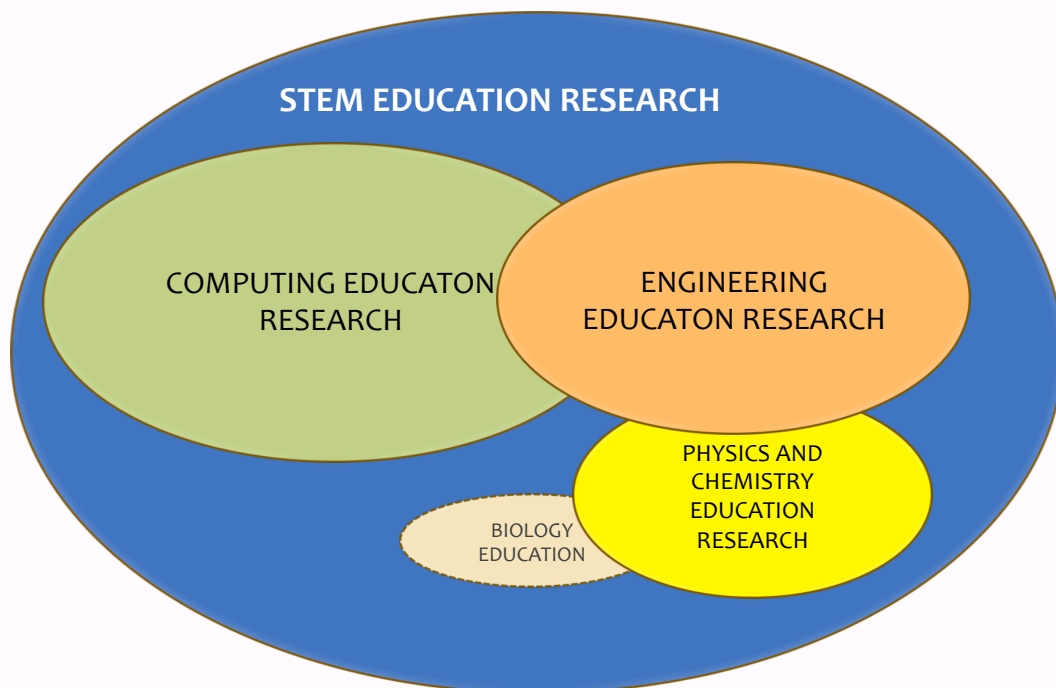
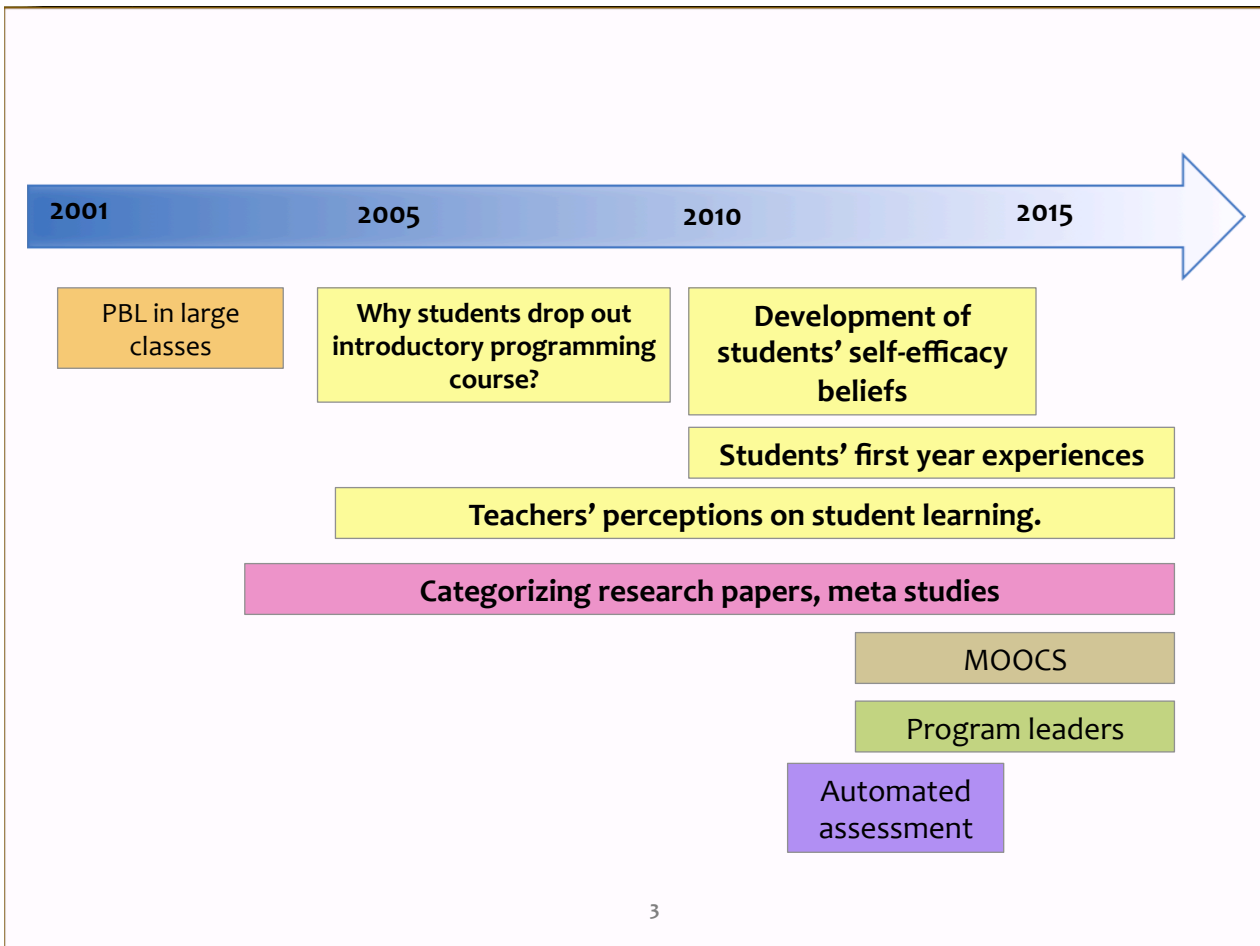




