

Interdisciplinary Ways of Thinking and Practicing Without Tears

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2013 International Higher Education Teaching and
Learning Conference
University of Central Florida
January 13-15 2013

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THE
**PERFECT
STORM**



Higher Education at the 'Eye' of the Perfect Storm . . .

[Graham Cagney & Coughlan, 2012]

- **The storm signals are there:**
 - questions about the disciplinary context in which higher education is delivered
 - the need for research-based responses to the grand challenges facing society
 - the employability beyond academia of the PhD graduate

To catch the wave (& ride out the storm). . .

- **The doctoral researcher needs to:**
 - to explore and exploit the value latent in the thesis research
 - to recognize the corresponding need to interact with others
 - so that, together, they might progress from disciplinary expertise through multi-disciplinary interaction to interdisciplinary outcomes
- Doctoral education is challenged to develop within the researchers new and different skills and perspectives.
- Combined, the elements of this response define *doctorateness* as a new threshold concept

Our Objective Was...

... to explore how distinctive learning spaces can be built into doctoral teaching-learning environments (TLEs) in order to create opportunities for cross-disciplinary transformative learning to occur.

How Could We Create Doctoral Learning Spaces That. . .

Enabled students to:-

- think beyond their own discipline
- communicate across traditional disciplinary divides
- in order to exploit the potential in their thesis research while not diluting the disciplinary core of the research.

Established Components of Doctorateness

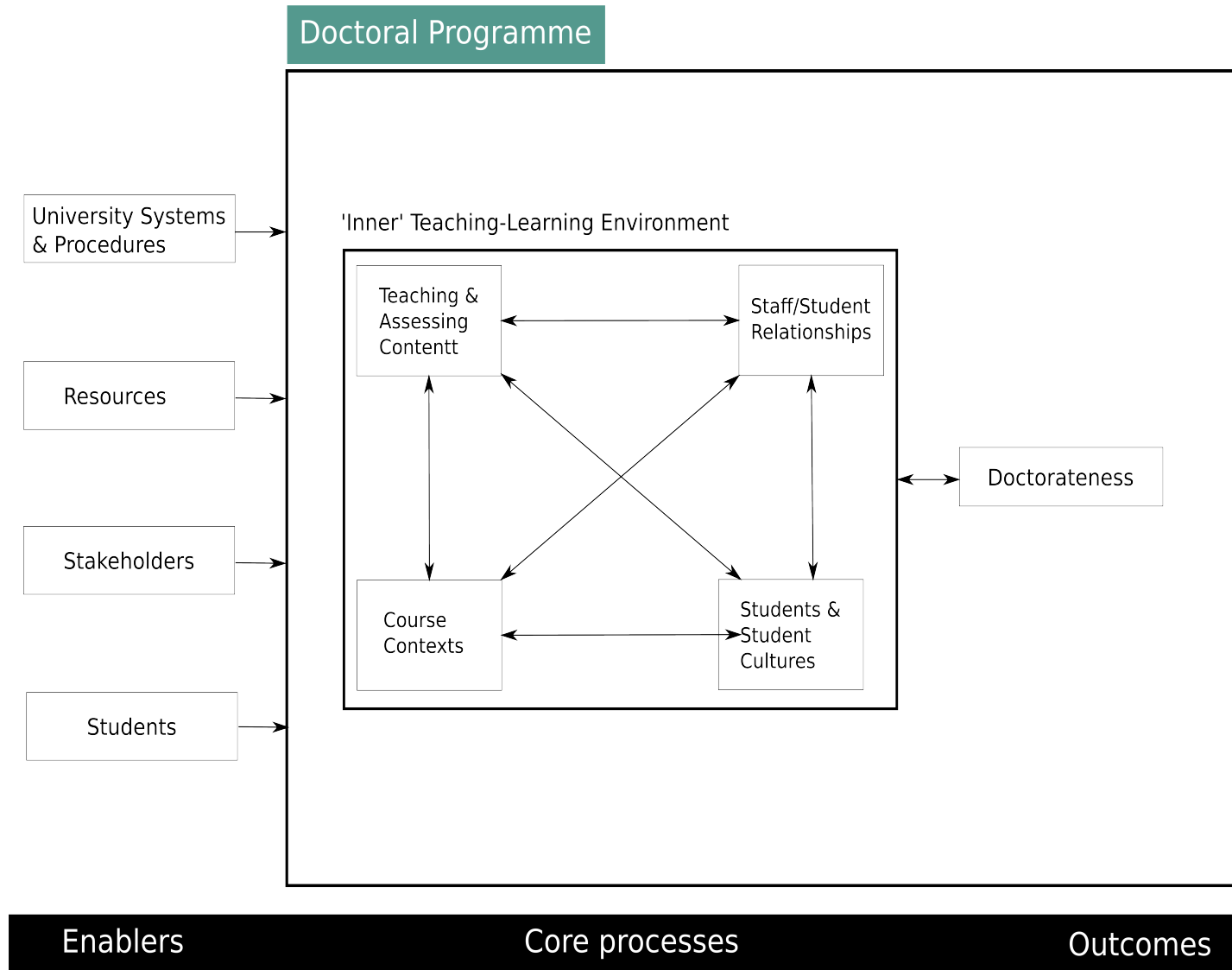
Contribution to Knowledge	Stated Gap in Knowledge	Explicit Research Question	Conceptual Framework
Conceptual Conclusions	<p>WHEN SYNERGY EXISTS BETWEEN THE COMPONENTS THEN DOCTORATENESS IS DEMONSTRATED</p>		Explicit Research Design
Research Questions Answered			Appropriate Methodology
Conceptual Argument Throughout	Full Engagement with Theory	Clear / Precise Presentation	'Correct' Data Collection

