

TECHNOLOGY AND TEACHING IN POST-MODERN ENVIRONMENTS- OR RHETORIC NEGOTIATIONS OF EDUCATION

Assistant Professor Geir HAUGSBAKK
Department of Education
Faculty of Social Sciences
Lillehammer University College,
Lillehammer, NORWAY

ABSTRACT

The article focuses on the situation as we engage with emerging post-modern environments marked by a continued strong belief in technology as the key governing force in society, and by teaching being sacrificed on the altar of "progress". "Teaching" has been turned into "learning". Furthermore, new learning strategies are quite often, in some way or other, interweaved with the use of new technology. However, the instrumental perspectives of the industrial society have been to a large extent prolonged. Accordingly, the underlying assumption of this article is that developments concerning technology and education during recent decades can most adequately be understood as a rhetorically based negotiation between two basic, antagonistic positions. The first position is grounded in perspectives of "the industrial society", the other one in notions of "the learning society".

When new technological devices, based on traditional perspectives, are combined with learning strategies of the future, we might regard this as an adoption of ideas of the learning society or as a construction of rhetoric structural couplings. Viewing recent changes in this manner provides new perspectives on important questions concerning the relationship between technology and education. It also constitutes a framework for the quite necessary process of reconsidering and clarifying the concepts of technology, teaching and learning. The tendencies described in the article are presented as overall trends within education, but the use of new technology to a large extent seems to be connected to new and more flexible educational methods and elements of distance education.

Keywords: Technology and teaching; ICT and learning; new language of learning; the learning society; interactive technology; Learning Management Systems; rhetoric constructions.

INTRODUCTION

The teaching machines of the 1960s constituted what was regarded as the ultimate combination of technology and teaching. The invention of these machines was based on a firm belief that the new technology would revolutionize the profession of teaching (Pressey, 1960).

Potentially making education more effective, to a large extent by industrializing it, the teaching devices represented the highpoint of a predictable, well-organized, modern society. The perspectives of industrializing the teaching activities were also to a large extent dominant within the distance education institutions (Peters, 1988; Keegan, 1996).

The use of new technology in education remained a symbol of modernity, even though the apparatus and methods of Skinner and the behaviourists were abandoned. Gradually though, visions of what technology might do to improve education were combined with the ideas of an emerging "post-modern" or "information society". This was clearly manifested in the arrival and use of the Internet, by systems making computer-mediated-communication feasible and later on by different kinds of Learning Management Systems. Computers and the Internet were linked to new educational practices and dynamic and flexible future environments (Selwyn, 2000a and 2000b). In this way they marked a distinct contrast to the industrial society, although basic attitudes towards technology were prolonged and technology to a large extent still was regarded as the basic motive force and premise in social and educational development. This corresponds with the tendency reported as having profound implications for distance education, namely "the tendency for online tools and pedagogies to operate in predictable ways" (Russel, 2007).

On the other hand, the attitudes and reflections concerning teaching obviously went through some quite dramatic changes during the same period. Through the 1980s "teaching" faced heavy pressure, both as a phenomenon and as a concept, and in the 1990s the main focus shifted from "teaching" to "learning" (Biesta, 2004). A common understanding was that teaching and learning constituted a dichotomy where teaching belonged to a tradition that we were about to leave, characterized by transfer of knowledge and students as passive recipients. Learning represented the future of education associated with active students, individuality, flexibility and a dynamic society. The different positions regarding "technology" and "teaching" constitute an interesting situation. The emergence of post-modern environmentsⁱ has been characterised by a continued strong belief in technology as a key governing force in society. In many respects, these are beliefs and attitudes that can be traced back to "the enthusiasm and faith in technology as a liberating force expressed by leaders of the eighteenth-century Enlightenment" (Smith, 1994, p. 2). Teaching, however, is apparently not a phenomenon in the same manner compatible with the emerging new society. Teaching has somehow been sacrificed on the altar of "progress" and turned into learning. Furthermore, new learning strategies are quite often some way or another interweaved with the use of new technology.

RHETORIC NEGOTIATIONS

The strong technological focus raises a number of challenges, not just because technological devices obviously draw attention away from the general didactical reflections, but also because technological perspectives to a large extent are connected to instrumentality and promises of bringing about clearly specified learning outcomes by using new technology.

The focus on learning is part of a natural reaction to negative experiences with traditional classroom teaching, and a consequence of the new challenges in education caused by profound changes in society. However, the promotion of learning at the expense of teaching to some extent seems to be based on intentions of just marking a difference to established educational practices or on commenting on visions of post-modern environments, rather than providing insights into the unique qualities and consequences of a new form of society. The arguments for a "learning society" contain obvious contradictory statements and reflections, but they are more or less united in the critique of "the teaching paradigm" and "the industrial society".

