



*Building a community of practice and employer engagement to enhance Systems Thinking in Practice.*

**Martin Reynolds**

Department of Engineering and Innovation

*With colleagues:*

Chris Blackmore

Ray Ison

Rupesh Shah

Elaine Wedlock

**The 3rd eSTEeM Annual  
Conference  
The Open University**

**Date: 6 May 2014**



- Systems Thinking in Practice (STiP): a postgraduate programme
- STiP performances
- STiP challenges
- eSTEEeM project: what?
- eSTEEeM project: how?
- eSTEEeM project: why?





C72

Postgraduate Certificate in Systems Thinking in Practice 60 credits		
Option 1	Option 2	Option 3
TU811 (30 credits) + TU812 (30 credits)	TU811 (30 credits) + 30 credits from other relevant postgraduate modules	TU812 (30 credits) + 30 credits from other relevant postgraduate modules

E28

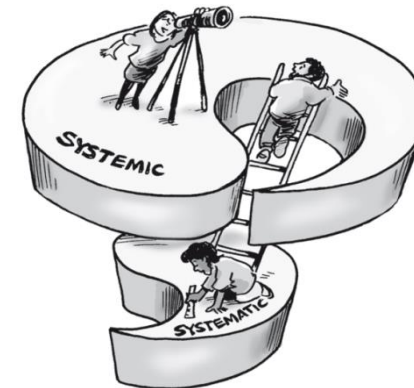
Postgraduate Diploma in Systems Thinking in Practice 120 credits
Postgraduate Certificate (60 credits) + extra 60 credits: (2 x 30 credit modules or 1 x 60 credit module) choose from relevant postgraduate modules; must include TU811 and TU812 if you have not already completed both of these

F47

MSc in Systems Thinking in Practice 180 credits	
Postgraduate Diploma (120 credits) + extra 60 credits from:	
Professional route	Research route
T847 (30 credits) + 30 credits from relevant postgraduate modules not already completed for the Diploma	T802 (60 credits)

# Systems Thinking in Practice

Postgraduate qualifications from the Open University



## X2 Core modules:

Thinking strategically: systems tools for managing change

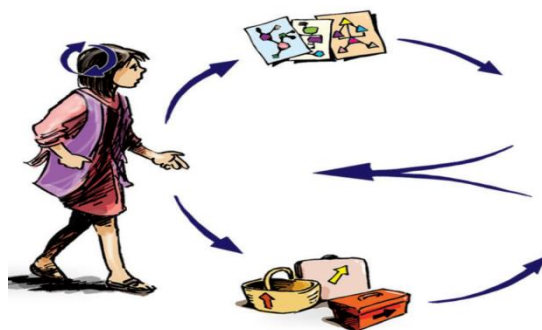
TU811 – 30 credits

- views managing as about taking action on the basis of your understanding of a complex interconnected situation, where others involved may have different understanding, motivation and interests.
- develops your understanding of complex situations using robust tools from the traditions of systems practice to think strategically about change and uncertainty.

Managing systemic change: inquiry, action and interaction

TU812 – 30 credits

- views change as inescapable in everyday managing in situations.
- equips you with skills to shape the nature and direction of change
- enables you to use systems thinking and practice to help you engage with change and recognise the interconnected nature of organisations and environments.



C72

Postgraduate Certificate in Systems Thinking in Practice 60 credits		
Option 1	Option 2	Option 3
TU811 (30 credits) + TU812 (30 credits)	TU811 (30 credits) + 30 credits from other relevant postgraduate modules	TU812 (30 credits) + 30 credits from other relevant postgraduate modules

E28

Postgraduate Diploma in Systems Thinking in Practice 120 credits
Postgraduate Certificate (60 credits) + extra 60 credits: (2 x 30 credit modules or 1 x 60 credit module) choose from relevant postgraduate modules; must include TU811 and TU812 if you have not already completed both of these

F47

MSc in Systems Thinking in Practice 180 credits	
Postgraduate Diploma (120 credits) + extra 60 credits from:	
Professional route	Research route
T847 (30 credits) + 30 credits from relevant postgraduate modules not already completed for the Diploma	T802 (60 credits)



# Systems Thinking in Practice

Postgraduate qualifications from the Open University

## X2 Core modules:

Thinking strategically: systems tools for managing change

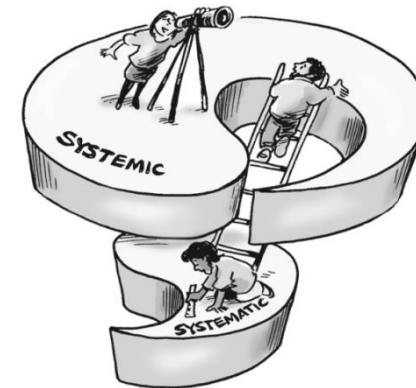
*TU811 – 30 credits*

- views managing as about taking action on the basis of your understanding of a complex interconnected situation, where others involved may have different understanding, motivation and interests.
- develops your understanding of complex situations using robust tools from the traditions of systems practice to think strategically about change and uncertainty.

Managing systemic change: inquiry, action and interaction

*TU812 – 30 credits*

- views change as inescapable in everyday managing in situations.
- equips you with skills to shape the nature and direction of change
- enables you to use systems thinking and practice to help you engage with change and recognise the interconnected nature of organisations and environments.



Postgraduate Certificate in Systems Thinking in Practice

*60 credits*

Understand the nature of complex problem situations and the tools with which they can be tackled.

Postgraduate Diploma in Systems Thinking in Practice

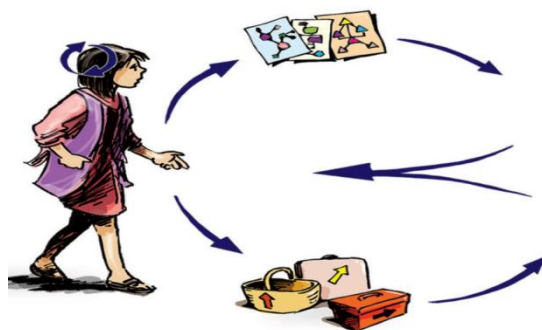
*PG certificate plus 60 credits*

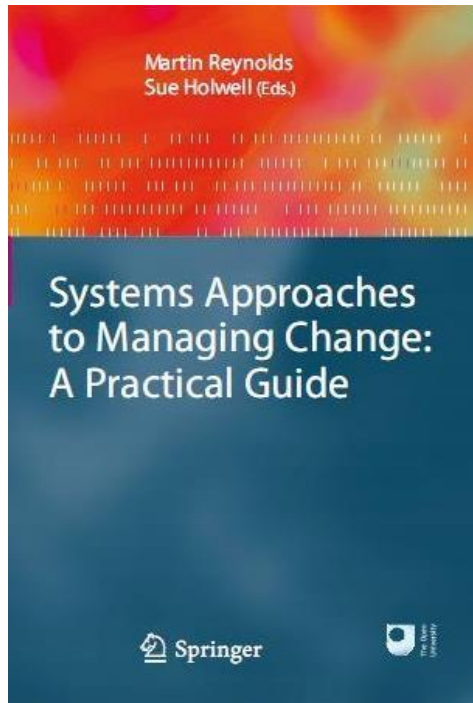
Learn how, in complex situations you can engage with others in coming to a common language, common understanding and an agreed way to tackle complex problem situations.

