

Karen Borgnakke

karen@comart.dk & karenb@hum.ku.dk

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Reflecting the Actual and the Future ICT based Strategies – Case studies in the practical learning context

By Karen Borgnakke

My research in the practical learning context show (Borgnakke 2007) that when schools uses IT-based strategies they are challenging both the conventional system and the progressive concepts of teaching, learning and evaluation.

The challenge is about the new large of scale where ICT-strategies are embedded in the learning environment. ICT as media and technology in use in the process of learning is the new soundboard for how to perform and how to learn.

From the schools perspective this is also a matter of developing a school culture where doing well and being well educated not only refer to the classic literacy and numeracy but also refer to the late modern question about what I will call Technacy. Technacy is the new life skill having impact on how the next generation will perform and learn.

Let me jump to conclusions before I give you examples

In my point of view the main challenge will be like the question: what happens when ICT becomes a “natural” part of every day life and what happens when Technacy becomes a part of the professional school life?

There will of course be more than one answer to my question and the process of practical IT implementation is rather complex. But so fare my research done in the IT schools being in front show answers closely related to the different school levels, meaning that

- The leader level need to regard the question of how to perform with Technacy as a matter of school culture and innovative strategies rather than a matter of just administration or management. Here the LMS system will be challenge
- The colleagues level need to regard the same question but as a matter of professional pedagogical acting. Here the LMS system and the whole MIX of internet and web-based

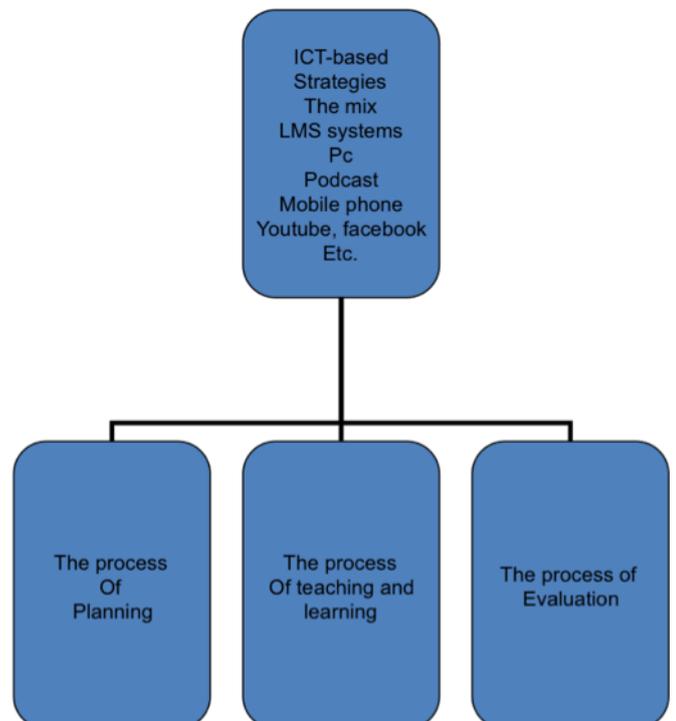
resources will be challenges through the process of planning, teaching and evaluation.

- At the learning practice level and in ‘the inner work of the classroom’ both teachers and groups of students need to regard that learning ‘with Technacy’ is related to scholastic culture as well as to youth culture and non-formal learning. Here the whole MIX of media and technology including the students own experiences with Mobile Phone, YouTube, Facebook etc. will be challenging their learning process.

If this was the conclusion the following examples will elaborate the case studies related to the overview giving in the first map below.

Case studies

- The case studies will be composed of mapping the area, material collections, observations and interviews at
- The management level – the faculty level
- The colleague level teacher/ teacher
- The teaching and learning practice level ... covering the process, ICT-based strategies and tools



Performativity with Technacy – Among leaders

If we go straight to the leader level I can give an example from my interview at the school loaded with ICT from cellar to ceilings. One on the leader team members gives me a kind of State-of-the-art:

”It has developed in the right direction, so a lot of things you can actually just do – if you have the basic ICT- tools on right places. So everything according to network, machines we already have. The fact that we have so much of it makes us different. I have participated in the start of those kinds of experiments before, and earlier you need *to think* a lot (...) Now you just need to state the fact: Are there wireless covering all over the cabin? There are. And are there the needed network facilities? When you have a knowledge platform like ours – namely Fronter – then you are almost good driving. You can do what you need to do. So the question about what happens (...) – in a way it is already happened (...) if you are surrounded by the wireless network and surrounded by network facilities in terms of a knowledge platform (...) then you are in so good shape that you can qualify those things the external world demands.”
(Int. Leader team, B-School, Borgnakke 2009)

When all parties are surrounded by IT, IT in it self is not in focus. It is the new background and you can ‘see’ and ‘hear’ how much IT-strategies already have an impact on the culture. They are doing IT-strategies; they are talking IT-language, interacting and networking by using LMS (Learning Management System). All together the new professionals are demonstrating what Technacy means. But they also seem to be in the newest dilemma and risk zone, namely that Technacy with lack of literacy and democracy can be risky business. The same goes for the risk of to much hyping new media, youth culture and technical culture. There can be a lack of reflective pedagogical culture.

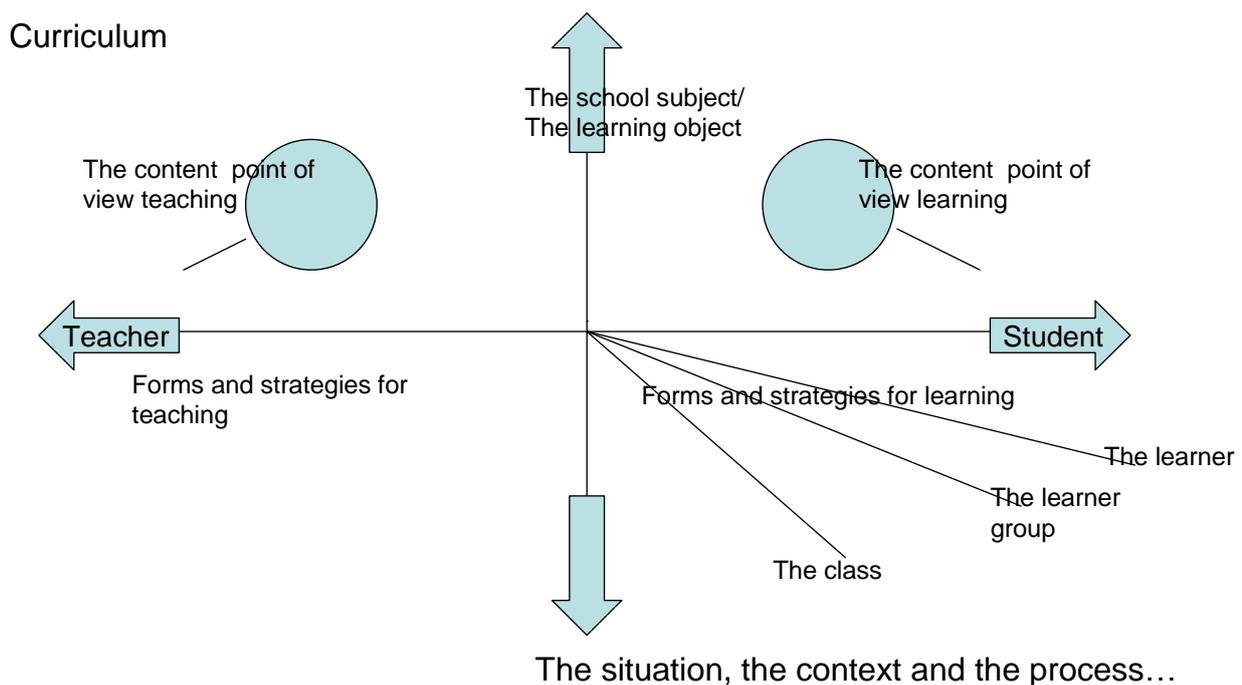
On this background I will recall another of my school cases. The school is placed in a suburb, with a lot of students with another ethnic background than Danish. The school is so to speak a newcomer in the field of high culture and scholastic learning and building up Technacy is regarded as a creative alternative to the classic literacy.

