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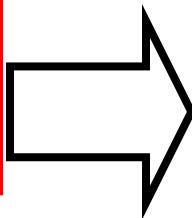
Mapping the Flair of the Entrepreneur



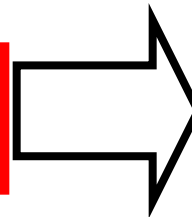
**Dr John Kelly &
Dr Brian Cummins**



Enterprise thinking



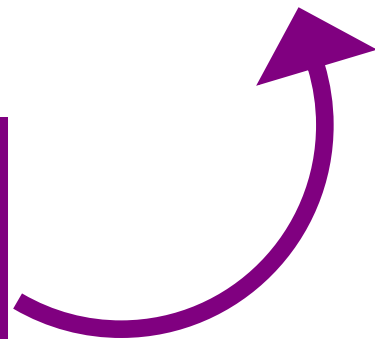
Entrepreneurs



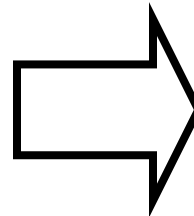
An Enterprise 'Culture'



Education and Enterprise

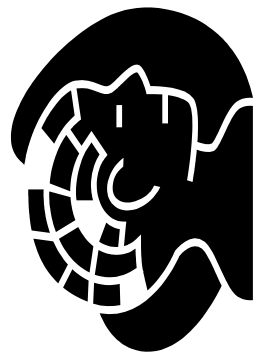


Research into Learning Styles



An Entrepreneurial Learning Style?





'Entre BRAINeur'

Investigating Entrepreneurial Learning Preferences

Context of the Study

Future Needs

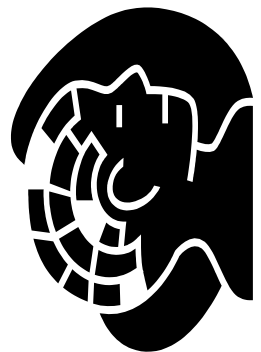
'It is widely accepted that the future prosperity of post-industrial societies depends on the strength of their **entrepreneurial culture** ...

Awareness & Research

Consequently many have focused on studying, **benchmarking** and **revitalising** local, regional, and **national entrepreneurial spirit** and competence ...

Education

Entrepreneurship has become a rapidly expanding academic discipline, focused on achieving an **understanding of what it takes to develop a successful entrepreneur** and on providing good entrepreneurial education' (Heeboll, 1997).



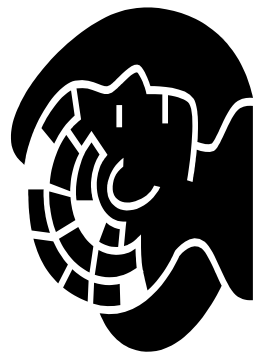
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The Importance of Entrepreneurship

In the 1980s, Kent (1984) saw entrepreneurship as a **developing revolution** throughout the world.

He believed that this centred on the recognition that entrepreneurs had become the **prime generators of economic progress** and would have as great an impact on the lives of people in the 21st Century as the industrial revolution [*in which Northern Ireland was a key player*] had made previously.



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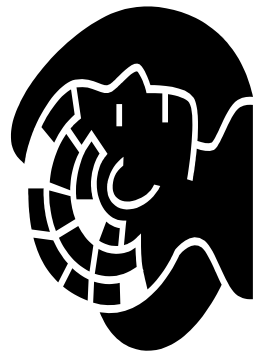
Government Rhetoric

The Northern Ireland (NI) economic blueprint, 'Strategy 2010' (March 1999) spelt out that:

'NI needs a culture which generates a common commitment to economic success based on inclusive and effective partnership; that honours entrepreneurs and encourages others to emulate them'.

The Northern Ireland Executive in their 'Programme for Government 2002' called for the creation of a;

'... culture and environment which supports and encourages enterprise and entrepreneurial activity'



'Entrepreneur'

Investigating Entrepreneurial Learning Preferences

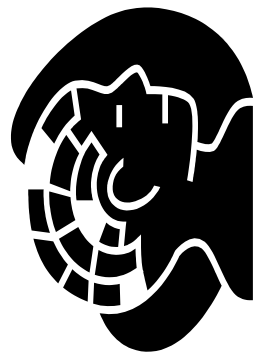
Education's Role in an Enterprise Culture

'We all, government and business, have a role to play in encouraging risk taking and high-growth business ... every government department is obliged to encourage enterprise and entrepreneurs ... *but raising our productivity starts in the classroom, not the boardroom*' (HM Treasury News Release 14, 25/01/99).



Accelerating Campus Entrepreneurship (ACE) Initiative 2009

‘To encourage and sustain a vibrant, successful knowledge economy, Ireland must increase the number and quality of indigenous companies and create graduates, irrespective of discipline, who are entrepreneurial thinkers and doers.’



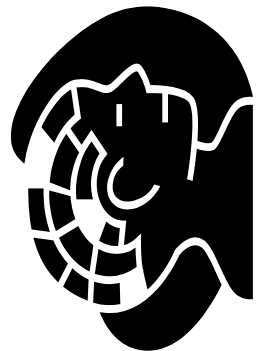
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ET 2020

**Strategic Framework for European
Cooperation in Education and Training
European Commission 2011
Objective 4**

‘Enhancing creativity and innovation,
including entrepreneurship, at all
levels of education and training.’