Figure 1: Components of Doctorateness, Trafford & Leshem (2009:5). Adapted by Graham Cagney & Coughlan, 2012

- Demonstrating 'doctorateness' comes from integrating

- high levels of competence in research**
- deep discipline knowledge**
- competence in presentation of the argument**

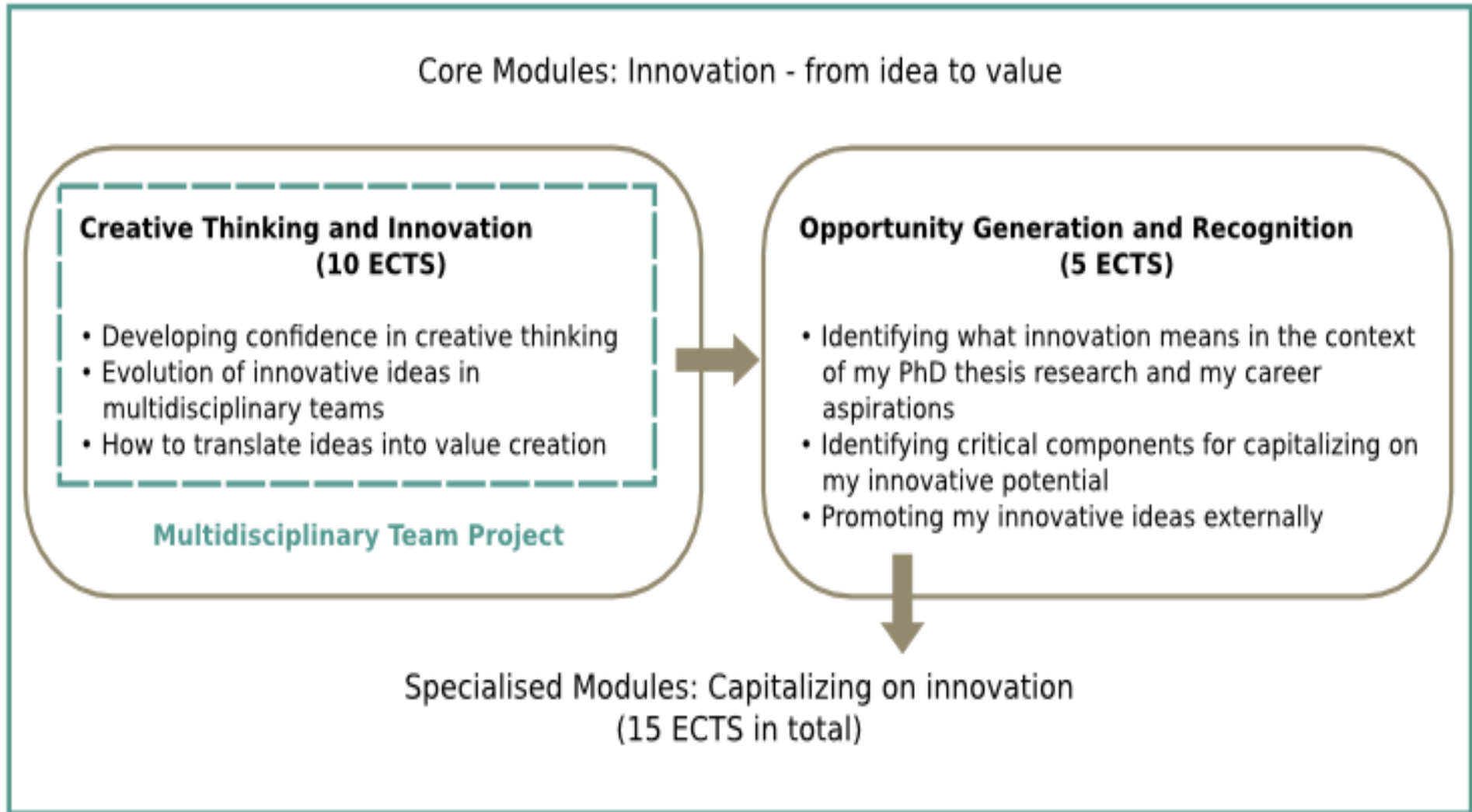
Congruence in the 'Inner' TLE Leads to Doctorateness



