levels of **proficiency**

<https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/entrecomp-entrepreneurship-competence-framework>



# Entrepreneurial Learning

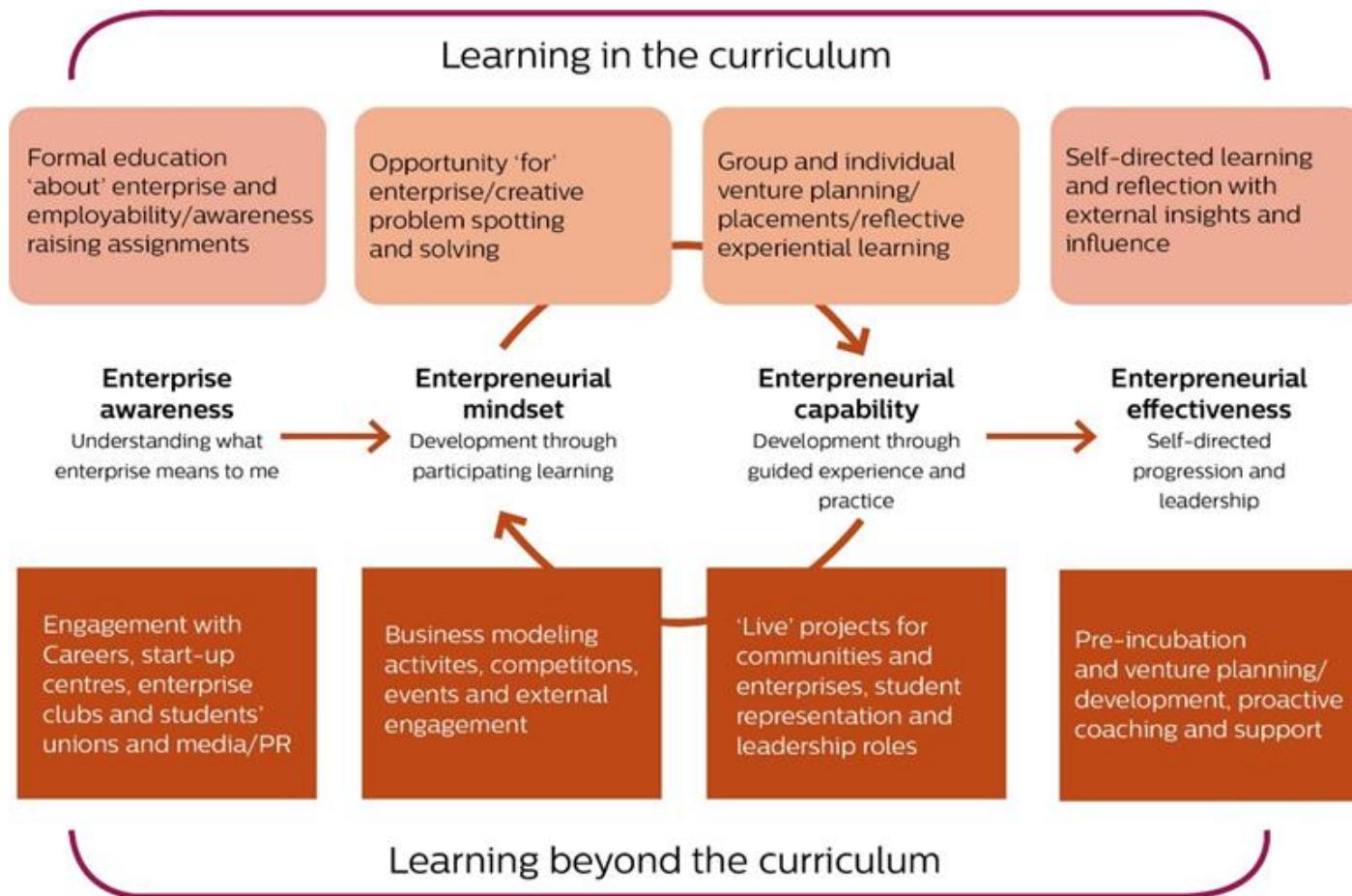
The process of becoming an entrepreneurial person;  
Learning to generate and act on opportunities