MSc in Systems Thinking in Practice

*PG diploma plus 60 credits*

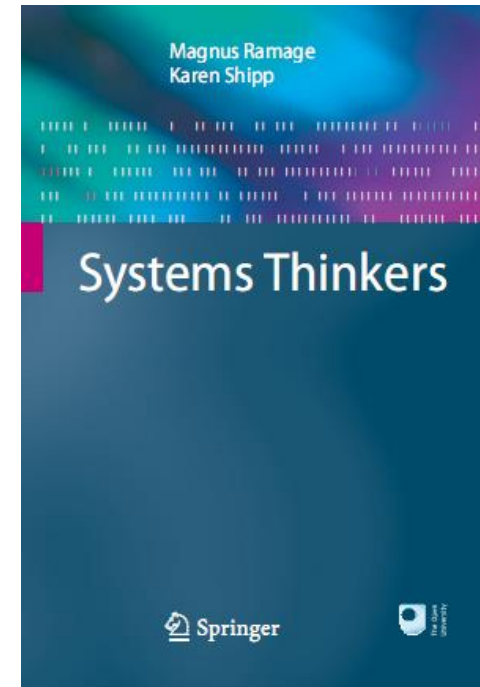
*Integrate the knowledge of the tools and approaches of systems thinking in practice with your own specialist discipline area, and knowledge of business and management*



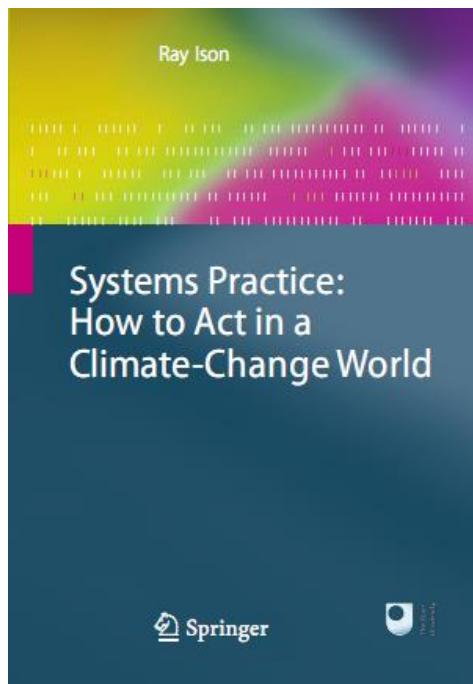


TU811  
30 credits

Thinking strategically:  
systems tools for managing change

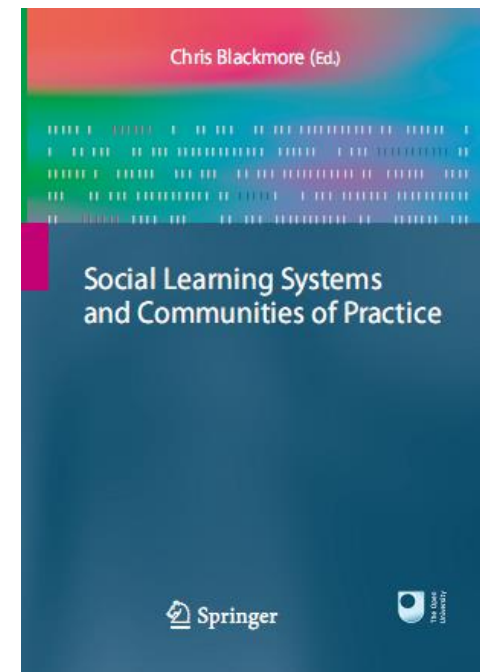


*Systems Thinking in Practice*  
Postgraduate programme 2011  
Masters/ Diploma/ Certificate



TU812  
30 credits

Managing systemic change:  
Inquiry, action and interaction



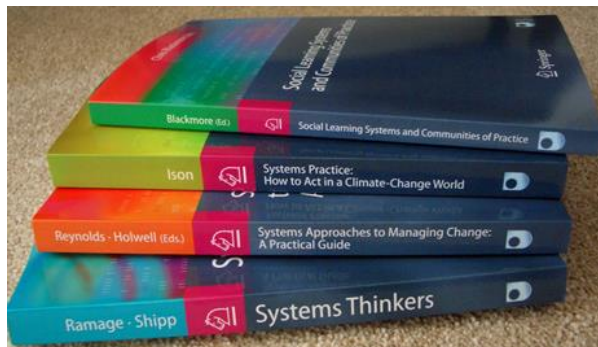


# Systems Thinking in Practice

## Postgraduate recruitment since 2010



Year	TU811	TU812	Total
2010	91	107	198
2011	134	83	217
2012	111	78	189
2013	110	97	207
Total	446	365	811



Module	Presentation	Non-UK%	EU	Ireland	Outside EU
TU811	2011	31%	18%	3%	9%
TU811	2012	28%	11%	5%	12%
TU812	2011	40%	28%	4%	8%
TU812	2012	18%	15%	n/a	1%



# Systems Thinking in Practice

Wider sales of the four books co-published with Springer (UK)

Title	2010	2011	2012	2013	Total	
	Chapters	Chapters	Chapters	Chapters	Books	Chapters
<b>Systems Thinkers</b>	3344	2548	3621	574	1437	10903
<b>Systems Approaches</b>	1101	1171	1499	424	1022	4195
<b>Systems Practice</b>	346	439	582	107	477	1474
<b>Social Learning Systems</b>	969	1281	1451	406	465	4107
<b>TOTAL</b>					3401	20,679





# Systems Thinking in Practice

## LinkedIn alumni group



- **Module forums:** successful pedagogy through online discussion groups with both TU811 and TU812
- **Self-organising since 2010:** x550 + alumni...
- **Mutual support:** advice and views shared regarding choice of electives and opportunities arising for consultancies etc.
- **Published outputs:** x3 peer-reviewed publications following critical reading and feedback on alumni site
- **Events:** face to face meetings in York, Dublin, and London (forthcoming)

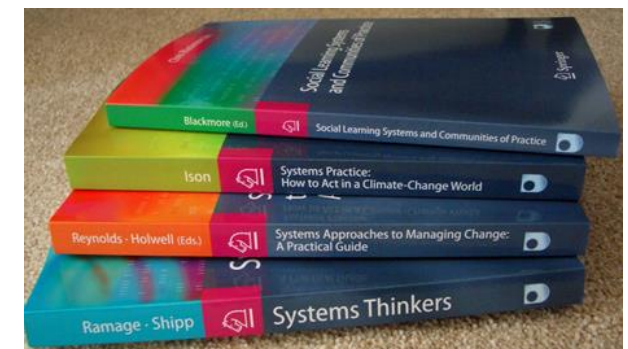




# Systems Thinking in Practice

## Key challenges

- **Demand pull?** employment opportunities (alumni)
- **Supply driven?** OU marketing of STiP (Faculty silos)
- **Retention:** 70-80% - not significantly low, but...
- **“Wacky subject!”:** The Independent review 2013\*
  - epistemic understanding of systems
  - active pedagogy
  - design learning
- **‘Delivery’ model:** supply-customer (passive top-down)



\* Finn, W. (2013) “A World of Wacky Subjects” [The Independent](#) (UK Newspaper: Post Graduate Supplement) , 20<sup>th</sup> November, 2013, pp. 5-6



# eSTEeM Project: What?



## Design a postgraduate recruitment and retention (learning) system based on systemic inquiry

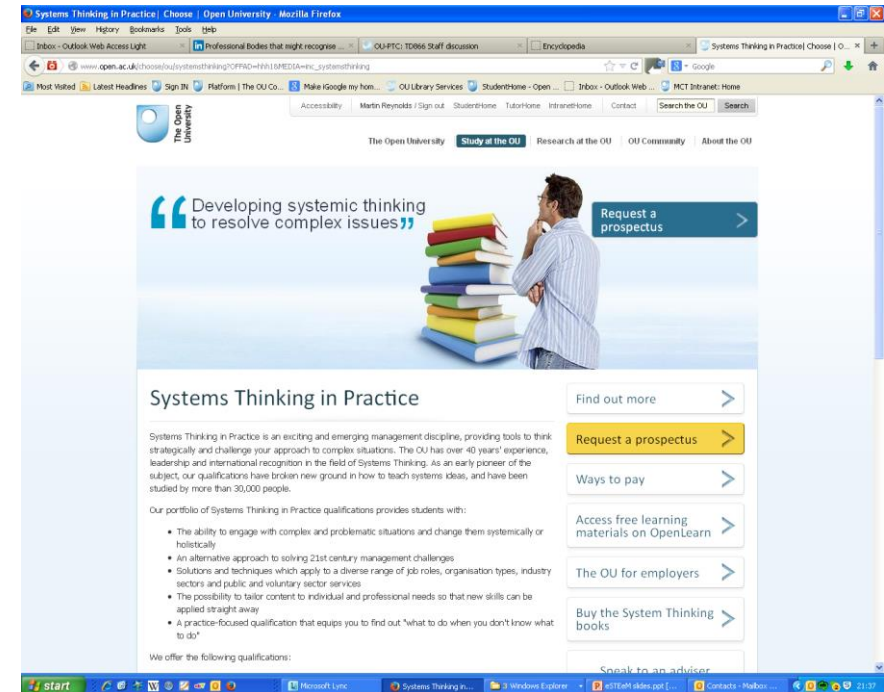
- Case study focus on PG programme of Systems Thinking in Practice (STiP)
- With employer engagement

