



明日之學校 明日之校長 創新和企業精神



教師及校長專業發展委員會主席
邱霜梅博士
2015年12月16日

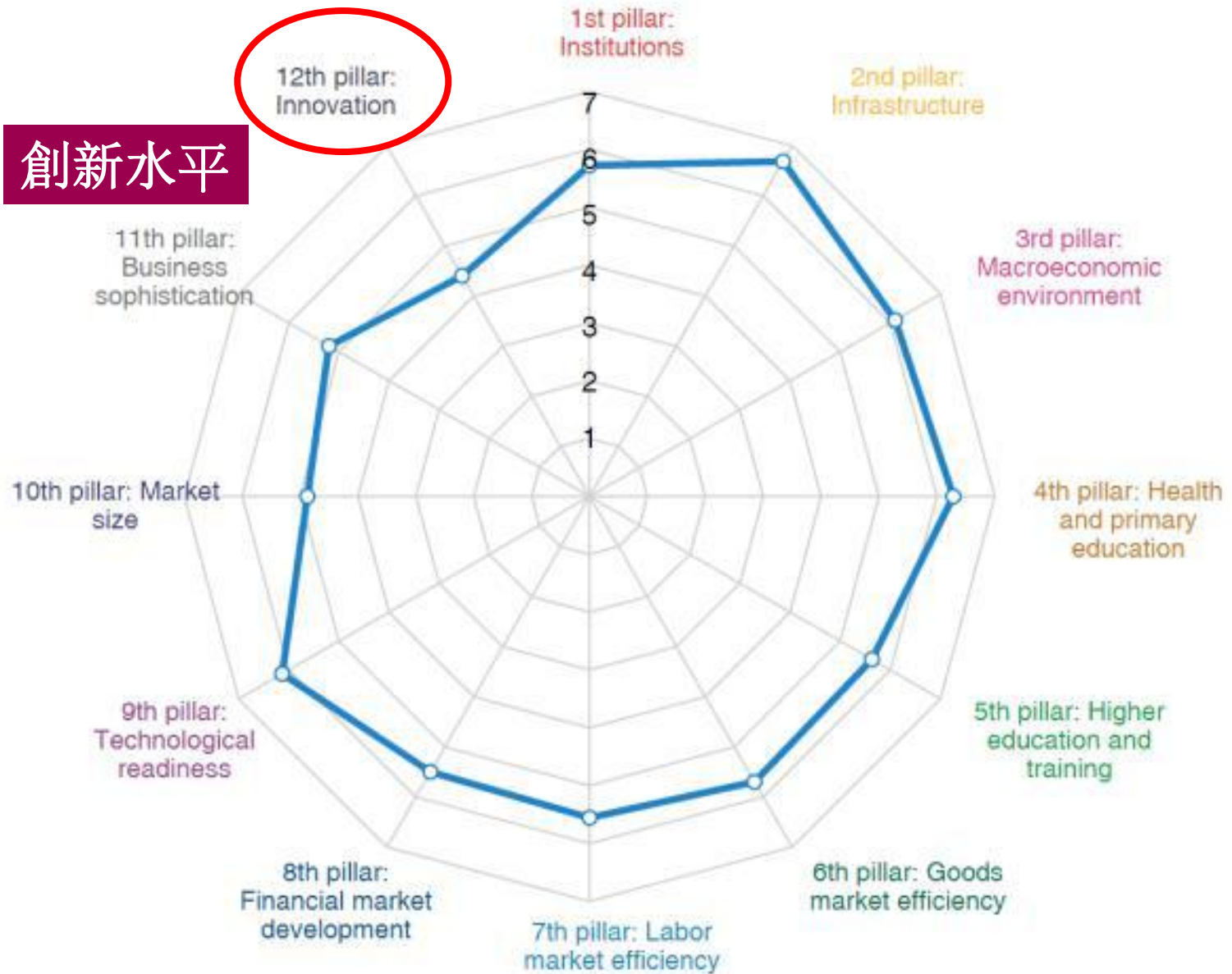
全球競爭力報告 (2015-16)