The pedagogical challenge is, according to the head of the school, that all school levels are to be looked upon as being “in practical transition” not occupied in “fancy experiments” but rather in “everyday school life and experience”. As the head says:

“We no longer take part in those huge and fancy experiments. It is more important for us that we are involved in ‘the new tendencies’ like IT learning on an everyday basis and on ordinary conditions”.

Let me therefore go to the ordinary conditions and the daily routine in the inner work of the classroom. If it is ordinary it is at the same time very complex relation between the four components in the process of teaching and learning. Further more the complex is divided in two areas of the room, namely the teacher’s area (see below the left side of the map) and the students /the learners/ area (see the right side of the map).

The four components in the process of teaching and learning



(The model origin from Borgnakke 2007:31)

The teacher need to navigate and need to use the ICT strategies to move from teacher directed teaching to students directed learning. And this move is THE challenge and when the teacher succeeds it can give ‘a kick’ as the next example will stress.

The experienced teacher - Among the professional teachers

At one of my case schools especially the teachers allocated the 3.g- classes are experienced in the sense: they have participated in the history of school development being in front as innovators including being a part of the first IT-classes. In my interview the teacher talks about the work with the class in very enthusiastic terms. The teacher confirms that the challenge is a matter of didactics where the Danish as school subject is challenge both by Literacy and Technacy. The teacher also confirms that it is a matter of pedagogical practice and interaction between teacher and students.

As she said “I got a ‘kick’ when I realized that the centre was moving and shifting from ‘the teacher as the permanent centre’ to ‘a space out in the classroom’. There were always more people in the room having something of relevance to contribute with.

TD go back to the sentence:” The person who works learn” and elaborate the centre moving and shifting with ” The worker shifts from being the teacher to being the students”.

(Cit. Borgnakke 2007:20-22)

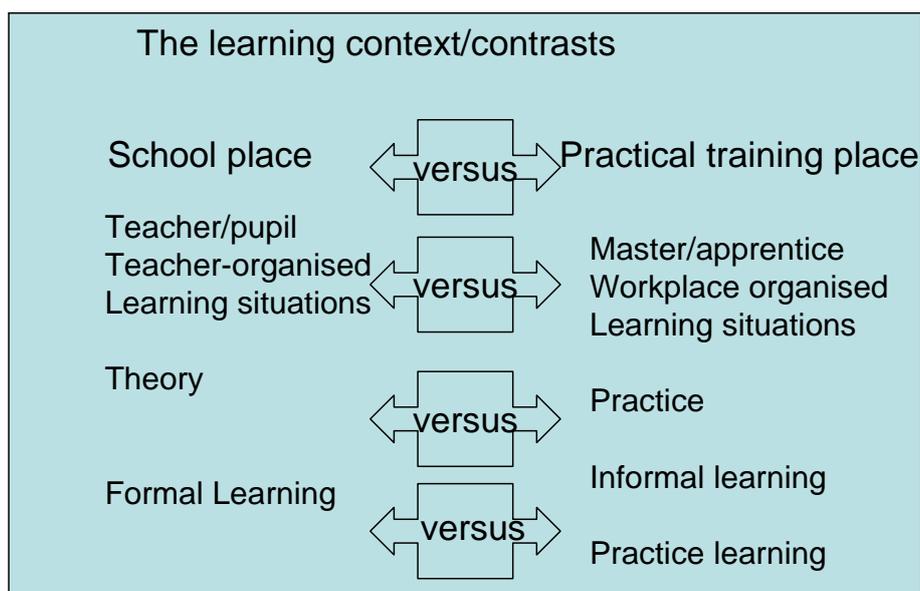
This description of basic functions makes sense if we will understand the background for professional ‘user driven’ technology. And when the parties use personal computers, the Learning Managements System and use the internet, mobile phones, create Power Point or Podcast they are not only using IT-tools they are creating a space for teaching and learning. The act of IT-using is the creative act of communication, interaction and learning.

We need to put attention to the move from teacher directed learning to student directed working and learning

According to the teachers we need a reference to the pedagogical impact in terms of learning workplaces. The teachers refer as example to *Writing workplaces*, where the students working with the computer as a tape writer with embedded extra resources build and train the writing techniques through out the process: writing a draft – electronic teacher feedback directly on the document – writing a second draft and working with new versions. The teachers also refer to *Counting workplaces*, where the learning workplace in the observed classes goes together with the programme MathCad.

