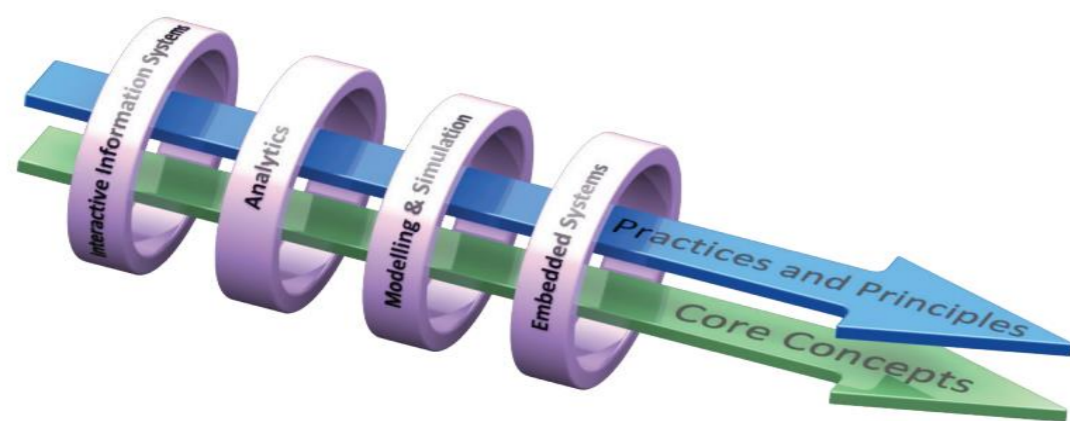# CS Impact: Exploring Students' Experiences of Leaving Certificate Computer Science

Joyce Borges, Clare McInerney, Oliver McGarr, Chris Exton, Brian Harkin

1 BACKGROUND:

Leaving Certificate Computer Science (LCCS) was introduced in 40 pilot schools in 2018. It is currently delivered in 220 schools (30% of all post-primary schools).

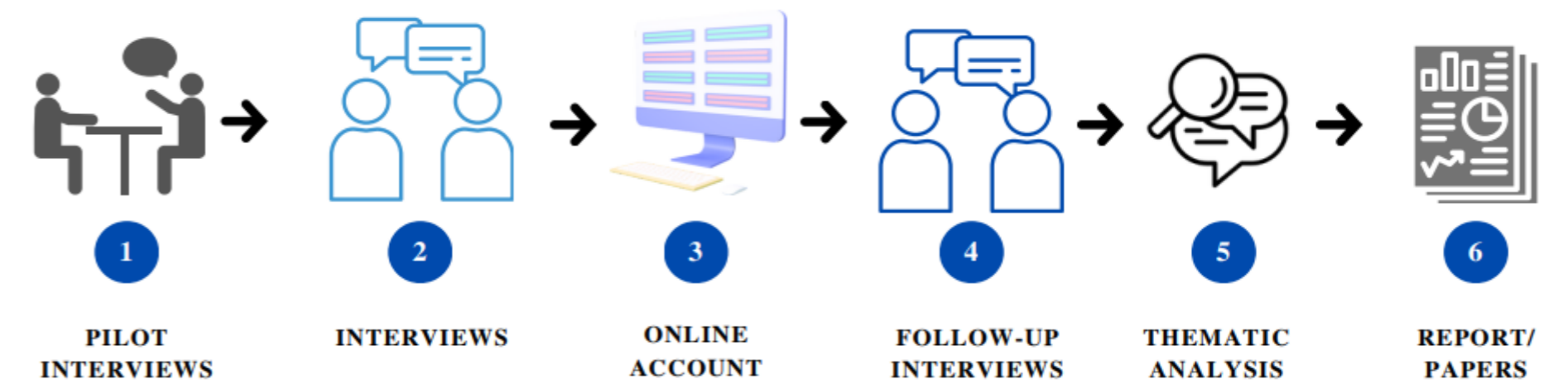| Strand 1: Practices and principles	Strand 2: Core concepts	Strand 3: Computer science in practice

