

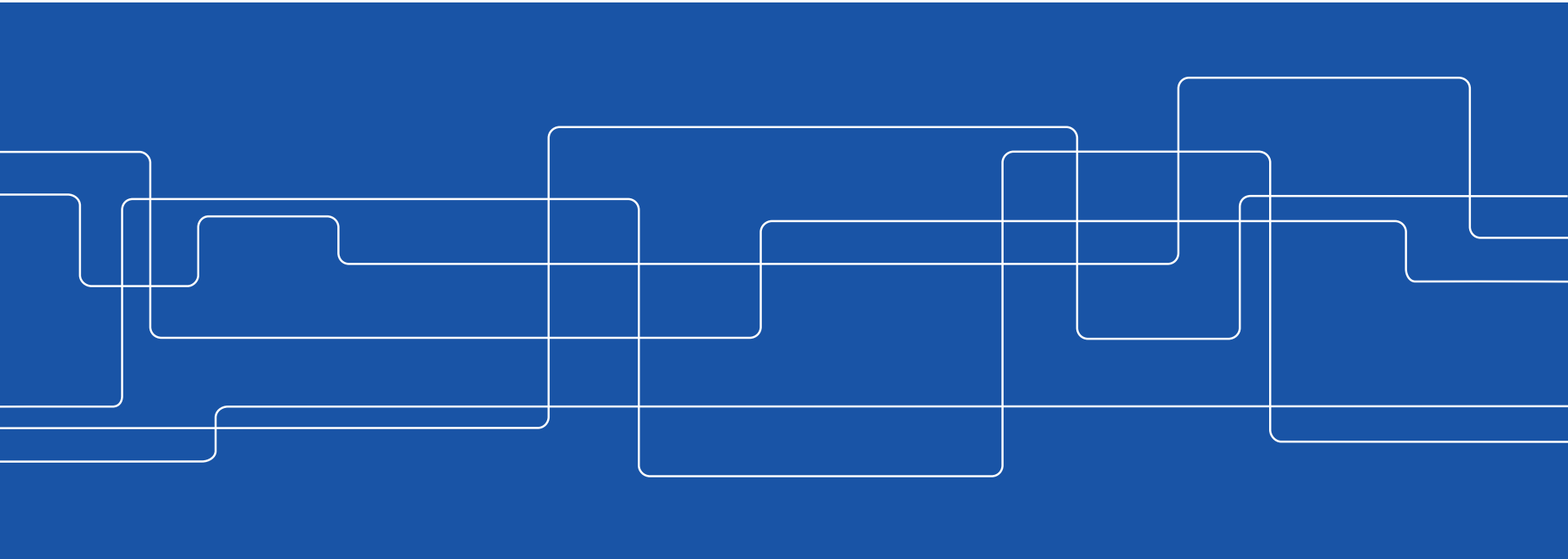


# Teknikvetenskapens lärande

## Teaching Computing - The Good the Bad and the Ugly

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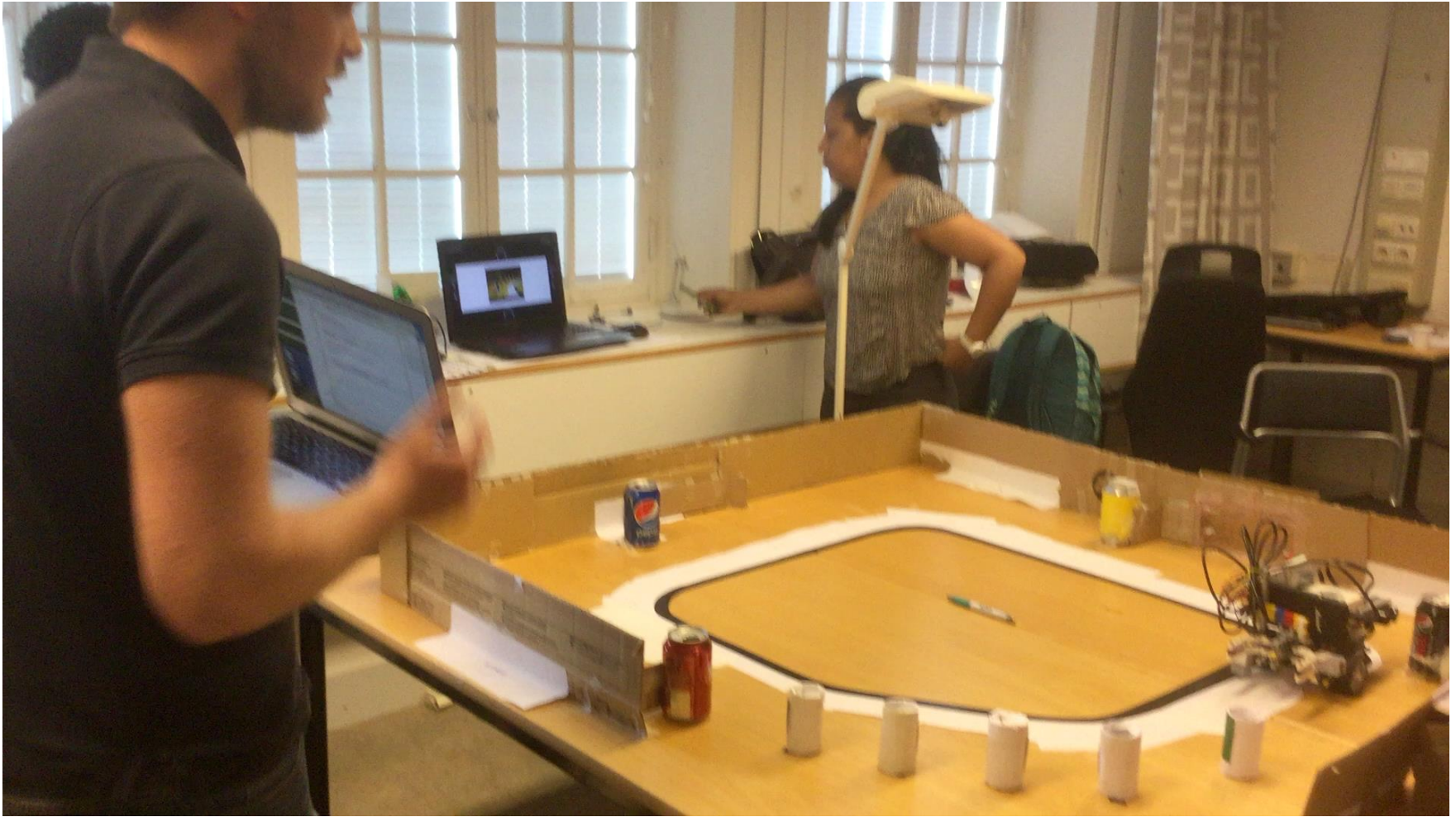




