Practitioner co-interpretation:

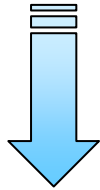## a strategy for engagement of teachers in reflection on teaching practice
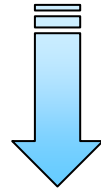
Plant Sciences
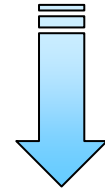Pedagogy Project

Teaching
for Learning
N E T W O R K

Aims

To develop learning approaches and resources to enhance the effectiveness of small group teaching in second year Plant and Microbial Sciences:

Improve learning outcomes	Engage students better	Enhance student recruitment and retention

Plant Sciences Teaching

Year 1 — Summer — **Year 2** — Summer — **Year 3**

Year 1

Choose 3

Chemistry
Geology
Materials & Mineral Sciences
Physics

Biology of Cells
Evolution and Behaviour
Physiology of Organisms

Choose 1

Elementary Mathematics for Biologists
Mathematics
Quantitative Biology

Year 2

Choose 3

Chemistry A
Chemistry B
Geological Sciences A
Geological Sciences B
Materials Science & Metallurgy
Minerals Science
Physics
Advanced Physics

History & Philosophy of Science

Mathematics

Animal Biology
Biochemistry & Molecular Biology
Cell & Developmental Biology
Ecology
Experimental Psychology
Neurobiology
Pathology
Pharmacology
Physiology
Plant & Microbial Sciences

Year 3

Choose 1

Astrophysics
Chemistry
Experimental & Theoretical Physics
Geological Sciences
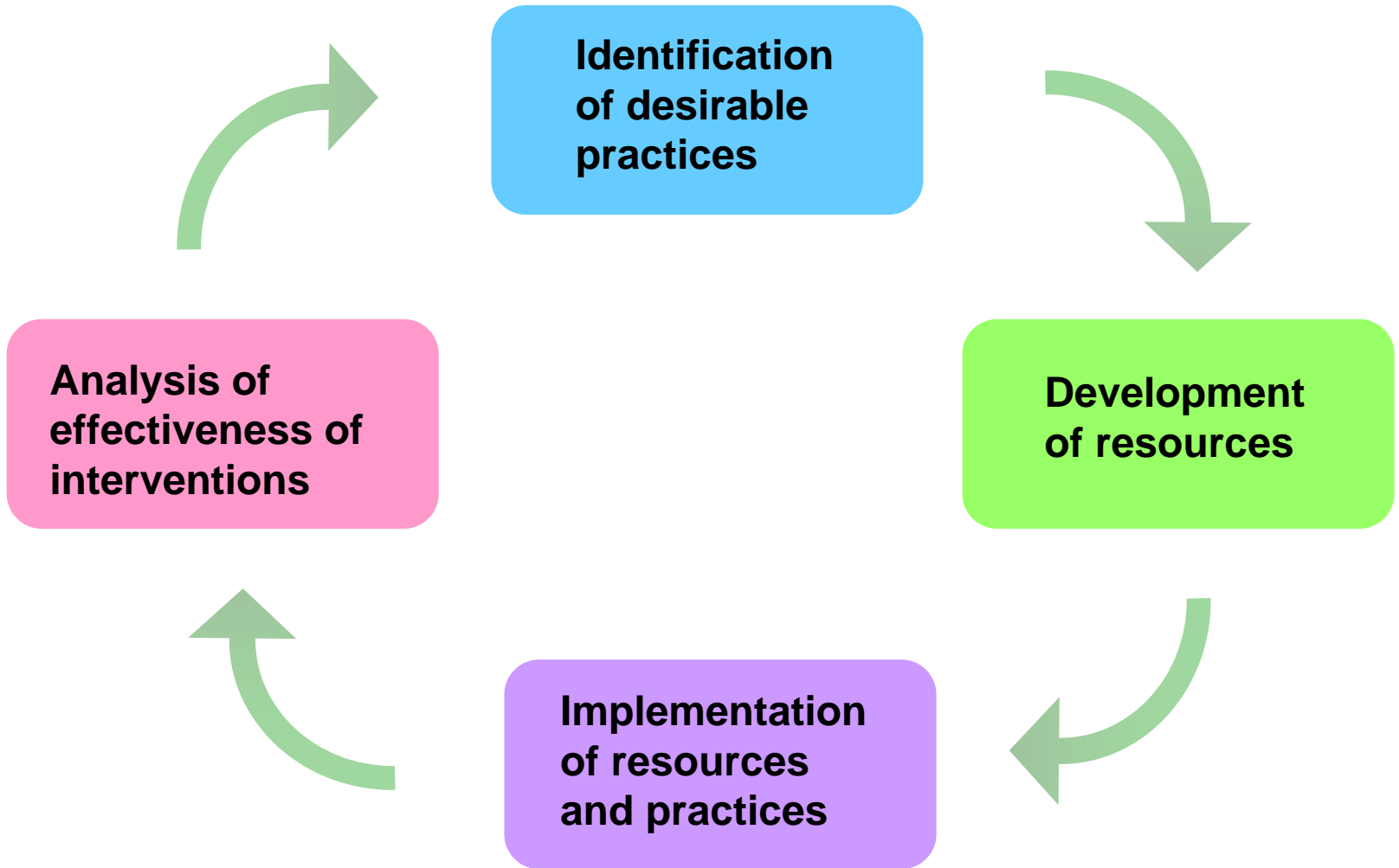Materials Science & Metallurgy