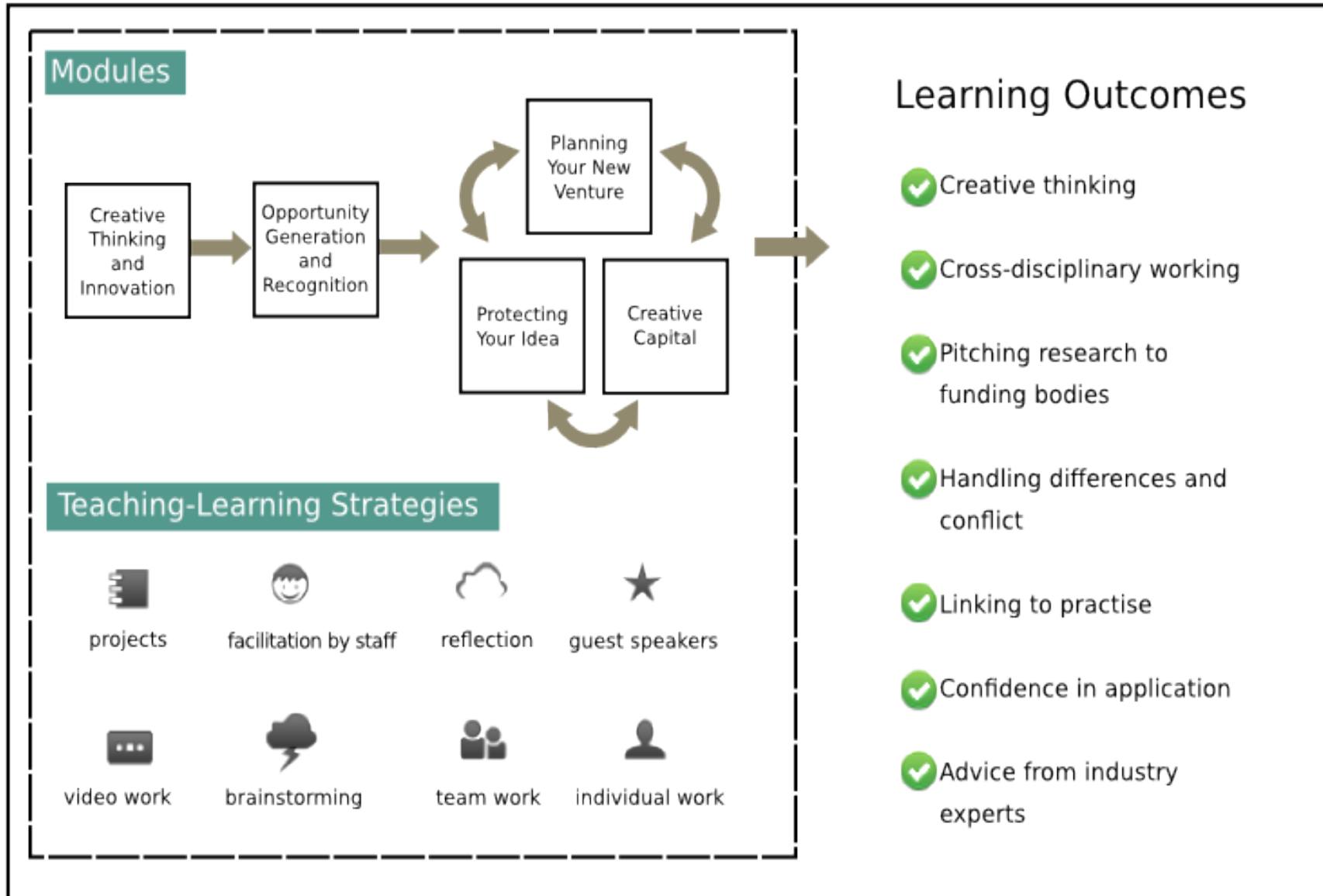
Conceptual map of the 'inner' Innovation Academy Teaching-Learning Environment



The PG Certificate in Innovation & Entrepreneurship



Innovation Academy TLE



Extending the Components of Doctorateness

Contribution to Knowledge	Stated Gap in Knowledge	Explicit Research Question	Conceptual Framework
Conceptual Conclusions	<p>WHEN SYNERGY EXISTS BETWEEN THE COMPONENTS THEN DOCTORATENESS IS DEMONSTRATED</p>		Explicit Research Design
Research Questions Answered			Appropriate Methodology
Conceptual Argument Throughout	Full Engagement with Theory	Clear / Precise Presentation	'Correct' Data Collection

Figure 1: Components of Doctorateness, Trafford & Leshem (2009:5). Adapted by Graham Cagney & Oughlan, 2012

