

IT, work environment and health

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<http://www.it.uu.se/research/hci>






IT and the work environment


IT and work environment





Stress at work

IT and work environment



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Successful introduction of IT...

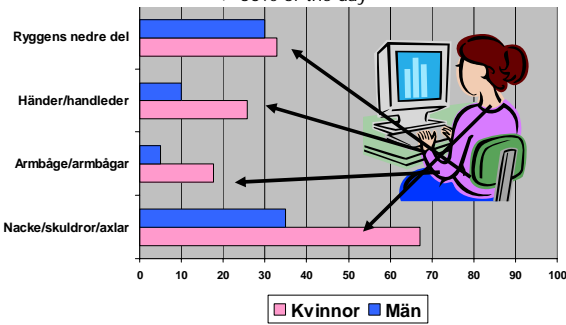
- Requires that users are not harmed, not exposed to health risks...
- We must create good, healthy and sustainable work, where people can be efficient and where they like to stay....

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Physical problems - pain

Have problems, pain daily when working with computers
> 50% of the day



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Physical problems

- E.g. pain in arm, shoulder, back, stomach, head, sleeping disorders
....
- ...is not only caused by physical load, but also by psychosocial or cognitive load and by stress!
- E.g. a user interface that "overloads" our short term memory can cause physical pain and damage.

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Work environment

- *Physical* - ergonomics
- *Psychosocial* – relations, support etc
- *Cognitive*
 - You are not “allowed” to work efficiently
 - Something prevents us from using our competencies and skills in an efficient way.
 - Are extremely important to understand in computer supported work.

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Cognitive work environment problems

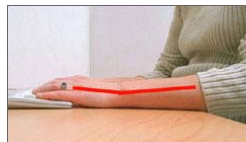
- Give some examples....
- Why do they occur?
- How can they be prevented?

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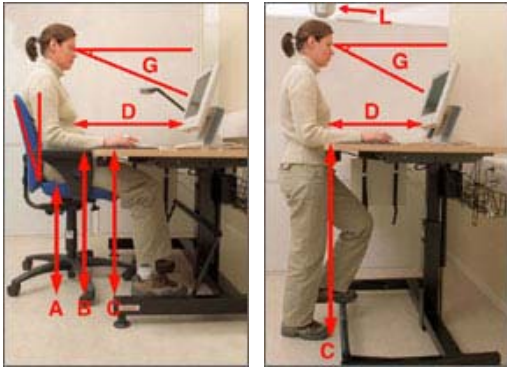
Ergonomics

- Much is known....



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Ergonomics



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The law?

- **Swedish work environment law:** all work must be characterized by:
 - variation,
 - social contact and cooperation,
 - consistency between work tasks,
 - possibilities for personal and professional development,
 - self control,
 - professional responsibility.

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Laws and regulations

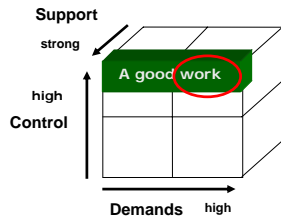
- Arbetsmiljöverkets (AV) föreskrift **ASF 1998:5, "Arbete vid bildskärm"** (work at computer screens):
- Rules and advice concerning physical and psychosocial factors when working with computers, including software and IT-systems.
- 7§ : "*Arbete vid bildskärm som är starkt styrt eller bundet i fysiskt eller psykiskt avseende eller är ensidigt upprepat får normalt inte förekomma.*" (Work that is strongly controlled, in a physical or psychic (mental) way, or is monotonously repeated, must not normally occur.)

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A good and sustainable work

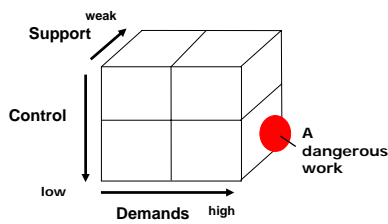
■ Karasek & Theorell:



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A bad, unhealthy work



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How do we feel at work?

- (Increased) Use of computers often leads to (experienced) increased demands.
- This must be combined with increased self control and social support.
- Today we often see the opposite! Experienced self control and social support is decreased.
- This will result in work environment problems.

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Health aspects

- "Chefen kan göra dig sjuk"
- Nyberg, Anna: *The Impact of Managerial Leadership on Stress and Health Among Employees*
- <http://diss.kib.ki.se/2009/978-91-7409-614-9/>

(This is about the effects of bad leadership. Can the results be relevant for bad computer systems?)



Demands, control and support?

- Give examples of demand aspects.
- Give examples of self control aspects.
- Give examples of social support aspects.



Stress

- The unbalance between demands and possibilities (resources) to live up to these demands.
- Long term stress is extremely harmful. The result can be irreversible damage.
- Stress requires recovery periods.
- Stress amplifies other (e.g. physical) problems.