## Who?

Martin Reynolds  
Chris Blackmore  
Ray Ison

Rupesh Shah  
Elaine Wedlock

Members of Applied systems thinking in practice (ASTiP) Group



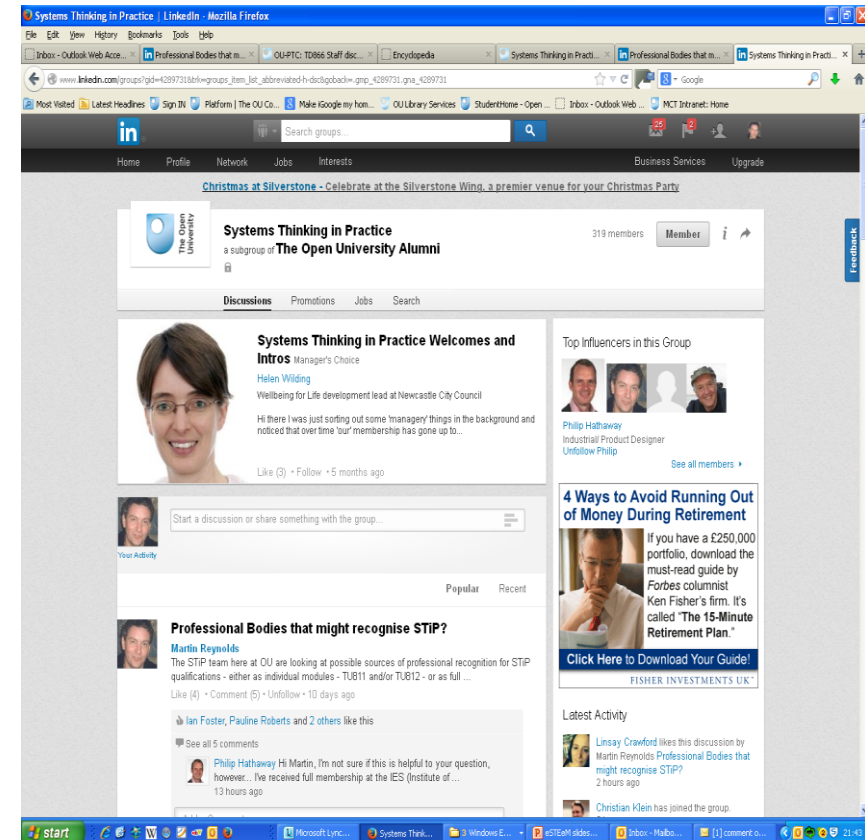


# How?



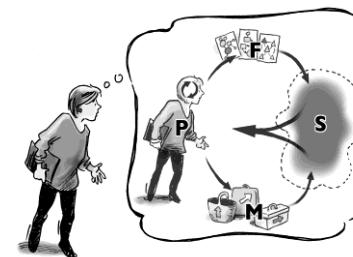
## 3 phases of systemic inquiry (c.18 months)

- Understanding existing PG situation of students (x10 interviews and x1 group follow-up video-conference meeting)
- Engaging with STiP alumni group and employers (x20 interviews + seminar and workshops)
- Developing systemic model of retention and recruitment;
  - Working paper
  - Refereed journal paper
  - Platform bid for wider systemic inquiry (HEFC/ ESRC/ EPSRC...)



## Who does it?

- Two ALs (c.24 days in total)
- ASTiP team (c. 80 days)



P = practitioner  
F = framework of ideas/theory  
S = situation  
M = method or methodology





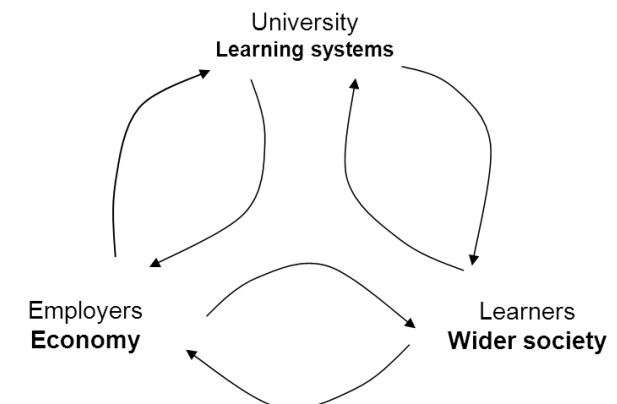
## Exploring an alternative pathway of partnership for postgraduate curriculum development

- Drawing on largely ‘untapped’ resource of alumni experiences and enthusiasms coupled with employers needs (unique to OU)
- Reducing dependence on ‘externalised’ (and often costly) marketing
- Developing more relevant and quality-enhanced curriculum content/ structure and support



## Who benefits?

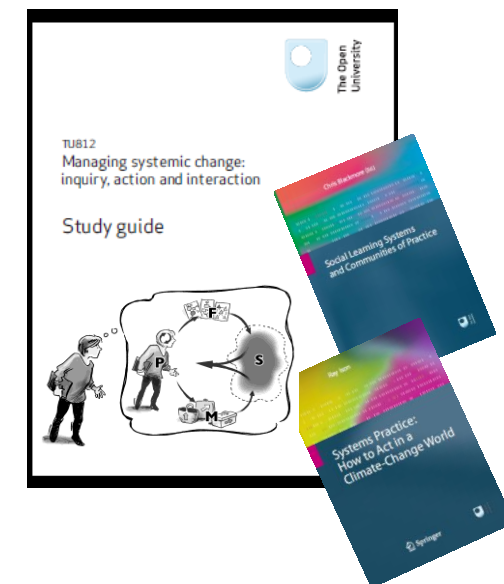
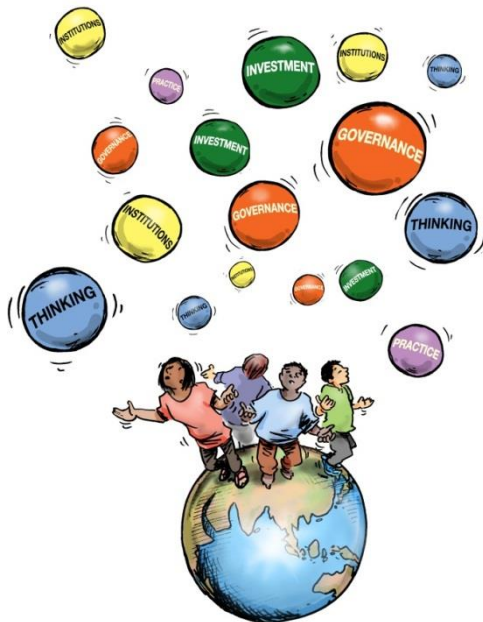
- University PG support
- Learners and employers





Dr Martin Reynolds  
Senior Lecturer and Qualifications Lead  
Systems Thinking in Practice  
Department of Engineering and Innovation  
The Open University

Tel: +44 (0)1908 654894 (work)



Certificate, Diploma or Masters  
in Systems Thinking in Practice







The Open University

## Mind the Gap

Developing praxis for learning, teaching, and working  
amongst OU postgraduate students

**Martin Reynolds**

Department of Engineering and Innovation

*With colleagues:*

Chris Blackmore  
Ray Ison  
Rupesh Shah  
Elaine Wedlock

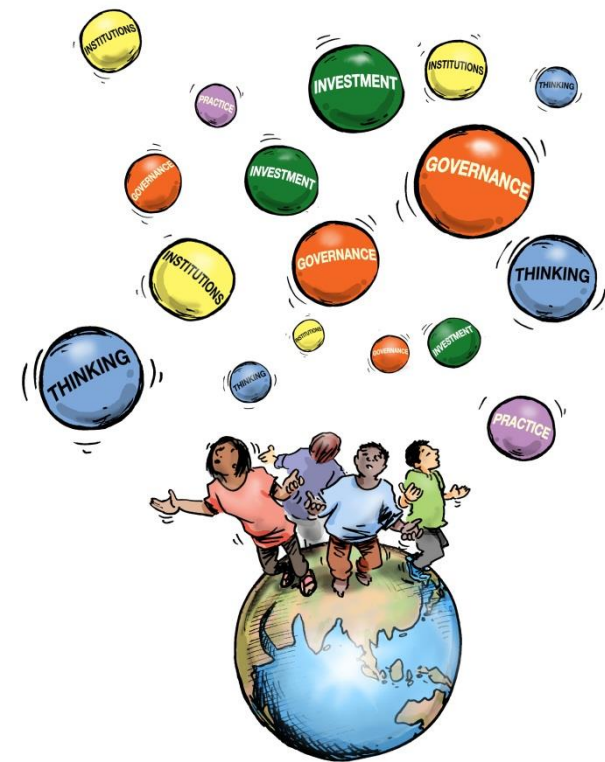
**The 4th eSTEeM  
Annual Conference  
The Open University**

