



# Reading Instruction and Use of ICT Tools for Students with Dyslexia in Denmark

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**TIETGEN**  
KOMPETENCECENTER  
FOR FREMTIDEN

# Program



- Limits for dyslexics in taking an education before 2002
- ICT rucksack from 2002
- Legislation protecting dyslexics
- From primary school to university
- Possibilities and limits
  
- ICT tools – demonstration

# Denmark before 2002



- Dyslexics did not receive any form of reading and writing help
- Very few dyslexics could complete an education
- Dyslexics were taught in special classes
- Exclusion
- Low self esteem
- Dependent of family members, friends etc.



# Denmark after 2002



- ICT rucksack for dyslexics: Possibility to get a computer, reading and writing programs, scanner etc.
- Beginning of digitalization of teaching material (only accessible to a few students)



# Limits of ITC rucksack



- Teachers and parents did not know it existed or how to get hold of one.
- Teachers, pupils, parents did not know how to use it.
- Heavy, very visible → not inclusive.
- Exams were not digitalized.
- ICT tools were not authorized at the final exams.



# CONVENTION on the RIGHTS of PERSONS with DISABILITIES



The United Nations Convention on the Rights of Persons with Disabilities became effective in **May 2008**. Its purpose is to ensure that the estimated 650 million people with disabilities **worldwide** can enjoy the **same rights and opportunities as everyone else**, and lead their lives as **full citizens** who can make valuable contributions to society. It is wide ranging and covers civil, political, economic, social and cultural rights.



Denmark signed the convention in August 2009.

# Principles of the Convention



- Freedom to make their own choices and be independent of others
- Non-discrimination
- Full and effective participation and inclusion in society
- Respect for difference and acceptance of persons with disabilities as part of human diversity



# Municipal primary and lower secondary school's purpose § 1



- The purpose of school is NOT to teach students to read, but more generally to "provide students with **knowledge and skills** that **prepare** them for **further education** and make them want to learn more," and also to "develop working methods and create opportunities for experience, and absorption, so that students develop **awareness, imagination and confidence** in their own abilities and background to commit themselves and act. "





# Individual student's needs and condition - Act § 18



.... “the choice of teaching and working methods, teaching aids and selection must in all subjects according with the public school purposes, objectives of subjects and topics and **varied to match the individual student's needs and conditions.**”





- An ICT rucksack, which consists of a PC, for example, reading and writing programs and training how to use them.
- “Study help”, for example help in writing assignments.
- Specially-designed study materials, study books in particular electronic format that the computer can read (NOTA).



UNDERVISNINGENS  
MINISTERIET  
UDDANNELSES-  
STYRELSEN

# Higher education



- SPS
- Study help
- Digitalization
- ICT (computer, tablets, smartphones)
- BYOD – Bring your own device



# Special educational programs for dyslexics



- Municipal primary and lower secondary school
- Special and reading classes
- Upper secondary shorter general education program for dyslexics
- Basic vocational course for dyslexics
- 9th form/grade for dyslexics
- Ordblinde efterskole = Independent boarding school for lower secondary students for dyslexics



# Dyslexic education for adults



Dyslexic Education for adults, § 1 ... to improve the participant's option to use compensatory strategies and methods that increase the participant's ability to function in employment, education, community and private life.