History & Philosophy of Science

Anatomy Option A
Anatomy Option B
Biochemistry
Genetics
Neuroscience
Pathology
Pharmacology
Physiology
Plant Sciences
Psychology
Zoology

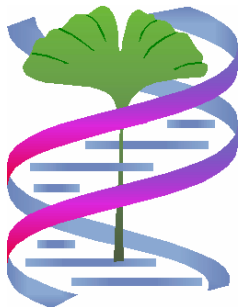Biological & Biomedical Sciences (dissertation-based)
Physical Sciences

The challenges
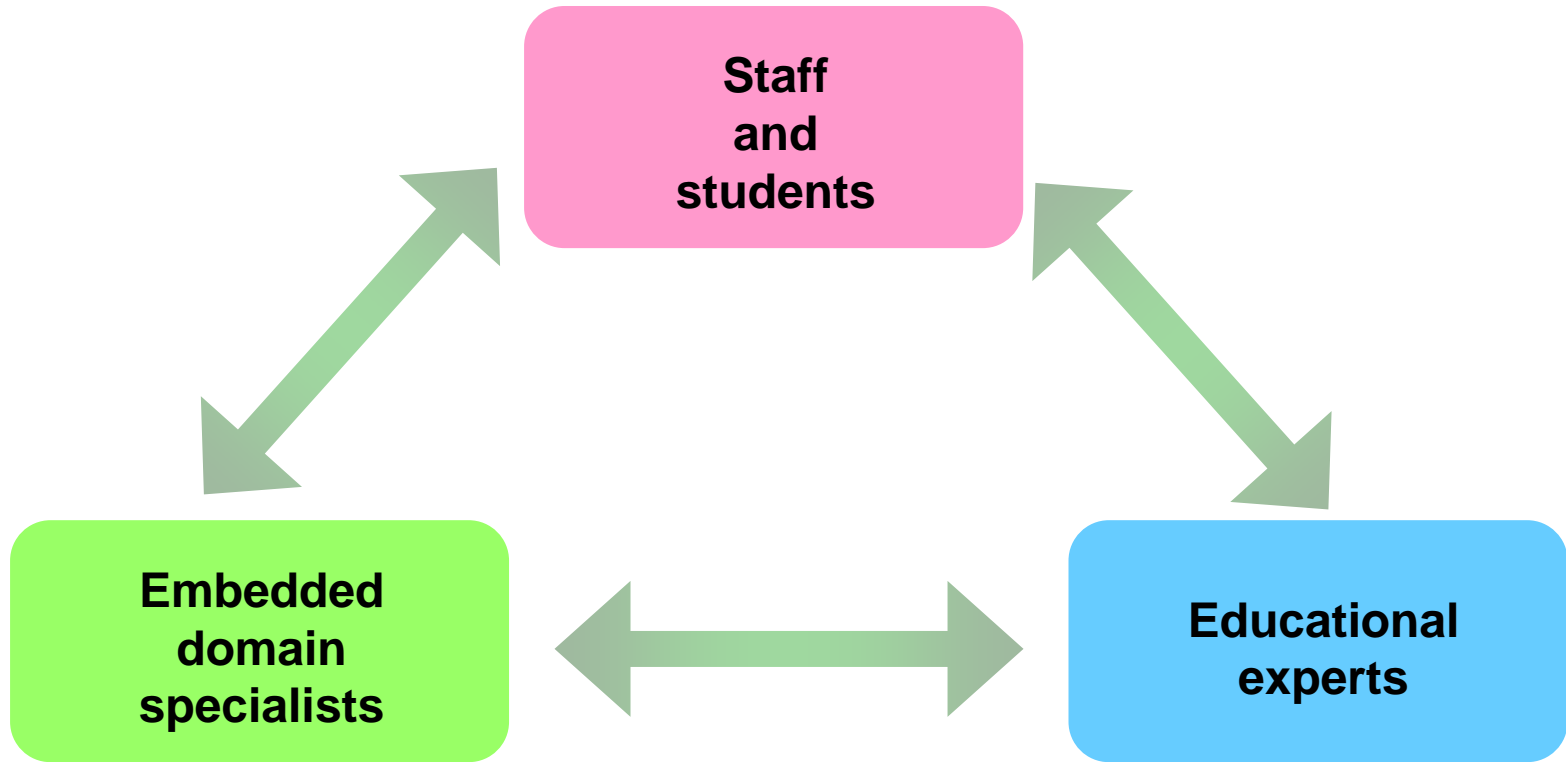
- Experienced tutors

- Inexperienced tutors

An evidence based approach:

Identification of desirable practices

Development of resources

Implementation of resources and practices

Analysis of effectiveness of interventions

Strategy

Collecting the evidence

Literature Review

Survey

Student Focus Groups

Tutor Interviews

1. Educational Literature

High leverage strategies

- **Sharing learning objectives**: Making it clear to students what the learning objectives of their course are

- **Authentic learning**: Relate learning to real examples and develop domain specific ways of thinking and practising

- **Contingent teaching**: Diagnostic questioning and scaffolding explanations and problems

- **Self regulation and independence**: Supporting independent learning and personal goal setting

- **Supporting peer and self assessment**: Involving students in the process of assessment

2. Student Survey – Dual Scale

The left scale relates to **practices** and this is for you to show how frequently things happen
The right scale is for you to show how much you **value** the activity.

Practices						Values				
Always				Never		High				Low
5	4	3	2	1	Cake is often provided on special occasions in the tea room	5	4	3	2	1

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Practices   **Values**

Always   Never   High   Low

1 ☐ ☐ ☐ ☐ ☐ The tutorial content is related to real-life situations and examples ☐ ☐ ☐ ☐ ☐