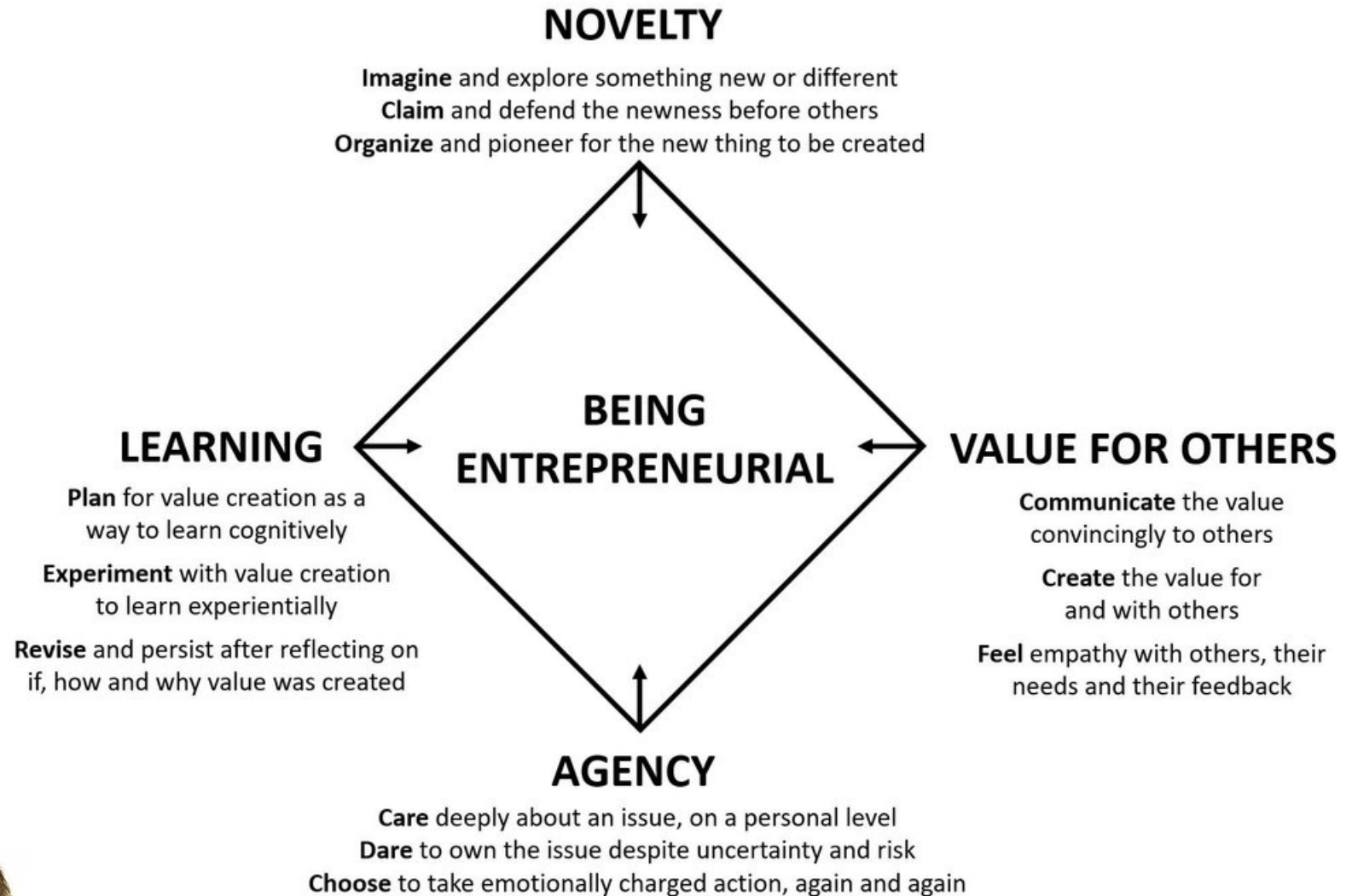
# What is Entrepreneurial Learning?

- Agency: becoming an entrepreneurial person
- Developing an entrepreneurial identity, mindset & skills
- Learning as both an individual and being socially connected
- Recognising, creating and acting on opportunities
- Creating multiple forms of value - eg from wasted or latent resources
- Initiating and managing teams & organisations
- Developing confidence to act in uncertainty & ambiguity



# Learning – formal and experiential





Martin Lackeus 2018  
@mlackeus

# Questions....about opportunities

- How can students learn to be entrepreneurial?
- How can they develop their entrepreneurial competences?
- How can they learn to form and work in entrepreneurial teams?
- How do they find and develop opportunities to create value?