- 2015年10月出版
- 比較140個經濟體系

十二項指標：

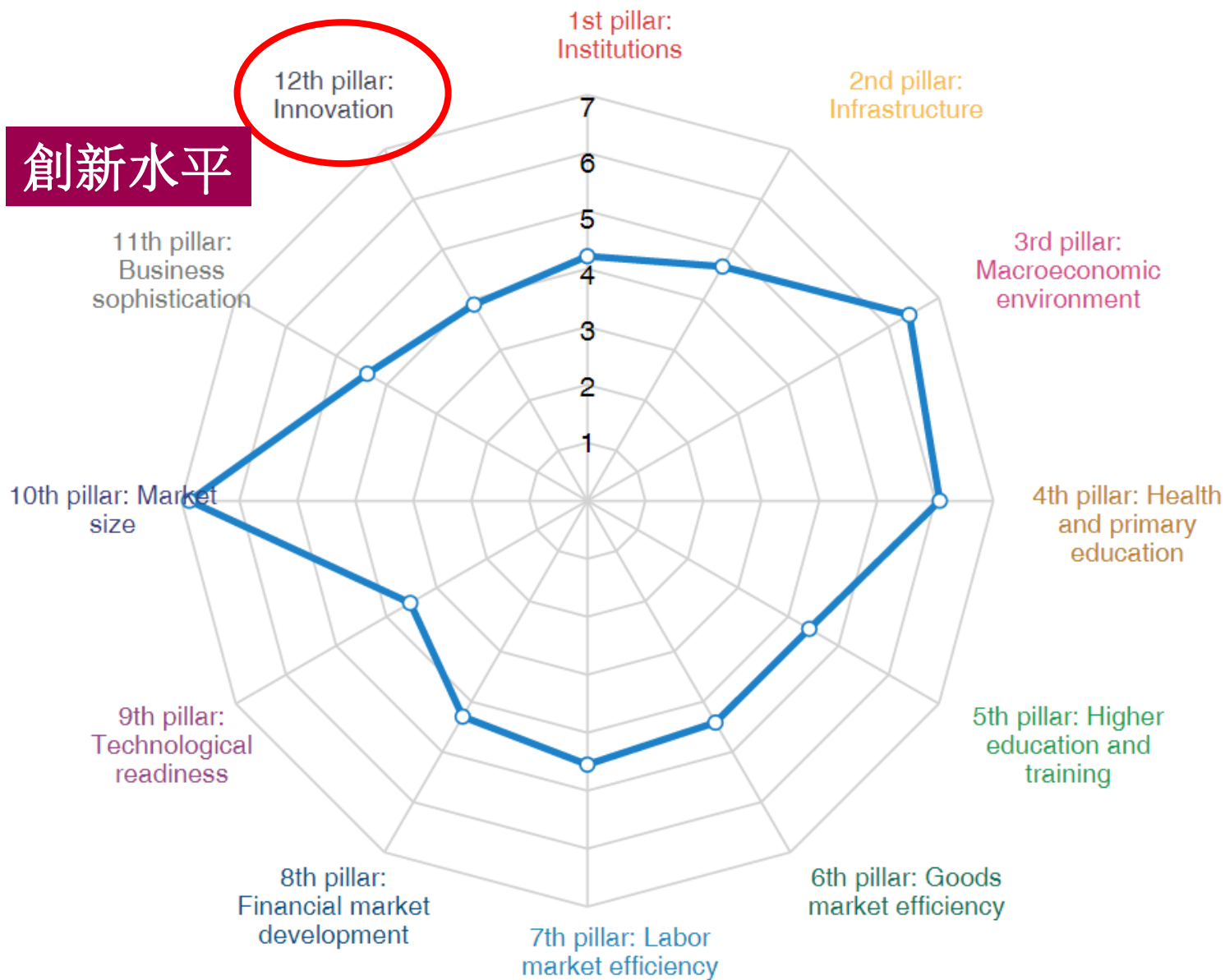
1. 制度建設 (Institutions)
2. 基礎設施 (Infrastructure)
3. 宏觀經濟環境 (Macroeconomic environment)
4. 衛生與初等教育 (Health and primary education)
5. 高等教育和培訓 (Higher education and training)
6. 商品市場效率 (Goods market efficiency)
7. 勞動力市場效率 (Labor market efficiency)
8. 金融市場發展水平 (Financial market development)
9. 技術就緒度 (Technological readiness)
10. 市場規模 (Market size)
11. 商業成熟度 (Business sophistication)
12. 創新水平 (Innovation)

創新水平



第7位：香港特別行政區

創新水平



第28位：中國

全球競爭力報告 (2015-16)



