NEW APPROACHES OF TEACHING ICT IN EDUCATION.

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Annotation: This Article will address modern technology as an Information and Communication Technologies, which has become possible in our communities since the availability of computers. Moreover, to what extend we can exploit it in education in general and English Language teaching / learning (ELT) in particular, according to our conditions and needs. Information Communication Technologies should be exploited effectively to shift from teacher-centered approach to the student-centered approach in teaching or learning English. As technology has created change in all aspects of society, it is also changing our expectations of what students must learn in order to function in the new world. Students will have to learn programmed materials and to steer through large amounts of information via computer into the web, to master new knowledge with these innovative technologies

Key words: information and communication technologies, ELT, learning, informationalism

Computers, especially when they are linked in networks, have the potential to dramatically change everyday classroom practice. The impact of the use of information and communication technology (ICT) in education will not be limited to the actors involved in the learning process (teachers and students), but will also change the institutional infrastructure, relations and patterns of behaviour within the education system, and even the content of education. For a good understanding of these educational changes it is necessary to look at the transformation industrialized societies are undergoing. Education is reacting to the emergence of the information society. Traditionally, schools provided the settings where individuals were prepared for the industrial society. In this society the focus was on 'making things', on industrial production. Today's education system faces the challenge to prepare individuals for the information society in which one of the most important aims is to handle information. Such a shift in focus can be seen as a new stage of our society, characterized by a new predominant paradigm.

The stages in themselves are not stable: in each stage, changes and developments are taking place continuously, but these changes tend to stay within the boundaries of the dominant paradigm and the reigning technology. The problems faced are basically variations of common practice, while the order of things is kept in place. After a period of time, successive variations get less effect and tension grows until the next stage is apparent and a transition takes place. The conversion to a next stage is influenced by the availability of a catalyst of some kind (money, new energy sources or technological developments such as computers, networks, etc.). In general terms, the mission of the education system is: to provide balanced, personal, social and vocational education; to facilitate personal growth, development and citizenship; and to prepare students for a profession. Quality of education can be defined as the degree to which education is capable of realizing these goals. In addition to the challenge of preparing individuals for the information era, the education system is facing other challenges:

Education is expected to contribute towards the solution of social, cultural and economic problems of society. Education can no longer remain uninvolved in all of the problems of society: isolation, ethnic integration, juvenile delinquency, unemployment, etc. There is massive evidence that one's level of education correlates directly to the opportunities one has in society (see various OECD reports published between 1988 and 1994). People want education to be individualized and flexible, suited to their specific needs. Growing individualization in and diversification of society calls for specific approaches in education. Standardized methods and classroom approaches will no longer be sufficient for individual needs.

Life-long learning and new demands for learning are rising. The 1994 report of the SCP (the Dutch national office of social and cultural studies) states that the main issue to be addressed by the educational community is the growing number of people participating in education. Under the current circumstances, the guarantee for open and equal access to education for everybody is becoming almost unaffordable. It can be concluded that the near future provides all kinds of challenges and opportunities for the education system in our society. Managing large amounts of information, developing learning strategies to facilitate effective learning, and assuring that all citizens are skilful in assessing, selecting and dealing with information are of critical importance. It is assumed that a new balance is needed between teacher-oriented arrangements of the learning process and student-oriented arrangements, with much more emphasis given to the latter. ICT provides a means to bring about the revolutionary changes called for by the evolutionary transitions in society. As a tool to support the learning process, ICT holds a promise of new solutions for the challenges facing education. DIFFERENT SCOPES FOR THE USE OF ICT IN EDUCATION The use of ICT as part of the learning process can be subdivided in three different forms: as an object, aspect or medium (Netherlands, 1992). In addition, ICT is often used as a tool for organization and management in schools. In the latter case ICT is not integrated in the actual learning process but provides support to it at the classroom or school level (an example of an ICT application for organization and management purposes is a student-monitoring system). The use of ICT in education as an object refers to learning about information technology and is mostly organized in a specific course such as 'computer education' or 'informatics'. As an object, ICT has been broadly implemented in the curricula of schools, especially in secondary education. Following the 'ICT-as-object-courses', students familiarize themselves with the most important 'ins and outs' of information technology as a dominant phenomenon in society. Its educational aim is the prevention of computer illiteracy. At present, education is quite good at this. But we have to take Walker's (1986) warn hag seriously, namely that the easiest way to meet the challenge of technological revolution is to create and implement a new subject so that the existing subjects do not have to change. ICT as an aspect refers to specific applications of ICT in education as used in industry and professional practice. For the most part, such use in education is found in vocational education, for example in the training for computer-aided design (CAD), computer-aided manufacturing (CAM) and computer-mediated accounting. Vocational training in these areas is unthinkable without ICT integrated into it. ICT as an aspect also appears outside the vocational territory in subjects that are no longer teachable without the technology for example, in general education experiments in science education, or accounting as a part of economics. For that reason ICT has become an obligatory part of the general exams in science and economics in general secondary education in the Netherlands.