**Date: 16 April 2015**

Applied Systems Thinking in Practice (ASTiP) Group



- Project outline: Enhancing Systems Thinking in Practice at the Workplace
- Phase 1: Barriers and enablers with PG study experiences
- Phase 2: Barriers and enablers with post-study work
- Phase 3: Design learning system for better pedagogy
- Challenges





eSTEEeM project outline:

# What?



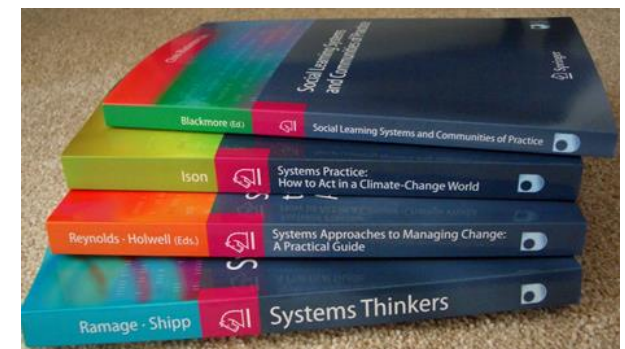
## Design a (learning) system for postgraduate recruitment and retention based on systemic inquiry

- Case study focus on PG programme of Systems Thinking in Practice (STiP)
- With employer engagement

## Who is involved?

Martin Reynolds  
Chris Blackmore  
Ray Ison

Rupesh Shah  
Elaine Wedlock



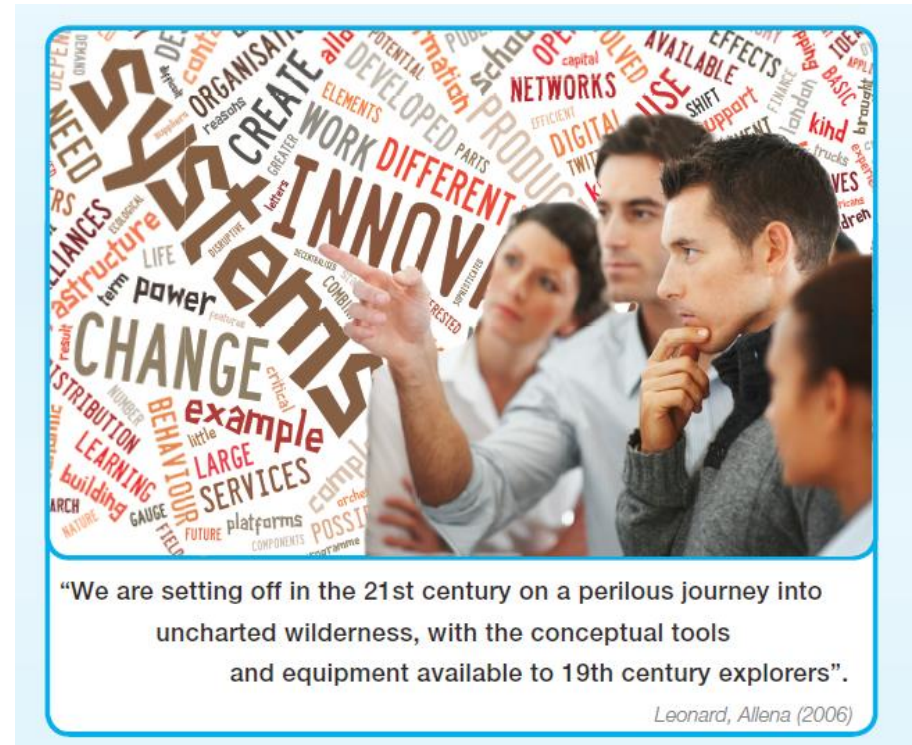
Members of Applied systems thinking in practice (ASTiP) Group



# Why?

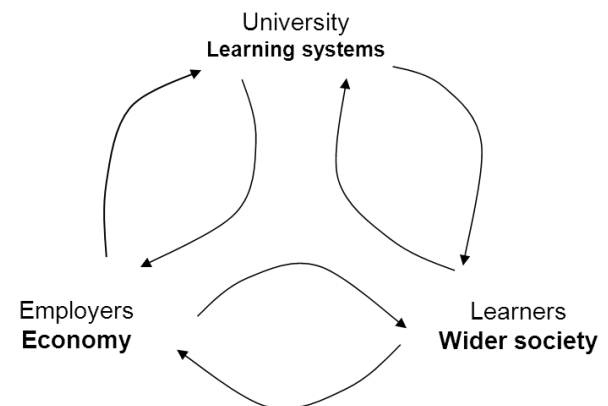
## Need for an alternative pathway of partnership for postgraduate curriculum development

- Reduce dependence on 'externalised' (and often costly) marketing and draw on demand-pull
- Draw on largely 'untapped' resource of alumni experiences and enthusiasms coupled with employers needs (unique to OU)
- Develop more relevant and quality-enhanced curriculum content/ structure and support



# Who benefits?

- University PG support
- Learners and employers







eSTEEeM project outline:

# How?

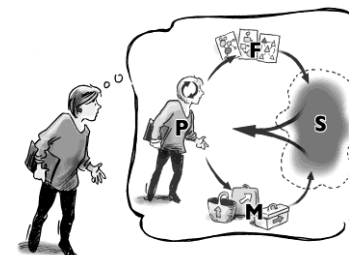


## 4 phases of systemic inquiry (c.18 months)

- Phase 1: Understanding existing PG situation of students (x10 interviews and x1 group follow-up video-conference meeting)
- Phase 2: Engaging with STiP alumni group and employers (c.x20 interviews)
- Phase 3: Developing systemic model of retention and recruitment (workshops)
- Phase 4: Dissemination
  - Working paper
  - Refereed journal paper
  - Platform bid for wider systemic inquiry (HEFC/ ESRC/ EPSRC...)

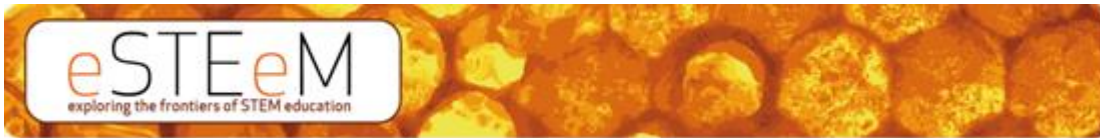
## Who does it?

- Two ALs (c.24 days in total)
- ASTiP team (c. 80 days)



P = practitioner  
F = framework of ideas/theory  
S = situation  
M = method or methodology





# Phase 1



## Barriers and Enablers in PG part-time study

- core STiP modules - TU811 and TU812

### Procedural issues

- Limited sample (x10) ...no statistical significance
- self-selecting: students willing to give up 30-40 minutes + possible further workshop engagement
- OU Live session to jointly explore outcomes
- Feedback given to all phase 1 students regarding consolidated findings + invitation

### Key 'barriers' (in addition to usual study-work balance)

- Changes in work circumstances whilst studying
- Forum discussions can be intimidating
- PG language: abstract nature of subject matter
- Case study: specific to students reinforcing solitude

### Key 'enablers'

- Chance to experiment in workplace situation
- Richness of voices and sharing experiences
- Resonance of (systems) ideas with work experiences
- Legitimacy of own views being expressed

## X2 Core modules on STiP (Systems Thinking in Practice) qualifications:

Thinking strategically: systems tools for managing change

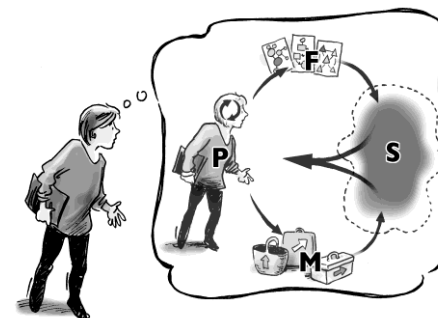
*TU811 – 30 credits*

- views managing as about taking action on the basis of your understanding of a complex interconnected situation, where others involved may have different understanding, motivation and interests.
- develops your understanding of complex situations using robust tools from the traditions of systems practice to think strategically about change and uncertainty.