經濟體系	綜合所有指標		第12項指標：創新水平		
	排名 (2015-16)	分數	排名 (2015-16)	排名 (2014-15)	排名 (2013-14)
瑞士	1	5.76	1	2	2
新加坡	2	5.68	9	9	9
美國	3	5.61	4	5	7
德國	4	5.53	6	6	4
荷蘭	5	5.50	8	8	10
日本	6	5.47	5	4	5
香港特別行政區	7	5.46	27	26	23
芬蘭	8	5.45	2	1	1
瑞典	9	5.43	7	7	6
英國	10	5.43	12	12	12
中國	28	4.89	31	32	32

要播撒**創新**的火種，要把激發創造活力、挖掘創新潛能作為**推進教育改革**和**提高教育質量**的重要抓手，為大眾創業、萬眾創新源源不斷地注入新生力量……

— 國務院總理李克強

我們知道，今天在**創新**方面銳意進取的國家明天將**主宰世界經濟**。這是美國不能放棄的戰線。

— 美國總統奧巴馬

保持**創新**…… 決定中國互聯網生死存亡……這十年中國企業不僅要和國際企業比拼服務，更要拼**創新**和**核心技術**能力。

— 馬化騰
騰訊主要創辦人之一 (QQ之父)

創新是決定成為**領導者**
或是跟隨者的關鍵。

— 喬布斯
蘋果公司的聯合創始人之一

創意？創新？

“Creativity is the capability or act of conceiving something original or unusual while **innovation is the implementation or creation of something** new that has realised value to others.”

Shawn Hunter (2013)

創意是構思原創或不尋常的東西，
創新則是落實或創造新的東西……

創意須建基於穩固基礎

“Creative thinking is defined as making and communicating meaningful new connections; thinking of many possibilities; thinking and experiencing in various ways and using different points of view; thinking of new and unusual possibilities; and generating and selecting alternatives.”

Isaksen and Treffinger (1985)

創意就是製造和傳達有意義的新連結……

為何要推動創新？

“A generation ago, teachers could expect that what they taught would last their students a lifetime. Today, because of rapid economic and social change, **schools have to prepare students for jobs that have not yet been created, technologies that have not yet been invented and problems that we don't yet know will arise.**”

Andreas Schleicher

Director for the Directorate of Education and Skills

Organisation for Economic Co-operation and Development (OECD)

(Speech presented at Global Education Industry Summit on 19 October 2015)

一代人以前，老師預計他們所教授的東西，學生能終身受用。今時今日，因為經濟和社會的迅速變化，**學校要預備學生應付尚未出現的工作、尚未發明的科技及尚未預見的問題。**

二十一世紀所需人才

- 納米技術專家 (Nanotechnologist)
- 幹細胞研究員 (Stem Cell Researcher)
- 廢物管理顧問 (Waste Management Consultant)
- 有機食品生產商 (Organic Food Producer)
- 生物化學工程師 (Biochemical Engineer)
- 營養師 (Nutritionist)
- 機械人技術員 (Robotics Technician)
- 風力發電技術員 (Wind Turbine Technician)
- 3D掃描/列印工程師 (3D Scanning /Printing Engineers)
- ...

耐克公司(Nike)將於2016年出售電影「回到未來 II」(1985年)曾出現的未來運動鞋

“By imagining the future, we create it,” said Nike, Inc. President and Chief Executive Officer Mark Parker.

通過想像未來，我們創造未來

Entrepreneurship at a Glance 2015 (OECD)

Benefits of entrepreneurship:

1. address effectively the problem of youth unemployment
2. **increase GDP** by boosting revenue generated from Small and Medium-sized Enterprise (SME)

經合組織(OECD)認為培育企業精神能有效解決青年失業問題，並**增加國內生產總值**.....

培育學生企業精神

Entrepreneurship isn't general business or economic studies. The aim is to **promote creativity, innovations and self-employment.**

European Commission (2009)

培育企業精神旨在**提升創意、創新和自僱能力**。

“... the power that education has in developing the skills that generate **an entrepreneurial mindset** and in preparing future leaders for solving more complex, interlinked and fast-changing problems.”

*Klaus Schwab, the founder and Chairman of
the World Economic Forum (2009)*

透過教育，發展技能，形成**企業思維**……

Entrepreneurship is the ability to:

- create something
- build an enterprise or organisation
- sense an opportunity
- build a “founding team” with complementary skills and talents
- tap resources
- take calculated risks
- ...