The educational aim of ICT as an aspect in education is job preparation. Today, ICT as an object and as an aspect are firmly embedded in our educational practice. A third form of use is ICT as a median for teaching and learning. This refers to ICT as a tool for teaching and learning itself, the medium through which teachers can teach and learners can learn. ICT as a medium appears in many different forms, such as drill and-practice exercises, simulations, tutorials, individual learning systems (ILS), educational networks, hypermedia programmes, test-generating systems, etc. We speak of ICT as a medium whenever ICT is used to support the teaching and learning process and not specifically its content (which is the case when ICT is used as an object of learning). Current actual use of ICT as a medium is rare, though there is a growing interest in this application. In this paper we will focus on the use of ICT as a medium in learning and teaching.

ICT AS A MEDIUM TO ENHANCE THE LEARNING PROCESS. For a good understanding of the potential of ICT for teaching and learning, it is important to have a closer look at the learning process. Figure 2 provides a general overview of aspects influencing the learning process. The learning process is represented as a field in which four forces operate. The horizontal dimension represents the relation between the actors in the learning process: the teacher and the learner. The vertical dimension represents the learning infrastructure, consisting of content, and teaching and learning materials. The learning process takes place at the cross-section of these four forces. The contribution at the level of school organization and management to the arrangement of the learning process (e.g. by provision of a student-monitoring system) is represented by the outer circle. The figure illustrates the view that a learning process is the result of both structural conditions derived from the learning infrastructure and personal characteristics of the actors involved, and their interaction. Changing just one of the driving forces may lead to tensions, but substantial changes and improvement of the learning process. The introduction of ICT in the learning process, as a medium for learning, obviously changes the learning infrastructure in terms of materials and technical infrastructure. But only in conjunction with changes in the roles of the teacher and the student, and with changes in the organization of the content, is it possible to make use of the potential that ICT holds for enhancing the learning process.

In addition to the above-mentioned dimensions of the learning process at the school level, changes in the learning process have to be supported by the public administration as well. It is hard to imagine how ICT as a medium can be implemented in a way that it has an impact on the role of the teacher without proper policy measures at the level of the national government. For instance, installing computers and software for an integrated learning system is one step and a relatively simple one compared to what has to be done for a structural change in the role of the teacher (needs consent by teachers, teachers tmions, management, government), a commitment to more student-oriented learning (needs organizational measurements to regulate the use of school resources), and a focus on learning which is often labelled as 'constructive learning'. Learning is, in this view, perceived as an active, constructive, goal-oriented and situated process.

For the development of effective strategies to use ICY to enhance learning and teaching it is important that we realize that the present use of ICY is just a substitution of the current teaching and learning activities. This substitution use can be seen as the first out of three phases through which the implementation of new technologies diffuses in general and therefore also in education.

PHASES OF TECHNOLOGICAL DIFFUSION. The three phases of technological diffusion. In the substitution phase, the technology replicates or automates the existing instructional practices. The technology is used for activities which people already do in education, e.g. drill-and-practice exercises on the computer refer to the use of computers as 'electronic paper'. This kind of use is not bringing about real change in education, and therefore by its character will not meet the real needs of education in an information society as discussed above. New instructional methods begin to evolve in the transition phase, for example the use of e-mail in foreign language classes to communicate with peers who are native speakers. In this phase the technology is used for activities for which it was not necessarily brought in, and it challenges old instructional practices. In the transformation phase, the final phase of technology diffusion, the etymology provides completely new instructional situations and the old customs may become obsolete. The technology was originally acquired may no longer be desired The underlying rationale of the phases of technological diffusion is that it is a mistake to suppose that new technologies will continue to fit existing or old practices. If we continue to use ICT only as a substitution for existing practices, ICT will not contribute to solutions for today's problems in education. We might be left with only artificial interventions that by their nature provide no way out for the problems of continuous harsh budget cuts (solution: more money), multi-cultural students (solution: more teachers), a constantly changing economy (solution: more specialized subjects) and high unemployment (solution: more study). It is important to note that in a traditional, mostly teacher-oriented educational setting the teacher is completely responsible for the arrangement of most of the learning activities. It is inevitable that the role of the teacher will increasingly change of the student is more actively involved in his or her own leaning process and ICY is adopted to support an increasing number of learning activities.

En route to the future . Our analysis so far leads to two conclusions. First, our society increasingly requires learning situations responding to the need for flexibility (adapting to different needs), accessibility (learning when and whenever suits best) and support (an adequate learning infrastructure to assist learners). To make this happen, more emphasis should be given to student-oriented arrangements, and ICT provides powerful possibilities to realize this. Teachers, being key actors in learning and teaching processes, need to be trained in designing and organizing such innovative teaching and learning environments. The learning infrastructure of the schools needs to change accordingly, both the content of what is being taught, as well as the materials and technical in the structure . A second conclusion drawn from the Clomped study is that in the early 1990s ICT use in education was predominantly the use of computers, reflecting usage characterized as substituting for already existing didactical functions. The integration of technology in the dimly practice of school is a process influenced by many different factors. So the question is how to get en route! This question will be discussed by applying a system analysis point of view.

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