DIGITAL SCHOOL AS NEW ORGANIZATION BASED ON TECHNOLOGIES OF INFORMATION AND COMMUNICATION

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Abstract

As an organization the schools need to change focus and develop into a skills- and competence-based environment. At the same time both teachers and the school as such are met with demands of increased professionalism, internationalization, etc. The task of the school is to provide students with an opportunity to develop the skills necessary to become independent and active citizens in the network society. This requires rethinking the structure of the school, rethinking the organization of learning and the content of the learning process as well as the roles of teachers and students. The content and concepts of the school subjects are developed in the light of information technology and globalization. This work propose some visions for your school regarding the initiatives that are needed to disseminate the evaluation culture both with regard to tools and improvement of the colleagues' qualifications.

Keywords: New School, ICT, Digital methods, Logbook

Introduction

As an organization the school is under pressure – from politicians, "users" (both students and parents) and opinion makers. One demand that is being voiced regularly is that schools need to change focus and develop into a skills- and competence-based environment. At the same time both teachers and the school as such are met with demands of increased professionalism, internationalization, etc. One reason, but certainly not the only one, for this is the rapid development of information technology. We are faced with growing amounts of information, new sources such as the Internet, and new ways of accessing and exchanging information. However, no one can take it all in: Sorting, assessing and selecting are necessary skills in order to handle the ever-increasing amount of information.

An Environment Focused on the Development of Competences

The task of the school is to provide students with an opportunity to develop the skills necessary to become independent and active citizens in the network society[1]. This requires rethinking the structure of the school, rethinking the organization of learning and the content of the learning process as well as the roles of teachers and students. The content and concepts of the school subjects are developed in the light of information technology and globalization. A school is a living organization where each teacher possesses a large amount of knowledge and experience that can benefit many if it is accessible[2]. In the past schools had little or no tradition of knowledge sharing – certainly not to the extent that is necessary to live up to the requirements of today. One of the reasons for this was probably the difficulties involved in

sharing knowledge: meetings and paper-based communication in the form of notices, distributed copies and local collections of educational courses, reports, etc.

Strategy of a net-based

Now information and knowledge are shared between management, teachers, students, parents and the surrounding community via knowledge sharing platforms, Intranet and Internet. There are, however, a number of barriers to the dynamic development of the school as an organization. The traditions and habits dominating in many schools today can only be changed through an active and continuous effort. Our societies are characterized by swift information flow, knowledge sharing, network and cooperation. Thus the overall strategy of the school must be based on these very same features.

The changing school: School Development as Common Responsibility for Teachers and Management

The school will not change just because each individual teacher changes his or her way of teaching. And the principal cannot start the development alone[3]. In that way the collective knowledge of the whole team can be utilized – a sharing of knowledge has taken place. By building networks and sharing the knowledge that each of we possess, the total competence of the school is developed. The students should develop ICT competencies that include:

- Ability to use the computer and the programs
- Ability to use the computer in relevant situations
- Knowledge about how and when it is practical to use a computer.

At the same time the students' ICT competencies should enable them to function in an ICT work environment with digital information communication and network structure.

ICT action plan and strategy plan of the school

It is not practical to isolate the ICT area and make a development plan for this area only[4]. The plan should be based on general educational goals. Here it is important to make clear how ICT can be integrated in the educational environment, and how teachers and students can use ICT to provide the students with an opportunity to develop up-to-date competencies. The principal plays a central role in the process that can change the school. If the management of the school adheres to a traditional organization, a traditional management style and a traditional view of education, it will be difficult to change the organization[5]. The management must take full responsibility for the change, but at the same time acknowledge that it will not be possible to make the change alone.

Where ICT makes a difference

Information technology should not be integrated in education at any price[6]. ICT can support teaching and learning when the integration of the different ICT tools is based on qualified pedagogical and organizational considerations.

By now most students are familiar with information search and retrieval via the Internet. The Web is often their first choice instead of using library books or other sources of information. When it comes to topical issues the Internet is often the best – or even the only – source of information. But students have seldom learnt how to carefully assess the information they find on the Web, and they often have problems grasping all the possibilities if there are many hits on a certain topic. The subsequent processing of the large amount of material may also cause problems.

When students present the results of their work on a project, they often do so in the form of reports, posters, or classroom presentations. With ICT, students have new

possibilities when creating their presentations. They may, for example, use a combination of text, images, sound and video in a presentation that is delivered either as a PowerPoint presentation or as part of a website. But students can also provide the more traditional written products with a look and feel that makes them both more aesthetically satisfying to the students themselves and more readable to the recipients. But ICT also makes communication possible in connection with the work process. Using the computer one can set up collaborative learning environments where students communicate with classmates or teachers via e-mail, conferences or chat.

