

Comparing teamwork skills between CS curricula

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1. Teamwork

Teamwork is essential when working within Computer Science (CS). The foundation of teamwork skills is taught to students in university. Unfortunately, there is a gap between the skills that are taught and that are expected in industry.

Furthermore, it is unclear which teaching and assessment methods are used in Dutch to teach these teamwork skills.

2. TU vs non-TU

The Netherlands has Technical and non-Technical universities, both having CS Bachelors. The TU's have a stronger focus on Technology and Engineering, but there is a research gap in so far TUs and non-TUs actually differ.

3. Methodology

This study performed a qualitative case analysis between Dutch TUs and non-TUs, to what extent they differ in their teaching and assessment methods to teach teamwork skills. Leiden University (LU) and the Technical University of Eindhoven (TUE) their courses were compared based on the respective study guide data.

4. Group sizes

Group project setup differed the most. LU's projects were mostly done in pairs, whereas TUE had more large projects where students had to work with 6+ others. Here, TUE prepares students better for industry positions after graduation, whereas LU prepares students better for an academic career.

5. Constructive alignment

The process of identifying learning objectives and coupling them to teaching and assessment methods, constructive alignment, was comparable in both CS curricula. As Figure 1 shows, both universities scored comparable. Though half of the courses did not apply constructive alignment, which could decrease the effectiveness of learning teamwork skills.

6. Assessment methods

TUE's study guide defined the way students are assessed on teamwork skills most explicit. Examples are using group assessment in combination with peer reviewing. Defining this more explicitly contributes to less social loafing and more positive individual experiences.

7. Conclusion

The differences between TUs and non-TUs affect the teamwork skill set students end up with after graduation which impacts their career. Program makers can use this work to reflect on CS curricula and evaluate how teamwork is taught, whereas students can use this to make a more informed decision about where to study CS.

8. Future work

Further research could focus on better understanding the differences between TUs and non-TUs and check if there are other demarcation lines in which universities in the Netherlands could be divided on. Another direction is diving deeper in how study guide information is translated to actual in-class methods.