The largest work environment problem

- ...is to feel that you are not doing a good work.
- Nothing must prevent us from doing so!

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To measure things

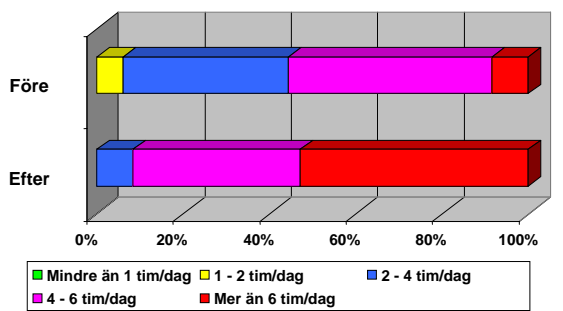
- Can we e.g. measure demand, control, support?
- Yes, one example.

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Changes in time at computer

Hur länge arbetar du i genomsnitt med datorstöd?



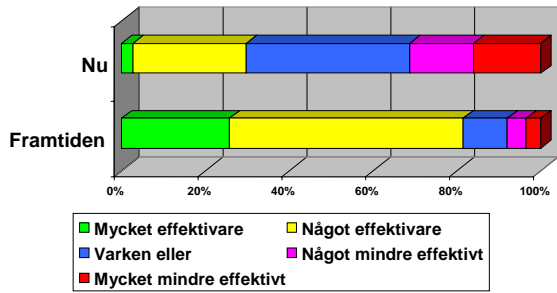
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Expectations

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Anser Du att systemet gör att Du kan arbeta effektivare?



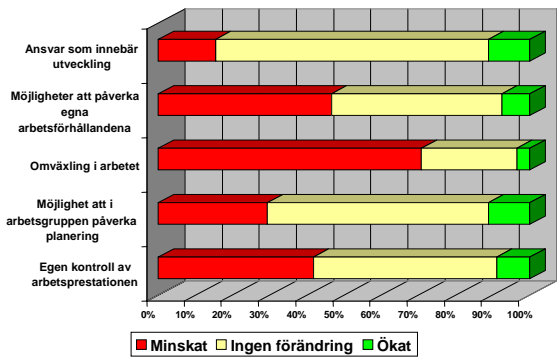
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Changes in positive factors

IT and work environment

Vad anser Du att införandet av det nya systemet inneburit beträffande



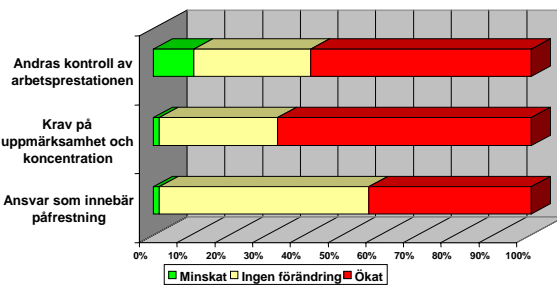
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Changes in negative factors

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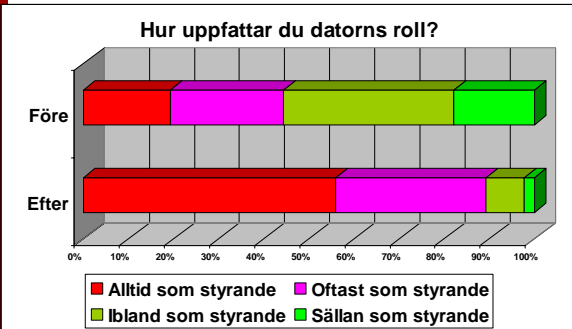
Vad anser Du att införandet av det nya systemet inneburit beträffande



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Changes in self control



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The example

- The introduction of the new system resulted in severe work environment problems.

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References, sources

- See the separate document listing several different sources of information!

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Assignment (No 2)

Work environment and IT-supported work

- Select and define the assignment subject (see suggestions below)
- Perform the assignment work.
- Write a report
- Present your work orally (Thursday, Nov 19)

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Assignment examples

- Study a workplace and analyse the work environment (e.g. somebody working with administration at the IT-department...). Observations, interviews, different work environment aspects....
- Read a PhD thesis on the subject and write a short summary and analysis.
- Study a work environment report in detail and analyse it.

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Assignment examples cont.

- Search for work environment statistics from different sources and write a report about the present situation (in Sweden or another country. Or compare basic data from different countries).
- Compare the Swedish work environment law with similar laws from other countries. How are they applied in practice?
- Write a (theoretical, or apply it to your assignment 1??) report on the possibilities to base a work environment analysis on the result from a vision seminar process. (Preliminary methods exist – ask Bengt).

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Assignment report

- The report should reflect the work (one work week per group member)
- Write a proper scientific report (even if it is short)
- Background, problem, theory, method, activities, results, evaluation, discussion, references...
- The report can be handed in as paper or electronically
- Collect all your assignment reports in a folder!

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