# The Case of Research-based and Group-based Project Works

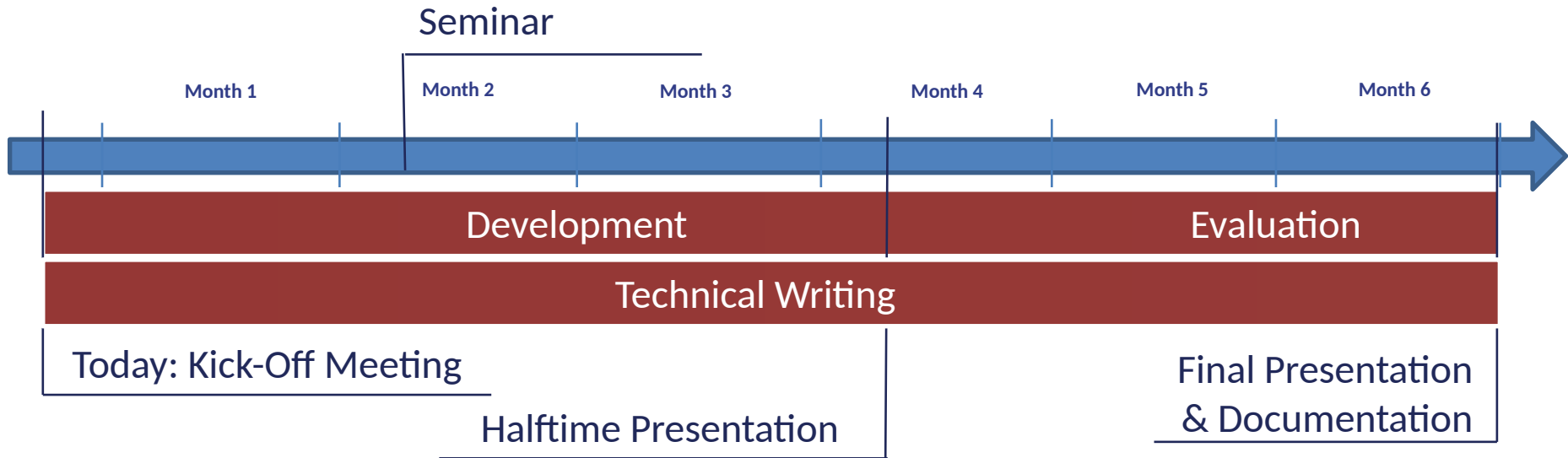## Prof. Dr. habil. Ansgar Scherp

**This report was part of my application programme for receiving the recognition as Fellow of The Higher Education Academy (FHEA)** with recognition on Nov. 20, 2019 (Reference: PR176575) of the UK Professional Standards Framework (PSF)

# Research- & Group-based Projects

- **What I Did:** introduced research- & project-based group assignments in 2008, *replacing traditional exercise sheets*
- *Initially*, with final oral exam, later: report-based mark only

- **What is a research- & project-based group (RPG)?**
  - Students' assignments are a data analysis tasks (text, graph) or advanced application development
  - Conducted in a small group of students during the term
  - Groups independently plan, design, implement, and evaluate their solution parallel to the weekly lectures
  - Results are written up in a scientific report

- **Rationale**: stimulate students' experience and ability to learn independently

# Project Timeline (6 Months)

Also a 12 months option available!

Seminar

Month 1 | Month 2 | Month 3 | Month 4 | Month 5 | Month 6

Development | Evaluation

Technical Writing

Today: Kick-Off Meeting

Halftime Presentation

Final Presentation & Documentation

- Roughly 2/3 of time for development and 1/3 evaluation
  - Yes, this means: "feature freeze" after ~ month 4 **!**
- Scientific paper and technical paper writing from early on **!**
- Seminar phase (optional)

# Advantages of RPGs

- Overcoming the **weaknesses of written exams**
- Allowing students to exploit their **potential** and **creativity**
- Working on **real-world problems**

- Early and frequent feedback based on weekly meetings
- Frequent feedback also successfully avoids the challenge in group work of ***free riders*** (Maiden & Perry, 2011)

- Potential to generate input for research papers
- Important to note: publication is optional and is not part of the grading

B. Maiden and B. Perry (2011): *Dealing with free-riders in assessed group work: results from a study at a UK university*, Assessment & Eval. in Higher Edu., 36:4, 451-464.

# Weekly Feedback in RPGs

- Frequent, formative feedback **ensures students reflect** on their work and keep focused (Biggs and Tang, 2011)
- Feedback is both informal and formal (Mellor, 2012), like
  - Informally discussing the progress with the group and
  - formal written comments on an early draft

- The type of feedback differs for *early stage ideas* vs *report nearly finished* and the individual group's needs
- For example, some groups need more feedback on the analysis task, some more on writing or others on how to manage the group's activities in general etc.
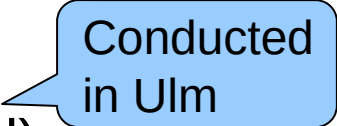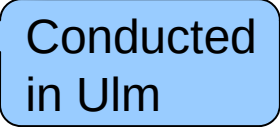
John Biggs and Catherine Tang (2011): *Teaching for Quality Learning at University: What the Student Does*, Open University Press.
Tony Mellor (2012): *Group work assessment: some key considerations in developing good practice*, Planet, 25:1, 16-20, DOI: 10.11120/plan.2012.00250016

# Publication-oriented Projects/Theses

- RGP adapted to the BSc/MSc theses and Master projects
- Alternative format to the traditional thesis/project format
- **Publication-oriented thesis/project**: same tasks at same level of difficulty as conducted in a traditional thesis
- **Difference**: directly structure and write the theses in a document that can be submitted at int. conferences
  - Format: 8-10 pages research paper (plus unlimited number of references)
  - Plus an additional technical documentation
- Again: publication is add-on and no impact on the grade

# Success Stories

- Successfully applied in the past for publications

- Success stories are, e.g.,

  - MSc Thesis Fabian Singhofer [DocEng '21] (B ranked), **Best paper award**!

    Conducted in Ulm

  - Project STEREO [iiWAS' 21] (C ranked)

    Conducted in Ulm

  - Project Text Summarization [iiWAS' 21] (C ranked)

    Conducted in Ulm

  - MSc Thesis Ishwar Venugopal [IJCNN '21] (A ranked), https://arxiv.org/abs/2102.07838

  - MSc Thesis Morten Jessen [DocEng '19] (B ranked), **Best student paper award**!

  - MSc Thesis Florian Mai [JCDL '18] ($A^*$ ranked), https://arxiv.org/abs/1801.06717

  - Project Quadflor: [KCAP '17] (A ranked)

  - MSc Thesis Gregor Große-Bölting [KCAP '15]: **Best paper nomination**!