Through the teacher’s description we are coming close to the concepts of workplaces both in terms of school subjects and gaining Literacy, Numeracy and Technacy and in terms of nonformal learning, learning in practice, referring to Dewey Learning by doing. Expressed in relation to the map it mirrors how the process of teaching shift from teacher directed work area (the left side of the map) to the student directed work area (the right side of the map)

Reflecting the learning context in contrasts – between formal and informal learning



(The model origin from Borgnakke 2005:228)

On this background I can give the examples with focus on the students.

Working, performing, learning among students

Looking at the students working we recognised how the laptop have becomes ‘every ones every day tool’. In a concrete manner we see the new types of performances and collections of students’ production, as fx Power Point collections, Net-Newspapers, Web-sites, Podcasts combined with more private and youth cultural genre.

Here the student’s performance recalls contrast basically conceptualised like desire/duty, play/learning, leisure (‘for leisure use’)/ school (‘for school use’). The interesting part is that the students refer to those activities as much more than just ‘an activity’. They refer to their whole

school life. This was the case, for example, when one of the students in a long conversation with me summarises his statement:

“It is also about the kind of feeling, where you want to go to school. I enjoy my time in the school more when we, as in the IT classes, have our own computers. It is more fun, pure and simple”.

If students in the Gymnasium, having been in scholastic cultures and school settings their whole lives, and then all of a sudden enjoy their school time more, one must acknowledge that the use of computers in schools is much more than a matter of text, screen and a printer.

At the same time there is a revolution going on in the classroom, as you can see from my interview with three boys from 3.g:

”Mohammed: we did not use computers in the Comprehensive school (Da: folkeskolen) so I did not know anything about it. But I got interested in the IT class because something new should happen.”

I understand that ‘the new’ especially shall be located at a class level and as improvement of the teaching and learning environment.

As Mohammed says: There will be more peace. One can be withdrawn to the computer if there is something boring in the teaching situation. In “Folkeskolen” you would just have disturbed the other students. And then you can actually make something of relevance (of course also play cards) but things like assignments, searching the internet till you’re ready again.”

Frederik adds: ”Yeah you can withdraw and let others come to words in the class discussion”.

I am surprised by the articulation. I ask them to elaborate and confirm that they actually mean that especially the class environment is better with the laptop’s existence. They confirm. Later on Janus gives further confirmation: ”Yes, what is revolutionized is not one’s preparation at home, but the lessons and the time spending in class room. In this respect I got the impressions of the main answer: It is more fun, more bearable and better spending time in school with The Laptop than without it.”

(Cit. Obs. prot. Int.3.g, Borgnakke 2007:59)

According to the boys it is more fruitful to get academic skills as literacy and numeracy with Technacy. Herby the boys add both an important aspect to the reflection and a concrete question: will the process of learning and gaining Literacy and Numeracy in the future be like doing Literacy with Technacy? If so, we need to regard Technacy as integrated in the learning process and school culture. The same goes for the following question about Democracy. As a perspective learning Democracy will be integrated in the learning process and in school life, almost like the life skills circle illustrated in the map below.