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Education's Contribution to an Enterprise Culture

Mini-Enterprise Companies

Master Classes

Dedicated Careers

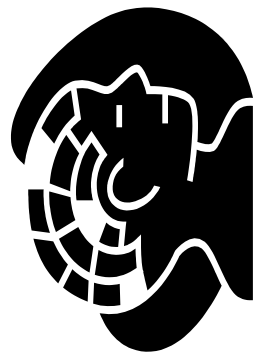
Information

Competitions

Insight/Support Programmes

Including
Lifelong
Learning

**Entrepreneurship is now
Embedded in Popular Culture**



'Entrepreneur'

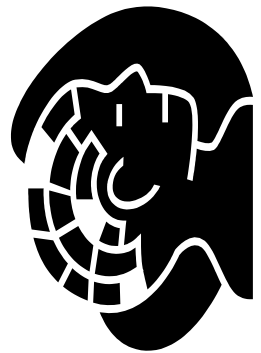
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Historical Curriculum Innovations

The **1931** Hadow Report recommended that the school curriculum should be thought of in terms of **activity** and **experience**, rather than of knowledge to be acquired and facts to be stored.

The **1967** Plowden Report argued that the aim of education should be to equip pupils with flexible skills, and that learning is enhanced when pupils are **motivated by interest**, and could **understand the purpose of what they were doing**.

Specifically, Plowden encouraged tuition to enable pupils to **discover answers** for themselves (Baker, 1994; Harris, 1995).



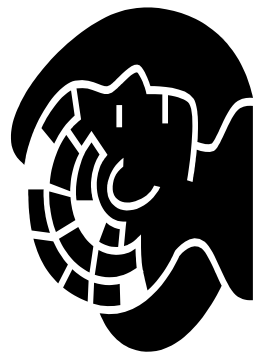
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'Learning Styles'

The differences in approaches to and ways how people learn have been comprehensively studied for decades.

From these investigations the concept of individualised 'learning styles' emerged during the 1970s, and gained increased popularity in the 2000s.



'Entrepreneur'

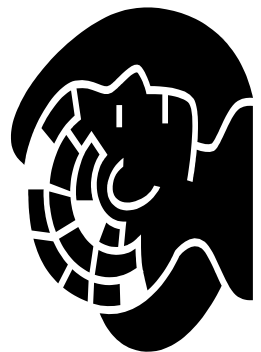
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'Towards an Enterprise Culture' in Education

'Enterprise skills and enterprise learning are not entirely new educational ideas ...

problem solving, stimulating curiosity, fostering creativity, developing personal responsibility and so on have been important objectives and practices among teachers for many years

.... enterprise does not depend on a totally new curriculum but rather new pedagogical processes' (OECD, 1989).



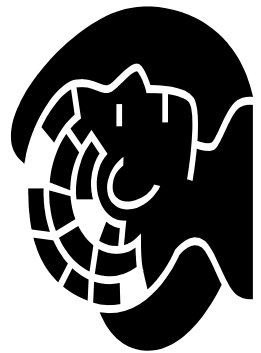
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Reference to 'Learning Styles' in Education

In (2008) the NI Education and Training Inspectorate published a review of the implementation of the revised school curriculum. It was noted in this review that in the **most effective lessons**, the main enabling factors in teaching and learning across all phases ensure that:

*'Differentiated teaching strategies are deployed to support the children and young people who have **different learning styles**'.*