To a large extent then, the situation might be regarded as a matter of rhetoricⁱⁱ and as a struggle over how society and education ought to be described. The underlying argument of this article is that developments in technology and education during the last decades can most adequately be understood as a rhetorically based negotiation and antagonism between two basic positions concerning education. At the same time these positions reflect dilemmas dating back to the eighteenth century. The first position is grounded in "the industrial society", the other one in the notions of "the learning society". The concept "learning society" has frequently been used in synonymous fashion with "information society" or "post-modern-society", quite often as a slogan without any clear definition, but indicating one of the dominating characteristics of an emerging society. "Learning society" might also be regarded as an action-oriented concept corresponding to the analytical concepts of a new society. "Learning", as writers such as Qvortrup (2001) have argued, is a practical and necessary consequence of living in a "hypercomplex" societyⁱⁱⁱ. Based on reflections above and the intention of studying the rhetoric concerning technology, teaching and learning, the concept of "learning society" represents a fruitful line of exploration, especially since it focuses on the core of topical discussions.

Viewing recent changes this way, as a negotiation between antagonistic positions rooted in different social paradigms as the industrial society and the learning society, provides new perspectives on the important questions surrounding technology and education. It also constitutes a framework for the quite necessary process of reflecting upon and clarifying the concepts of technology, teaching and learning, hopefully based on the unique characteristics of the currently emerging society. As a background for the further elaboration of this framework, I will briefly examine the history of technology and education and take a closer look at the transformation of teaching into learning.

FROM TEACHING MACHINES TO LEARNING MANAGEMENT SYSTEMS

"Modern" teaching machines were anticipated in the 1920s by the devices of Sidney L. Pressey. By introducing a "simple apparatus which gives and scores tests – and teaches", he became a pioneer in the development of "teaching machines" or "automated teaching". He pointed out how labour saving devices were quite feasible in education and that education could be run as efficiently as any large-scale undertaking (Glaser, 1960, pp. 23-24). Pressey predicted an industrial revolution in education as education was the one major activity that was still in "a crude handicraft stage" (Pressey, 1960, p. 51).

Whereas industry had reached the stage of mass-production in the 19th century, education was still regarded as pre-industrial "in concept and execution" in the middle of the 20th century. The idea was to create synchronized and standardized systems not just for one class or one school, but for all nations as a whole (Marx, 1970, p. 210). These kinds of assumptions also constituted an important part of distance education in the early 1960s (Keegan, 1996)

From the 1950s, the development of teaching machines was linked to B. F. Skinner and his concept of reinforcement. Although Skinner consistently used the term teaching machine, he clearly pointed out that the really vital aspect was the arrangement of the materials, not the machines themselves (Skinner 1958). However, in the public debates it was the machines and the ambitions to replace teachers that received main attention.

From the late 1970s, new tendencies became apparent in educational technology. In the wake of the "cognitive revolution" the emphasis shifted from the behaviouristic perspectives based upon arranging teaching materials to procedures for facilitating interaction. The focus was placed upon knowing rather than responding, the active and constructive learner rather than the passive recipient of stimulus (Saettler, 1990). Throughout the 1980s, a huge number of educational programmes were launched containing some element of "interactive" technologies (Haugsbakk, 2000). Interactive technology was supposed to "bring new kinds of access techniques", "afford radically new ways of enabling a student to interact with knowledge" and "support a high degree of user control" (Laurillard, 1987, pp. 13 – 14). Differences compared with the established ways of doing things were given a lot of attention, especially in terms of the contrast between the "new" interactive media and "traditional" broadcast media. However, arguments were mostly based on *visions* of what we might achieve in making use of the new technology, and they were expressed in general phrases. The existing material, the "interactive" programmes and technologies, often showed "weak interaction" (Bork, 1987). Compared with the teaching machines and the behaviouristic approaches, the differences and improvements weren't always visible and impressive. But with an emphasis on cognition, individuality, active construction and interaction some new signals were sent out.

With the introduction of the Internet and different kinds of Learning Management Systems in the 1990s, the intention of making education suit the new emerging society became clearer, and they were more directly stated. Unlike the "interactive" devices of the 1980s, based on human-machine-interaction, the Internet constituted a framework for human-human-communication and for flexible ways of handling complex interactions and information processes. The Internet went more directly to the core of the post-modern conditions, and Learning Management Systems were explicitly designed to match the "dynamic future". They were described as flexible, giving a maximum of freedom to the students, and they were supposed to reflect "the latest developments in technology and modern education" (Haugsbakk, 2004).

The arguments were to a large extent grounded in a set of new perspectives regarding education and in a firm conviction that we were entering a quite new kind of society.