Managing systemic change: inquiry, action and interaction

*TU812 – 30 credits*

- views change as inescapable in everyday managing in situations.
- equips you with skills to shape the nature and direction of change
- enables you to use systems thinking and practice to help you engage with change and recognise the interconnected nature of organisations and environments.



P = practitioner  
F = framework of ideas/theory  
S = situation  
M = method or methodology



# Phase 1



## x5 archetypes from STiP cohorts

- 'Teach me tell me' - limited authority in workplace
- 'MBA-ready' - newish to systems thinking but having responsibilities
- 'Geoffrey Vickers lite' – senior business with views on systems thinking
- 'Get diploma and make hay' – worldly experienced though new to systems thinking
- 'Naked systems thinkers' – already appreciating inter-relationships and multiple perspectives

## Interviews with ALs on student retention

- Ray Ison interviewed all STiP ALs (x7)
- Little understanding of timelines and money issues and TMA banking
- No tagging of students returning and doing well
- AL contracts start 2 weeks after students have initial access to course materials
- Initial starting conditions for students new to systems thinking: limited opportunity for conversation

## X2 Core modules on STiP (Systems Thinking in Practice) qualifications:

### Thinking strategically: systems tools for managing change

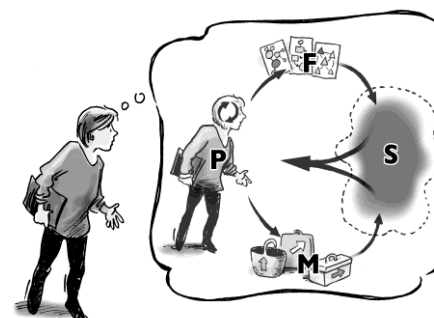
*TU811 – 30 credits*

- views managing as about taking action on the basis of your understanding of a complex interconnected situation, where others involved may have different understanding, motivation and interests.
- develops your understanding of complex situations using robust tools from the traditions of systems practice to think strategically about change and uncertainty.

### Managing systemic change: inquiry, action and interaction

*TU812 – 30 credits*

- views change as inescapable in everyday managing in situations.
- equips you with skills to shape the nature and direction of change
- enables you to use systems thinking and practice to help you engage with change and recognise the interconnected nature of organisations and environments.



P = practitioner  
F = framework of ideas/theory  
S = situation  
M = method or methodology



# Phase 2



## Applying PG learning in the workplace

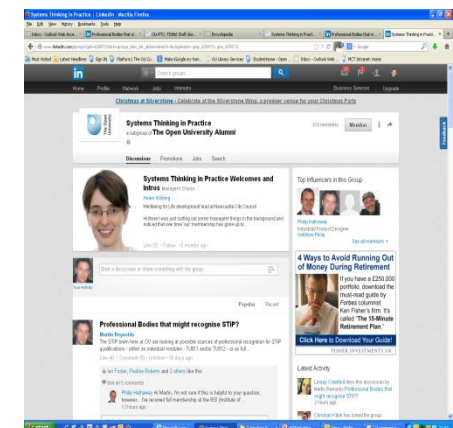
- Knowledge constitutive interests (Habermas, 1971)
- Some PG courses have fewer problems applying PG learning to workplace – e.g. technical-based subjects like computing and environmental technologies...technical interests
- Some PG courses engage with complexity ie. *interdisciplinary* and *transdisciplinary* elements e.g. systems thinking in practice, development management, technology management, environmental management... 'practical' (communicative) and 'emancipatory' (political) interests

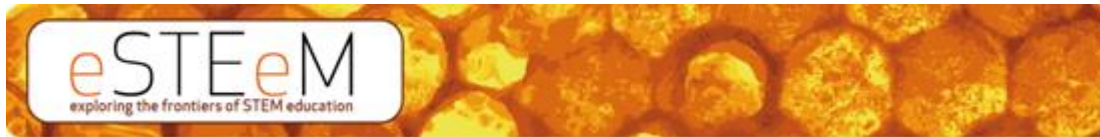
## Identifying the gap

- Espoused theory and theory in practice (Argyris and Schön, 1974)
- STiP...ers (alumni) experiences and Employ..ers needs
- Semi-structured interview schedules designed to flush out contrasting expectations and experiences

## Special data-sets

- STiP-er partnered with employer
- STiP-er first followed by employer-partner separately
- X8 partner groups (pharmaceutical, NHS, HE, IT, EU funding, UN FAO, Disability support, Volunteer support)





# Phase 2



## Themes arising: dealing with the workplace

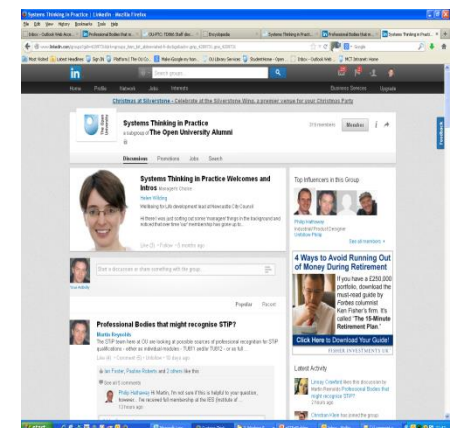
- Pre-defined job specifications
- Power dynamics ...covert systems thinking
- BAU (business as usual) pressures on resources (time etc.)
- Organisational silos
- ....

## Themes arising: dealing with the study experience

- Confronting misplaced expectations – technical fixing of ‘systems’ or extravagant ‘leadership’ roles
- Shifting from individual understandings (aha! moments) to co-worker practical engagement with work colleagues on issues
- Dealing with sense of ‘hypocrisy’ – not being able or confident to ‘walk the talk’
- Practising autonomy in workplace
- ....

## Possible relational archetypes

- ‘mother-child’
- ‘autonomy supporting’
- ‘mutual empowering’
- ‘co-learning’
- ...







## Workshop purpose

- Discuss tentative findings
- Co-design new learning system based on systemic inquiry:
  - exploring inter-relationships between employment and study
  - engaging with perspectives (alumni, employers, ALs, academics, marketing etc.)
  - reframing boundaries of design parameters

## Workshop logistics

- May 8<sup>th</sup> Camden Regional Office 10.30am to 3pm
- All participants from phase 1 and phase 2 (90% positive response)
- Special guests active in alumni group (Helen Wilding) and with HR in OU (Phil Wason)
- Some limited expenses support for those in need (including travel from Dublin and Rome)

## Ongoing work to Phase 4

- Working paper and seminar at OU
- At least one peer-reviewed article (probably two)
- Bid for wider research grant



# Challenges



- Retaining high quality of existing provision (avoid technology fixes...VLE)
- Reconfiguring PG course production and provision (changing role of educators as gatekeepers to facilitators and co-learners)
- Changing marketing ethos from supply-driven to demand-pull
- Drawing on expertise and experiences of ALs
- Securing involvement of OU alumni (as mentors)
- Securing involvement of employer-partners



Certificate, Diploma or Masters  
in [Systems Thinking in Practice](#)







The Open University

## Enhancing 'conversation' at the OU

Developing praxis for learning, teaching, and working  
amongst OU postgraduate students

**Martin Reynolds**

Department of Engineering and Innovation

*With colleagues:*

Rupesh Shah  
Elaine Wedlock

Chris Blackmore  
Ray Ison

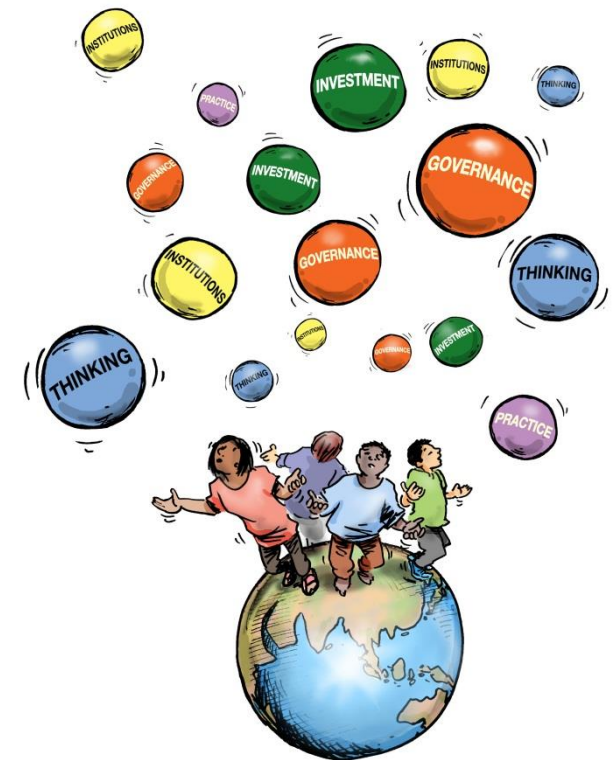
**The 5th eSTEeM  
Annual Conference  
The Open University**

