TEACHERS REFLECTIONS on USING the COMPUTER for WORK and LEARNING

In Primary and Secondary school in Sweden

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This article describes the teachers' reflections on the work to implement computers in a Swedish school (years 2010-2014).

A municipality decided to launch a one - one project (one computer for each student and teacher).

The study includes a local primary school (grades 1-9).

The school has 38 teacher and 535 students representing 25 different languages (cultural backgrounds).
The aim of the study was to take advantage of the teachers' experiences from work in the classrooms.

- What do they face during this transition period?
- How do they think about managing the practice?
- What kind of imbalances could they see and what type of activities did they create?
**Background to the study:**
Earlier research in One – One Project (2010 – 2013)


*Lärarens ledarskap med datorer i undervisningen.*
*En aktionsstudie i tre klassrum i grundskolan (1-9) och ett i gymnasieskolan*

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**Selection of groups**

- **Small town, Group A, B, C**
  - Selected 86 pupils (total 120 pupils)
  - Selected 17 teachers (total 20 teachers)

- **Big town, Group D**
  - Selected 21 pupils (total 1250 pupils)
  - Selected 4 teachers (total 130 teachers)

<table>
<thead>
<tr>
<th>Group</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
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<tbody>
<tr>
<td>Pupils</td>
<td>22</td>
<td>23</td>
<td>20</td>
<td>21</td>
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<tr>
<td>Year</td>
<td>1/2</td>
<td>4</td>
<td>8</td>
<td>1</td>
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*Table 1. Groups A-C comprise of primary pupils (17 teachers) and group D secondary pupils (five teachers)*
Concept in the first study (intervention)

Intervention, university course in three steps, Including: ICT knowledge, special education and measures handling program (22.5 ects)

I used Activity theory and Action research built on observations and interviews

Activity Theory (Leontiev sv. 1986) highlights the motives and goals of the work.

Engeström (2001) was used to identify links between individuals, topics, activities, and environment.
In the second study (2013)

Data collection was based on interviews with three school principals and seven teachers in August 2013.

Invitation was given to all teachers at the school but an expressed preference was that teachers who represented various school subjects would participate.

The interviews were recorded and transcribed.

(Classroom observations were also conducted in relation to the study.)
The results (second) were analyzed and some patterns and perspectives emerged:

Teachers talk about

1) the *freedom* to manage the practice,

2) and *different directions* in the work

3) to *discover possible ways* to go, and

4) to *justify* why they are *handling* practices in different directions.

The perspective shows the teachers' thoughts on

a) *meeting the children* b) *to use the computer in school activities*, and c) *to work towards the goals of the school*. 
Teachers' descriptions take up leadership and how their own needs and the needs of students must be addressed.

Seven patterns were identified from the teachers' statements that positive motives for carrying out the work.

- Self-innovation,
- broader interest,
- private entrance and motivation to learn,
- to feel their own safety,
- diversity,
- cultural and language backgrounds are not seen as getting in the way of the work.

They saw the tangible benefits of the work of individual students and the school when using computers in education.
Comparing the results from the first study (2010-2013) with the results from the second study (2013).....

We can see some differences between the teachers thoughts about handling the work in practice (in the classroom):

The *concept* is different in the two studies:

- The first study contains intervention activities for teachers and headmasters: education and computers for all
- The second, only contains intervention of computers for all
Results from the Action research, the first study, the teachers expressed that they needed:

1. - courage to handle the work in the classroom
2. - **freedom** to organize the work (own and at school)
3. - the will and **motivation** for trying new ways (own)
4. - time for searching new material and plan activities (own and at school)*
5. - **possibility for** trying out tools and programs (own and at school)*
6. - **the opportunity** to create the lessons (at school)
7. - try out and reconstruct the structure in the classroom and at school
8. - education and time to take in new thinking (own and at school)*
9. - support from colleagues (own and at school)
10. - safeness and support from headmaster (own and at school)
11. - pedagogical discussions with colleagues (at the school)
12. - close technical support (own and at the school)

The words **marked in black** are components expressed from the teachers in the second study as well
All expressed needs was not fullfiled in the beginning of the project (the first study) but solved during the dialog process.

Some needs the teachers had to manage themselves that resulted in a higher burden (work outside the school) marked with *

All the needs (components) the teachers expressed had a positive connection to the teachers motivation for implementation of computers in the classrooms activities (as tools).
We have **inside factors:**
The needs (components), courage, will, competens, selfconfidence trying new ways to handle practice and material.

We have **outside factors:**
Support, pedagogical discussions, education, freedom to explore lessons in interchange with colleagues and headmasters. This is more of a **collective development process.**

In the second study we lack all the components related to outside relations and interchange with colleagues. **This is more of a solitare project.**

The different components, motivate the teachers to develop their practice. (2010, 2013)
Conclusion so far:

The Teachers in the second study:

- did not make use of their colleges as resources
  they expressed that we have different ways to handle practice and
- even if the teachers handle the same subject or similar subjects they did not discuss interchance
- or ask for headmasters support
- or for education or time for discussions with colleagues

They trust their self as resources
A question raised: is it relevant to compare conditions and components from the two projects?

The same conditions are: it took place in the same community, the same school leaders are involved, all teachers and students got a computer

Comparing:
- an Action research and Activitie Theory driven project in a relatively homogen school culture

with

- a non action driven project? Activitie Theory is used, a multi heterogen school culture

What are the results?