On the other hand, these basic beliefs didn't seem to contain a more detailed analysis or descriptions of the unique characteristics of the new environments and the actual knowledge and competencies acquired. In addition to this we might easily detect examples of how established ways of describing and understanding education and society were prolonged, not the least regarding technology. The strong focus on technological devices was maintained and also the tendency to view technology as the driving force in society. Learning Management Systems were promoted by their "effectiveness" and goal-directedness compared to "traditional" methods in education. They could offer several specialized, "flexible tools" to "satisfy most of your needs". In such a way, pedagogical challenges were transformed into questions of picking the right tools (Grepperud and Haugsbakk, 2004). Neil Selwyn has described how The National Grid for Learning, "the most ambitious educational computing initiative in UK", has been shaped within "a restrictive technocratic and determinist discourse, thus conforming to traditional narratives of society and technology". At the same time the Grid has explicitly been positioned within the wider discourses of the "information age" and "computer revolution" (Selwyn, 2000a). Instrumental attitudes regarding technology have been integrated parts of the official plans for introducing ICT in education, and Norwegian schools have by some researchers been criticized for going backwards into the new millennium (Østerud, 1999).

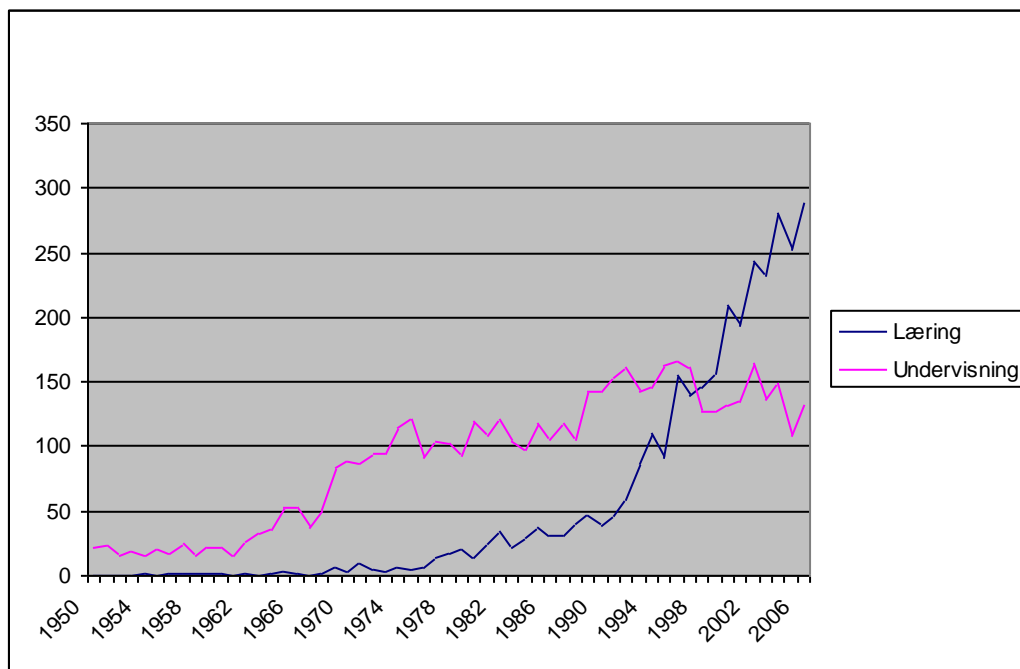
To some extent this situation may be regarded as a consequence of the educational institutions not having reached a level where they have made use of the latest technology described as for instance "Web 2.0" (Nordkvelle, 2007). Based on perspectives defining "social software and Web 2.0" as "highly interactive", distance learning environments founded on the more well-known Learning Management Systems are characterized as being "passive to moderately active" (Kesim and Agaoglu, 2007). The article, however, is based on the fact that the present situation is characterized by the Learning Management Systems constituting the main preferences of the educational institutions.

THE NEW LANGUAGE OF LEARNING

We might therefore, conclude that some of the basic considerations and attitudes regarding the use of technology in education have scarcely been altered, although the context has profoundly changed. However, as indicated above there has been a significant change in the way we speak about education in general. Gert Biesta summarises these changes and states that we have established a "new language of learning" (Biesta, 2004). At the core of these changes is the replacement of "teaching" with "learning". Instead of "teaching" and "education" or combinations including these terms, we now usually talk about the "facilitation of learning", "provision of learning opportunities", "establishing learning environments", "adult learning", "lifelong learning" and so on. The names of projects, institutions and departments have been changed accordingly. In Norway the national initiative to support and coordinate the involvement of higher education institutions in "lifelong learning" was established in 1990 and named "The Norwegian Agency for Distance Education". In 1999, the name of the institution was changed to "The Norwegian Agency for Flexible Learning". Similarly, several distance education units at universities and colleges were turned into departments for "lifelong learning" (Haugsbakk and Nordkvelle, 2004).

