Chapter 3

Effective Use of ICT for Inclusive Learning of Young Children with Reading and Writing Difficulties

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ABSTRACT

This case presents the three-year research and development IT Folder Project (PIF), which has been aimed at facilitating the inclusion of young children with potential reading and writing difficulties in normal classes. The research focuses on everyday practice in schools and produces knowledge that gradually qualifies and consolidates a sustainable implementation strategy for the municipality involved regarding ICT as a change agent for inclusion. The children with potential difficulties are identified though tests and the adults and the classes involved "accompany" the children into the project. Thus, the adults involved are not necessarily passionate about ICT; they are representative of the average Danish schoolteacher. The case presents the first year and a half of the project and the initial results regarding the quality of the children's inclusion process along with modifications of the screening tests and organizational changes in the municipality and the local schools based on these results.

ORGANIZATION BACKGROUND

The IT Folder Project (PIF) differs from previous Danish projects on ICT implementation in two ways. First, the project involves teachers who can be described as early and late majority adaptors of ICT (Rogers, 1995), while previous projects have worked with voluntary innovators and early adaptors. The experience has been that projects involving innovators and early adopters tend to fade away as soon as the special conditions that have made the project possible are withdrawn or if the innovators who drive the process change job. Therefore, PIF produces valuable knowledge of the conditions for implementing ICT in everyday practice in Danish schools. Second, as an explorative and design-based study, PIF is carried out as an iterative collaborative process that aims to use and share knowledge as it is produced and at all levels in the municipal organization. PIF is based on iterative principles of

project management and project design derived from the field of Interaction Design (Sharp, Rogers & Preece, 2007). Thus, PIF is a research-based iterative intervention that involves two primary schools, including both the teachers and the school administration, as well as the local Pedagogic Development Centre (PDC) in the municipality, the local politicians and decision makers.

The processes and everyday practices that PIF intends to change are the organizational structures within the school system that deals with children who are identified as having reading- and writing difficulties. The present practice in Denmark is that children who are observed by their teachers to have problems are tested in third grade. If they are diagnosed as dyslexic they are offered special needs education from fourth grade. The special needs education can take place either by letting the children remain and in their class most of the time and giving them segregated lessons some of the time, or by transferring the children to a dyslexic school. Often these children, who are in general able-minded, have lost both their confidence and their desire for learning because they feel they have failed many times. They have developed a repertoire of strategies to hide their difficulties and additionally, they are seriously left behind in school subjects.

In addition to bringing about change in organizational structures, PIF also intends to impact the way the teachers and other resource persons think about reading and writing difficulties. This is done by introducing a PIF philosophy according to which the children's difficulties are perceived as contextual conditions. The idea is to move the focus of agency away from the traditional approach by which the difficulties are treated as personal defects. On the contrary, the PIF philosophy focuses on changes in the everyday context that remove barriers for the children's inclusion in the normal classes. According to Holmgaard (2007) and the Danish Ministry of Education (Undervisningsministeriet, 2003), reading is traditionally understood as the relation between a person and a text. According to the traditional view, reading and writing are understood as the ability to code and decode content represented as signs, e.g. letters, syllables and sentences. Reading and writing difficulties are seen as problems with coding and decoding signs. The problems become a handicap – a personal disability – that requires intervention in terms of special needs initiatives. This discourse revolves around persons *with* reading and writing disabilities. Holmgaard's research demonstrates that children experience their own *reading difficulties* when they observe other children's *reading abilities* (Ibid: 8). The children experience that they are different from other children. However, the nature of the children's social experience depends on how *being different* is handled by the child and by others. According to Holmgaard, adults' reactions are pivotal for the child's self-esteem: whether they think they *have* a disability or whether they think they *are in* a difficult situation. When difficulties become a situation a person *is in*, the focus for possible interventions becomes the context and the practice, *not* the person. This interpretation emancipates reading and writing from being defined solely as the ability to code and decode signs. On the contrary, the PIF philosophy is based on the assumption that modification of context and practice may remove barriers and allow the person *in* difficulties to participate on equal terms and be included in the normal class. Thus, according to the PIF philosophy:

- to read may mean to use *text-to-speech* applications that transform text to synthetic voice
- to write may mean to use *speech-to-text* applications that transform spoken words into text or applications for dyslexics that support spelling and generation of words.

Using these tools, the child can participate and work with the same subject as the other pupils, but not necessarily at the same level (Tetler, 2000).

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