**Date: 14 April 2016**

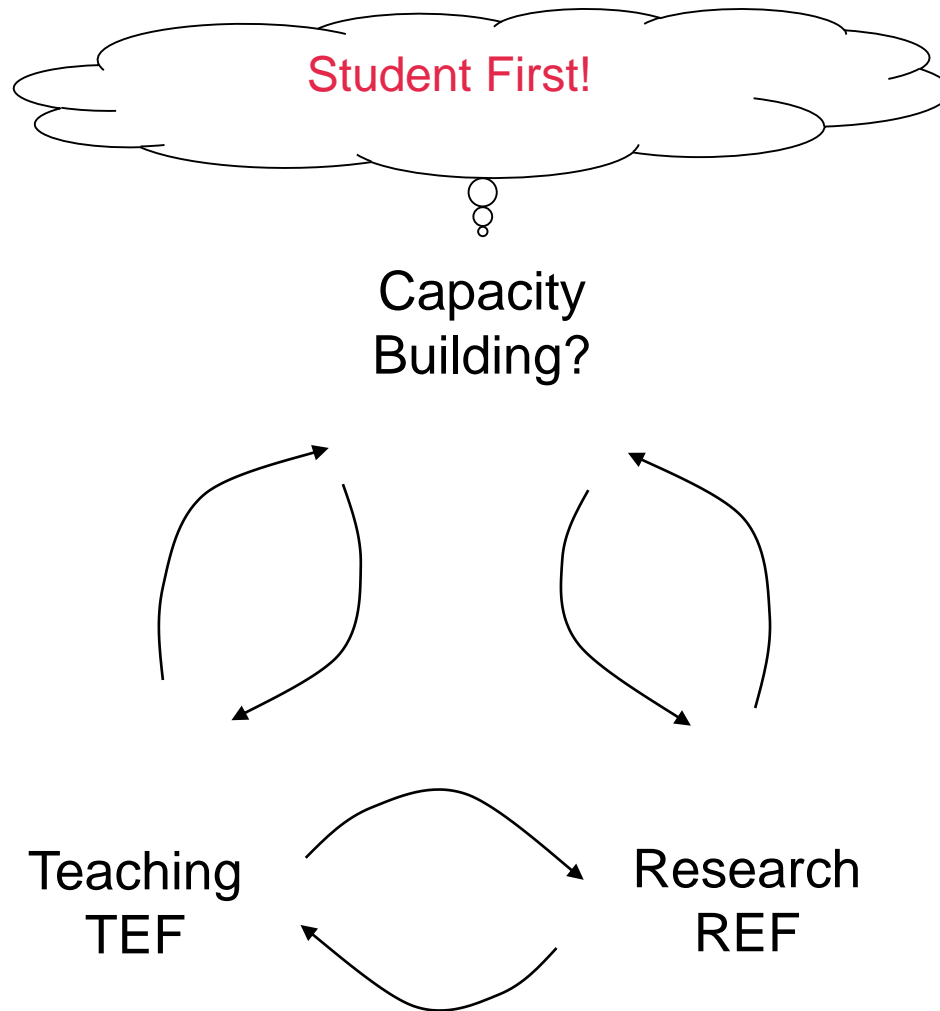
Applied Systems Thinking in Practice (ASTiP) Group



- Praxis: 'unique selling point' of OU and STEM Faculty?
- 'Conversation': OU as a complex learning system
- 3 orders of conversation: systems thinking in practice
- eSTEEeM project conversations
- eSTEEeM project outcomes
- Challenges: towards a complex adaptive system



# The Open University: an existential crisis?



## 'USP' of OU

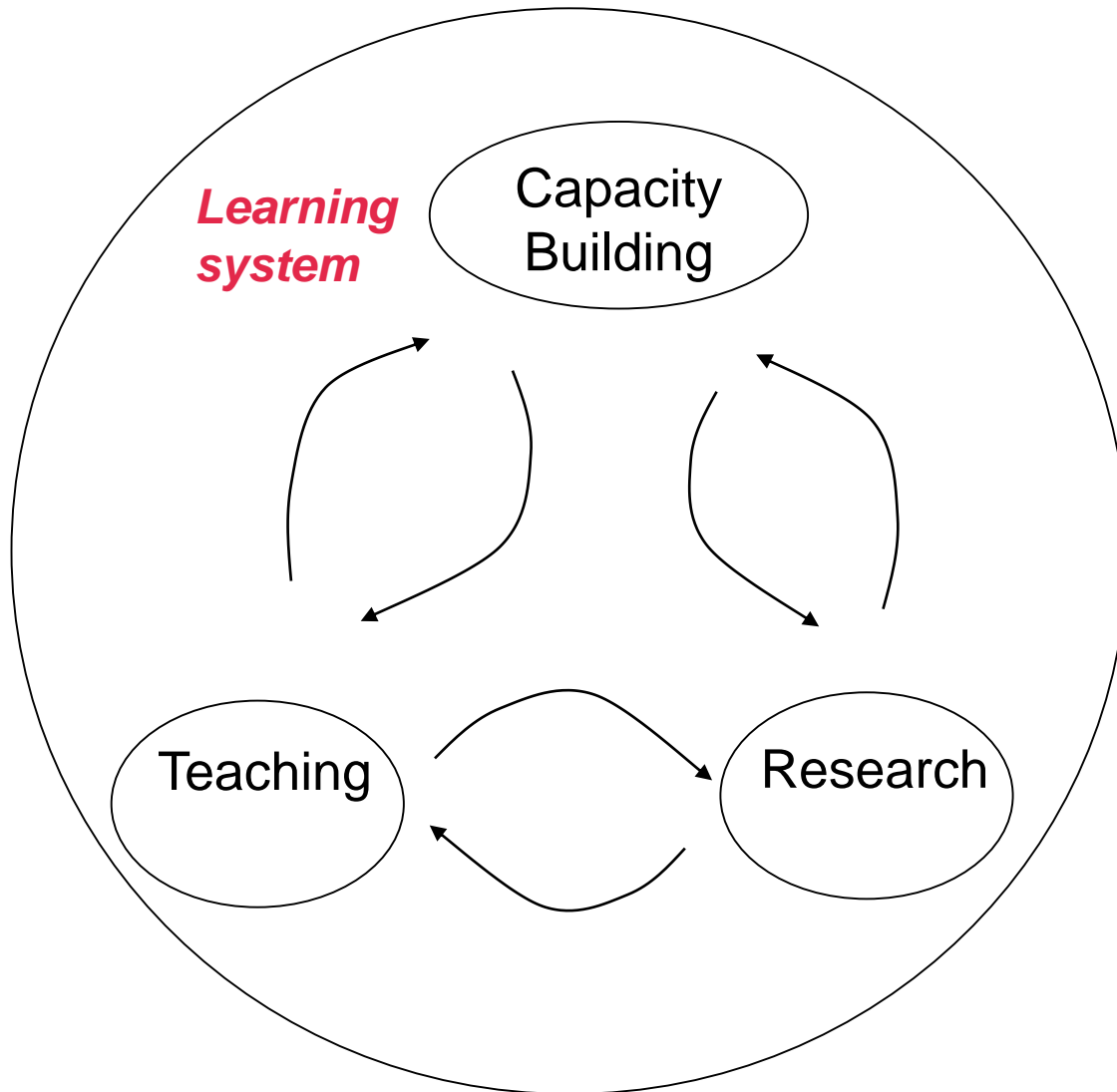
1. **Openness**
2. **Scale and reach**
3. ***Learning system***