*From Jeff Timmons (1989),
a pioneer in the development of entrepreneurship education and research*

培育企業精神就是幫助學生發展以下能力：創作、建立企業或組織、抓緊機遇、建立互補不足的團隊、開發資源、承擔預計的風險等。

“The narrow understanding of entrepreneurship refers to the creation of new firms, whereas the wide understanding is about **personal development, creativity, self-reliance, initiative taking, action orientation, i.e. becoming entrepreneurial.**”

*“From Creativity to Initiative:
Entrepreneurial Competencies in Schools” (2015)
by OECD*

培育企業精神涉及個人成長、創意、自立、自發……

國際政策 及良好實踐經驗

美國

“Entrepreneurship education is a lifelong learning process, starting as early as elementary school and progressing through all levels of education, including adult education.”

*International Journal of Physical and Social Sciences,
Vol. 2, Issue 3 (March 2012)*

http://www.ijmra.us/project%20doc/IJPSS_MARCH2012/IJMRA-PSS881.pdf

培育企業精神是一個終身學習的過程，早在小學開始……

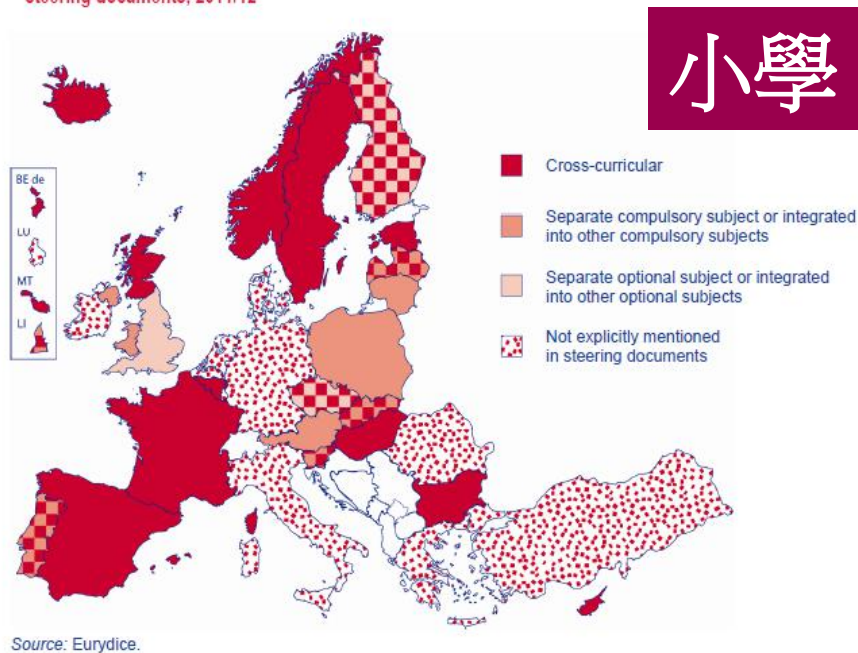
歐洲

2011 Eurydice survey on Entrepreneurship Education (比較31個歐洲國家)

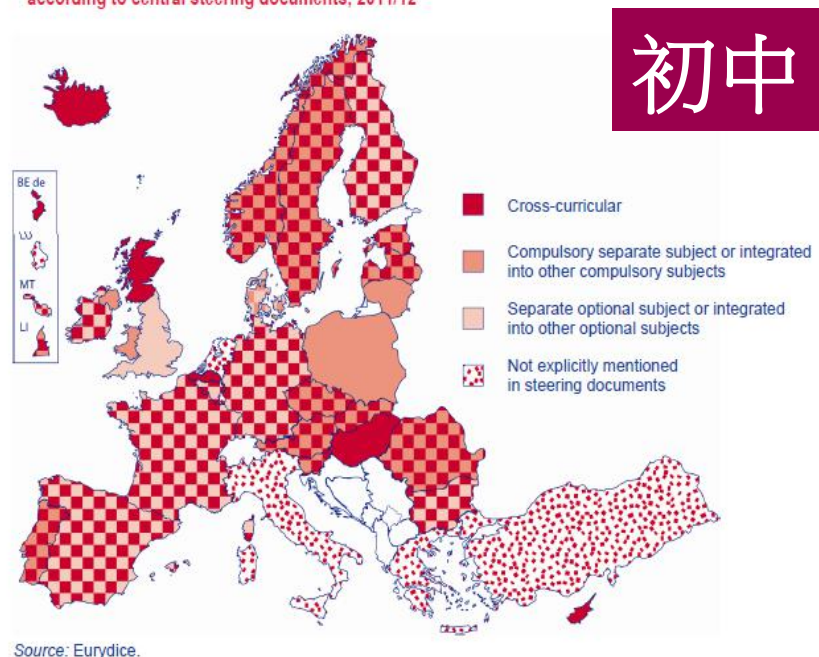
The **strategic** framework for European cooperation, Education and Training **2020** has aimed, as one of its long-term strategic objective, to **enhance creativity and innovation, including entrepreneurship, at all levels of education and training.**