# The municipal social administration – everyday life



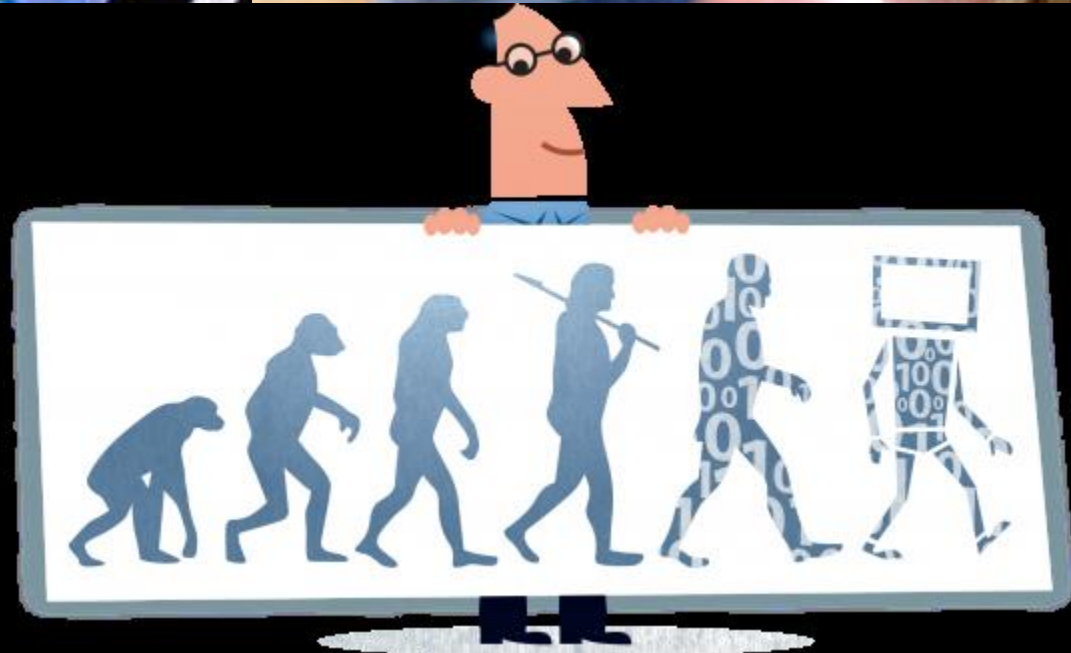
- To promote opportunities for individual citizens to fend for themselves or to facilitate their daily lives and improve quality of life.