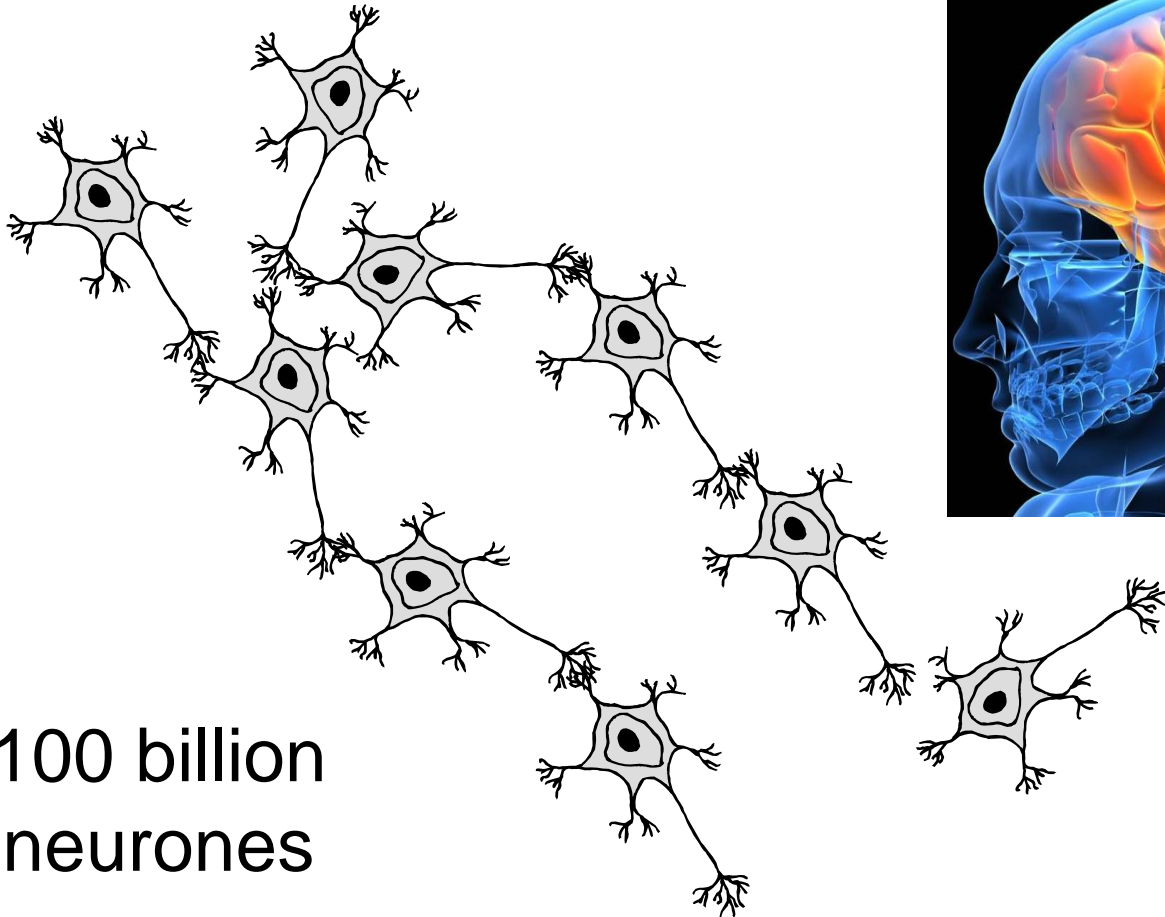


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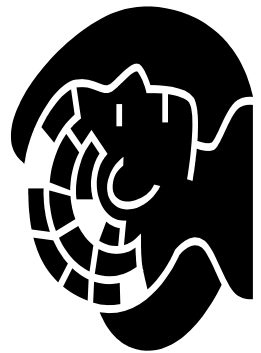
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'Learning Styles' in Education

The brain is 'wired' to learn through trillions of neuronal connections.



100 billion
neurones



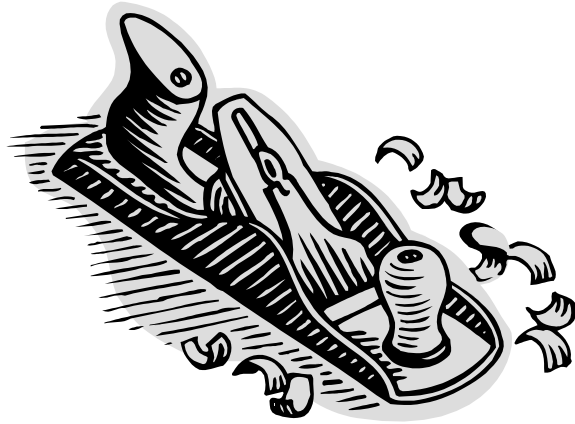
'Entrepreneur'

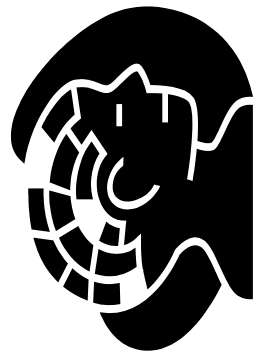
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'Learning Styles' in Education

How the individual brain is 'wired' to learn has been compared to the 'grain of the brain'.

Learning styles identify the grain of a person's brain for learning.





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Investigating Entrepreneurial Learning Preferences

Traits of Entrepreneurs

- Need to achieve
- Need for control and power
- Autonomy
- Self-confidence
- Perseverance
- Resistance to stress
- Conceptualisation
- Innovative
- Able to live with ambiguity

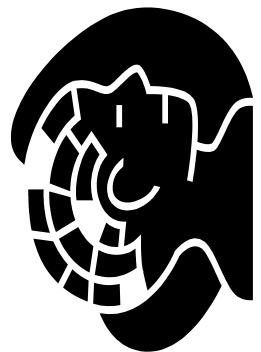
Research Aims

- 1. Does a pattern of brain preference exist amongst successful local entrepreneurs.*
- 2. Offer insights into why some successful entrepreneurs rejected, or failed to respond to, formal education*
- 3. Is it possible to offer an entrepreneurship learning preference model for curriculum development and transformation at all educational levels.*
- 4. To match curriculum content and delivery to the way in which entrepreneurs think and act.*



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'Entrepreneur'

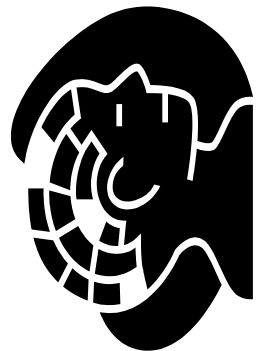
Investigating Entrepreneurial Learning Preferences

Research Sample

A representative sample of 55 Northern Ireland entrepreneurs, including

- **Commercial entrepreneurs**
- **Female entrepreneurs**
(in all the categories)
- **Social entrepreneurs**
- **Young entrepreneurs**
(under 35 years)

7 in Invest NI's 'Hall of Fame'



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Investigating Entrepreneurial Learning Preferences

Research Tools

Learning preferences measured using Questionnaires on

- 1. Identifying Right and Left Hemisphere Dominance.**
- 2. Gregorc's Mind Styles**
- 3. Enterprise Success Factors.**

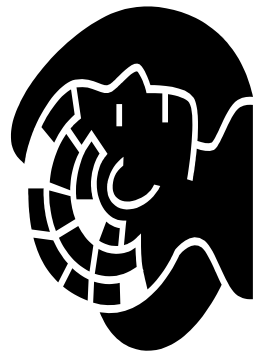
Qualitative interview used to assess

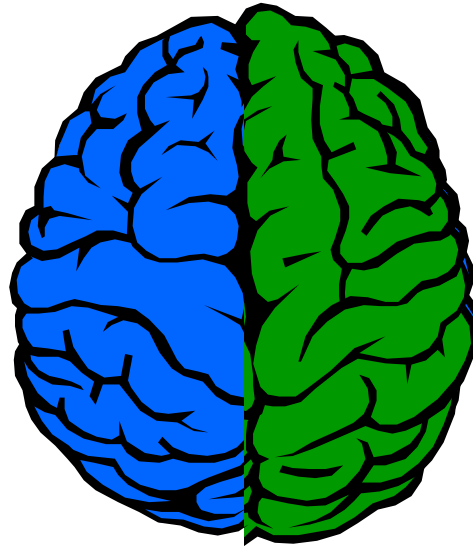
- School experiences**
- Enterprise history**

Right and Left Hemispheres

'One of the more durable generalisations about the hemispheres has been the finding that the left hemisphere tends to deal more with pieces of information in isolation, and the right hemisphere with the entity as a whole, the so-called Gestalt' (MacGilchrist, 2009).