Biesta provides a broad perspective concerning the reasons for this development, and he claims that the growing significance of the "new language" is connected with underlying tendencies in the current society: the theories of learning, the effect of postmodernism, the effects of individualism, and the erosion of the welfare state. All these trends are vital to an understanding of why the "old" language is being replaced by the new. What we have at hand, according to Biesta, is a situation where the process of education is re-described in terms of an economic transaction, in which the learner is the consumer, the teacher or the educational institution the provider, and education itself becomes a commodity (Biesta, 2004).

The empirical effects regarding the development of the language of learning can be documented by bibliometric analysis. Searches for "learning" and "teaching" in the Norwegian BIBSYS Library database rather clearly support the tendencies presented above. BIBSYS contains information about books and periodicals held by Norwegian University Libraries, the National Library, college libraries, and a number of research libraries in Norway.



The number of hits for "learning" ("læring") and "teaching" ("undervisning") in the Norwegian BIBSYS Library database 1950-2006.

The database covers 8 million copies. The total results of the search in the title-fields of BIBSYS were about 8000 hits for "learning" ("læring") and 6000 for "teaching" ("undervisning").

When the hits were organized by the years of publication in the period 1950 - 2006, "teaching" appeared as the most popular term all the way up to almost the middle of the 1980s.

There was a shift between 1983 and 1984. During the 1990s the differences were quite remarkable, on average there were more than double the amount of hits each year for "learning" compared with "teaching". A similar search by the ERIC (Educational Resource Information Center) ended up with broadly similar figures. ERIC is an information system supported by the U.S. Department of Education, the National Library of Education, and the Office of Educational Research and Improvement (Haugsbakk, 2008).

BETWEEN "INDUSTRIAL SOCIETY" AND "LEARNING SOCIETY"

As indicated above, visions of learning in a "post-modern society" have to a large extent been based on a traditional and restricted understanding of the technology as tool. The instrumental perspectives from the industrial society have been prolonged into a society where "interaction" is just as important as "production", where the ability to handle complexity is of increasingly importance compared to creating transparency and transmitting the largest possible amount of information. When traditional technological perspectives in industrial society have been combined with notions of new learning strategies, it has to a large extent been done by making rhetoric structural couplings. This might be seen as an attempt to cross the borders or overcome differences between an industrial society and a learning society. But, in this way the basic challenges and conflicts are not resolved, and this is also of great importance to the main questions concerning teaching and learning. As outlined by Lars Qvortrup (2004) the relation between the industrial society and the learning society are of the same kind as the ones between teaching and learning. They are both genuinely about the controversy between the ideal of goal-directedness and causality on the one hand, and self-dependence and individual freedom on the other hand.

At the same time the educational conflict reflects a dilemma between teaching and learning with roots in the eighteenth century, a dilemma between causality and freedom formulated by both Jean-Jacques Rousseau and Immanuel Kant. Rousseau proclaimed that we should live in accordance to nature and that free will was in conflict with the laws of mechanics. But, he also developed the idea of "the social contract" as a key factor of society to balance the "natural" rights of individuals, and he emphasised that the children had to be educated, even if this was an education to freedom. With his theories of the transcendental subject Kant brought this educational dilemma into the public domain. Public education and public forums were regarded as being basic conditions for the development of the universal, independent and free citizen. In the twentieth century this educational dilemma appears as two competing paradigms, behaviourism and cognitivism, described by "either-or", not by "both-and" (Qvortrup *ibid.*). The conflict has partly been "resolved", or we might say "neglected", by just focusing on one of the paradigms or by stating that the perspectives and approaches by one of them cover the interests of both.

In a behaviouristic, stimulus-response-perspective the main focus is put on the activities of teaching, the efforts of deciding the educational goals, the processes of planning, the development of the educational materials; on intentionality and causality. In the "ideal" industrial society the focus is put on transmitting information and knowledge, and the activities of the learner are reduced to absorbing and responding.

The last two decades have witnessed the opposite situation. By promoting cognitivism and constructivism the processes of teaching have to some extent been overlooked or transformed into matters of learning. An important consequence is that no clear distinction is made between the outer, goal-directed activities of the teacher and the inner self-referring and self-dependant processes of each individual pupil or student. In this manner, educational dilemmas are still not critically examined. They are either not taken into consideration, or "resolved" by making use of rhetoric constructions, as is the case regarding technology and education. The current situation seems to be characterised by a description of technology bearing obvious marks of values and ideas usually associated with a learning society: self-dependence, individual freedom, new learning strategies, constructivism etc.. At the same time the basic assumptions of instrumentalism, goal directedness and causality connected to technology are prolonged. The descriptions of technology and education might be regarded as parts of an ongoing negotiation of how education ought to be described, based on ideal positions within an industrial, respectively a learning society. These positions might schematically be described this way:

"Industrial society"	"Learning society"
behaviourism	cognitivism/constructivism
goal directedness	self-dependence
causality	individual freedom
teaching	learning

RHETORICAL CONSTRUCTIONS

An overall trend is that technological perspectives based on traditional attitudes of the industrial society are rhetorically linked to strategies of the learning society. In many ways this might be seen as an annexation or adoption by the industrial society of the new language of learning. By using the descriptions of "interactive" devices and the Learning Management Systems as examples, some more illustrations of rhetorical constructions will be given below. The teaching machines of the 1960 clearly show how instrumentalism connected to technology was achieved in a performative manner. The machines were explicitly made parts of the attempts to bring education into the stage of mass-production.

However, to a large extent this also has to be regarded as a rhetorical construction taking advantage of the still evident aura of industrialisation and automation. Knowledge and skills should not be treated as industrial products, and by the end of the 1970s analogies like these were no longer part of the dominant rhetoric. Since then, rhetorical descriptions or constructions concerning the use of new technology in education have been characterised by:

- The annexation or adoption by the industrial society of the arguments connected with the learning society; trying to make them fit the new technological devices in a simple and natural manner.
- The efforts to create an antagonistic situation between the new technological devices and traditional technology, or between new educational practices supported by the innovative technology and established ways of teaching and learning.
- The use of concepts and metaphors generally giving positive connotations to most people and being able to bridge the gap between different theoretical stands towards education.

"Interactive Technology" as an Example

The first two characteristics are usually combined. The promotion of the "interactive" media in the 1980s suggests several illustrative examples. The focus on learning, new learning strategies and the distinct differences compared with existing technology and practices are evident in the quotations from Diana Laurillard cited above. She described "interactive" technology in terms of its "new kinds of access techniques", "radically new ways of enabling a student to interact with knowledge" and "high degree of user control" (Laurillard, 1987). Furthermore, the interfaces of "Interactive Learning Systems" were specially designed "to engage the learner in external behaviors such as making choices, answering questions, and solving problems" (Jih and Reeves, 1992, p. 40).

The visions were seldom very concrete, although the ambitions of creating "something new" were quite apparent. Interactive video promised "enhanced learning opportunities" for students and offered academics "a new avenue for creative expression" (Fuller, 1987, p. 26). Interactive video was described as "the Twenty-first Century Books" that would "set the tone and style for education" in the future. The traditional book was supposed to become "the papyrus of a bygone age" (Clark, 1987, p. 73). The new devices were obviously meant to be capable of coping with the challenges of the future.

To a large extent interactive media were also described in terms of the contrast with "traditional" media, first of all broadcast media. "Interactive" media were proposed as the solution to a major problem with broadcast medium, namely its "ephemeral nature and linearity" (Looms, 1993, p. 117). This was achieved on a general level and not by going into detailed descriptions or analysis, whether of broadcast media or the "new" media. In the same way "interactive" media were associated with new ways of learning in opposition to traditional teaching methods. This was largely done by using stereotypes, for example by stating that "interactive" ways of learning constituted a break with a two thousand year tradition of education dominated by "modes of learning that are *not* interactive". The aim was to move to "an interactive learning environment for *all* students, in all parts of the world" (Bork, 1987, p. 30).

To promote the new technology a quite useful and appropriate concept was introduced and heavily used – "interactivity". The term had no common accepted meaning or definitions, but a whole range of positive connotations making it acceptable for most people. It offered positive associations for technologists, marketers, publishers, academics, politicians and ordinary IT-users.

It was connected with high-tech, progress, individual freedom, self-dependence, increased learning opportunities, and even democratisation and political liberation.

“Interactivity” possessed some kind of “magical power” (Jensen, 1998). The term and the vague ideas surrounding it apparently bridged the gap between former opponents regarding the use of technology in education in general and also between diverging educational strategies, as found in behaviourism and constructivism. It was an almost perfect concept for making a rhetoric structural coupling of the industrial society and the learning society.

To some extent, however, the opinions expressed by distant educators and distant education institutions seem to differ from the dominating ones usually presented by actors within dual-mode institutions. Academics and researchers rooted in the distance education traditions to a larger extent presented broader and more nuanced perspectives regarding “interaction” and “interactivity”. One reason for this might be that the reflections on “new interactive” media from the 1980s and 90s were clearly based on the efforts and research connected to the development of more traditional educational material. An illustrating example is the work of Holmberg on “guided didactic conversation” established through “real” or “simulated style”. A simulated conversation might be developed by using “a conversational style” within a course material, and this could lead to “an internalized conversation” within the students (Holmberg, 1989 and 1993). Approaching new media and new technology Holmberg’s focus is on how they might strengthen the guide didactic conversation. Similar broad perspectives are also presented regarding Moore’s “three types of interaction” (Moore, 1989), Mason’s “three dimensions of interactivity in educational terms” (Mason, 1994), Hillman’s work on “learner-interface interaction in distance education” (Hillman et al., 1994) and Wagner’s efforts to develop “a functional definition on interaction” (Wagner, 1994). The overall dominating descriptions of “interactive technology” from the 1980s, however, illuminate all of the three main characteristics of rhetoric concerning the use of new technology as presented above.