# Digitalization



Lifelong Learning Programme



# Municipal primary and lower secondary school

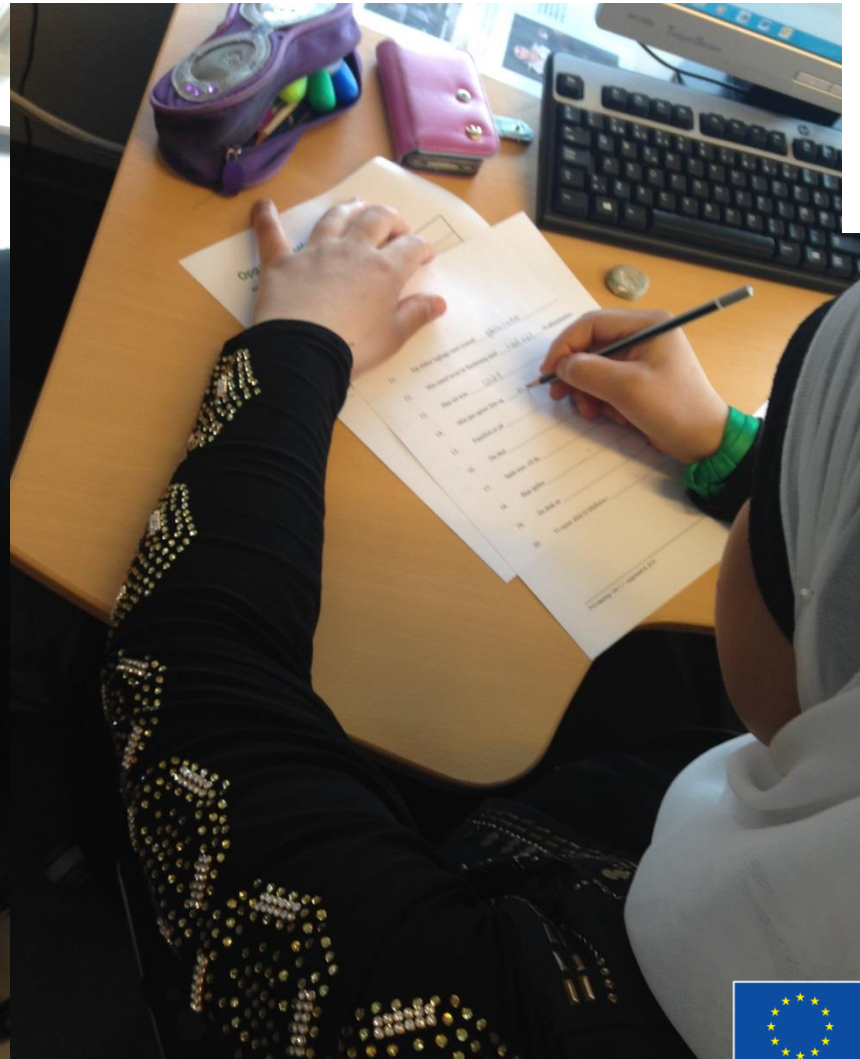
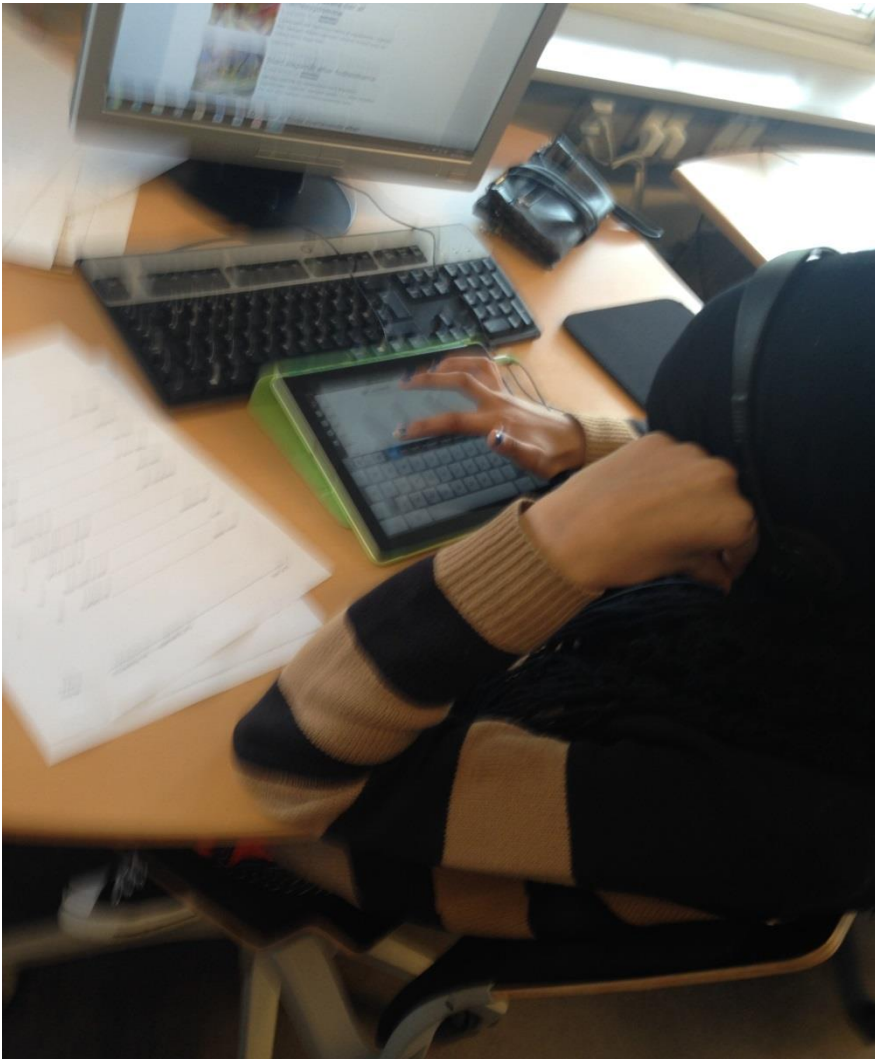


- ICT tools for all pupils = inclusion
- iPads
- New view of reading and evaluating
- Digitalized teaching material (materialebasen)
- Differentiated teaching (Case Fatma)





# Differentiated teaching



# Final exams



- Digitalization of final exam
- ICT tools allowed for the exams:



Text to speech for the reading comprehension, speech to text for the essay, and word prediction for the dictation.