In the next paragraphs we describe some of the areas where ICT can make a difference and where ICT has changed the existing practice in several ways[7]. ICT-based learning material can contribute towards the development of some of the competencies that are required of students in the Network Society: for example the ability to cooperate in a network, enter into process-oriented work processes and assess the constant flow of information of the Information Society critically and independently.

In addition, working with ICT-based media is often inspirational for the students, and at the same time the school's use of ICT-based tools is a natural continuation of activities that by now are part of everyday life of most of the students at home and in their spare time.

Finally, ICT-based tools may contribute towards changing the focus from teacher-directed instruction to student learning. In this way ICT supports modern educational tendencies which, for example, recommend that students should take responsibility for their own learning and learn in communities of practice.

Extension of the Concept of Written Assignments

Written assignments are no longer merely traditional essays and reports. Today students also submit websites, multimedia productions, sound montages and PowerPoint presentations as written assignments. Evaluation of these new electronic products differs from the evaluation of a traditional written product, so teachers must be conscious of how such products can be evaluated, just as students must be told how form, content and functionality are assessed. Presentations, multimedia products or websites will in many cases become the preferred products at the end of courses and projects. Thus new and different demands face the teachers who evaluate the products and also the students who have to understand the evaluation! Therefore, it is important to set up clear goals for the end products and then follow up with systematic evaluation when the students have submitted or presented their work. The goals may be in the form of check lists, which the students can refer to when creating their products.

ICT in project work

Project work without the application of ICT is increasingly rare. Numerous evaluations show that virtual learning environments, use of the Internet and electronic product forms are natural elements in the project work.Evaluation of project-based teaching does not differ from other kinds of education evaluation in terms of method, but perhaps a thorough evaluation of all aspects of the project work is especially important here so that both teachers and students get a satisfactory impression of work method as well as progress.

Evaluation with ICT

Evaluation is a keyword in today's educational debate. In the systematic work with evaluation it is very natural to use ICT both as a tool in connection with data collection and in connection with the processing and presentation of the results of the evaluations. It is important to consider both the form and the content of the evaluation process once you have

decided upon the objectives of a series of lessons, i.e. once you have decided what the students are expected to master when they have completed the lessons[8].

Evaluation methods: Formative = goal realization
Formative evaluation is an evaluation method where the evaluation is done with the primary goal to enable the student and the teacher to consider whether the goals set in connection with a course are being achieved[9].
Formative evaluation is pointing forward and gives a current picture of a student's strengths and progress and can form the basis of an adjustment of the way teaching or the learning episodes.
Examples of formative evaluation are:
- Talks with students
- Portfolio
- Logbook.

Evaluation methods: Summative =learning outcome
Summative evaluation is an evaluation method where the results of the learning episodes are in focus. The evaluation is facing backward and does not immediately make reflection possible[10].
Examples of summative evaluation are:
- All forms of end evaluation
- Examination
- Final marks for the year's work.
We must develop methods of evaluating of the students' general skills, i.e. skills that are not subject-specific, but rather skills that are essential to the educational process as a whole and to their personal development.
The evaluation may focus on a number of different things:
- The subject-specific content
- The level of the lessons
- Presentation (students' oral and written presentations)
- The dialogue in the classroom, for example student activity
- Work methods
- Environment, for example physical environment and available computers
- Social manners
- Student participation, for instance student preparation
- Learning outcomes

ICT application
ICT can be used for evaluation in all areas. The use of electronic questionnaires has become quite a popular way of gathering information and thus an important step in the evaluation process. Whether we communicate electronically or face to face, questions and replies form the basis for the ongoing dialogue about all aspects of the teaching process and for any adjustment of the content or method of teaching.

Tools: the Quality Star
There are a number of different tools that one can use when developing the objectives of a series lessons and when planning and evaluating the lessons. The Quality Star is a graphic version of different aspects that one should consider when developing a plan for a

series of lessons or project of some duration[11]. The Quality Star can be used in various ways and at various level both with and without ICT integration:

1.   Status: The teacher undertakes an evaluation of relevant prerequisites for the project in relation to previous teaching and the students' level.

2.   Quality criteria: Together teachers and students formulate the competence goals to be set for the project, and what is required to consider it a success.

3.   Objectives: What's the teacher wants to achieve.

4.   Action plan: The action plan outlines the steps that are needed in order to achieve the objectives.

5.   Evaluation plan: As mentioned earlier it is a good idea to decide how and when to evaluate the process.[12]

Test and screening

Evaluation in the form of testing is, however, applied in several subjects. By testing we understand an assessment of the students' learning outcome, typically the learning benefit or their competence level after a completed series of lessons. The testing can result in marks or may have a certain impact on the marks.