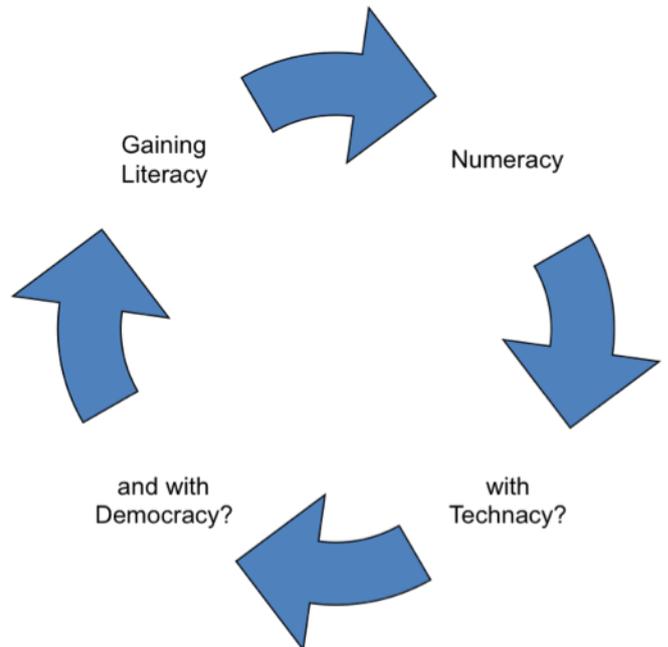
Reflecting ICT and life skills

In the future it is a matter of

Literacy

Numeracy

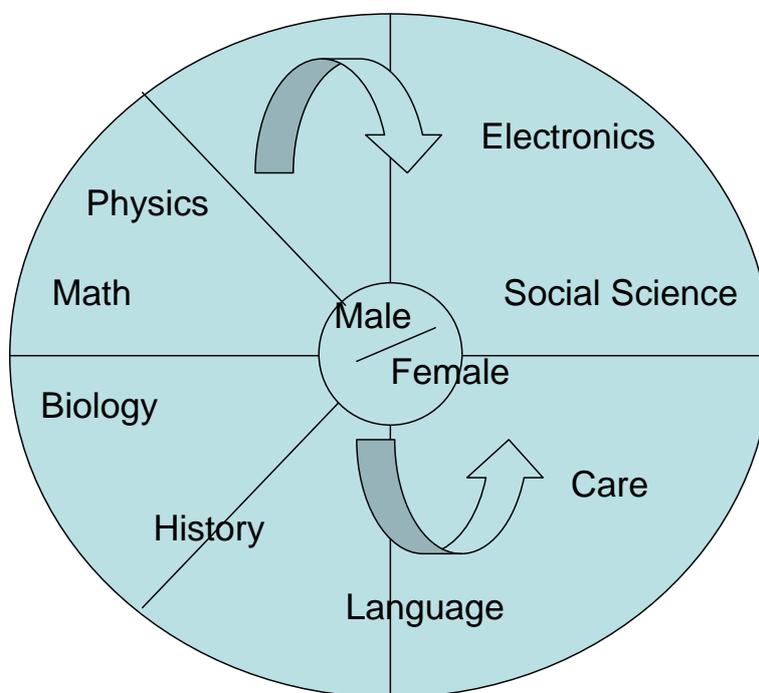
and Technacy as well?



Related to gender and ethnicity?

My case studies show that as a tendency both girls and boys are eager to see changes in the inner work of the classroom and willing to build a bridge between experiences and life skills gained in the leisure context and skills gained in school context. Literacy having a feminine approach will refer to subjects as language, care and subject within the humanities. Technacy having a masculine approach will refer to electronics, math, physics etc. In this sense the issue refer to the map below mirroring the gender-tradition for preference in choice of school subject and profession. What we add to that is Technacy as more than the school subject electronics. We also add the question of ethnicity as an open ended question related to both the conventional gender pattern and the new where especially girls (despite ethnic background) are in front.

Technacy between school subject & gender



(The model origin from Borgnakke 1996)