▸ Computers and society
▸ Computational thinking
▸ Design and development
	▸ Abstraction
	▸ Algorithms
	▸ Computer systems
	▸ Data
	▸ Evaluation/Testing
		▸ Applied learning task 1
		  - Interactive information systems
		▸ Applied learning task 2 - Analytics
		▸ Applied learning task 3
		  - Modelling and simulation
		▸ Applied learning task 4
		  - Embedded systems

Rationale

Very few studies have focused on students and their experiences of LCCS in-depth. Exploring students' experiences is important as students experience the subject at first hand and can provide valuable insights that can help shape LCCS education into the future.

Research aim

To explore 5th and 6th year students' overall experiences of studying LCCS using qualitative methodology and capturing students' experiences over a period of time.
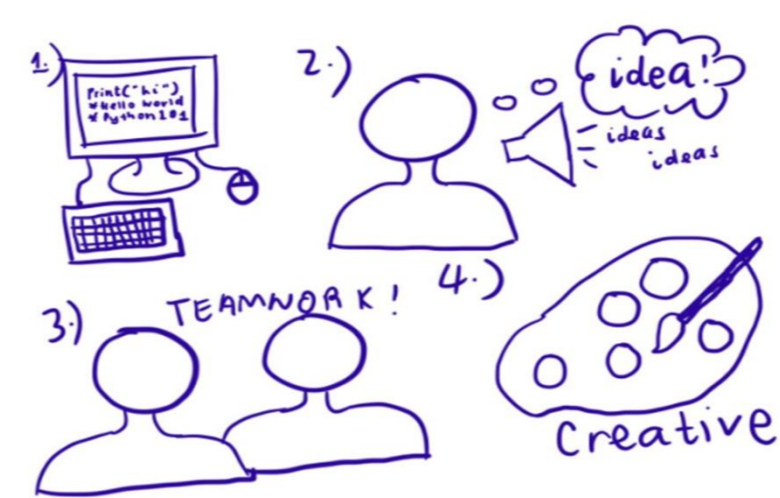
2 METHODOLOGY:

PILOT INTERVIEWS → INTERVIEWS → ONLINE ACCOUNT → FOLLOW-UP INTERVIEWS → THEMATIC ANALYSIS → REPORT/ PAPERS

1. Pilot interviews with 3 former LCCS students.

2. One-to-one semi-structured interviews with 5th and 6th year LCCS students.
   - 22 in 5th year/ 5 in 6th year
   - 15 males / 12 females

3. 5 fortnightly written online records of students' real-time engagement with LCCS + an art-based method to express what LCCS represented to them in a visual format.

4. Follow-up interviews with eight 5th year students.

5. Thematic analysis using Braun and Clarke's six-phase approach.

6. Producing a report and papers for publishing.

3 FINDINGS:

Paths students take to study LCCS
- Personal interest
- Influence from TY taster courses
- Influence from JC short course in Coding

Students' perspectives of the positive factors of LCCS
- Active student-centred learning
- Groupwork and collaboration
- Creativity in coding
- Teachers seen as facilitators

Students' experiences of how the subject was realised
- Practical versus Theory content
- Applied learning tasks – benefits and challenges
- Gender imbalance

What students learn and take from LCCS
- Transferrable skills
- LCCS perceived as a unique subject
- 'CS for all' approach
- Debunking stereotypes

4 VISUAL REPRESENTATIONS OF LCCS:

"We are always on our computers be it for coding or for research... We are always told to speak up about our ideas and even questions... Teamwork is the biggest part of computer science... computer science allows me to be a bit creative" (5th year, female)

"the image is supposed to be a teacher's point-of-view of a computer science class, with the students being represented as the anime class with the nerd emoji heads, because I feel like that's how the teacher might perceive the class due to their interest in computer science (nerds)" (6th year, male)

"it's needed in literally every aspect of like healthcare, business, law... everything needs computer science and applications of it" (6th year, male)