# How do students learn most effectively?

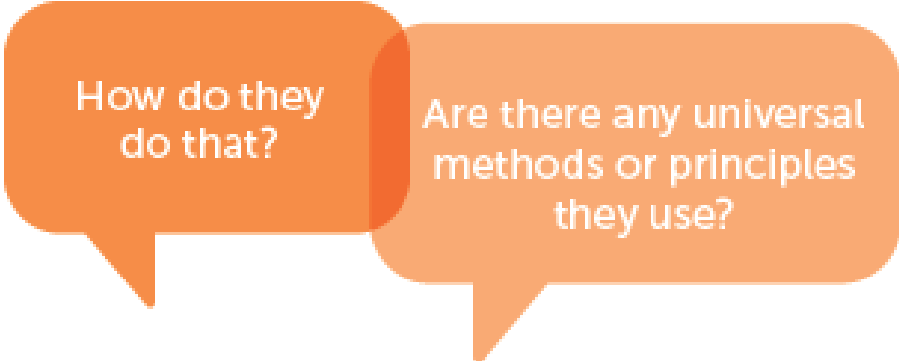
- Creative teamwork - social learning
- From real entrepreneurs & business owners
- Practical situations & projects feature real responsibilities, ambiguity & uncertainty
- Outside the classroom: organisations & communities
- Discovery, failure, iteration, competition
- Emotional engagement: *feel* the enterprise experience
- Critical reflection & constructive feedback
- 'Pull' self-learning to address their questions
- Least effective: didactic lecture-theatre teaching

# Effectuation

Sara Sarasvathy 2001  
Means-ends approach

## What is effectuation?

Entrepreneurs constantly  
**make decisions** and **take action**.



How do they  
do that?

Are there any universal  
methods or principles  
they use?

To answer these questions, Dr. Saras Sarasvathy, a cognitive scientist, conducted a study\* of expert entrepreneurs. ———

The result? **Effectuation**

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<http://www.effectuation.org/sites/default/files/documents/effectuation-3-pager.pdf>



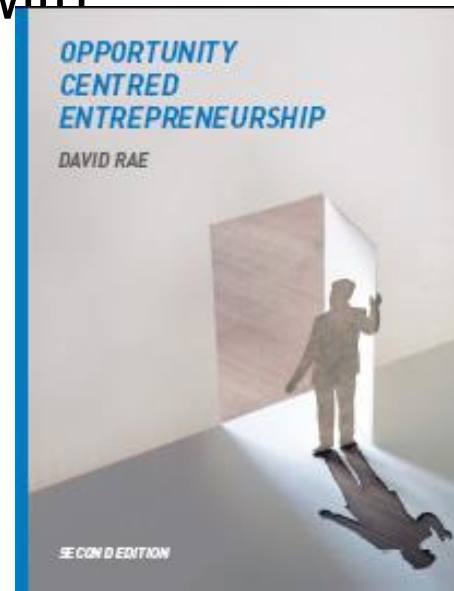
# Entrepreneurship is Opportunity-Centred

Finding, creating, assessing & developing opportunities is a process with tools & skills which can be learned.

This methodology for entrepreneurial learning includes four clusters of activities:

- **Personal enterprise** - connecting opportunities with goals and identity
- **Creating** & exploring opportunities
- **Planning** to realise opportunities
- **Acting** on opportunities

<http://www.palgrave.com/companion/Rae-Entrepreneurship/>



# Opportunity-centred entrepreneurship

What do I want?  
Personal goals  
Skills & strengths  
Confidence & self efficacy  
Values & motivations

## Reflection

Personal enterprise

## Generative curiosity

Creating & exploring opportunity

Creative thinking  
Exploring ideas  
Seeing needs as opportunities  
Taking initiative