2 ☐ ☐ ☐ ☐ ☐ Tutorials are more about me showing how much I have learned rather than developing my understanding ☐ ☐ ☐ ☐ ☐

3 ☐ ☐ ☐ ☐ ☐ Tutors relate specific content back to the overall course aims and objectives ☐ ☐ ☐ ☐ ☐

4 ☐ ☐ ☐ ☐ ☐ Tutors motivate me to do my best work ☐ ☐ ☐ ☐ ☐

Identified Value - Practice Gaps

Top 5 highly valued practices that are not carried out often enough in tutorials:

1. **Assessment criteria** or **model answers** are not used to help me understand how well I am doing in my studies

2. Tutorials do not help me to have a clear idea of how the course as a whole is **structured** and what is expected of me

3. Tutorials do not help me to focus on the importance of **integrating concepts** rather than just learning rules and laws

4. Tutors do not provide enough helpful **feedback** on my progress

5. I do not receive enough useful **comments** (orally and/or in writing) on my work

Identified Value - Practice Gaps

Bottom 4 often used but not valued practices

1. Tutorials are more about me showing how much I have **learned** rather than developing my **understanding**

2. I am assessed on what I have **memorised** rather than what I have **understood**

3. I am mainly asked questions which require **recall of facts**

4. The emphasis in teaching in supervisions is on **techniques and procedures** rather than **arguments and reasoning**

Practice-Value data

- Highlights potential areas for changes in practice and potential interventions

- Highlights variation in student experience

- A good basis for initiating discussions with teaching staff and students

- A robust baseline to evaluate impact of interventions in the second year of the project

- Potential for cross-context comparisons

3. Student focus groups

Where a small group of students is led in a discussion to identify and evaluate learning practices