Learning Management Systems

The same characteristics might also be demonstrated by descriptions of The Learning Management Systems, although they appear in slightly different ways. They are in the same manner connected to some undoubtedly very important key phrases in “post-modern” environments, to a large extent “flexibility” and “freedom”. “Interactivity” is still important, but the popularity of this term seems to have waned, probably because it has been too intimately associated with the “human-machine” technology of the 1980s. The Internet-based systems, such as the LMS’s, are, however, to a greater extent than “interactive media” linked to the emerging new society. On the other hand, it seems like the contrast with established technologies and methods of teaching and learning are expressed more indirectly.

The Norwegian LMS Classfronter might be used as an example. No doubt, this system was assumed to be a natural and necessary part of the new learning society. Classfronter was developed to give a maximum of freedom to the students:

"Thanks to Fronter, you can work on your tasks at any time and from anywhere." Classfronter was designed to match the "dynamic future": "As your needs change, you can add new Fronter tools to the rooms where you are working." Fronter might satisfy most of your needs: "There are more than 50 flexible Fronter tools to choose from!". And the system offered new ways of dealing with the challenges of learning. Classfronter was presented as a result of an advanced educational development.

The system was described as "ideal for problem-oriented learning and group collaboration", and the ambition is to be at the forefront of developments in technology, teaching and learning: "In Fronter, development is always an ongoing process! Four times a year, we improve Classfronter, so that it always reflects the latest developments in technology and modern education" (Haugsbakk, 2004).

The difference compared with established educational methods was manifested for instance by statements of being at the "forefront" of educational development. In the case of Classfronter it was also made perfectly clear that the system "focuses on learning rather than teaching – meaning that Classfronter to a great extent facilitates learning on the students' own terms".

Comparisons with former educational technologies were not done explicitly. On the other hand, compared with the "interactive technology" of the 1980s the contrasts and conflicts to a greater extent seemed to be included in the system. Although it was the new learning strategies that were in focus, established educational methods were clearly integrated parts of the system, actually making them quite problematic. There was a dramatic contrast in Classfronter between the learning processes promoted as being at the forefront of the educational development, characterized by complex processes of problem-orientation and group collaboration, and attitudes regarding tests and evaluations, where learning was mainly concerned with rather simple processes of absorbing and reproducing knowledge in ways that may easily and quickly be detected with automated tests. These contrasts were rarely commented upon, but they were made even more distinct by overall arguments of simplicity. Simplicity was a key concept elaborated in different directions. The designers had for instance made it "just as easy to navigate and work in Fronter's virtual building, as to move around in a physical building." Classfronter was designed to make it easier for the teachers and administrators to monitor some of the students' activities. They were offered reports and statistical material on the students' progress. When they felt prepared, students could test their skills and knowledge and immediately receive results. Classfronter made it easy to design good tests. These could be automatically corrected. Classfronter offered comprehensive and detailed progress reports for individual students, classes, or the learning institution as a whole: "Automatically!"

The extent to which the argument of simplicity was elaborated, illustrates the instrumental attitude towards technology and the influence from behaviourism as also indicated above. This was not in accordance with the main intentions of being at the forefront of the educational development and focusing on learning rather than teaching. However, this not articulated, more or less implicit, combination of behaviourism and constructivism might also be seen as a strengthening of the rhetoric coupling.

CONCLUDING REMARKS

The basic argument of this article has been that the introduction and description of technology in education can most fruitfully be regarded as part of a rhetoric negotiation on how education ought to be described. They are rooted in antagonistic positions concerning the industrial society and the learning society.

New technology is linked to values and ideas associated with new learning strategies although the instrumentalist perspectives of industrial society have been prolonged. When traditional technological perspectives have been combined with the new language of learning, it has to a large extent been done through rhetorical structural couplings. But, the basic challenges and conflicts of education are not resolved, they are merely overlooked or neglected.

