

The Groupthink specification exercise: A realistic activity that teaches a challenging topic

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ICSE 2005 Education Track

Groupthink: teaching specifications

Goal: teach students to read and write specs

Problem: specs seem *boring* and *irrelevant*

(A problem with current teaching methodology.)

Solution: a fun and realistic group activity, in the form of a gameshow

Result: It works!

Students like it

Students learn from it

Goals in designing the activity

1. Realistic, well-motivated problem
Appears easy, but requires use of a specification
2. Interactive, lively, iterative event
Learn by doing
Learn by failing then succeeding
3. Appeal to participants with many backgrounds
Major, computer experience, job experience, ...

Schedule of the activity (2 hours)

Introduction to the problem (answering machine)

Groupwork (7-10 people) to specify the system

Gameshow to evaluate specifications

Each team member answers individually; no right answer; points for plurality answer; bonus if whole team agrees

Discussion (students describe in their own words)

More groupwork to refine specifications

Second round of gameshow

Prizes and wrap-up discussion

What do students learn?

Technical lessons:

- rules and priorities
- use cases
- state diagrams

Group organization (and communication)

- choose a leader; don't argue
- listen to everyone
- make sure everyone understands

Different students learn different lessons

Conclusion

Success is due to achieving the goals:

- Realistic, well-motivated problem
- Interactive, lively, iterative event
- Appeal to participants with many backgrounds

The Groupthink specification exercise is available from `mernst@csail.mit.edu`

- Includes lecture slides, handout, scoring spreadsheet, etc.
- Has been used outside MIT; over 600 students