Teaching Electrical Engineering (EE) to non-EE majors in blended (flipped) classroom:
Creation of the flow experience in online Self-Assessments

Alexander Ganago, Hyunsoo Kim, Mohammad Rasouli, Brent Vece, Huajun Zhang, and Diana Perpich

Theoretical perspective

The Bloom’s taxonomy provides a framework for learning and teaching

The flow experience

Pre-requisites for the optimal performance:
- Specific goals
- The level of challenge matches the skills
- The feeling of being in control
- Immediate feedback

The optimal conditions for learning are between boredom and anxiety

Skills

Boredom
Optimal learning
Anxiety

Changes & Challenges

Changes
- Pre-Labs online: Theoretical questions are offered online but hands-on questions (show how you will build the circuit, etc.) are still done on paper
- Self-Assessments and Homework: SA cover the lower 2 levels of the Bloom’s taxonomy; Homework targets the higher levels
- Homework becomes shorter, because students cover lower levels in SA
- The grading scheme is changed: Rewards for SA and participation lead to reduced cost of the exams; the scores for SA “saturate at the top”

Challenges
- Very robust, sustainable, and reusable online repository for Question Pools and Self-Assessments is necessary; CTools are not perfect
- How to assess the effectiveness? Are we fostering intrinsic motivation?
- Do students get the flow experience?

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