ICT IN LEARNING PROCESS

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Introduction:

ICT can help to change the nature of the interactions of teachers and students by changing the interactions within classroom, changing the type of interactions between teacher and students, allowing students more direct interactions with resources to support learning and increasing the interactions between students themselves (Harris, 2002). Influencing many facets of our daily life, Information and Communication Technology (ICT) have brought about an increased need for in-service ICT Teacher Education in recent years. With the rapid pace of technological developments, it could sometimes appear that the teacher training institutions have to make substantial investments in new hardware, software and trained manpower in order to stimulate and challenge teachers. Teachers have to be equipped and educated accordingly, educators and administrators find it difficult to integrate and introduce ICT in schools. Teachers are moving from teaching people everything to teaching people where they can find things out through the facilities of ICT. The introduction of these new resources often brings an associated demand for further training for teachers, which can delay the effective implementation of ICT. The innovative practices were not implemented and integrated without problems and difficulties.

Some reasons that make difficult integrating ICT may be listed as follows:

1)   the cost of providing and updating necessary tools,

2)   already overloaded curriculum, and

3)   a short supply of teachers knowledge on ICT.

Background of the Study :

ICT has a great impact on society at large, but its integration into educational institutions is a painful process, since it is very difficult for policy makers in education to make huge commitments for the development of ICT in schools. Through ICT, young

learners become technologically literate in social studies. Technology may contribute to the student's attainment of social studies learning objectives. Preparing students for the real life in our technological and diverse world requires that teachers embed ICT in significant learning experiences (Braun & Kraft, 1995). Realizing learners' potential and need to use ICT out of school activities, schools have to implement innovative practices for learners for making schools attractive. ICT clearly offers communication options unavailable or inaccessible without an electronic media in social studies. There are extensive databases available to teachers and learners to be used in social studies les- sons. Teachers have opportunity to access huge information at first hand and the ICT provide teachers with more interactive, dynamic information venture for dialog ICT may contribute more positive outcomes for students in social studies.

The nature of social studies develops depending on how people change their ways of teaching and learning. Modern technology should, in this respect, be of particular interest for teachers in social studies. In order to be efficiently used in subject matters, such as social studies, the pervasive characteristics of ICT, as well as its costs, should be taken into account. By providing students with a larger amount of information, ICT makes them more able to learn and analyze the information provided. Thus, teachers and learners may have tools for analyzing several information resources irrespectively of where they live.

Focusing on the Learning Process

Going back to the question whether pupils' learning in education improves with the help of computer support, we shall now focus on the learning process. Our main idea is that learning rather deals with learning how to learn than simply learning facts "*it is rather a matter of process than a matter of product*" (Axelsson in Tydén & Andrae Thelin, 2000, p. 58). In other words, it does not deal with the possibility to read any differences concerning pupils' learning, which may occur, but to focus on phenomena that may be – to some extent – of significance for the learning process. For example, we can study how pupils comprehend the computer support in education when they deal with different tasks, what impact using computers has on their work and how they perceive the result of their work. If we compare that way of attacking the question, whether computer support improves learning, we are here dealing with a change of perspectives from an outside estimation to an inside description. We are thus focusing our interest on the pupils on the one hand, and the way of working, on the other. In both cases, we are depending on the medium in use.

The expectation that one with the use of more computers could improve learning has not yet been met and will not. Something more is certainly needed. As Papert (1995) points

out it is essential that teachers at the same time are open to all kinds of variations in education. The same is pointed out by Riis, Jedeskog, et al. (1997) in that they propose a development like a change of central conditions in schools: the role of the teacher, ways of working, and strategies of learning and how to use knowledge or information. In the proceeding text, we shall therefore discuss this change of central conditions to see what they mean to us. Thus, we suggest a new perspective on computer support in education, which is based on the learning process. In judging pupils' comprehension of a new medium, like the computer, there is always a problem because of the use of a new medium, which means a new way of working. That is why we always have to be aware of the interaction between medium and way of working in use. That is the reason why it is so hard to decide which of these is the assumption and which is the consequence. Furthermore, we have to consider how the pupils' motivation to learn is influenced since the result of learning is highly related to the kind as well as the degree of motivation.

Motivation factors such as curiosity, interest, fun, thrill and the joy in succeeding are seen as intrinsic motivation factors distinguished from extrinsic motivation factors, which are related to concurrence, ability, expectations from outside, threat and punishment. As to intrinsic motivation factors, Fransson (1978) has shown that if this kind of motivation is stimulated it commonly leads to a holistic (understanding) way of acting, which in its turn leads to improved learning. What are the results concerning the use of computers in this domain? How do pupils comprehend this medium? They have studied how teachers have answered the question whether computer support/IT improves learning or not. The most common answer was that the pupils' commitment and interest increase in situations when they use computer support/IT. For the matter of differences in learning related to gender Pedersen (1998) points out that the attitudes of boys using computers are more positive in general than the attitudes of girls who are interested in how computers can be used in a context. The objection to the results however can be raised in those cases, where pupils develop a positive attitude to the medium and way of working in question that it is mainly regarded as a Hawthorne-effect, which means that they enjoy the pleasure to work with something new in education. It is also a well-known fact that a varying content and ways of working in education have proven to have a positive impact on learning. The objection however is hard to claim in those cases dealing with studies executed over a long period of time.