OPPORTUNITY  
CENTRED  
ENTREPRENEURSHIP

Planning to realise opportunity

## Prospective imagination

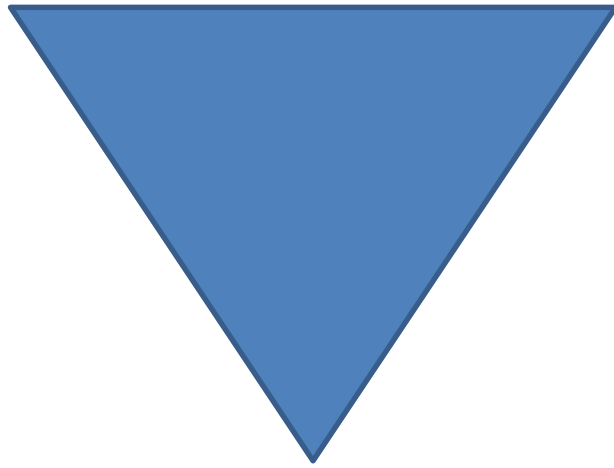
Planning:  
Goals & activities  
Aiming for success  
How-to?  
Who with?  
Resources

## Active & social engagement

Acting on opportunity

Networking  
Creating & using contacts  
Communicating effectively  
Self marketing  
Learning from experience

# Divergent and convergent thinking



## **Divergent thinking:**

- identifying the opportunity
- making creative connections
- exploring new information
- researching & analysing information

## **Convergent thinking:**

- deciding possible solutions
- planning what to do
- developing & implementing the innovation
- communicating the idea
- monitoring progress & results.

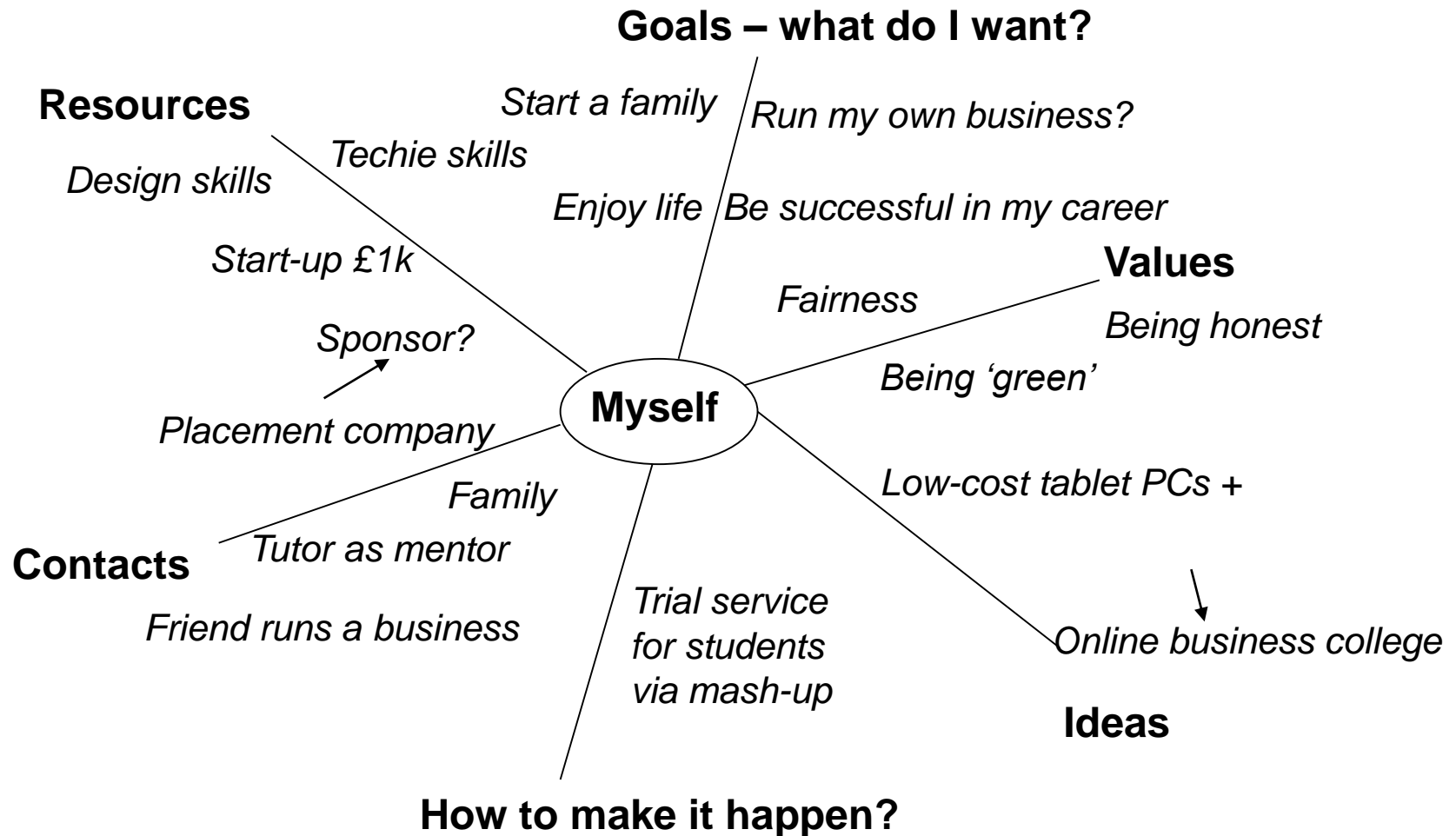
# Coming up with ideas....