Accordingly, there is a need to clarify the basic concepts and phenomena of education, of teaching and learning and of educational technology. It's quite necessary to challenge the instrumentalism and determinism connected with traditional understandings of technology. One approach is to look at the unique characteristics of the industrial society versus the learning society. As described in the article these different social paradigms can function as a framework for an extended understanding of teaching and learning, as two separate but mutually dependent processes within education, and represent an approach to basic educational conflicts and dilemmas. In addition to this the framework above might also bring some new dimensions to Biesta's analysis of the new language of learning. First of all, the framework presented makes technology an integrated part of the analysis. Biesta does not discuss the role of new technology. Secondly, it highlights the continuous negotiation between established and new sets of perspectives, in this case a dominant perspective constituted by traditional assumptions of technology and new conceptions of learning. Lastly, current conflicts within education are made part of an educational dilemma with roots in the 18th century. Biesta's analysis is concentrated on new tendencies and on how tradition and established practices are defeated.

I have concluded that the dominating tendency concerning reflections on technology and education is constituted by rhetoric couplings between two antagonistic positions. I have also regarded the rhetoric couplings as arguments in the ongoing negotiation based on a traditional understanding of rhetoric. I have not discussed to what extent the current participants of the negotiation have been aware of the character of their own argumentation. Another interesting question not discussed, is to what extent the current metaphors and rhetoric constructions are necessary and helpful in times of radical change. They might under certain circumstances represent useful ways of dealing with complexity. They also to some extent might be regarded as a necessary part of change as they are connected to expectations of a new development opposed to experiences of the past. This corresponds to Koselleck's studies of the transition between pre-modern and modern society. He observes how the key concepts that had formerly been rooted in "experience", become associated with "expectations" of something new.

When concepts are disassociated in this way from experience and linked to expectation, they are generalised and become less specific. It means that many people will endorse them but it also provides a basis for attempts from many quarters to capture them and assume control of them (Koselleck, 2004). This gives a background for the rhetoric negotiations of education at present.

Anyhow, we have to be aware of the unique characteristics of the social conditions under which we are living and not act as if the perspectives of industrial society were satisfactory as guidelines for addressing the emerging society.

BIODATA and CONTACT ADDRESSES of AUTHOR



Geir HAUGSBAKK is an Assistant Professor at Lillehammer University College, Department of Education. For more than ten years he has been responsible for developing part-time and distance education courses at the Centre for Continuing Education within the University College. Gradually he was increasingly more involved in research, from 2002 as the project manager for the development of a research centre of media pedagogy. His research interests are connected to language, media, technology and education, and he has published several articles within in this area.

Assistant Professor Geir Haugsbakk
Department of Education
Faculty of Social Sciences
Lillehammer University College,
Phone: +47 61 28 82 09
Cell: +47 90 91 48 18
Fax: +47 61 28 81 88
Email: Geir.Haugsbakk@hil.no

REFERENCES

Biesta, Gert (2004): Against learning. Reclaiming a language for education in an age of learning. *Nordisk Pedagogikk*, Vol.24. no.1, pp 70-82.

Bork, A. (1987): Interaction: Lessons from computer-based learning. In Laurillard, D. (ed.): *Interactive Media: Working Methods and Practical Applications*. Ellis Horwood, Chichester.

Clark, David R. (1987): Twenty-first Century Books: An assessment of the role of Videodisc in the next 25 years. In Laurillard, D. (ed.): *Interactive media: working methods and practical applications*. Ellis Horwood, Chichester.

Fuller, Robert G. (1987): Setting up an interactive videodisc project. In Laurillard. D (ed.): *Interactive Media: Working Methods and Practical Applications*. Ellis Horwood, Chichester.

Glaser, Robert (1960): Christmas Past, Present, and Future: A Review and Preview. In: Lumsdaine, A. A. and Glaser Robert (eds.): *Teaching Machines and Programmed Learning. A Source Book*. Washington: Department of Audio-Visual Instruction, National Education Association of The United States, p. 23-31.

Grepperud, Gunnar and Haugsbakk, Geir (2004): *Ikke helt som planlagt? Nettbaserte aktiviteter i teori og praksis*. [Not as planned? Net based activities in theory and praxis.] Forskningsrapport nr. 118/2004, Høgskolen i Lillehammer.

Haugsbakk, Geir (2000): *Interaktivitet, teknologi og læring – en forstudie*. [Interactivity, technology and learning – some preliminary studies.] Skriftserie for Forsknings- og kompetansenettverk for IT i utdanningen, Unipub forlag, Oslo.

Haugsbakk, Geir (2004): The ideas of Learning Management Systems. Paper at The Nordic Educational Research Associations 32nd Congress, Reykjavik 11-13.3, 2004.

Haugsbakk, Geir (2008): Retorikk, teknologi og læring. [Rhetoric, technology and learning.] Unpublished manuscript.

Haugsbakk, Geir and Nordkvelle, Yngve Troye (2004): The rhetoric of ICT and the new language of learning - a critical analysis of the use of ICT in the curricular field. Paper at The European Conference on Educational Research, University of Crete, 22. - 25. September 2004.