'Essentially we have 2 brains in our head' (Norden, 2007).





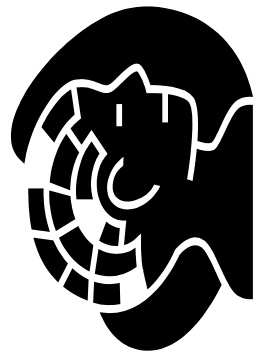
LEFT

Focused attention

RIGHT

Broad Attention

Left Hemisphere	Right hemisphere
<i>Focused attention</i>	<i>Generalised attention</i>
<i>Sequential thinking</i>	<i>'Random' thinking</i>
<i>Predictability</i>	<i>Possibility</i>
<i>Details</i>	<i>Big picture</i>
<i>Conforming</i>	<i>Non-conforming</i>
<i>Reflective</i>	<i>Impulsive</i>
<i>Logical</i>	<i>Intuitive</i>
<i>Abstract</i>	<i>Contextualised</i>

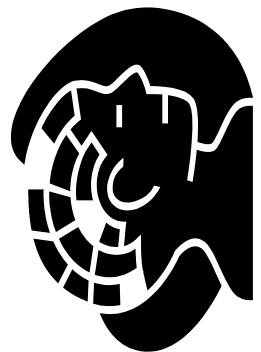


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Investigating Entrepreneurial Learning Preferences

Research Findings





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Gregorc's Mind Styles Delineator

Recommended for the assessment of Learning Styles by Department of Education and Science (GB)

Assesses the different ways of receiving and processing information:

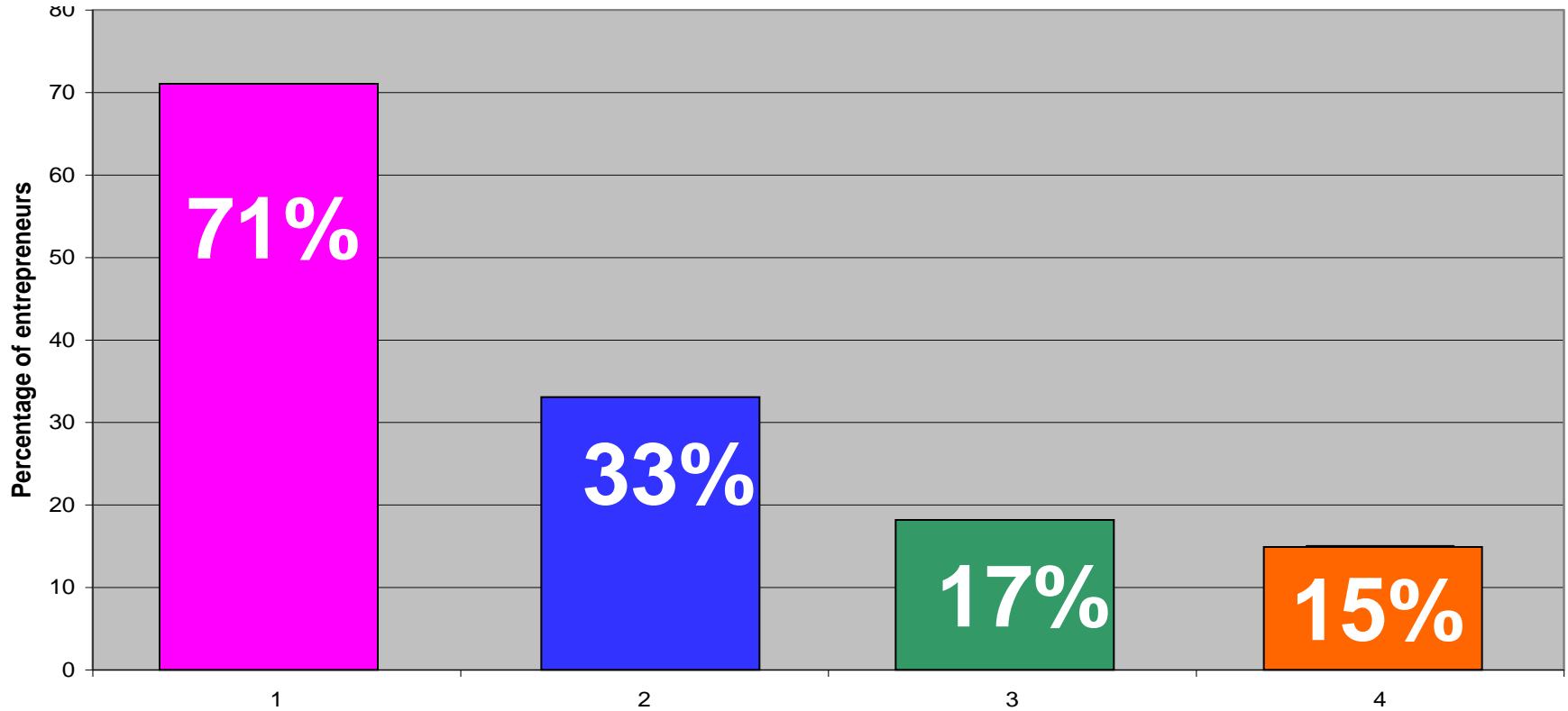
Receiving

- Concrete - through senses ('hands on')
- Abstract - through ideas

Processing

- Random - in chunks; not ordered
- Sequential – sequentially; ordered

Gregorc's Mind Styles



**Concrete
Random
71%**

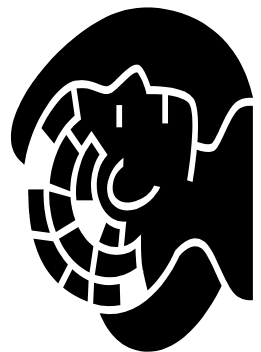
**Concrete
Sequential
33%**

**Abstract
Sequential
17%**

**Abstract
Random
15%**

Concrete Random

Preferences	<ul style="list-style-type: none">•Experimenting to find answers•Taking risks•Using their intuition•Solving problems independently
Learning context	<ul style="list-style-type: none">•Use trial-and-error approaches•Compete with others•Working through problems themselves
Dislikes	<ul style="list-style-type: none">•Restrictions and limitations•Formal reports and routines•Re-doing anything once it's done•Keeping detailed records•Showing how they got an answer•Not having options



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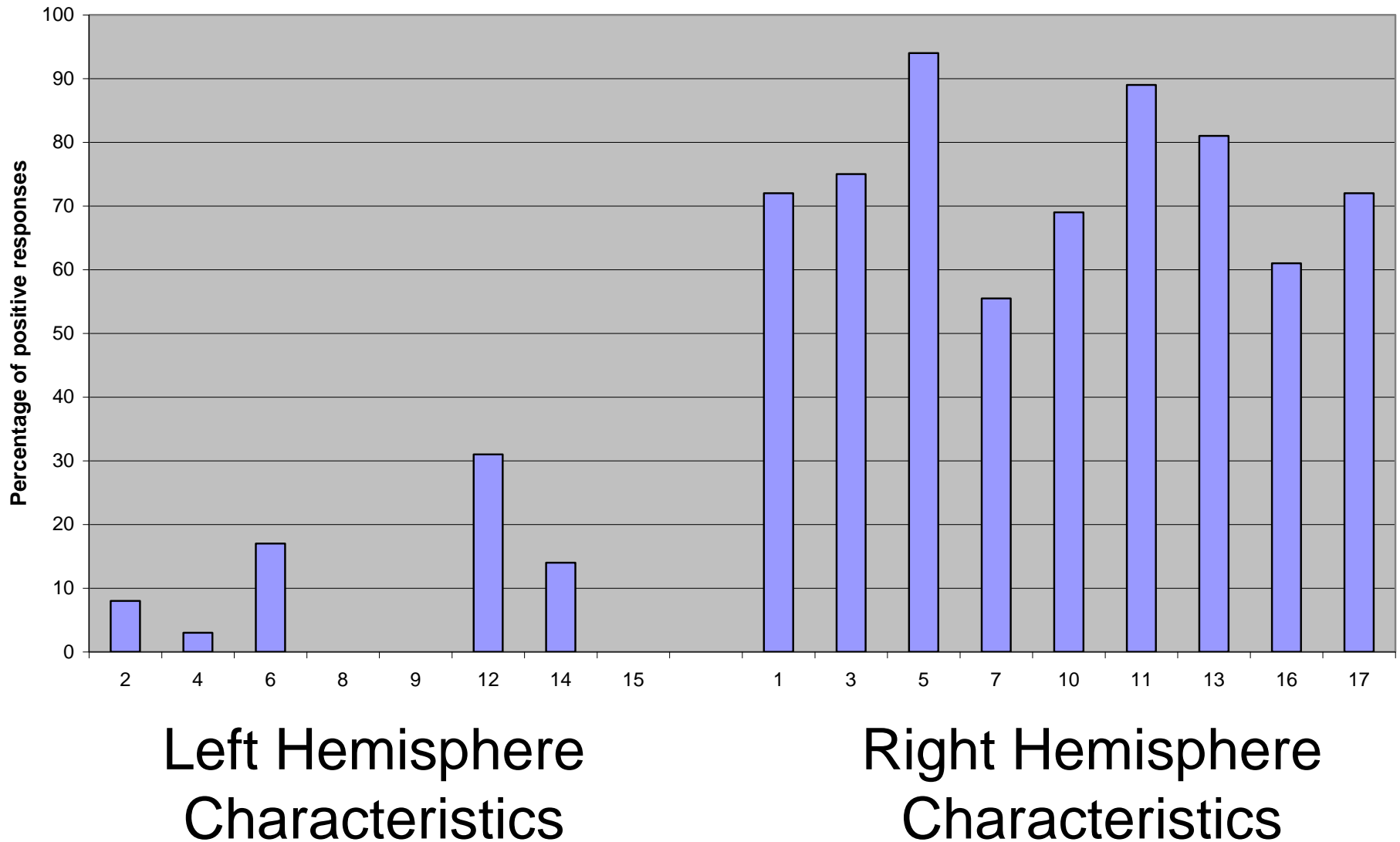
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Enterprise Success Factors

