



Materialitet

Hvorfor stof ikke bare er stof

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 +  = @rhachmann

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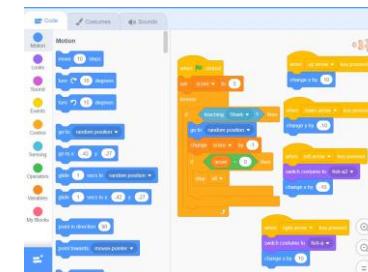
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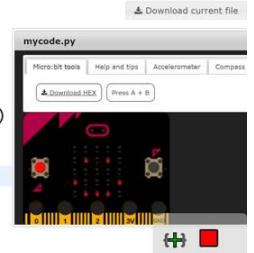


Materialiteten og stoffet

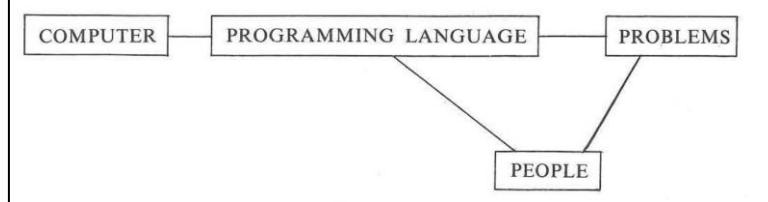
Hvilken betydning har materialiteten og stoffet for indholdsudvælgelsen og deltagelsesmuligheder.



```
mycode.py + {create.withcode.uk}
1 from microbit import *
2
3 while True:
4     if button_a.is_pressed():
5         display.show(Image.HAPPY)
6     else:
7         display.show(Image.SAD)
8     sleep(500)
```



Materialitet som begreb

- Andrea diSessa: Computational Literacy
 - *Material intelligence* med et kognitivt/ social og materielt aspect
 - "...Socially widespread patterned deployment of skills and capabilities in a context of material support to achieve valued intellectual ends". (diSessa, 2001, s.19)
- Peter Naur:A diagram illustrating the interconnected nature of computation. It features four rectangular boxes labeled "COMPUTER", "PROGRAMMING LANGUAGE", "PROBLEMS", and "PEOPLE". The "COMPUTER" box is connected by a horizontal line to the "PROGRAMMING LANGUAGE" box, which is further connected by a horizontal line to the "PROBLEMS" box. From the bottom right corner of the "PROBLEMS" box, a diagonal line extends down and to the left, ending at the "PEOPLE" box. All connections are represented by thin black lines.

```
graph LR; COMPUTER[COMPUTER] --- PL[PROGRAMMING LANGUAGE]; PL --- PROBLEMS[PROBLEMS]; PROBLEMS --- PEOPLE[PEOPLE]
```
- Paul Douris – “Stuff of Bits – Det digitale har en materialitet, der afføder bestemte måder at forstå og kommunikere om verden på.

To eksempler:



Som strukturerende resource i elevernes skriveprocess. → Afgrænsning (design constrain) + mønsterenkendelse + modalitetsskifte (repræsentationsformer)

Fagsyn

Kunst
Håndværk
Videnskab

Indholdsopfattelser:

Samfundsfag
Sag-fag
Æstetikfag
Programmeringsfag

Faglige aktivitetsformer

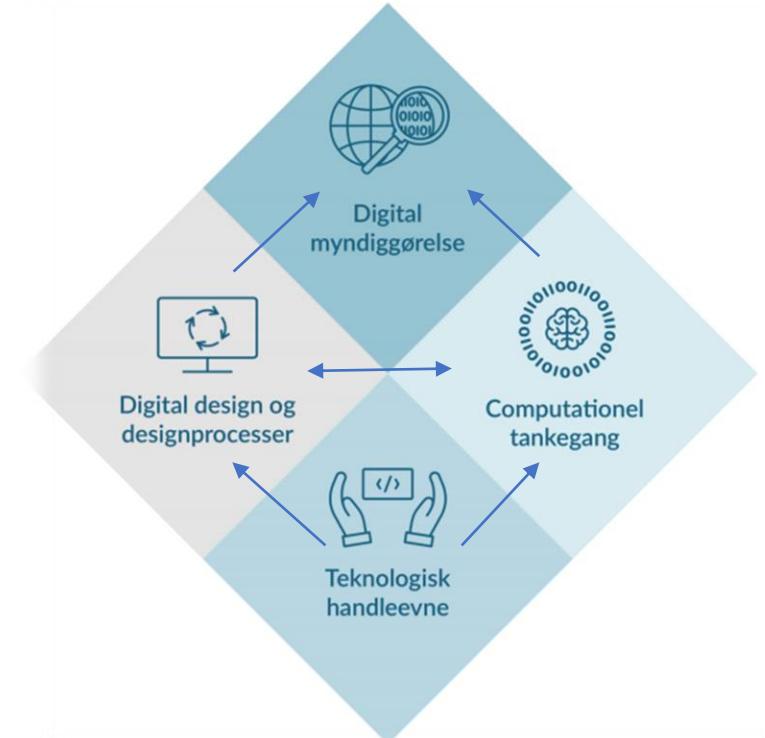
Produktion
Reproduktion
Perception
Interpretation
Refleksionsfag



Teknologianalyse + analog
programmering + decomposition +
mønsterenkendelse → kropslig

Opmærksomhedspunkter

- Er designprocesserne i kompetenceområdet tilstrækkeligt fokusiseret på elevernes *material intelligence*?
- Hvilke didaktiske implicationer har materialitetsaspektet for lærerens stof- og indholdsudvælgelse?



Referencer

DiSessa, A. A. (2001). *Changing minds: Computers, learning, and literacy* (1. paperback ed). The MIT Press.

Dourish, P. (2017). *The stuff of bits: An essay on the materialities of information*. The MIT Press.

Hachmann, R. (2022a). The Cyber Weapon: Decomposing Puzzles in Unplugged Computational Thinking Practices with Computational Objects. *KI - Künstliche Intelligenz*.
<https://doi.org/10.1007/s13218-022-00756-8>

Hachmann, R. (forthcomming). Things to think With. Learning Tech

Naur, P. (1965). The Place of Programming in a World of Problem, Tools and People. *Information processing 1965*, 195–199.