Using ICT in Education to meet Special Needs

Sharing Knowledge about best Practice

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Students are all equal to the situations at the school. This is the aim of changing the teaching and learning at inclusive schools.

Since the students’ learning experiences and their ability to solve problems are different, they need different challenges, which inclusive schools provide if possible.

Due to changes of technology, society, and culture, the possibilities of the schools change all the time. Nowadays, the information and communication technology (ICT) is often used to provide adequate challenges to all students.

This is the theme of this memorandum. It brings into focus initiatives with ICT fostering learning for all students.

In particular, it focuses on the teachers’ need of inspiration and up-to-date knowledge in this field. It suggests various initiatives suited for the sharing of knowledge about best practice.

Elements of Current Efforts

Without teacher competences in the field of ICT there is always a risk, that ICT is used for rest or reward¹. Thus, preconditions regarding proper use of ICT are²:

1. Teachers are familiar with the use of the technology in learning situations;

2. Teachers are able to cover the special needs of their students sometimes with and sometimes without the application of ICT into the classrooms.


The teachers’ need of ICT literacy can be satisfied by means of in-service education and local inspiration. For example, Danish teachers participate with great interest in the KVIS E-Learning Programme. Popular topics are, among other things, development of school practice and of reading abilities. These topics are related to the integration of ICT into education.

The evaluation of the KVIS E-Learning is very positive indicating that many participants are inspired and qualify their teaching through these courses³.

Moreover, many Danish teachers have completed the Educational Driving License – a general in-service education concerning teaching and learning methods and the significance of ICT in that respect⁴. The evaluation⁵ is very positive indicating that the course has impact on the participants’ teaching methods⁶.

In order to realise the learning potentials of the application of ICT into the classrooms, teachers need knowledge about the use the ICT to compensate for learning difficulties⁷. For example, the use of ICT for reading and prediction is very promising. The research in this area shows that students with reading and spelling difficulties (around every fifth students at the Danish folk school) benefit a lot from the digital tools. Current research thus recommends a preventing effort where the students alternate between reading with their eyes and ears according to their needs⁸.

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⁴ www.skole-it.dk.
It is well known that trees and flowers grow from below, but they are irrigated from above. In parallel, exchange of ideas often marks the first step when teachers develop their teaching and learning practice.

Teachers learn about development of learning activities by means of many sources, i.e., journals, printed reports, resources on the internet, in-service courses, and conferences. In Denmark, a great number of teachers visit the KVIS web-site to get news, course materials, information about conferences, etc.

Currently, there is great interest for conferences. For example, a Danish conference, “ICT as a learning tool – an alternative to exclusion”, had three times as many participants as expected. Statistics from the Danish part of a European study indicate great interest for similar conference activities. The study covers three counties – København, Frederiksberg Frederiksborg, and Viborg.

In general, teachers are anxious to learn about and make use of the learning potentials of ICT.

In addition, many teachers consider the application of ICT into education a reason to reconsider their practice.

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9 www.kvis.org
10 The conference was announced through the KVIS web-site, www.kvis.org.
11 The study is conducted as part of the SPERO project. The overall objective of this project is to provide data concerning the field of special educational needs. The data offers valuable information in the area of teacher education. The Danish part of the project is headed by Mr. Ole Hansen, Danish Ministry of Education.
12 http://manolito.image.ece.ntua.gr/spero.
In particular, most teaches consider the internet a useful learning resource, and many use it in their teaching and leaning.

The teachers report that using the internet often causes important changes in their way of teaching.

Concerning the use of ICT, the Danish part of the SPERO project also shows that new educational practice has to be developed, and it will be a personal challenge for the teachers to do that.

In particular, it will be a challenge to acquire the knowledge and skills needed.

The study shows great interest among teachers concerning in-service education regarding inclusive schools and students with special needs.

In order to cover these needs, two new modules of the Danish ICT Driving Licence, “ICT as a means of compensation” and “Reading and ICT”, have been offered recently. In addition, a KVIS E-Learning course, “Reading for All”, covers methods of reading education and, in particular, reading of digital texts.

In order to use ICT to create adequate challenges for all students, schools need a proper strategy (action plan). Without such a plan, the use of ICT might be random and casual (“what’s on the shelf?”)

For example, an action plan can describe the efforts to implement the portfolio method at a school. Teachers in Denmark and many other countries are often favourable to the so called portfolio method, where the students document their learning efforts by means of folders of a Learning Management System. Their folders contain, among other things, their individual objectives, outlines, drafts, products (text, image and sound) and feedback provided by their teachers.

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13 [www.skole-it.dk](http://www.skole-it.dk).


Well planned actions concerning the application of ICT into schools can:\footnote{Rasmussen, T., Fisker, B. & Velstrøm, A. (2003). Forslag til projektbeskrivelse - barrierer og potentialer i forbindelse med anvendelsen af IT i folkeskolens special-undervisning. Frederiksberg Kommune.}

- Transfer initiatives from special education to normal education;
- Increase the inclusion of students with special needs in the local school districts;
- Improve the continuous assessment and tailor the challenges at the school to the particular needs of each student.

**Suggestion of future Efforts**

The experiences concerning actions plans and teaching methods in order to provide adequate challenges for all students at schools can be presented at conferences and project days.

At these occasions, the presentations and debate can be initiated by questions such as:

- How can we adjust the attitudes to students with special needs in order to make schools more inclusive\footnote{Hansen, O. et al. (2000). *Future Prospects of ICT in Special Education*. Copenhagen: Danish Ministry of Education.}?
- How can we change practice in order to increase the inclusion of these students\footnote{Andresen, B. B. (2003). *Pioneering Technologies – IT-use that makes a Difference*. Copenhagen: Danish Ministry of Education. (www.kvis.org/centralweb/indikatorer/PDF/3_gb_banebrydende_1102.pdf )}?
- How can we develop an understanding of the learning potentials of the use of ICT – related to subjects, individual behaviour and social aspects – and how can we realise these potentials in a way that are equal to all students\footnote{Rasmussen, T., Fisker, B. & Velstrøm, A. (2003). Forslag til projektbeskrivelse - barrierer og potentialer i forbindelse med anvendelsen af IT i folkeskolens special-undervisning. Frederiksberg Kommune.}?
- How do the potentials of ICT influence the way we evaluate the efforts of each individual student, and which methods of assessment can be recommended?

\footnote{17 Rasmussen, T., Fisker, B. & Velstrøm, A. (2003). Forslag til projektbeskrivelse - barrierer og potentialer i forbindelse med anvendelsen af IT i folkeskolens special-undervisning. Frederiksberg Kommune.}
\footnote{18 Hansen, O. et al. (2000). *Future Prospects of ICT in Special Education*. Copenhagen: Danish Ministry of Education.}