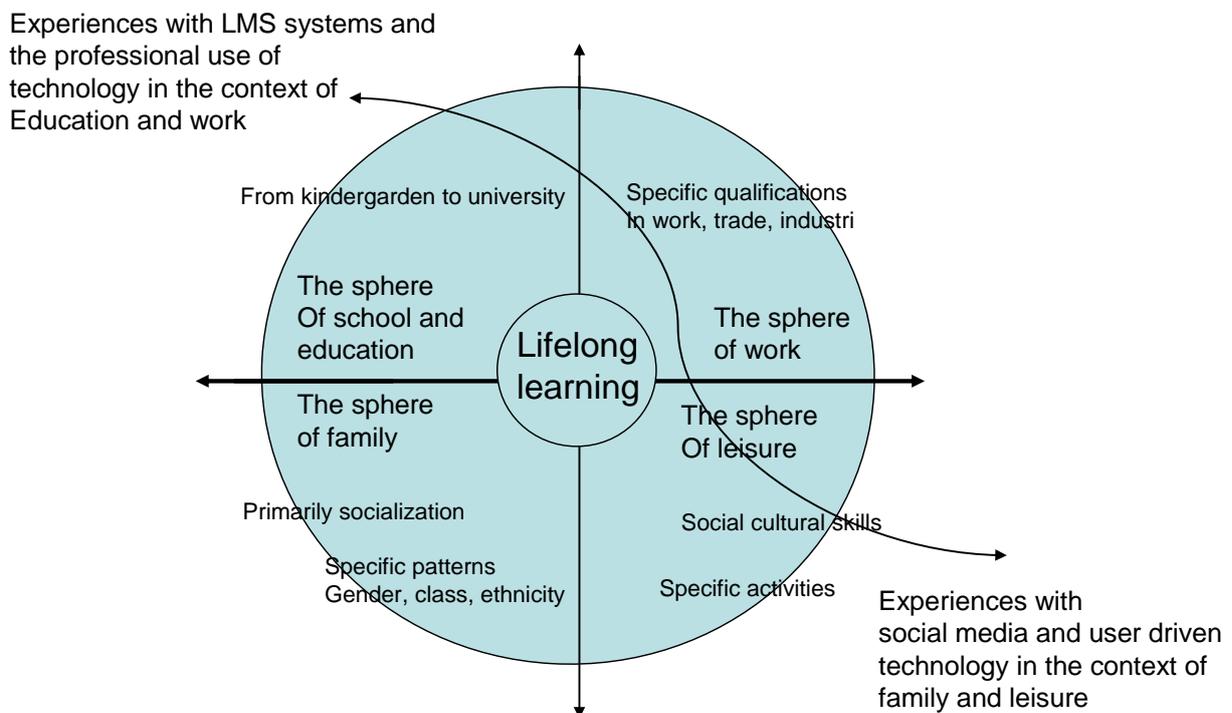
When Literacy and Numeracy are well performed we see the classic masculine and feminine ideal for scholastic learning and performing. When Technacy is well performed we maybe rather see the IT-nerd creating the new model for life long learning

The Nerds and models for life long learning

The competencies The Nerd represents are acknowledge with respect and gives social prestige both among teachers and students. Such Technacy gained in a leisure context but being useful in the scholastic context is also remarkable positive. But to the same degree negative transformation of behaviour from the leisure context was remarkable. Private chat, computer games, My space and Facebook activities are namely also in a risk for being regarded as youth cultural noise and personal self occupation, clique creation and mobbing will as example definitely be negative and not only be disturbing the system and the teachers but also be regarded as a pity. It is a pity because the school need the youth cultural approaches to the world, need their enthusiastic self occupation and friendship driven community of practice.

On this background we can look upon the basic criteria about relevance. A competence, a case, a type of activity (or the issue) can be of use in the classroom. It doesn't matter if it origin from industrial life, leisure life, home or street life. The demand is that 'the case' or 'the issue' shall demonstrate the relevance for the process of teaching and learning in the classroom. In other terms we are facing the question about how the future classroom can cope with the world of learners by constantly being between the spheres.

ICT and the future: lifelong learning across the spheres



To sum up: learning and performing with Technacy – the Third space for learning

- Students' performance with Technacy is integrated in the students own strategies for learning. But at the same time both strategies for teaching and learning in IT-classes must be described as a mix or a new blended version: how to perform as learners and students in late modernity.
- The mix have an impact on the conditions for performing and doing well both in the terms of being a dynamic IT school, and in terms of being an professional teacher and student doing.
- The mixed culture is also a part of the students' social and ethnic background with challenging both the educational culture and the youth culture. Upper Secondary School culture is in tradition understood as Danish high culture (Literacy) But both the whole it-culture is together with youth culture is rather the new international mainstream (or globalized youth culture)
- IT classes in the professional teachers point of view is a brake through for more inclusive and student oriented teaching. The new technologies and media seem to have an important result, namely a renewed motivation for learning. Here is both a perspective of integration and widened up learning perspective at stake.
- IT classes create a third space for learning as a space where one can be good/better/best to communicate gaining literacy with Technacy. The point is that the students in practice are a living challenge to the question of how to do and demonstrate the communicative skills, socio cultural skills and study competences.
- The third learning space is maybe in the experienced students' point of view only a matter about practical consequences. But anyway: it can be regarded as THE place for mastering the new culture techniques. And if so, it will be THE space creating both motivation and new motives for learning.

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