A Lifelong Learning Perspective on ICT Education

The lifelong learning perspective suggested above could be adopted whenever ICT literacy is taken into consideration. There are obvious differences between book related knowledge and ICT-based knowledge. Book related knowledge is considered to have a longer retention period and a deeper impact on the intellectual mind. ICT-based knowledge is normally considered as a renewable supply and to be sustained must be constantly reviewed. Lifelong learning as a phenomenon is generally defined from two different perspectives. These are the lifelong and the life wide learning processes. Life wide learning is related to the different forms of learning during a person's life. They are regarded as *formal learning*, *non-formal learning*, and *informal learning*. Generally speaking, formal learning is that which is given in formal institutions, e.g. schools and universities. Non-formal learning occurs in other institutions, such as study circles, a popular form of continuing education in Scandinavia. Both formal and non-formal learning are awarded with some form of diploma or, at least, an official recognition. Informal learning refers to the learning, which occurs in everyday life, and where the learner is not usually conscious of the learning process. This category also includes learning labeled as tacit learning or tacit knowledge. ICT learning does, in fact, occur in all these forms of learning. These three forms of life wide learning are not mutually exclusive. They appear in each of us during our entire life. Lifelong learning on the other hand, refers to the process by which an individual is given the opportunity to learn throughout his/her entire life, from the cradle to the grave. Although the term lifelong learning is widely used, its practical use in the shaping of career and competence development is rarely mentioned and hitherto not really investigated. Educators have mostly concentrated on the design of the formal learning function. Relevant questions have been raised regarding the phenomenon of lifelong learning and the training of ICT-skilled teachers. As we have noted previously, ICT skills are developed not only in formal learning contexts, or limited to in-service training. Teachers' ICT skills should be developed throughout their entire career. We should seek to establish ICT training programmes based on teachers' individual abilities and real competence.

Most of the current ICT training programmes available are trainer rather than teacher centered. They focus on ICT as an information and communication device, and lack any appreciation of teacher follow-up and pedagogical support strategies. The optimal aim of ICT-based education should be the shift from, what I would like to call, a deficit-based to a competency-based approach. A deficit-based approach is the compensatory approach, the main purpose of which is to compensate for teachers' lack of competence. The competency-

based approach aims to integrate teachers' knowledge, skills and experience in the building and extension of ICT skills.

This strategy could help to move teachers from their dependency on external monitoring to solve their problems, towards the growth of a professional self-reliance in instructional decision-making.

Conclusion

The willingness of teachers to change their existing educational habits to utilize ICT in new ways and to carry out preparation associated with implementing new practices are all crucial factors in determining the extent to which innovative practices may be adopted by larger numbers of Turkey. The Ministry of National Education has been organizing in-service education programs for teachers to advance teachers ICT use in Turkey. Every year, the Ministry of National Education provides almost 2000 teachers Information Technology usage training. In 2001, 2837 IT classes were established. The distribution of educational software purchased for these schools was completed in the same year. ICT classes contained computers, printers, instructional software, electronic references, video players, overhead projectors and TV (MEB, 2003). However, a number of factors, including economic instability, technological innovations and political initiatives created the above stated situation. All changes are accompanied by uncertainty, but change can also be instrumental in raising important questions. One question is what will be the long-term impact of ICT usage on instruction? The other question is the skills needed by teachers to use ICT effectively and adaptation rate of ICT into instruction. ICT creates enormous possibilities but demands high level of skills. Therefore, not all teachers welcomed the widespread introduction of ICT in schools. However, there is still no consistency in using ICT. These give rise to hindrance for ICT usage in the classroom. However, teachers use the printed materials such as maps, globes and timelines widely as regular social studies activities and daily life provides natural settings for using map and globe.

Summary:

IT or ICT has been influencing life in modern communities, although the IT-revolution which one hoped for has not occurred. Instead, there was an IT-evolution. That means, among other things, that the computer is looked upon as any tool in the education process. The interest for the IT-technology has turned into an interest for the IT-pedagogy instead. The reason is that there has been a change of perspective concerning our view on how computer support affects pupils' learning over the last decades. It implies that the fixing of technique from earlier has now turned to putting pedagogic in focus. Instead of studying the concept "IT and learning", it is now relevant to study "learning and IT". In spite of our

interest in pedagogical questions, we have not yet been able to find adequate forms of the way ICT is delivered in schools. In this presentation, it is our intention to show how to perform certain contexts to optimize the effect on learning with the help of computer support in education. The information technology will be used best when it is fully integrated into the development of the education as a whole. The question whether computer support improves pupils' learning must be put in a larger context relating to the role of teacher, the way of working and the way of using information and knowledge. Furthermore, the view of knowledge must be changed. It means that we must consider the fact that knowledge is a process or a way of relating to knowledge and learning rather than, to a product. We have presented the results out of that perspective in a report in which an example of an exploring way of working is described.

On the basis of a learning perspective, one would expect that questions related to pupils' democratic, critical and reflecting behaviour on different levels in the education system and in what way computer support improves learning would be enlightened in detail. Furthermore, we regard it as desirable to investigate when and how skills concerning the behaviors mentioned above can and have to be developed, and what skills and know- ledge pupils are expected to master on different levels in the compulsory school. When is it relevant to develop democratic competence, exercise skills as interpreting, investigating critically, comparing and valuing information, use a way of working like seeking information with computer sup- port and use a reflecting way of working? How can/are these exercises to be performed in order to stimulate holistic learning? What kind of computer applications would support a learning process like this? Since the computer seems to play a central role as a valuable tool in that learning process, there is good reason for studying the possibilities this medium can offer. The remaining question is: How can teachers help pupils create meaning out of information and how to seek and use information?

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