# Digitalized tests + national test



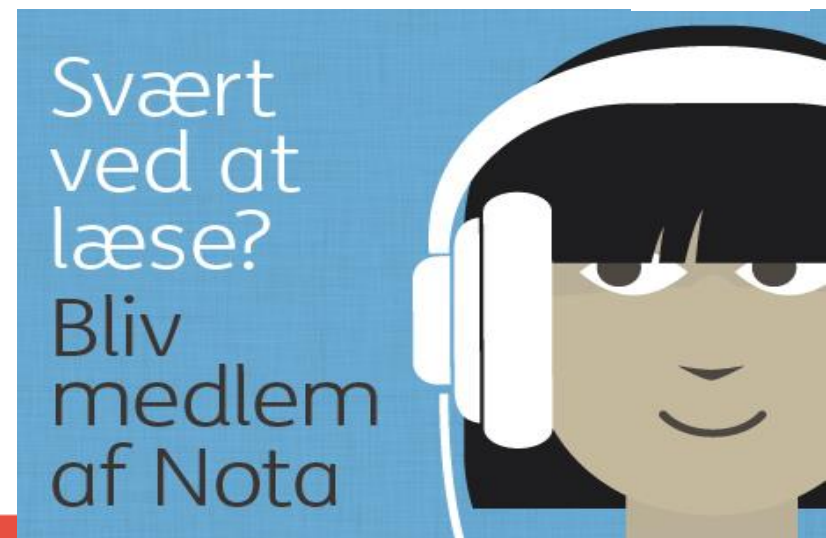
## Easy access to digitalized test



# NOTA – Digital library



- From August 2013 any teaching material can be digitalized
- Ministry of Education and Youth
- SPS
- e17



# ICT tools



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深圳市领派科技有限公司

Approved by ICTTutors.com



# Possibilities no matter hardware



- Digitalization – scanning (OCR)
- Electronic / online dictionaries
- Digital books and teaching materials
- Text to speech (eventually sound files)
- Speech to text
- Word prediction



# Computer – CD ord



- Word, outlook, office, wordpad, PDF – all windows programs
- Many reading options – word, sentence, text -
- Writing options – prediction, checking spelling with reading.
- Word list
- Personalized profile.







# Intowords



## Video presentation



# Mobile112



## Mobile112 (possible to translate in Latvian)



# The National Labour Market Authority



Free ICT tools for one year



# Inclusion and Accessibility



- ICT tools are **authorized** in almost all kinds of education from primary school to university
- Possibility of **digitalized tests/exams**
- Possibility of **digitalized teaching materials**
- ICT tools are now **accessible** to almost everybody
- ICT tools are **inclusive**, almost invisible



# Limits of ICT tools



- Schools have **too poor economy** to provide necessary help.
- Teachers and study counselors **ignore dyslexics' rights** and how to receive support.
- Fast development of technology.
- Difficulties establishing ICT tools.
- Teachers are not always able to use and teach in ICT tools.



# Reading or not?



- Change of mentalities: is it ok to use ICT, is it cheating, is it real reading?
- How to including ICT tools in special pedagogy?

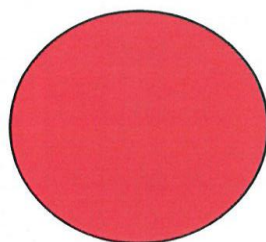


# Conventional reading and writing



”Konventionel”  
Læsning og  
skrivning

Læse- og  
skriveundervisning

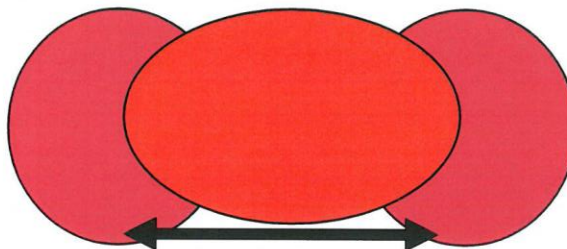


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# Reading and writing technology