Screening plays an important role in many subjects - for example in mathematics and languages [13]. By screening we understand evaluation of the students' qualifications, i.e. a formative evaluation form. For screening the same tools are used as for self-evaluation and testing – the aim, however, is different. A good example of an area where electronic screening can be used advantageously is the students' ICT skills. Through appropriate screening the teachers can plan the teaching based on the requirements of the syllabus. A screening in electronic form will be easy to keep, reuse and revise so as to match the changed prerequisites. Self-evaluation, testing and screening form a natural point of departure for evaluation interviews about the students' subject-related skills and competencies. Electronic tools can, however, also be used in connection with the evaluation of other skills.

Questionnaires & Test results

The test results and other self-evaluations can be kept in the students' portfolios for later use so that the student – and the teacher – can make comparisons between evaluations made at different times during the school period[14]. The student can at any time find previous evaluations in the portfolio and use them in his/her future work. In connection with the guidance of the student the teacher can focus on the student's strengths and weaknesses documented in the portfolio. An obvious area for self-evaluation is the student's work with language skills, for example in connection with grammar and sentence analysis. In other subjects like mathematics, scientific and technical subjects you can use electronic types of quizzes in connection with factual learning.

Portfolio

Gathering and presenting work in folders/portfolios is not a new invention. It has always been a tradition for both artists and craftsmen. They select examples of their work and present them to demonstrate their accomplishments and skills. In schools the use of portfolios has spread concurrently with a changed view of learning and with the new ways of organizing the learning process. Most learning management systems today include a portfolio module. Whether you build your portfolios on the school server or use existing functions in the school LMS, using an electronically stored portfolio is easier and more natural than working with physical folders and paper. However, it is important that the reflective part of the work does not become toned down or even disappears completely in the process of

archiving and systematizing the many different types of material. The summary of the dialogue is kept in the portfolio together with other evaluation material.[15]

Logbook
Logbook writing, too, can be used in many subjects and in many different situations. A logbook may be used by the student as a way:
•   to give reflective responses to the teacher
•   to reflect on and specify the steps involved in connection with a work process[15].
Many people who have worked with logbooks and portfolios find, as an additional benefit, that through the effort of formulating your thoughts and describing the work process you are going through, you develops a deeper understanding of the things learnt: You become more conscious both of the process and of what you learned, and you also remember better what you learned.
The individual logbook typically contains the student's own reflections on the learning process, which is why it is an important part of a process evaluation and therefore should be kept in the portfolio and thus in a collective evaluation of the students' competencies.

Differentiation of teaching
Differentiation of teaching is yet another of the many buzz words in the educational arena of the past few years, and most people will probably agree that the adaptation of teaching to the needs of the individual student is a big challenge.
And when that challenge also includes the use of ICT, many people feel that they are on uncertain ground:
•   Is it at all possible to keep the overview of the many different processes that the students are involved in simultaneously?
•   Can we be sure that the students learn what they have to learn?
•   What if the students merely chat, surf the Internet or write e-mails?
•   Are the students utilizing all the possibilities that exist?
•   Does the computer contribute positively by allowing students to take control – or does it do the opposite?
It is difficult to answer these questions clearly and exhaustively. The answers most often begin with "It depends on …".
It is our opinion that it is worth the bother and the time it takes to immerse oneself in the jungle of offers and possibilities to estimate what ICT tools can contribute with that will make the students' daily life easier.

Can use of ICT be unrewarding?
The learning outcome is reduced when ICT is used to support traditional teaching methods. The learning outcome, however, seems to increase when ICT is combined with problem-oriented and student-activating work forms. Irrespective of the tools applied, learning requires initiative, concentration and effort. Content and planning of the instruction are the most important factors, not technology. The challenge for the teacher is to plan the instruction in such a way that ICT is a functional aid. Computer and software do not replace other tools; they constitute a supplement.

A school for everyone?
Nine years of compulsory education seems a good offer to some, whereas others think it is a curse. Some students experience school as extremely academic, and some students

actually leave school without getting an exam. At the same time there are students that are not challenged sufficiently in school.

• How do we motivate students so that they benefit as much as possible from going to school?

• How do we help them develop the skills and competencies that are necessary in a modern society?

It is the task of the teacher to contribute to the learning process in such a way that it matches the needs and qualifications of the students.

Important questions in this connection are:

• How do I plan the instruction according to the objectives and intentions of the curriculum?