- What interests you?
- What do you enjoy?
- What can you do?
- What are you good at?
- What problems do you notice?
- What would make your life easier/happier?
- What's missing around here?

# Entrepreneurial learning map

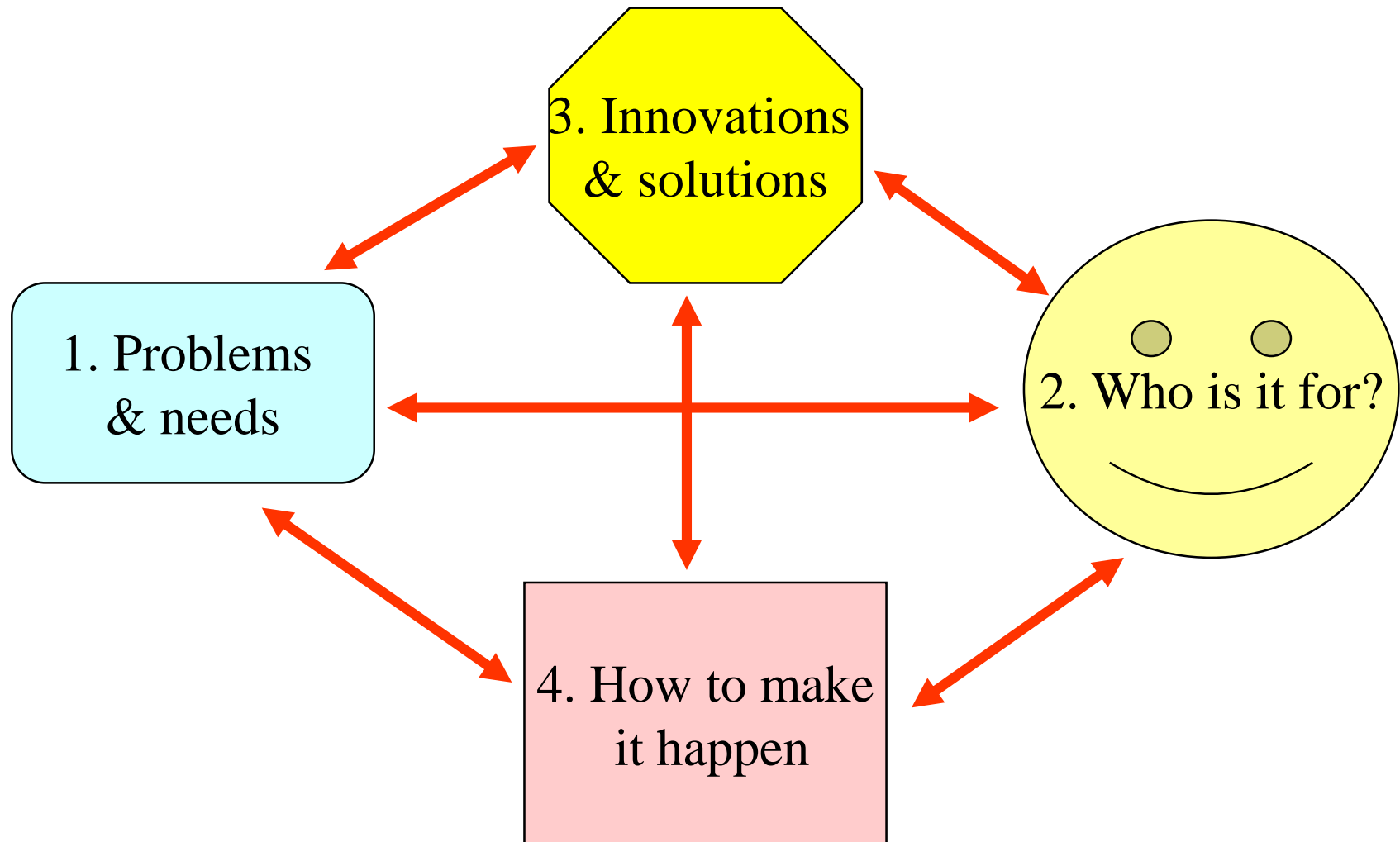
You can use Mindview or Mindgenius





Entrepreneurial learning map for start-up business idea

# Winning ideas > opportunities





Time – when?

Plan: Sept-Oct

Fit-out end Oct

Open Nov-Jan

£2000 set up costs

Money  
– how much?

£1800 sales per week

Off High St

Location  
where

Attract passing trade

Route to  
market – how?

Pop-up café on short licence

Pop-up cafe

Need/problem

Seasonal demand for savoury  
Street food & drink