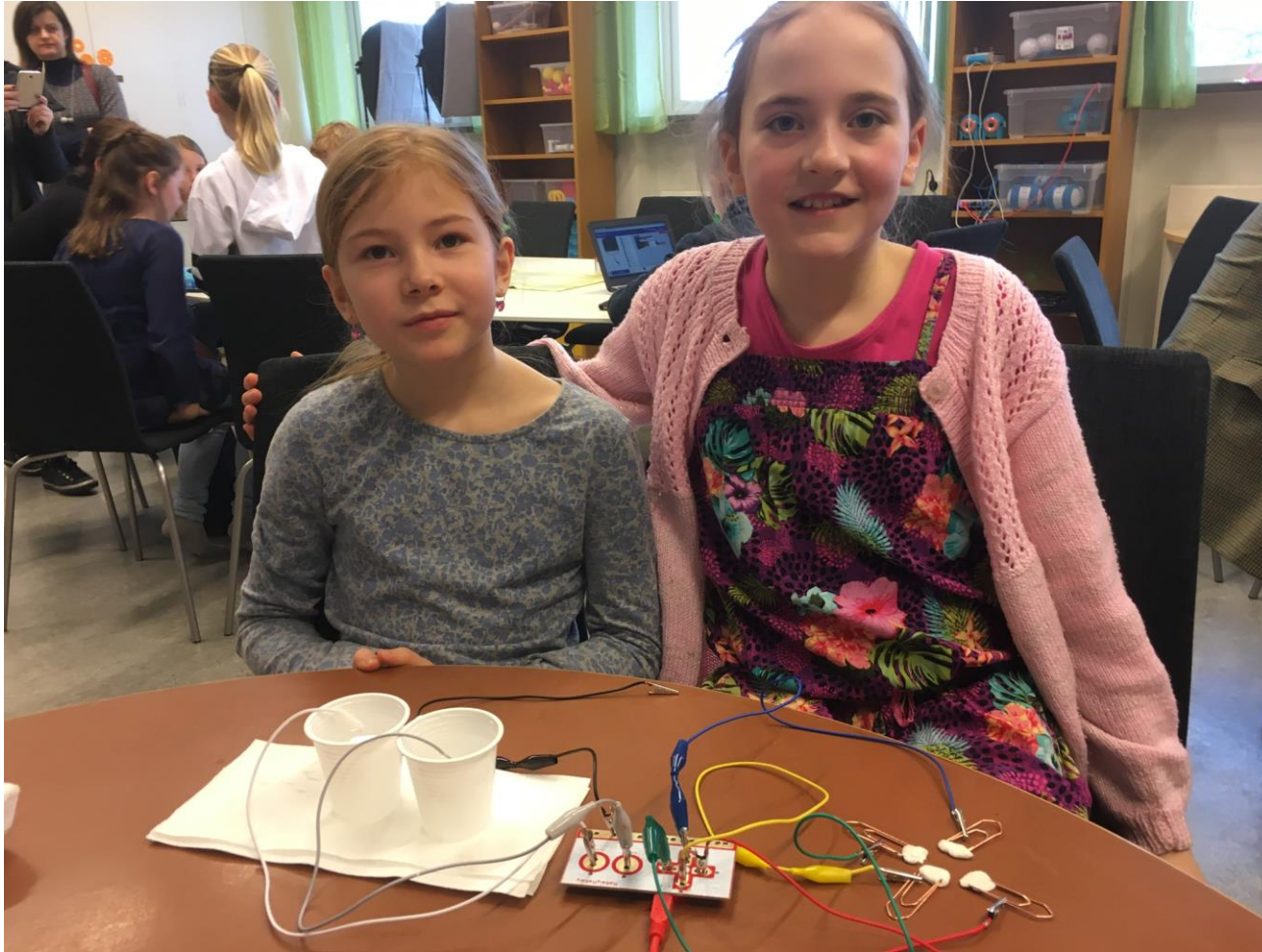
# The Good

- Computing is much more than just “programming”
  - see M. Tedre, *The Science of Computing: Shaping a Discipline*, Taylor & Francis, 2014.
- Creativity is a key to motivation
  - see J. Bennedsen, M. Caspersen, and M. Kölling, *Reflections on the Teaching of Programming.*, vol. 4821, Springer-Verlag, 2008.
- Students need space to explore and make mistakes - we learn from our mistakes
  - see TRG Green ICER Keynote, Kent, 2006
- You don't need a computer
  - see Bell et al. - *CS Unplugged*
  - see Dagiene et al. - *Bebras*

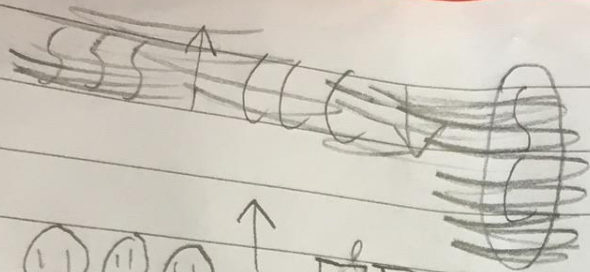
# What does “good” look like?



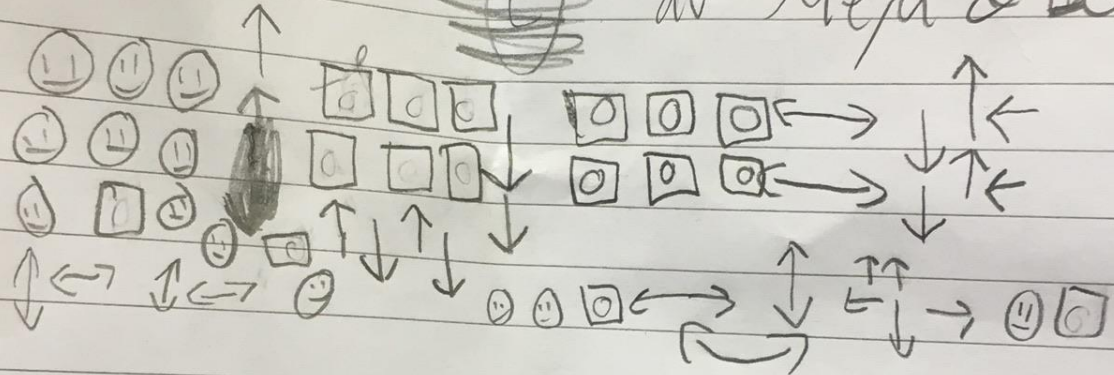
# What does “good” look like?



Meja & Leia



Make Makey sing  
av Meja & Leia



Meja & Leia



# The bad

- Focus on artefacts and technology without context
  - C. BISSELL, D. CHAPMAN, C. HERMAN, and L. ROBINSON, Still a gendered technology? issues in teaching information and communication technologies at the uk open university, *European Journal of Engineering Education*, 28 (2003), pp. 27–35.
- Solving the teacher's problem (esp. focus on mathematical problems)
  - see J. Bennedsen, M. Caspersen, and M. Kölling, *Reflections on the Teaching of Programming.*, vol. 4821, Springer-Verlag, 2008.