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## What students expect to study in CS degree?

Kinnunen, P., Butler, M., Morgan, M., Nylén, A., Peters, A-K., Sinclair, J., Kalvala, S., Pesonen, E. (accepted for publication). Understanding Initial Undergraduate Expectations and Identity in Computing Studies. *European Journal of Engineering Education*.

# Overview

- ◆ Motivation & research aim
- ◆ Research design & methods

- ◆ “So what?”, Why the topic is important? Why should I care about the results you about to present?
- ◆ What is your research aim/goal? What is “the ultimate big goal” you want to achieve?

## Example of how we tried to argue for the motivation & research aim in our study

- ♦ STEM education in general in Europe faces serious challenges relating to recruitment and retention.
  - ♦ We want to understand why some young people choose STEM related study fields
    - ♦ understanding of student expectations
    - ♦ their perspectives on the field of Computer Science (CS)
    - ♦ students' identity as a CS student and future professional
- better equipped to face the challenges of recruitment and on-going support.

## What we learned from the literature review

- ♦ Previous studies on retention in computing-related majors suggest that most students who decide to leave a computer science major do so during or at the end of the first study year
- ♦ Reasons for leaving computing major:
  - ♦ a loss of interest in the computing field and career.
  - ♦ feelings of not belonging
  - ♦ a notion that a more fulfilling identity is possible

disconnect between the students current' and aspired identity??

- ◆ How do students relate to their area of study?
- ◆ In what ways students envision themselves engaging and working in CS area in the long run?
- ◆ How does the education provider supports the students to develop this sense of place within the discipline?
- ◆ Students' expectations → students' experience??

## Why students' identities or satisfaction matters?

- ◆ Attract and keep variety of students who have great potential to become excellent computer scientists & contribute to the well being of society.
- ◆ Many universities use undergraduate experience surveys (e.g. in UK National Student Survey (NSS))
  - ◆ Results may have an effect even to the money allocation, not to mention the reputation of the university/study field

## From research aim to research questions

- RQ1: Why do students choose a computing related field of study?
- RQ2: What expectations do students have of degree program content as they commence their CS studies?
- RQ3: What kind of career expectations do students have on entering CS studies?
- RQ4: How does this form an insight into the CS identity of contemporary CS students?

**What kind of data you'd need to answer the RQs? How would you collect the data?**

## Example: Data collection

- ◆ Part of a longitudinal study
- ◆ Data from four universities
- ◆ Finland, Sweden, and UK
- ◆ The data was collected within a few weeks of students starting their university studies
- ◆ Questionnaire, essay
- ◆ Altogether data from 345 students

## References

- ◆ Kinnunen, P., Butler, M., Nylén, A., Peters, A-K., Sinclair, J., Kalvala, S., Pesonen, E. (accepted for publication). Understanding Initial Undergraduate Expectations and Identity in Computing Studies. *European Journal of Engineering Education*.
- ◆ Kinnunen, P., Marttila-Kontio, M., Pesonen, E. (2013). Getting to know computer science freshmen. In *Proceedings of the 13th Koli Calling International Conference on Computing Education Research*. ACM New York, NY, USA. 59–66.
- ◆ Mayring, Philipp (2000). Qualitative Content Analysis [28 paragraphs]. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, 1(2), Art. 20, <http://nbn-resolving.de/urn:nbn:de:0114-fqs0002204>.

Thank you 😊