**(OU perspective)**

4. **Life changing experience**

**(student perspective)**

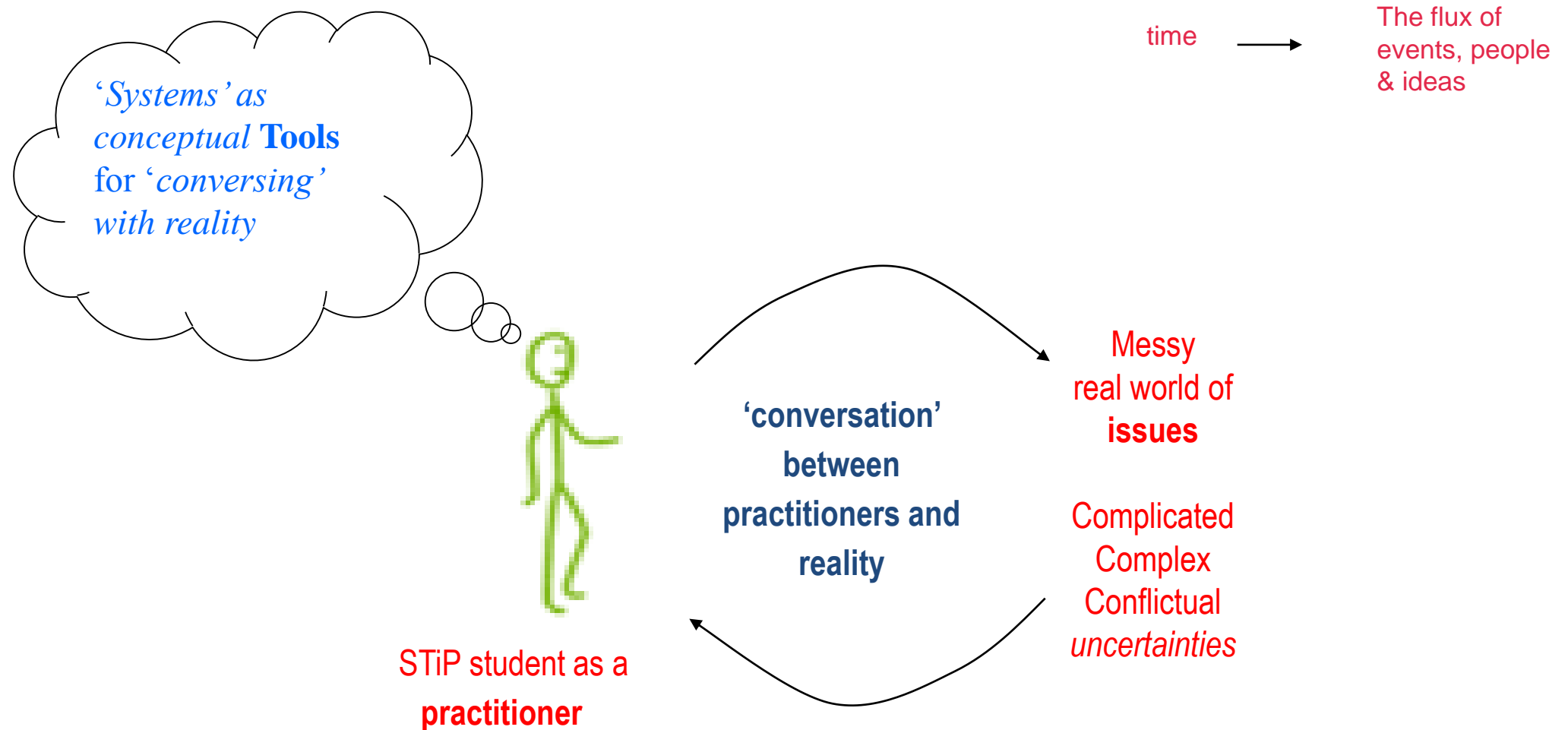
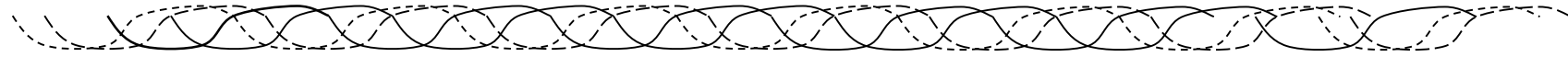
# The Open University: a complex learning system



## OU is a 'unique' *Learning system*

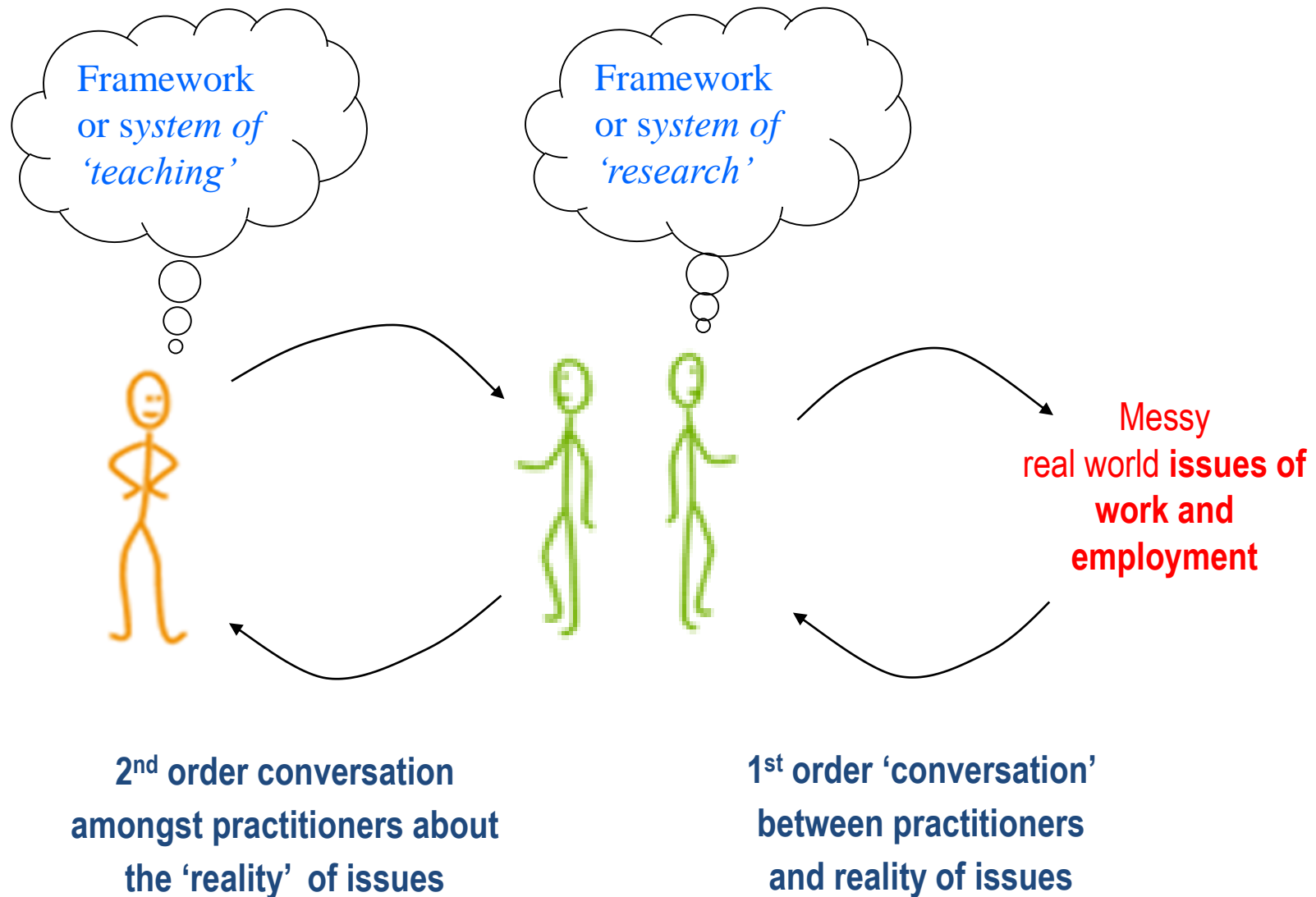
1. Built on ongoing 'conversations'
2. Based on social constructivist pedagogy/ social learning – people learn by discussing (cf FutureLearn)
3. Conversation is metaphor for praxis dynamic: theory in action; thinking in practice
4. Core OU praxis dynamic is between research and teaching
5. OU system is 'complex' dynamic; i.e. involving different perspectives (team work – feedback)
6. 'Conversation' transcends boundaries – rich tradition of inter- and trans-disciplinarity in Technology Faculty (1970 ...)
7. John Beishon (1971 – Professor of Systems) –designed systems curriculum (T241 Systems Behaviour)... 'inventing as they went along'
8. Systems thinking and 3 orders of 'conversations'