• Demonstrating 'doctorateness' comes from integrating:-

- high levels of competence in research
- deep discipline knowledge
- competence in linkage, application, presentation of the argument

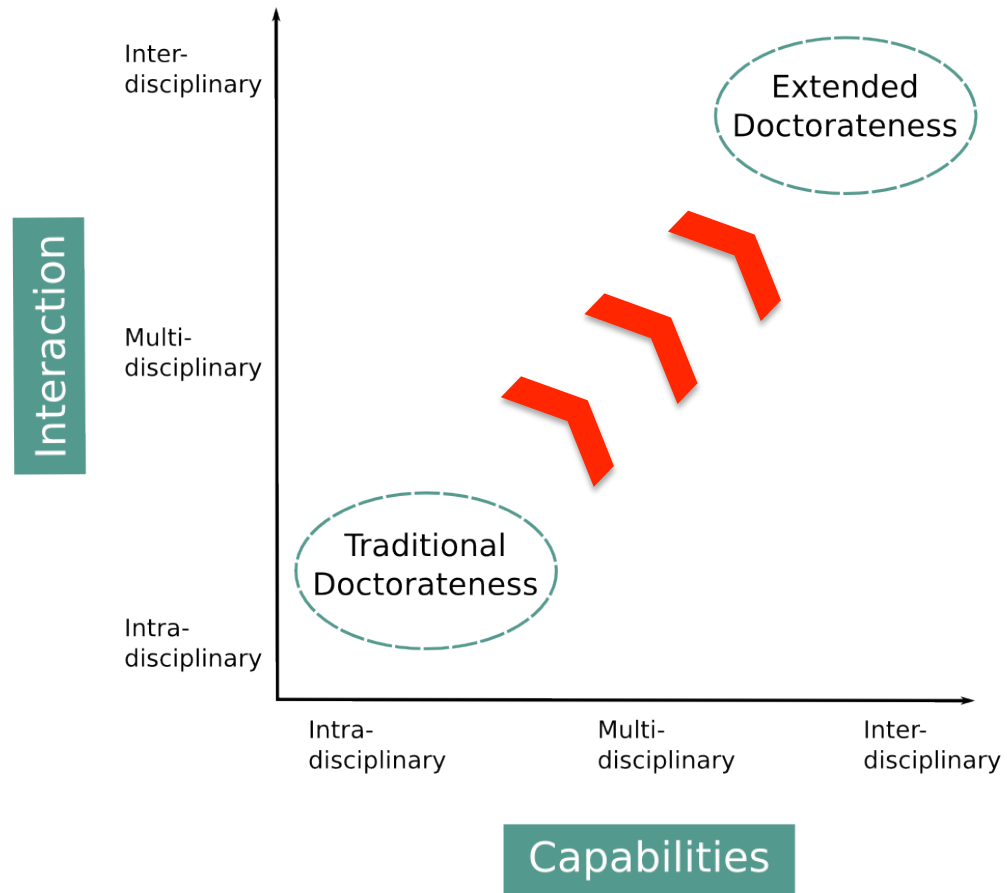
Finding the safe harbour for an 'extended' Doctoral Learning Space