• Which adjustments do my students need?

• Which tests and evaluation forms do I use?

• Which follow-up of the courses does the individual student need?

• Which work forms are best suited for class instruction?

• Which tools and educational materials are available?

• Upon all these questions yet another question follows naturally:

• How can ICT tools support and contribute in these contexts?

Even though teachers have a common task, i.e. implementation of the curricula, the approach is different. Some people thrive in the role of presenting information. They are enthusiastic when it comes to imparting knowledge, and they are confident that the students welcome the information that is presented. Other teachers thrive on the fact that the students are active. They plan their instruction so that the students are expected to learn as much as possible on their own initiative, and they have an unshakable faith in the students' independent will to learn.

Considering the variations in any group of students it is beyond question that teachers need to master the discipline of differentiated teaching. The students must learn to plan, implement and estimate their own work. They must learn how to learn, and this requires a high degree of activity – and it will differ from one student to the other.

Conclusions

Student-centered work methods and the use of ICT have been presented as one of the means of facilitating the individual student's learning. So the question is how to motivate the students and make them interested in learning. Here are some ideas:

• Study counseling about subject-related development

• Develop awareness of learning strategies

• Motivation to choose suitably difficult tasks

• Consciousness-raising of personal skills and qualifications

• Making plans in common.

In connection with several of these things, working with logbook and portfolios is central, but personal contact is also important.

By means of ICT tools such as mobile phone and mail, the student and the teacher can have daily, more or less spontaneous contact. More formal contact is possible in dedicated for on the Net or in learning management systems like Moodle, FirstClass, it's learning, or Blackboard.

When it comes to planning their own work, students should always be involved irrespective of age. The older the students are the more responsibility they should have. Here is a proposal for a work procedure for slightly older students where the use of a computer is required:

- The students find topical plans on the Net and print them out if necessary
- The class discusses what is going to be common material
- The teacher works out suggestions and sends them to the students
- Based on this, each student develops his individual plan based on common material and the material and the amount that the student finds natural
- The plan is discussed with the teacher and the finished result is saved as a basis for the work during the period.

The method can seem time- and work-consuming compared with going through chapters in a book. However, the method often leads to greater awareness of process and method and increased motivation for the students.

One of the consequences of using ICT tools is that the traditional classroom instruction is reduced. It is easy to communicate with and guide the students using a learning management system. The teacher can create work spaces and virtual class rooms that are always open. And students and teachers can enter whenever they have the time and wish to do so. The teachers can place assignments for the students. The assignments can be submitted by e-mail or through the LMS and can be returned with the teacher's comments and corrections via e-mail. Comments, particularly short ones, may also be given as text messages on the mobile phone (SMS).

References:
Murphy, J. and Schiller, J. (2002). Transforming America's schools: An Administrators' Call to Action. La Salle, Ill.: Open Court.
Murphy, J. (2001). Transformational change and the evolving role of the principal: Early empirical evidence. In J. Murphy & K. S. Louis (Eds.). Reshaping the Principalship: Insights from Transformational Change Efforts (pp. 20-53). Newbury Park, Calif.: Corwin.
Newmann, F. M., Rutter, R. A., & Smith, M. S. (1999). Organizational factors affecting school sense of efficacy, community, and expectations. Sociology of Education, 62 (4), 221-238.
Newmann, F. (2005).   Successful School Restructuring. Madison, Wis.: Center on Organization and Restructuring of Schools.
Rathbone, C. (2002). On the Outside Looking In: A Year at an Inner-City High School. New York: Atlantic Monthly Press.
Raywid, M., Phillips, S.E., Schmerler, G., & Smith, G. A. (2003). Not So Easy Going: The Policy Environments of Small Urban Schools and Schools-Within-Schools. Charleston, W.Va: Appalachia Educational Laboratory.
Rosenholtz, S. (2009). Teachers' Workplace: The Social Organization of Schools. New York: Longmans.
Sashkin, M., & Walberg, H. J. (Eds.). (2003). Educational Leadership and School Culture. Berkeley: McCutchan.
Lightfoot, S. L. (1983). The Good High School: Portraits of Character and Culture. New York: Basic Books.
Lipsitz, J. (1984). Successful Schools for Young Adolescents . New Brunswick, N.J.: Transaction Books.
Louis, Karen, and Miles, Matthew. Improving the Urban High School: What Works and Why.
www.epict.org
Howard, E. R., & Keefe, J. W. (2001). The CASE-IMS School Improvement Process. Reston, Va: National Association of Secondary School Principals.
http://www.quia.com
www.ils.uio.no/forskning/avsluttede-prosjekter/sites/index.html