"Konventionel"  
Læsning og  
skrivning  
  
Læse- og  
skriveundervisning



Læse- og  
skriveteknologi

Oplæsning,  
PC-læsning

Skrivehjælp,  
ordforslag og  
Dictus



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# Inclusion: means and goal



Folkeskolens formål

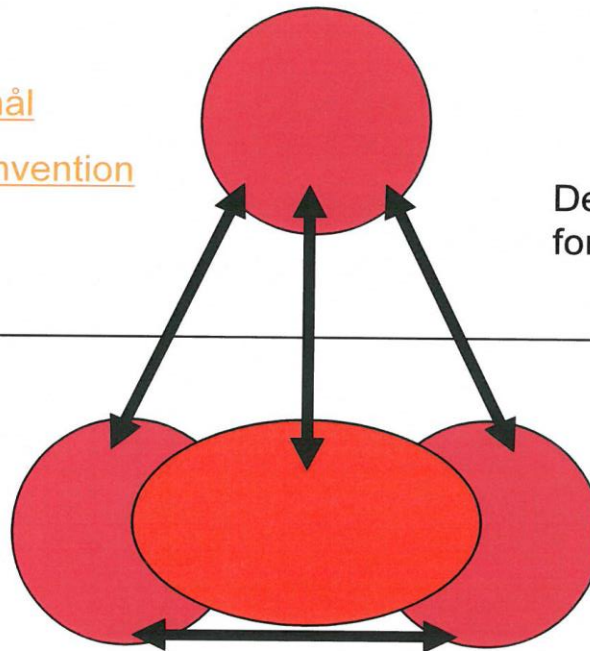
FN's Handicapkonvention

**Mål**

**Middel**

"Konventionel"  
Læsning og  
skrivning

Læse- og  
skriveundervisning



**Inklusion i**

- Skole
- Uddannelse
- Erhverv

Deltagelse i samfundet  
for alle

Læse- og  
skriveteknologi

Oplæsning,  
PC-læsning

Skrivehjælp,  
ordforslag og  
Dictus



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# References Legislation



Municipal primary and lower secondary school's :

<https://www.retsinformation.dk/Forms/R0710.aspx?id=145631#Kap1>

Consolidation Act of public school special education and other special educational assistance:

<https://www.retsinformation.dk/Forms/R0710.aspx?id=25013>

United Nations Convention on the Rights of Persons with Disabilities:

<https://www.itu.int/net/itunews/issues/2009/06/38.aspx>

After primary school:

<http://www.hokbh.dk/hjaelpemidler/stoettelovgivning/Oversigt/#beskæftigelse>

Dyslexia education for adults:

<https://www.retsinformation.dk/Forms/R0710.aspx?id=25011>



# References Education + ICT



About ICT in primary school:

[http://bolig.hmi.dk/media/upload/Hvordan\\_kan\\_folkeskolen\\_undervise\\_ordblinde\\_me.pdf](http://bolig.hmi.dk/media/upload/Hvordan_kan_folkeskolen_undervise_ordblinde_me.pdf)

Erik Arendal's presentation:

[http://ucl.dk/wp-content/uploads/gravity\\_forms/20-10c8da1765eebd9ac55c8367faf153ce/2014/03/Erik-Arendal-Fra-individuel-it-rygs%C3%A6k-til-l%C3%A6ringsredskab-for-alle-Marts.pdf](http://ucl.dk/wp-content/uploads/gravity_forms/20-10c8da1765eebd9ac55c8367faf153ce/2014/03/Erik-Arendal-Fra-individuel-it-rygs%C3%A6k-til-l%C3%A6ringsredskab-for-alle-Marts.pdf)

About the national test for students with difficulties:

[http://uvm.dk/~media/UVM/Filer/Udd/Folke/PDF11/110921\\_de\\_nationale\\_test\\_for\\_elever\\_med\\_laesevanskeligheder.ashx](http://uvm.dk/~media/UVM/Filer/Udd/Folke/PDF11/110921_de_nationale_test_for_elever_med_laesevanskeligheder.ashx)



# Referencer ICT tools



Dictus:

<http://dictus.dk/referencer.html>

Intowords:

<http://intowords.com>

[http://intowords.com/files/intowords\\_uk\\_pressrelease\\_dyslectics.pdf](http://intowords.com/files/intowords_uk_pressrelease_dyslectics.pdf)

Mobile112:

<http://www.mobile112.info/Mobile112/Start.html>

[https://www.youtube.com/watch?v=SbOHX8GjuHk&feature=player\\_embedded](https://www.youtube.com/watch?v=SbOHX8GjuHk&feature=player_embedded)

CD ord:

<https://www.mv-nordic.com/dk/produkter/cd-ord>



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