Two key criteria:-

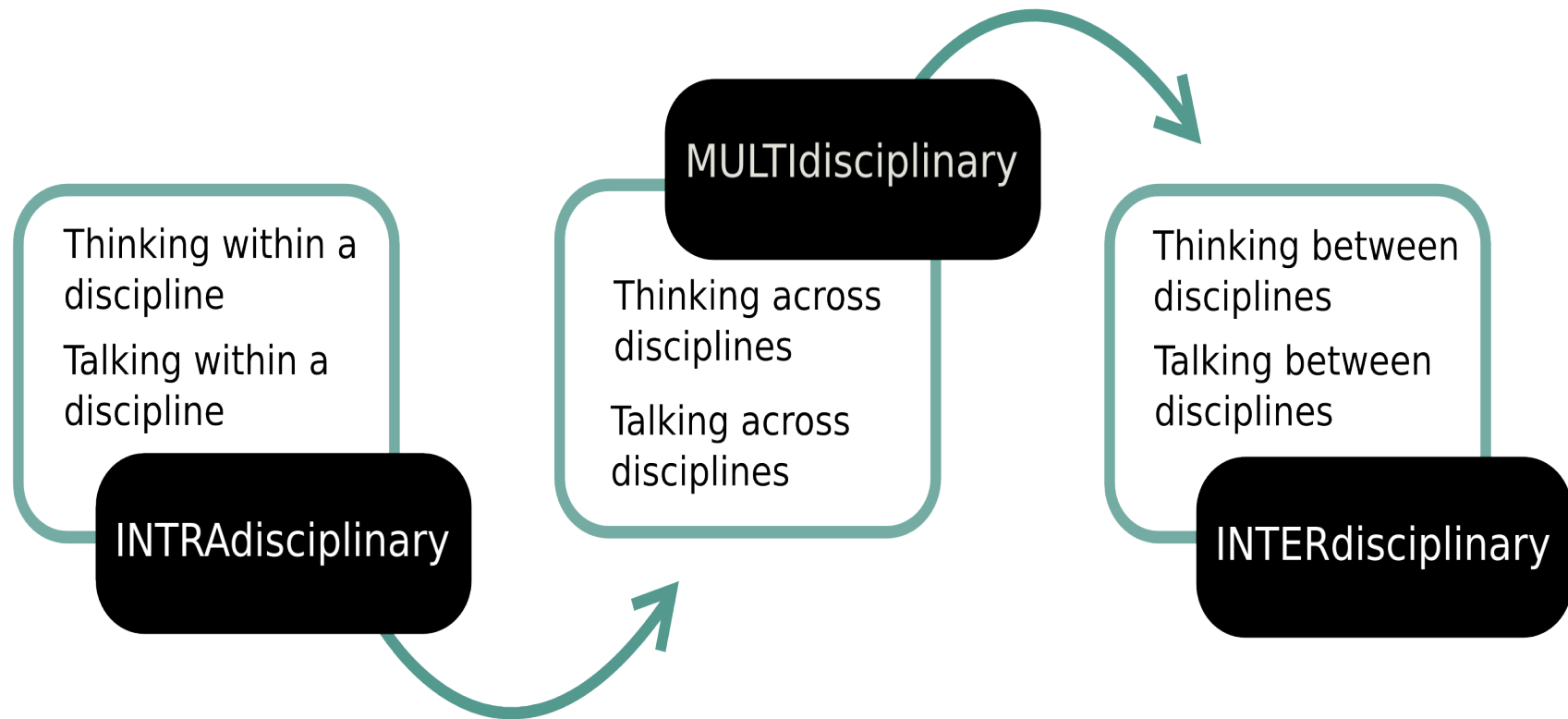
- Develop the **capabilities** of thinking and practicing in intra, multi and cross-disciplinary ways
- Creating opportunities for **interactions** to occur within the doctoral learning space at inter, multi and cross-disciplinary levels.

'Extended' doctorateness is the new challenge for higher education providers

Catching the Wave



'Thinking and Talking' - Toward a Different Perception of Doctorateness



adapted from Coughlan & Graham, 2009

Thinking & Talking Across the Disciplines – the RDLE Effect



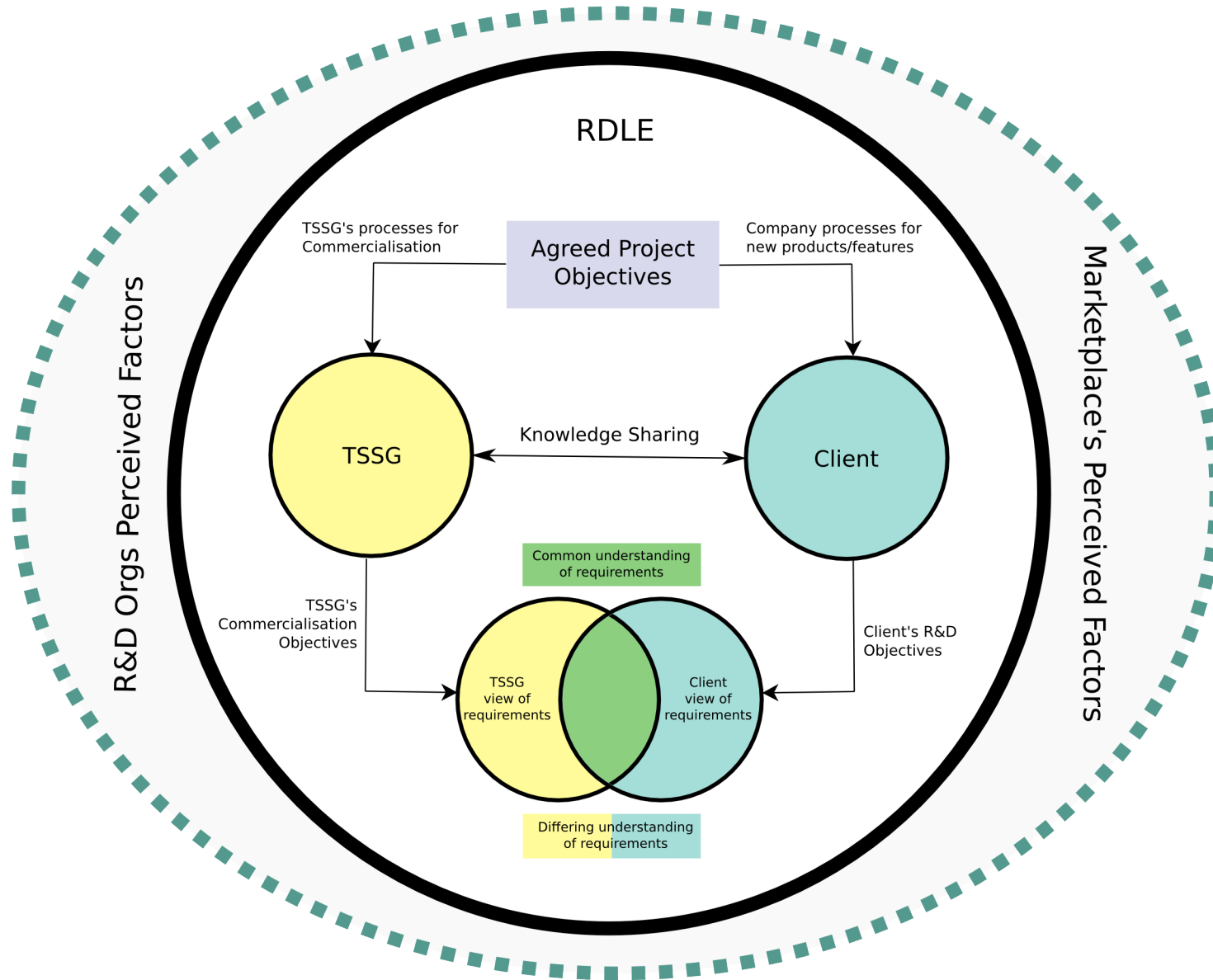
[Graham Cagney, Quinn & Mannix, 2013]