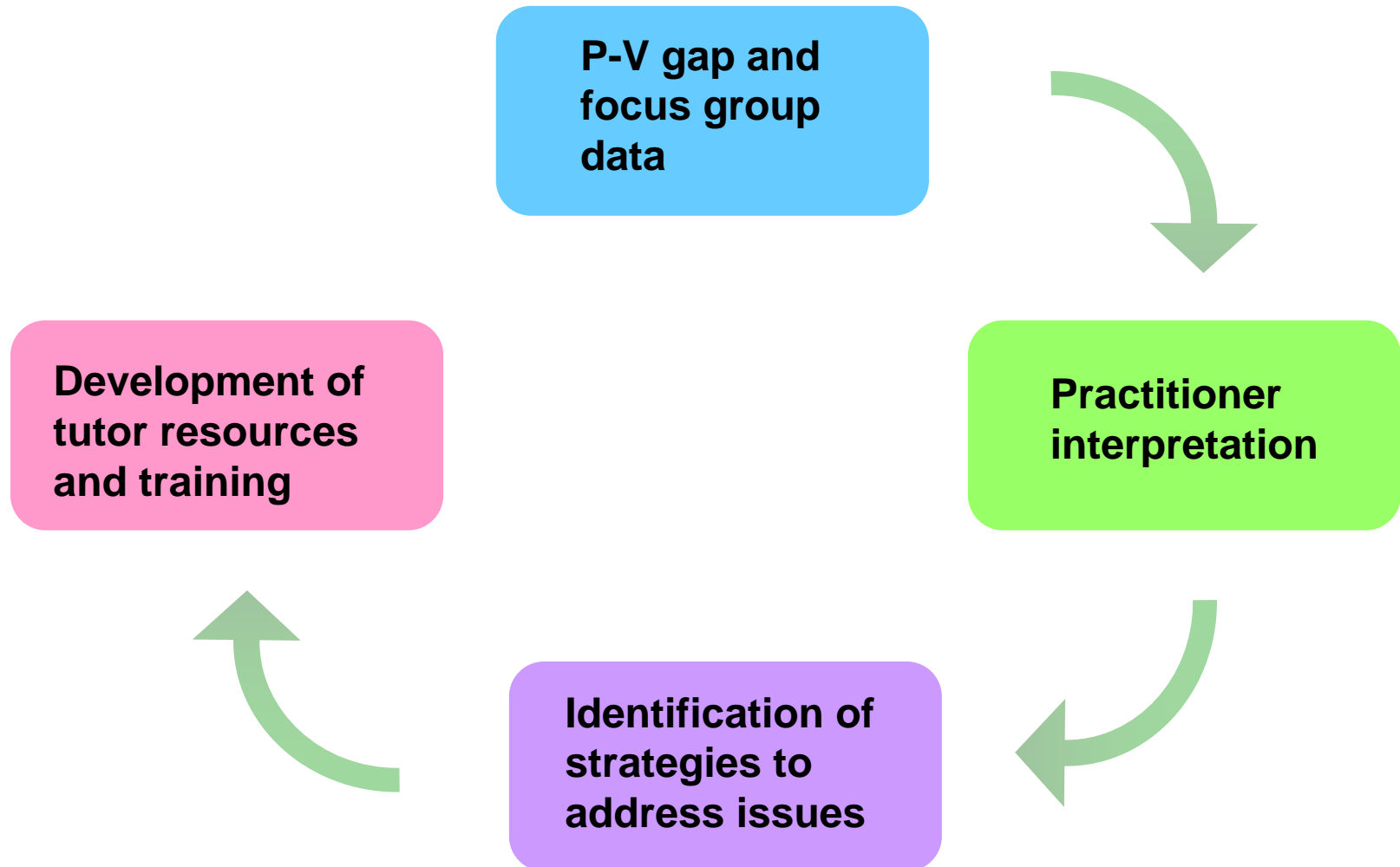**Experience of and attitudes towards assessment**