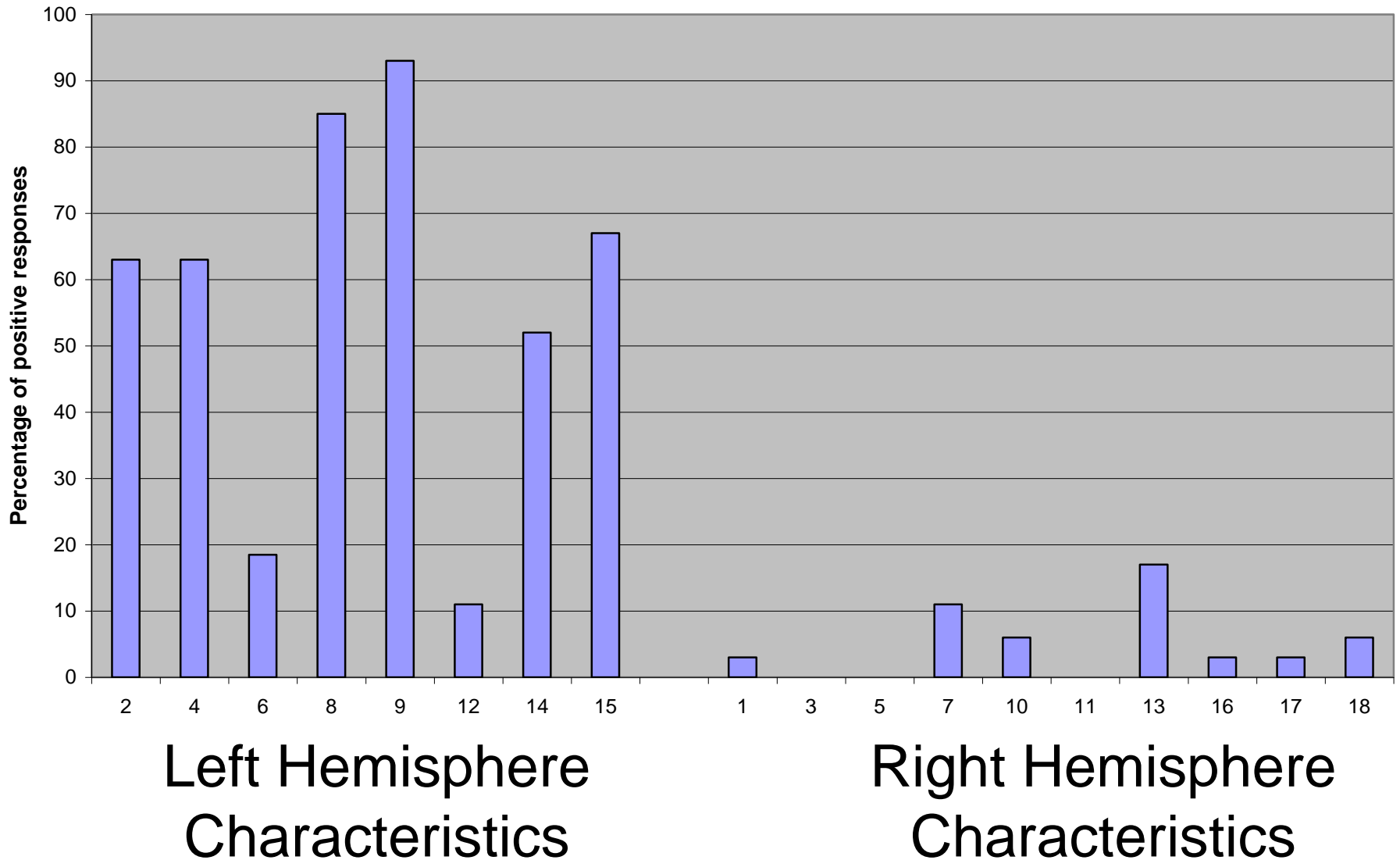
Factors selected by the entrepreneurs as contributing to their success in enterprise.

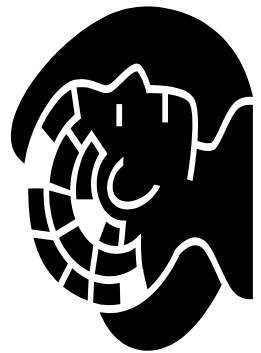
Classified by researchers in terms of right and left dominance.

Factors considered very significant in their success



Factors considered not significant in their success





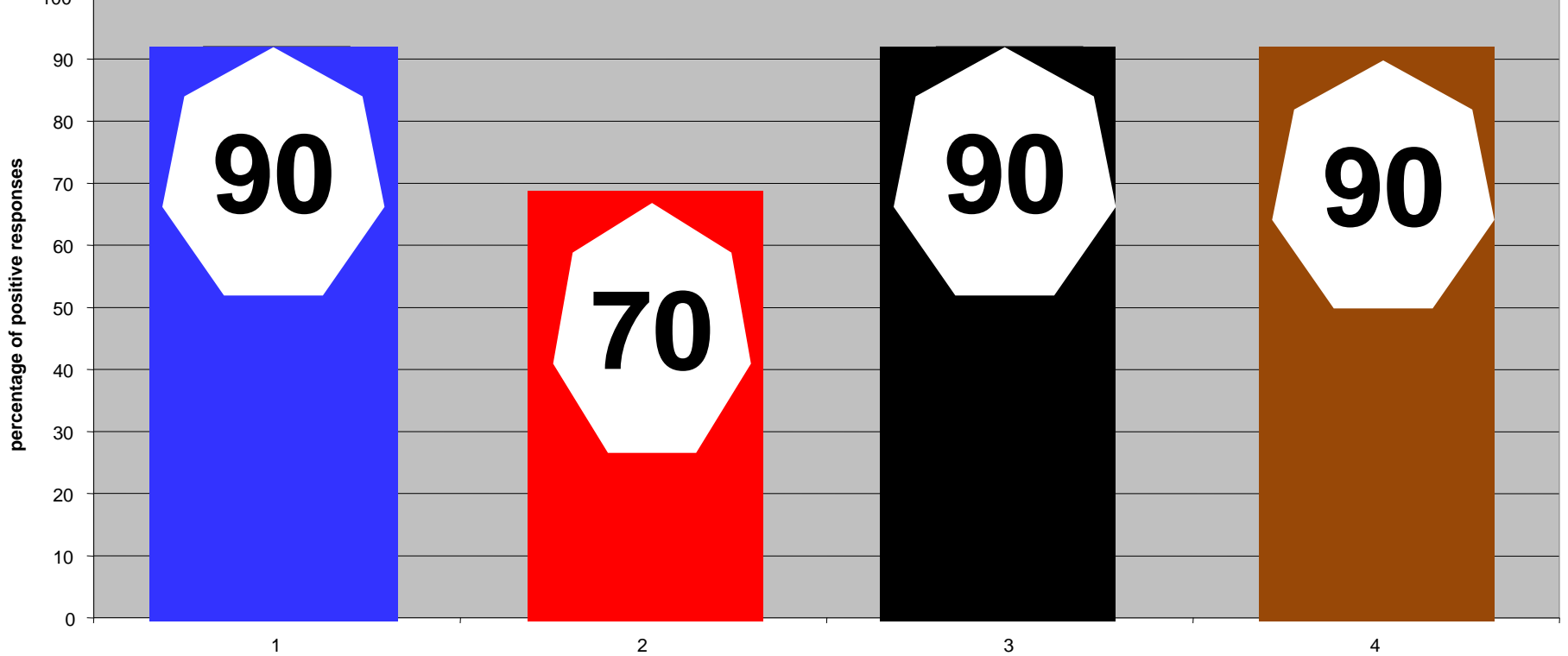
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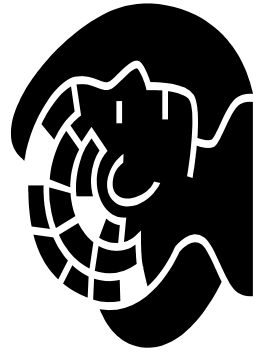
Educational and Enterprise History