歐盟(EC)以加強創意及創新
(包括培育學生企業精神)作
為長遠策略

◆◆◆ Figure 2.1: Approaches to entrepreneurship education in primary education (ISCED 1), according to central steering documents, 2011/12



◆◆◆ Figure 2.2: Approaches to entrepreneurship education in lower general secondary education (ISCED 2), according to central steering documents, 2011/12



根據 2011 Eurydice survey 的調查結果：

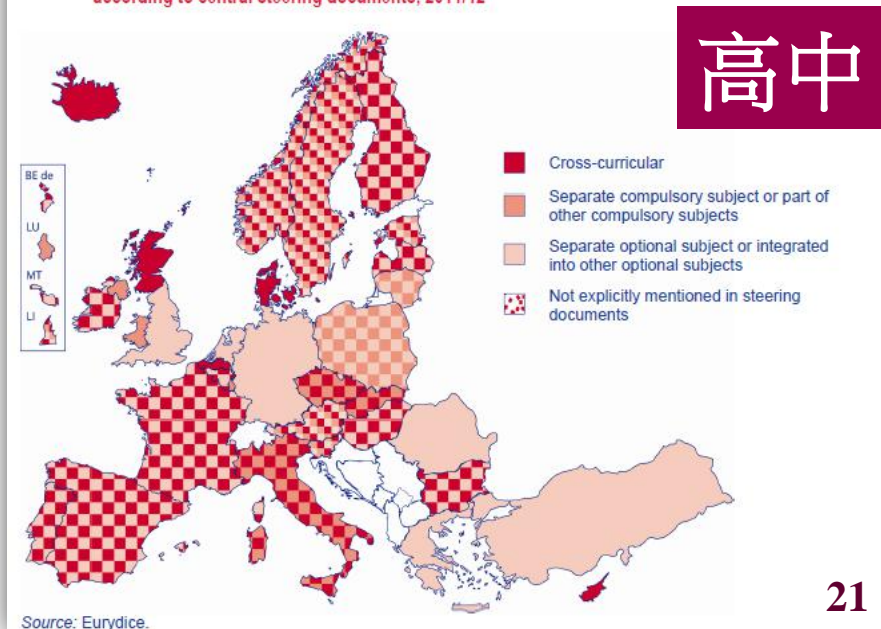
小學

- 2/3歐洲國家已制定培育學生企業精神的政策文件

中學

- 幾乎所有歐洲國家都已將培育學生企業精神納入課程

◆◆◆ Figure 2.4: Approaches to entrepreneurship education in general upper secondary education (ISCED 3), according to central steering documents, 2011/12



Entrepreneurship360 - OECD

經合組織的「企業精神 360 計畫」

- 目的：促進與企業精神相關的中小學教育及職業培訓
- 試行 (2014年)：包括21所來自15個歐洲國家的學校

Teaching about, for and through entrepreneurship



Approaches	Content	Target
Teaching ABOUT entrepreneurship	<ul style="list-style-type: none"> Content-laden and theoretical 	Higher education institutions
Teaching FOR entrepreneurship	<ul style="list-style-type: none"> Occupational-oriented The requisite knowledge and skills 	Budding entrepreneurs at secondary and higher levels of education
Teaching THROUGH entrepreneurship	<ul style="list-style-type: none"> Experiential An actual entrepreneurial learning process integrated into other subjects in general education 	All students and all levels of education

將企業精神融入各級別的各科目中

Paradigm shift: Traditional => entrepreneurial



傳統學習	Traditional	Entrepreneurial	培育企業精神
單一科目	single-subject	Multidisciplinary	跨學科
個人習作	Individual work	Collaboration	協作
著重內容	Content focused	Process focused	著重過程
被動	passive	active	主動
理論	Theory	Practice	實踐

培育學生企業精神，將帶動範式轉移

Entrepreneurial competencies

	Main theme	Sub themes	
Cognitive competencies	Knowledge	Mental models	Easy to teach and evaluate
		Declarative knowledge	
		Self-insight	
	Skills	Marketing skills	
		Resource skills	
		Opportunity skills	
		Interpersonal skills	
		Learning skills	
		Strategic skills	
		Attitudes	
Self-efficacy			
Entrepreneurial identity			
Proactiveness			
Uncertainty / ambiguity tolerance			
Non-cognitive competencies	Innovativeness	Requiring learning-by-doing and difficult to evaluate	
	Perseverance		