Experience of teaching and learning in tutorials

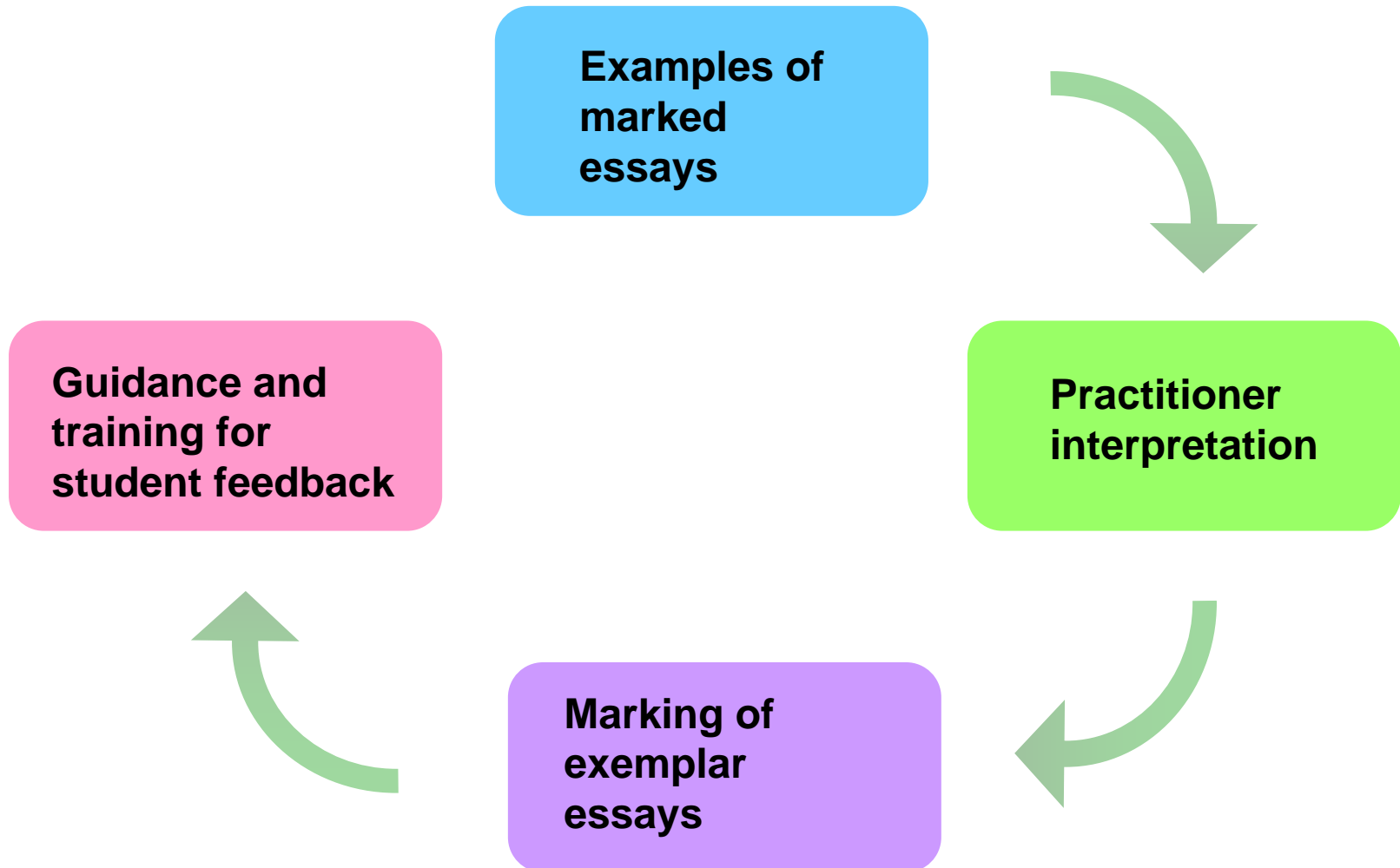**Prior experience of learning and dispositions towards specific teaching and learning strategies**

Tutor workshop I

Tutorial content

P-V gap and focus group data

Practitioner interpretation

Identification of strategies to address issues

Development of tutor resources and training

Tutor workshop II

Essay feedback

Examples of marked essays

Practitioner interpretation

Marking of exemplar essays

Guidance and training for student feedback

"A network supporting evidence informed practice for enhancement of student teaching and learning"