Apart from essential skills, school did not contribute much to success in enterprise

Interest in study and achieving qualifications occurred after school and in context of work.



- Need to know why I have to do something
- Difficulty following rules
- Questioning rules; seeing alternatives
- Prefer to have options; not just one way

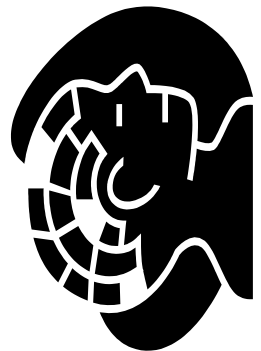


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Conclusions



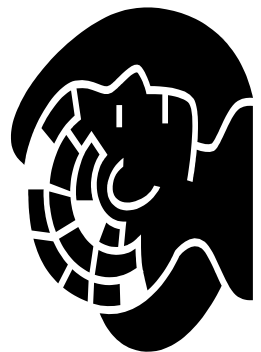


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Investigating Entrepreneurial Learning Preferences

Research Findings Summary

- **Right Hemisphere Dominance**
- **Concrete** mind style
'Hands-on'; don't learn by ideas abstracted from experience
- **Random** mind style
Question, challenge, intuitive, need options, take risks, resist restrictions.

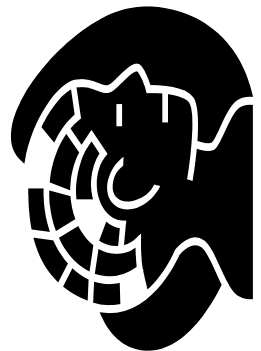


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These results suggest that any curriculum developed to encourage and stimulate enterprise needs to be sufficiently '**Right Hemispheric**' to *inspire* as well as *inform* potential entrepreneurs.

They suggest that entrepreneurs tend to be '**Concrete**' learners who do not learn by studying theory for testing by terminal examination.

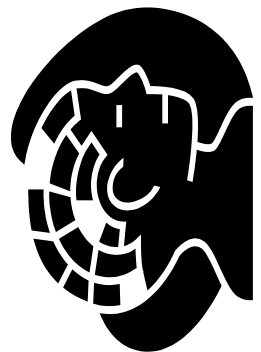


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Investigating Entrepreneurial Learning Preferences

In one word...
Entrepreneurs are
Non-Conforming





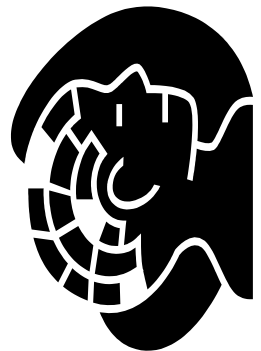
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Recommendations

The results of this study indicate that there is a need to reflect on what is presently being done to stimulate enterprise at all levels of education. The recommendations targeted the following categories:

- **Compulsory education**
- Non-compulsory education
- **Lifelong education and work**
- Agencies working with entrepreneurs



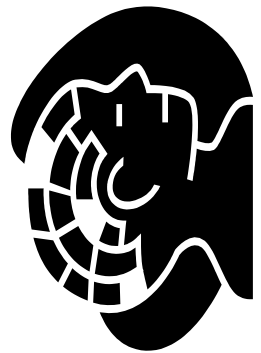
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Schools

Caution is urged that educational establishments do not shape the revised curriculum to suit a more traditional approach, particularly at senior/public examination level.

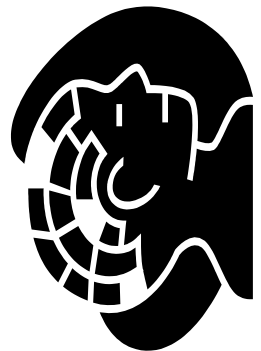
Strong examination-based testing can 'turn off' potential entrepreneurs.



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There is every possibility that a curriculum that is actually planned to suit right brain dominated pupils, and therefore as this study illustrates, potential entrepreneurs, might not be realised due to the strong influence of those teachers and educational policy makers who are left brain dominant.