Visitors

Market – who?

Retail shoppers

Local workers

Spicy hot snacks

Product/service – what?

Hot drinks, chocolate & fruit

# Creating & capturing multiple sources of value

## Financial

Direct wealth creation

## Economic

Indirect financial impact

**Creates value:**  
added to any of these



**Captures value:**  
Proportion retained by the business

## Social

Benefits to community:  
Jobs, healthcare, inclusion,  
housing, services etc

## Environmental

Beneficial impact on environment,  
Eg conserves or re-uses resources,  
Reduces climate change

## Cultural, spiritual, heritage

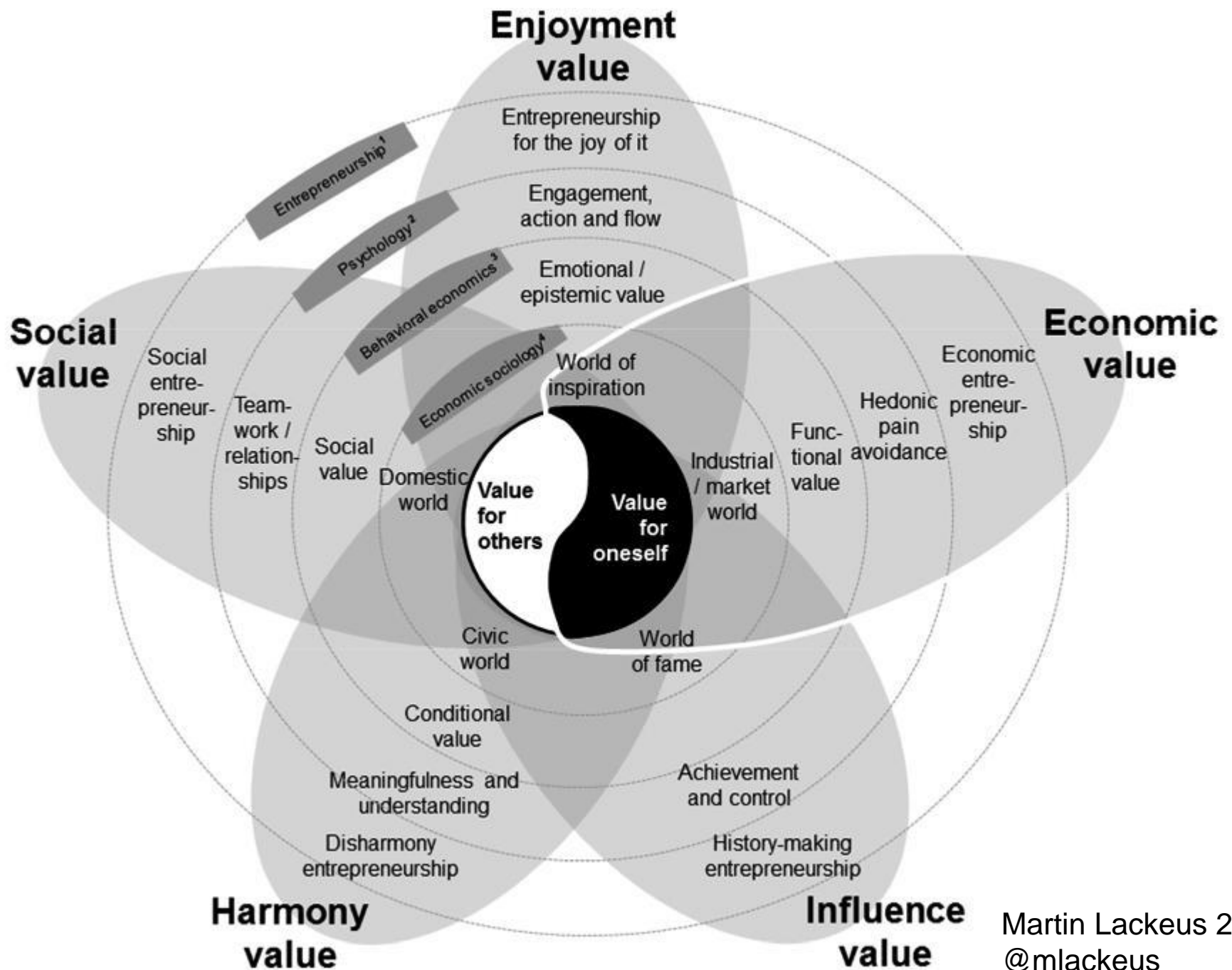
Contributes to shared expressions  
Of identity, heritage & emotion