# Systems thinking in practice (STiP) as 'conversation'





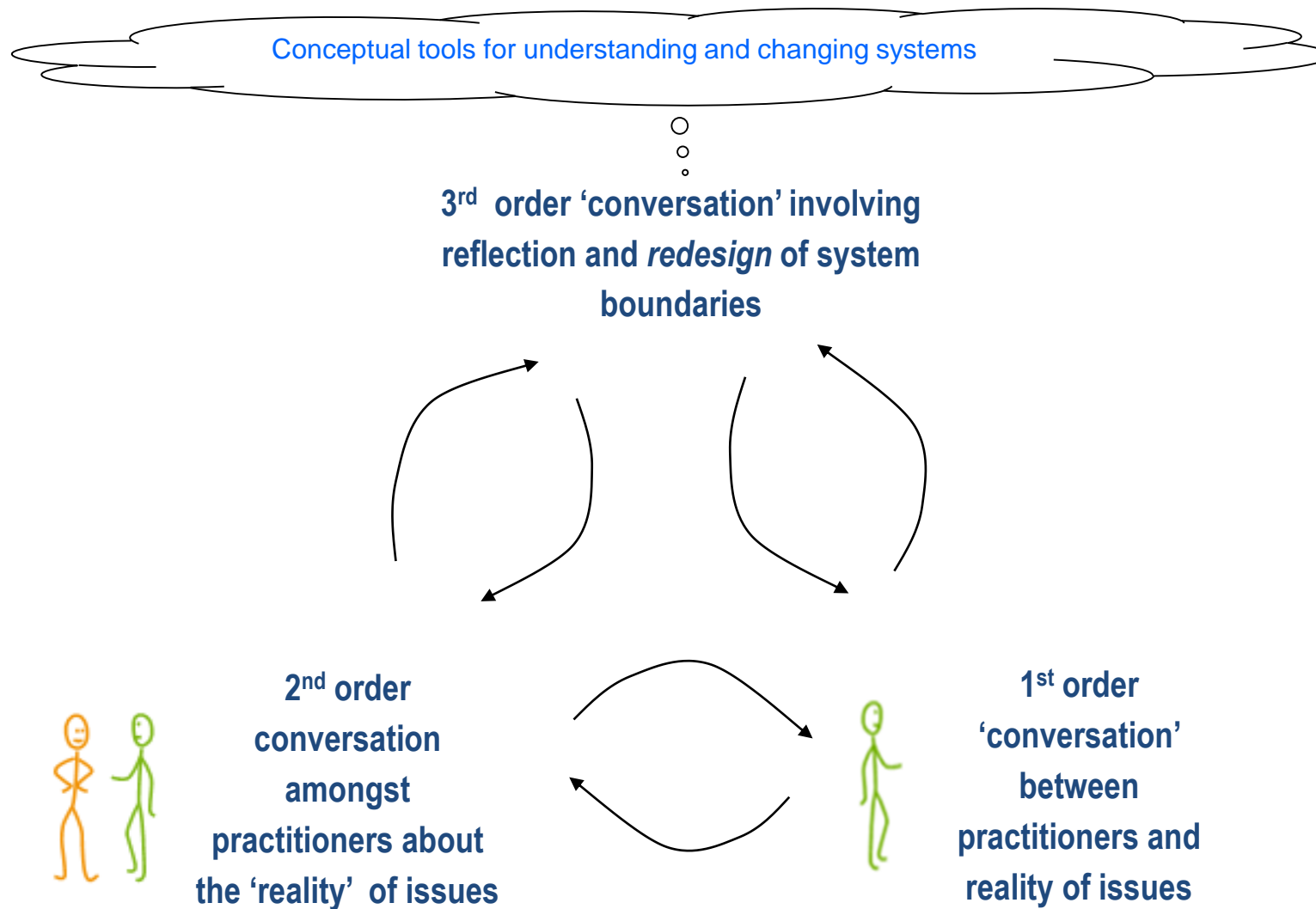
# Praxis as two orders of 'conversation'



# 3<sup>rd</sup> order conversation in praxis



Reflecting on limitations of 1<sup>st</sup> and 2<sup>nd</sup> order 'conversations'



# Three orders of conversation



1<sup>st</sup> order conversing with reality

2<sup>nd</sup> order conversing with perspectives

3<sup>rd</sup> order conversing through reflection

# eSTEE M project: Enhancing systems thinking in the workplace (designing an alternative pathway of partnership for postgraduate curriculum development)

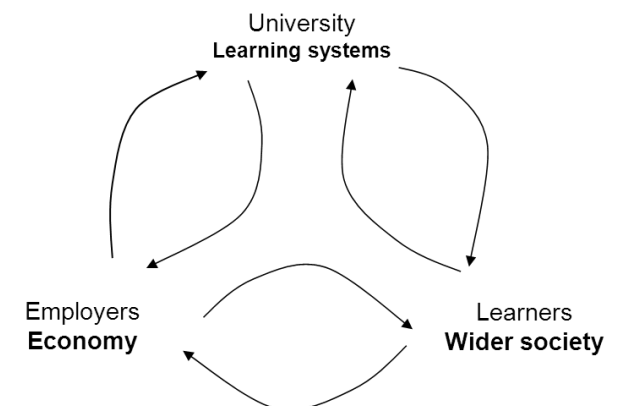


## 4 phases of systemic inquiry

January 2015 to August 2016 (c.18 months)

- Phase 1 (1<sup>st</sup> order\*): Understanding existing PG situation of students (x10 interviews and x1 group follow-up video-conference meeting)
- Phase 2 (2<sup>nd</sup> order): Engaging with STiP alumni group and employers; feeding back on phase 1 (c.x16 interviews)
- Phase 3 (3<sup>rd</sup> order): Developing systemic model of retention and recruitment (workshop)
- Phase 4: Dissemination
  - Working paper
  - Refereed journal paper
  - Platform bid for wider systemic inquiry (HEFC/ ESRC/ EPSRC...)

**\*Note: phases have incidences of other orders of 'conversation' aside from the primary ones indicated.**



# Some recommendations for STiP postgraduate curriculum development based on 3 orders of conversation arising from eSTEEeM project



- (1<sup>st</sup> order): develop repository of case studies as benchmark for systems thinking in practice
- (1<sup>st</sup> order): launch 2<sup>nd</sup> edition of 4 Springer books
- (2<sup>nd</sup> order): co-design learning system with employers and alumni
- (2<sup>nd</sup> order): explore use of twitter and other social media for facilitating peer conversations
- (2<sup>nd</sup> order): promote action learning amongst online alumni
- (2<sup>nd</sup> order): promote workplace coaching with employers of STiP alumni
- (2<sup>nd</sup> order): explore partnership ideas with conventional universities on f2f complementarities
- (3<sup>rd</sup> order): enhance appreciation of student learning journeys through development of 'archetypes'
- (3<sup>rd</sup> order): challenge 'turf wars' and methodological pluralism amongst systems practitioners; promote models of bricolage and juggling
- (3<sup>rd</sup> order): design modules customise-able for professional development bespoke short courses
- (3<sup>rd</sup> order): re-design system for retention and recruitment
- (1<sup>st</sup> and 3<sup>rd</sup> order): develop professional recognition of STiP through a competency framework



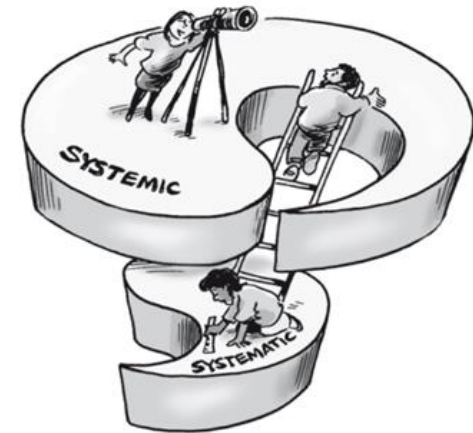
Certificate, Diploma or Masters  
in Systems Thinking in Practice



# Challenges



- Retaining high quality of existing provision (avoid technology fixes...VLE)
- Reconfiguring PG course production and provision (changing role of educators as gatekeepers to facilitators and co-learners)
- Changing marketing ethos from supply-driven to demand-pull
- Drawing on expertise and experiences of ALs
- Securing involvement of OU alumni (as mentors)
- Securing involvement of employer-partners



# Towards a complex adaptive learning system



Applicable for STiP programme/ STEM Faculty/The Open University