How Could We Create R&D Working and Learning Environments That ...

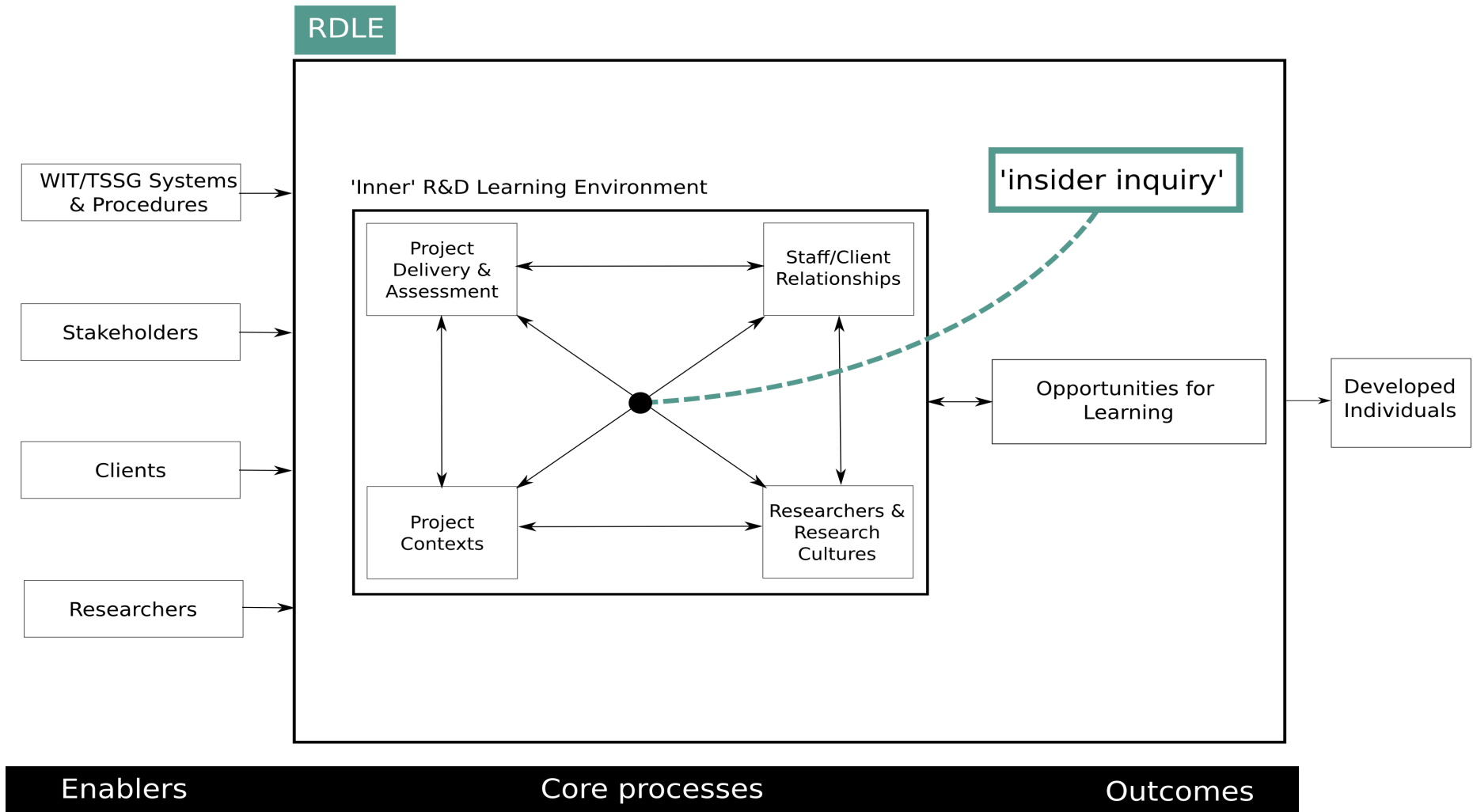
Enable graduates and post-graduates to:

- think beyond their own discipline
- communicate across professional disciplinary divides
- enhance the commercialisation of applied research

DIMENSIONS OF R&D COMMERCIALISATION OBJECTIVES & REQUIREMENTS

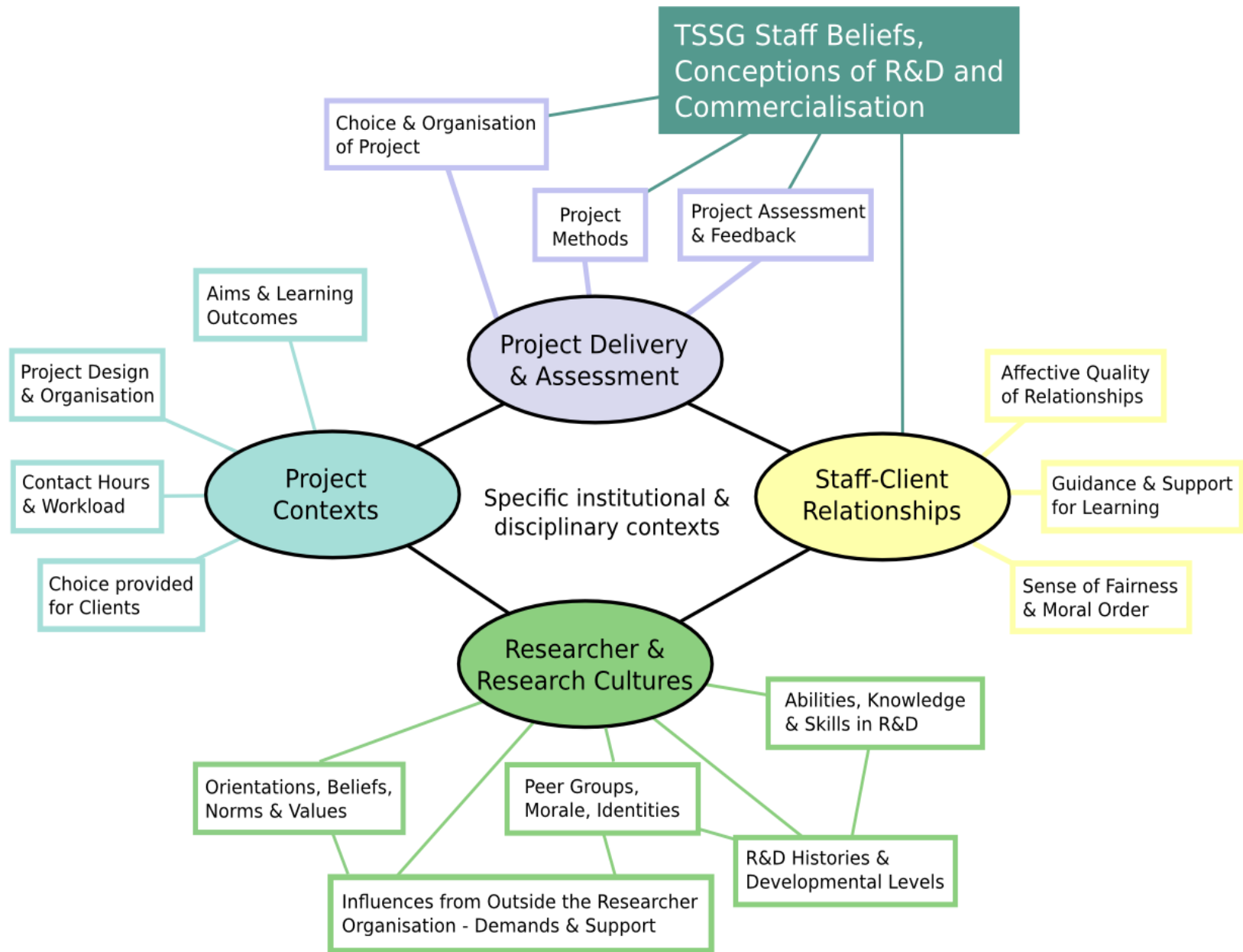


The 'inner' RDLE effect



Source: Adapted from Graham Cagney 2011

Conceptual map of the 'inner' RDLE (R&D learning environment)



Source: Adapted from Entwistle 2003
Graham Cagney, 2013

Thinking, Talking & Working Across the Disciplines – the RDLE effect

Conceptual map of the "inner" R&D-learning environment of the TSSG.