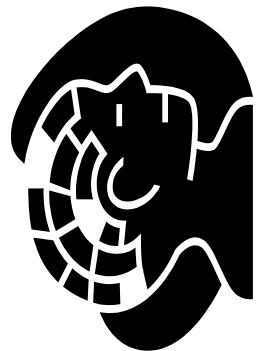
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Investigating Entrepreneurial Learning Preferences

Marginalised Learners

There is strong evidence from this study that learners with entrepreneurial potential will be **non-conforming** and **question accepted views and approaches**.

If education does not take this into account it is these individuals who are more likely to **become disengaged** and even **appear to be 'disruptive'**.

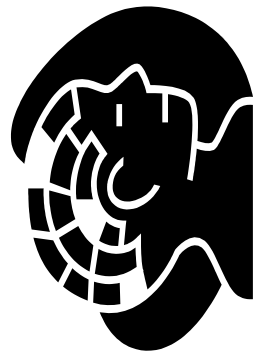


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Marginalised Learners

If the curriculum, the testing instruments and the teachers predominantly recognise and only *reward conformity* there may be a problem here for the enterprising / entrepreneurial learner.

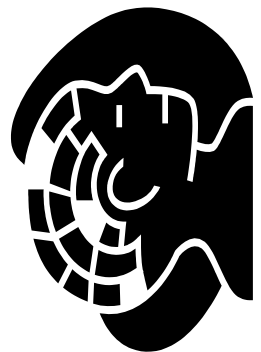


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Assessment

‘Public examination success’ or ensuring students meet the requirements set down by an outside body; this is what is expected and demanded in education.

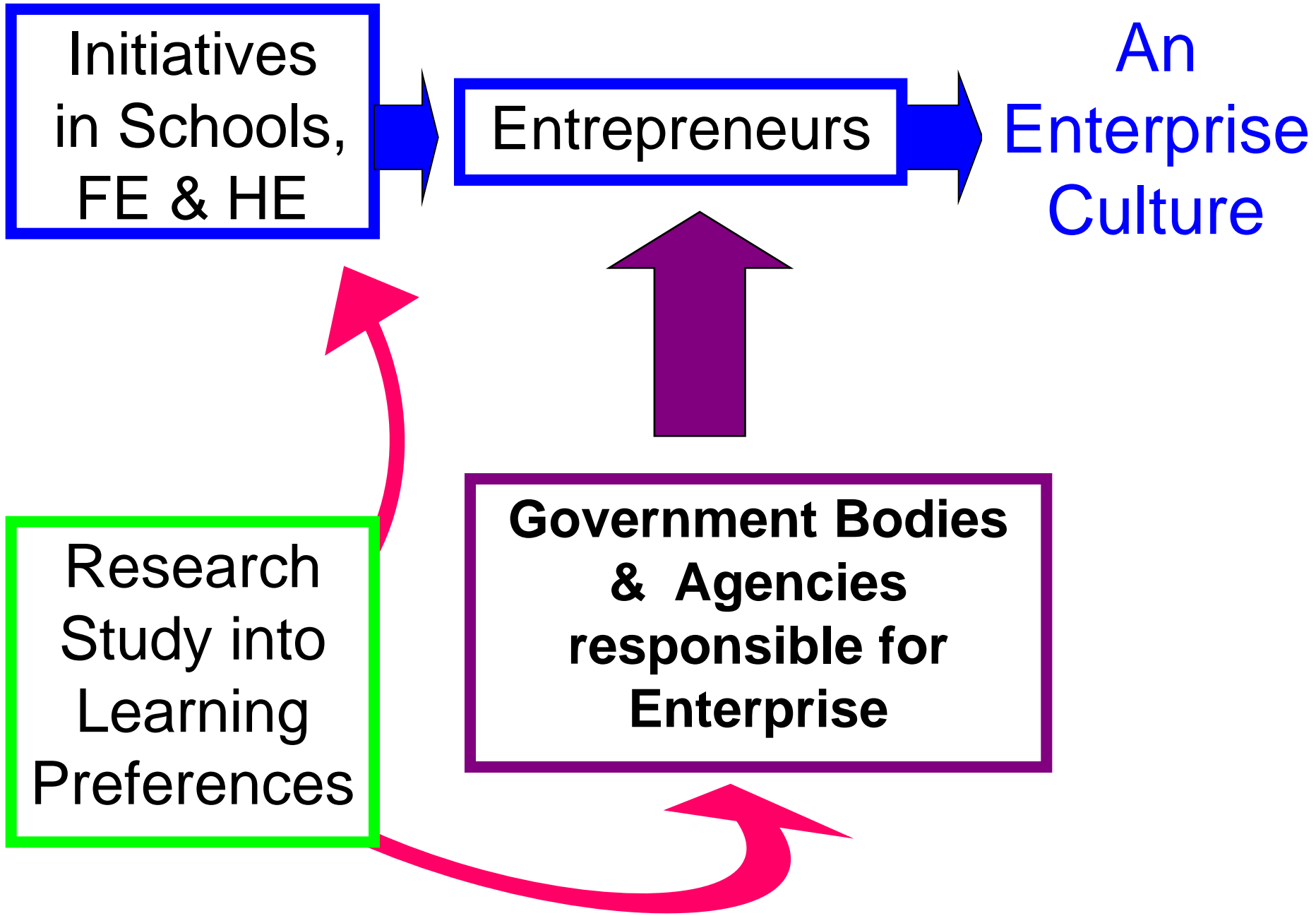


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Assessment

It is perhaps more cost effective to retreat to traditional left brain approaches to cramming knowledge. Significant problems may arise with any attempt to introduce a more right brained approach if this is not accompanied by an endorsement by examination bodies.



Initiatives
in Schools,
FE & HE

Entrepreneurs

An
Enterprise
Culture

**Government Bodies
& Agencies
responsible for
Enterprise**

Research
Study into
Learning
Preferences