

How do Swedish technology teachers assess programming education in grade 4-6?

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 - programming, grades K-9
 - northern continental tradition => no methods nor concepts
- Mathematics
 - Algebra*
 - Programming in visual programming environments. How algorithms are created and used in programming.
 - Technology
 - Working methods to develop technical solutions*
 - Control of one's constructions or other objects with programming.
 - “Get a glimpse of digitalization”
 - Code writing, problem solving
 - Holistic perspective => creativity, control, simulation, and democratic dimensions

- Teaching & assessment intricately linked
 - Study assessment => understand teaching
- Do the existing governing documents provide sufficient guidance for teachers to teach and assess their students in programming?

- Control structures: Loops, conditions and sequential
- Functions, procedures, methods
- Algorithms
- Variables (and Constants)
- Parameters (input to a function)
- Data structure
- Decomposition (breaking down a program into smaller parts)
- Reusability
- Arrays (list with variables or constants)
- Logical thinking
- Formal language grammar and syntax (formalism)

...educational research and pedagogical literature, rather than traditional computer science research...



- 7 teachers, experienced in programming in school
- Survey, underline grading criteria and abilities
- Semi structured interviews
- Zoom, \approx 1 h
- Show 2-4 examples



Teaching: 28 years

Programming: 6 years

7,5 credits

Motivation: stay updated & a passion for digital technology

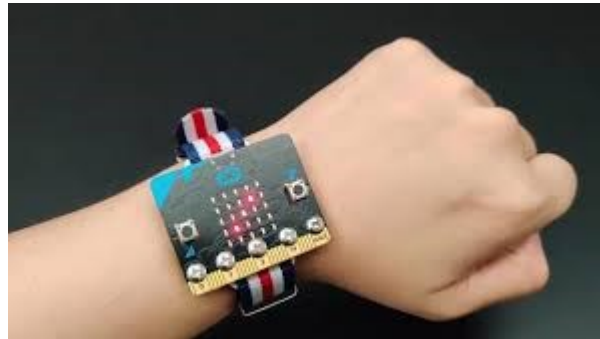
- Abilities & grading criteria
 - the capacity for technological development and construction work



- Abilities & grading criteria
 - the capacity for technological development and construction work
 - knowledge of technical solutions and their interaction

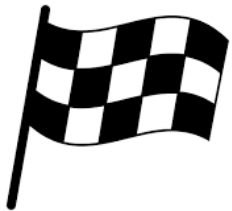


- Abilities & grading criteria
 - the capacity for technological development and construction work
 - knowledge of technical solutions and their interaction
 - reflecting on technical choices, consequences, and the evolution of technology




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- Goal



- critical thinking, independent problem-solving, collaboration, and reflection,
- practical activities, encouraging experimentation
- foster technical knowledge, construction skills, and programming proficiency

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- Do the existing governing documents provide sufficient guidance for teachers to teach and assess their students in programming?
- Camilla: Integration of curriculum in programming education in technology  holistic evaluation
- Identify key characteristic (e.g. 'Big ideas') => Comprehensive & progressive approach to programming edu. in technology



Preparing student => skills & knowledge

Thank you for your attention!

Clarification, questions, or
thoughts?