(Adapted from Entwistle 2003)

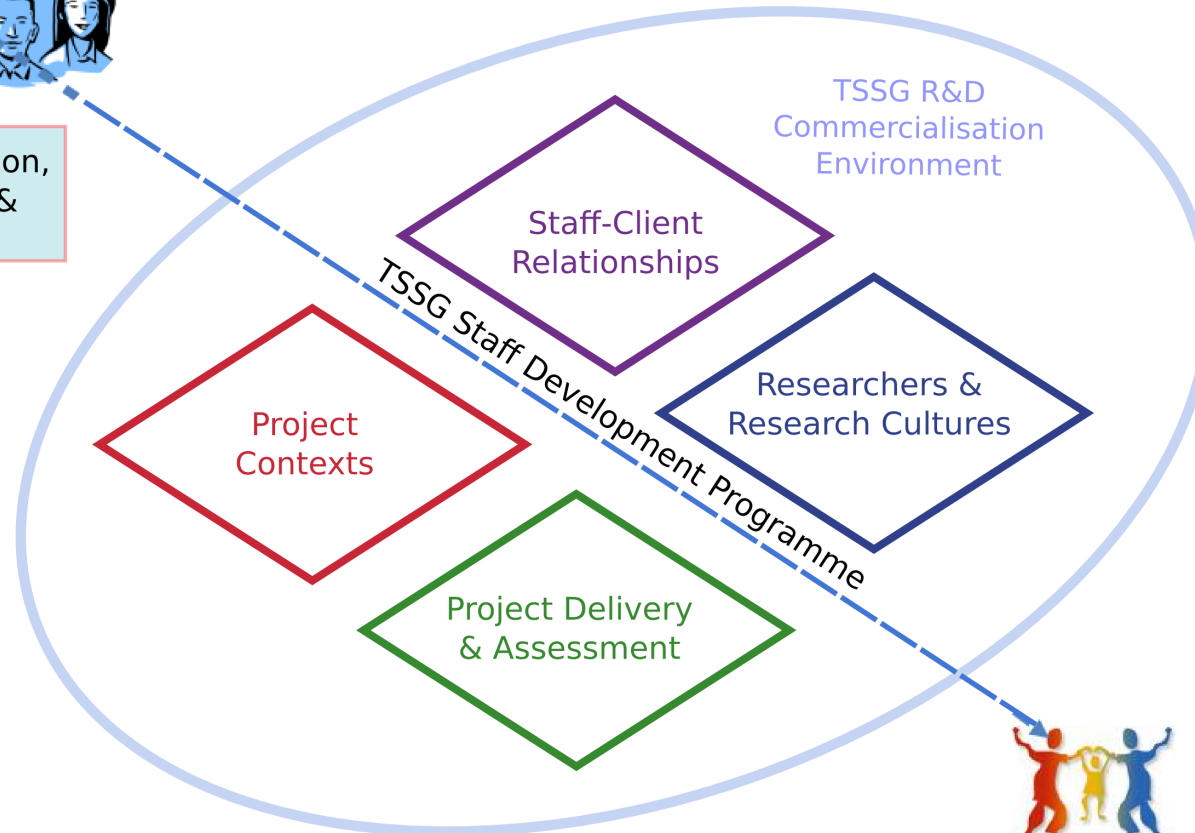
Incentive: Motivation, Emotion & Volition

Content: Abilities, Insight & Understanding



Interaction: Action, Communication & Cooperation

Illeris (1999)

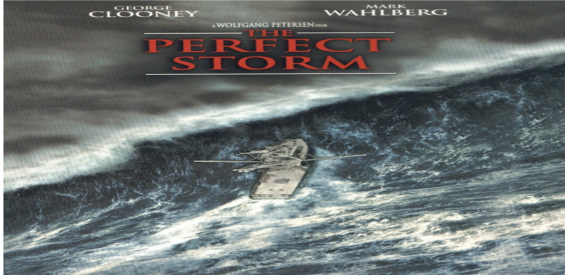


R&D people who can think and talk across disciplines

Source: adapted from Graham Cagney 2011

Graham Cagney, 2013

Research Papers – related to this research stream



- **Doctoral Education at the 'Eye' of the Perfect Storm . . .**

- Dr Anne Graham Cagney, TCD.
- Dr Paul Coughlan, TCD

<http://www.innovationacademy.ie/who-we-are/>



- **Thinking and Talking Across The Disciplines – the RDLE effect**

- Dr Kevin Quinn, WIT.
- Dr Anne Graham Cagney, WIT

<http://www.tssg.org/2012/05/colloquiumattssg/>



- **Flying the Plane While Building It**

- Dr Anne Graham Cagney, Research Fellow, TCD.
- Dr Valerie Mannix, WIT

<http://www.wit.ie/schools/education/welcome>

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LIMITATIONS

UNTIL YOU SPREAD YOUR WINGS,
YOU'LL HAVE NO IDEA HOW FAR YOU CAN WALK.