- Communication climate and inclusiveness
  - see L. J. Barker, K. Garvin-Doxas, and M. Jackson, Defensive climate in the computer science classroom, *SIGCSE Bull.*, 34 (2002), pp. 43–47.
- A focus on syntax rather than problem solving
  - see Y. B.-D. Kolikant and M. Mussai, “So my program doesn't run!” definition, origins, and practical expressions of students' (mis)conceptions of correctness, *Computer Science Education*, 18 (2008), pp. 135– 151.



# The Ugly

- Language wars
  - see R. Lister, A. Berglund, T. Clear, J. Bergin, K. Garvin-Doxas, B. Hanks, L. Hitchner, A. Luxton-Reilly, K. Sanders, C. Schulte, and J. L. Whalley, Research perspectives on the objects-early debate, in ITiCSE-WGR '06: Working group reports on ITiCSE on Innovation and technology in computer science education, New York, NY, USA, 2006, ACM Press, pp. 146–165.
- Folk pedagogies
  - see S. Firmin, J. Sheard, A. Carbone, and J. Hurst, An exploration of factors influencing tertiary it educators' pedagogies, in Proceedings of the Fourteenth Australasian Computing Education Conference- Volume 123, Australian Computer Society, Inc., 2012, pp. 157–166.



**Thank you for your attention**