## Aesthetic

Creative or artistic expression

## Technological

Displays & uses innovative  
technology to advantage



## **As an entrepreneurship educator...**

- What is your own entrepreneurial mindset?
- How can you facilitate learning in entrepreneurial ways?
- How can students recognise, create and act on opportunities?
- How can they create new value?
- What scope is there for imaginative use of technologies?
- How do we all reflect on personal & social learning?

**Questions?.....**



## QUESTIONS & ANSWERS

1. How best can entrepreneurial learning be assessed.

Learning can be assessed during the whole process or as a result of the process. A good practice is for self-evaluation and peer-group evaluation by the students themselves, where they should evaluate their performance along a set of criteria for reflection and discussion with the tutor. The EntreComp framework of competences is very helpful for self and tutor assessment.

2. what are the study subjects that are most/not appropriate for entre. education methods ?

Almost any subject can be starting point for entrepreneurial thinking. It is more the pedagogical approach of how the learning is designed and conducted, to promote curiosity, enquiry and creativity.

3. Where do you see entrepreneurship education in 10 years?

A major change started in 2008 with a very strong focus on financial values, this has changed and the value creation process is much more responsible and inclusive, including social, environmental and economic values. This is expressed by the European definition of entrepreneurship as 'creating value for others'. The development will go further in that direction, towards a more inclusive, ethical, responsible and sustainable approach to entrepreneurship in society with value being created at different levels.

4. What is the most successful strategy to engage Businesses in entrepreneurship education.

Bring them in as speakers, motivators, but take care that the business representative also has a kind of payoff (visibility, as company, as someone engaging in higher education etc.)

5. Do You think that summerschools could - beside the "normal" studytime be a nice chance to work with students on entrepreneurship and have brainstorming and pilots within that?

Yes, there the people can engage with each other in different activities, in social exchange, such events offer special opportunities for collaborative and social learning and to work with people with whom they would have not been able to work together in other ways. The intensity and also balance of leisure/outdoor with groupwork can enhance the learning experience in innovative ways.

6. What's your opinion about developing entrepreneurial skills (e.g. decision making or opportunity recognition) through serious games? Is it possible to evolve or develop these skills by playing a game? do you have any related experience?

Yes simulations and gaming can be an effective means for learning. This can only grow. 'Serious' gaming has real potential to create simulations for scenarios such as fundraising, competing with other teams in entry to market, etc.

7. As entrepreneurship covers a wide variety of skills such as personal, business, own field of study etc... Where to start from? Integrate all together at the same time?

Start from the students, their competencies, their interests, their ideas, who they are (like in the effectuation approach) and build up from there. Entrecomp describes also levels of competencies that can be acquired along the course of a study.