www.tfln.org

TfLN aims

- To facilitate practitioner engagement in reflection on teaching practices

- To share resources and experiences in the disciplines
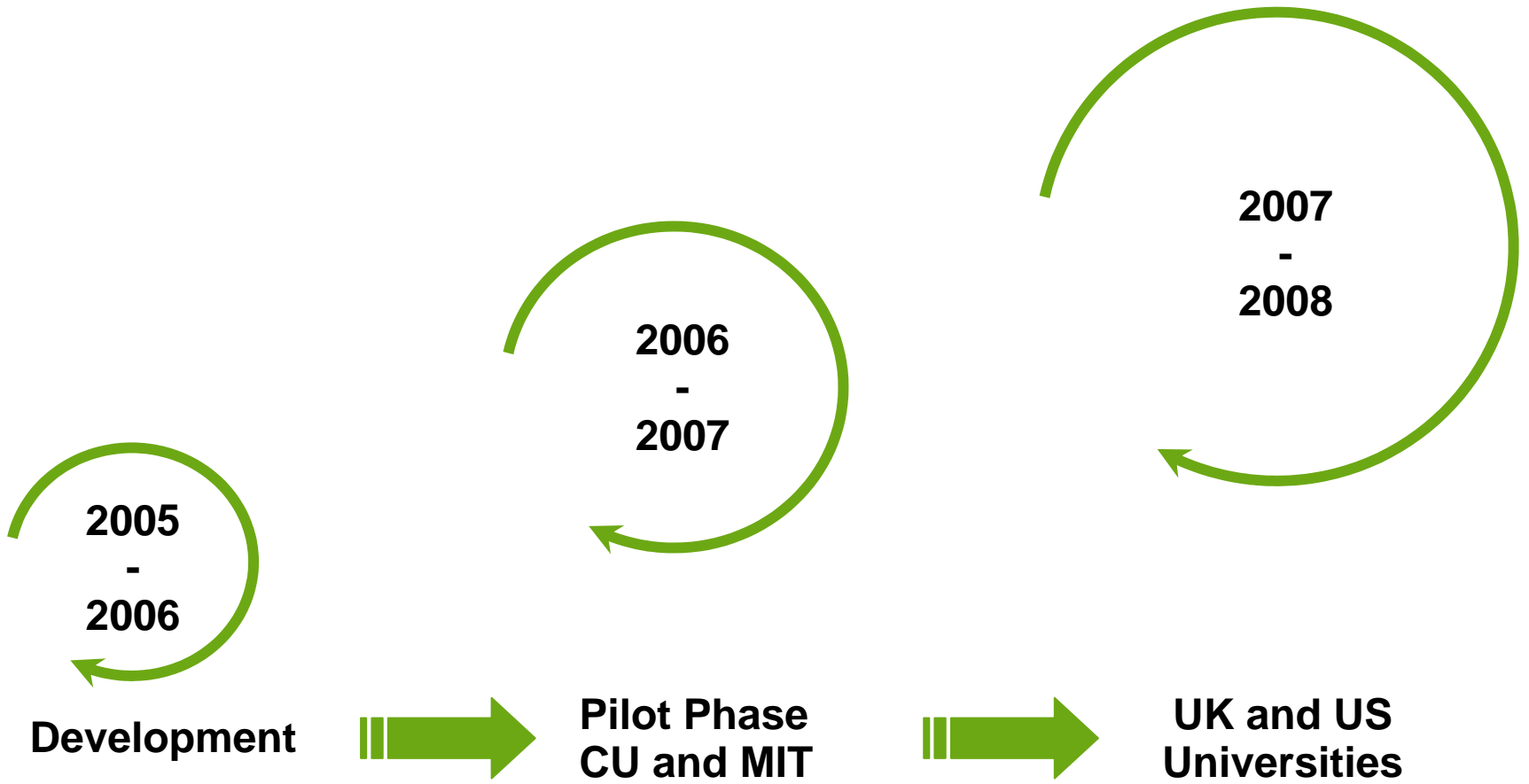
- To enable cross case analysis and outputs

TfLN Activities

- Expansive research process and integrated design involving staff and students

- Range of techniques and approaches
  - Documentary analysis
  - PV gap questionnaire
  - Self-efficacy questionnaire
  - Student focus groups
  - Interviews with staff
  - Video analysis of tutorials

TfLN expansion

2007
-
2008

2006
-
2007

2005
-
2006

Development ➤ **Pilot Phase CU and MIT** ➤ **UK and US Universities**
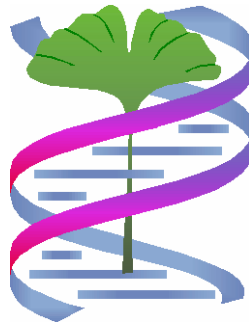
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