包括培養學生的知識、技能及態度

The ACRO model

(a structure for curriculum development and planning)

A ttitude	Learners acquire a can do attitude which helps to drive innovation
C reativity	Learners display creativity while at the same time developing the skills needed to bring a product to market
R elationships	Learners get on with people, being able to negotiate, listening to people and persuading them
O rganisation	Learners complete tasks associated with risk management, researching and planning; getting to grips with costs, cash flow and managing work environments

以「態度」、「創意」、「人際關係」
及「組織」規畫課程

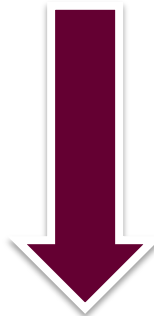
Nurturing the innovative and entrepreneurial mindset

- Reasonable adventurers
- Knowledge harvesters
- Glorious failure

期望學生能在預計的風險下冒險、主動創造及建構知識，以及從失敗中學習

Teachers' role

From Pedagogy to Andragogy, and onwards to Heutagogy...



Pedagogy	teacher-centred
Andragogy	more learner-centred
Heutagogy	student-determined objective setting

由教師主導最終變為學生自定目標

The successful entrepreneurial teacher...

- breaks down barriers
- acts as a catalyst for ideas
- spots the ‘pain points’ where significant problems are apparent
- mobilises a team to jointly and flexibly solve problems

成功的教師能幫助學生排除萬難、觸發創意、尋找問題根源及透過團隊協作解決問題

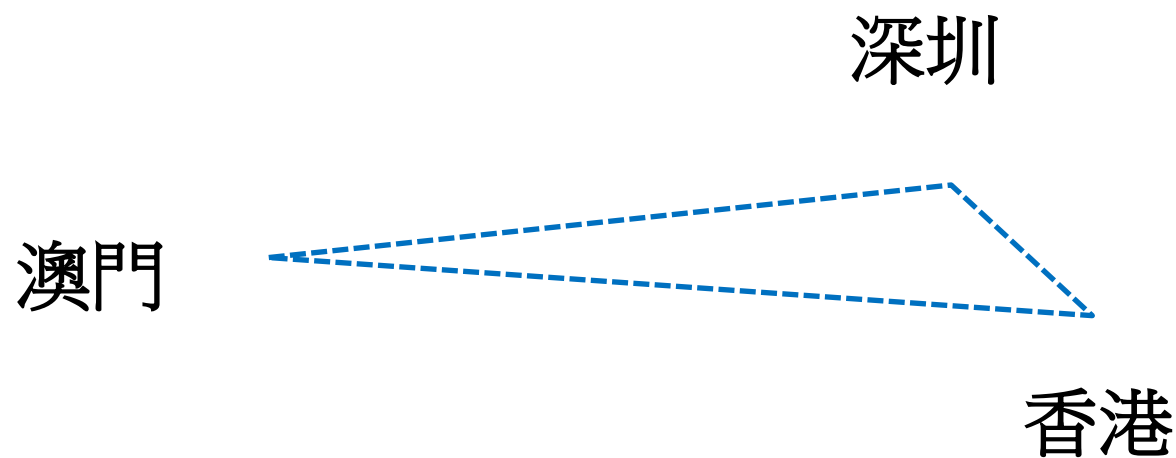
「企業精神教育」在香港?

建基於實踐經驗，注入「企業精神教育」元素

- 學生經營合作社、English café等
- 學生競投年宵市場
- 學生主辦籌款活動、攤位遊戲、嘉年華等
- 政府及學校推行師友計畫
- 非政府機構提供相關的研習計畫
[例如：和富千禧企業家精神計畫
(Wofoo Millennium Entrepreneurship Programme)]

展望未來：亦危亦機

- 國家銳意將珠江三角發展成世界頂尖的超級城市
- 深、港、澳三地應審時度勢，把握機遇



COTAP 可作為三地校長的專業交流平台

訂定
共同目標

支援
專業學習
社群

促進
專業對話

交流
教育發展
趨勢

分享
良好實踐
經驗

期望學校……

勇創新

建優勢

迎挑戰

要改變世界，先改變自己。
— 甘地

“Be the change that you wish to see in the world.”

Gandhi

謝謝!