Hillman, Daniel C.A.; Willis, Deborah J. and Gunawardena, Charlotte N. (1994): "Learner-Interface Interaction in Distance Education: An Extension of Contemporary Models and Strategies for Practitioners". In *The American journal of distance education*, vol. 8, no. 2.

Holmberg, Börje (1989): *Theory and Practice of Distance Education*, London: Routledge.

Holmberg, Börje (1993): "Key issues in distance education: An academic viewpoint". In K.

Harry, M. John & D. Keegan (red.): *Distance Education: New Perspectives*, London: Routledge.

Jensen, Jens F. (1998): "Interaktivitet og Interaktive Medier". In Jensen, Jens F. (ed.): *Multimedier Hypermedier Interaktive Medier*. [Multimedia, Hypermedia and Interactive Media.] Aalborg Universitetsforlag.

Jih, H.J. & Reeves, T.C. (1992): Mental models: A research focus for interactive learning systems. In *Educational Technology Research and Development*, 40 (3), p. 39–53.

Keegan, Desmond (1996) *Foundations of distance education*, London: Routledge.

Kesim, Eren and Agaoglu, Esmahan (2007): A Paradigm Shift in Distance Education: Web 2.0 and Social Software. *Turkish Online Journal of Distance Education - TOJDE*, Vol.8. no. 3.

Koselleck, Reinhart (2004) *Futures past. On the semantics of historical time*, New York: Columbia University Press.

Laurillard, D. (1987): Pedagogical design for interactive video. In Laurillard, D. (ed.): *Interactive Media: Working Methods and Practical Applications*. Ellis Horwood, Chichester.

Looms, Peter Olaf (1993): Interactive multimedia in education. In Latchem, Colin; Williamson, John and Henderson-Lancett, Lexie (eds.): *Interactive Multimedia: Practice and Promise*. London: Kogan Page.

Marx, Leo (1970): Notes for a humanist critique of technological innovation in teaching. In Tickton, Sidney G. (ed.): *To improve learning. An Evaluation of instructional technology. Volume II*. New York: R. R. Bowker Company, p. 203-212.

Mason, Robin (1994): *Using Communications Media for Open and Flexible Learning*, London: Kogan Page.

Moore, Michael G. (1989): "Three types of interaction". In *American Journal of Distance Education*, vol. 3, no. 2.

Nordkvelle, Yngve (2007): *Digitale mapper i høyere utdanning: Omfang, bruk og trender for framtida*. [Portfolio in higher education: the extension of use and trends for the future.] Tromsø: Norgesuniversitetet.

Peters, Otto (1988) Distance teaching and industrial production. A comparative interpretation in outline. In: Sewart, David; Keegan, Desmond and Holmberg, Börje (eds.) *Distance education. International perspectives*, 95-113. London: Routledge.

Pressey, S. L. (1960): A Third and Fourth Contribution Toward the Coming "Industrial Revolution" in Education. In Lumsdaine, A. A. and Glaser Robert (eds.): *Teaching Machines and Programmed Learning. A Source Book*. Washington: Department of Audio-Visual Instruction, National Education Association of the United States, p. 47-51.

Qvortrup, Lars (2001): *Det lærende samfund. Hyperkompleksitet og viden*. [The Learning Society. Hypercomplexity and Knowledge.] København: Gyldendal.

Qvortrup, Lars (2003): *The Hypercomplex Society*. New York: Peter Lang.

Qvortrup, Lars (2004): *Det vidende samfund. Mysteriet om viden, læring og dannelse*. [The Knowledge Society. The Mystery of Knowledge, Learning and Bildung.] København. Unge Pædagoger.

Russel, Glenn (2007): Globalization, distance education and hegemonic futures. *Turkish Online Journal of Distance Education - TOJDE*, Vol.8. no.4.

Saettler, Paul (1990): *The Evolution of American Educational Technology*. Libris Unlimited, Colorado.

Selwyn, Neil (2000a): The Discursive Construction of the National Grid for Learning. *Oxford Review of Education*, Vol. 26, No. 1, pp. 63-69.

Selwyn, Neil (2000b): The National Grid for Learning: panacea or Panopticon? *British Journal of Sociology of Education*, Vol. 21, No. 2, pp. 243-255.

Skinner, B. F. (1958) Teaching Machines. *Science*, (128) 969-977.

Smith, Merrit Roe (1994) Technological Determinism in American Culture. In Marx, Leo and Smith Merrit Roe (eds.) *Does Technology Drive History? The Dilemma of Technological Determinism*, 1-35. Cambridge, Massachusetts: The MIT Press.

Svennevig, Jan; Sandvik, Margareth and Vagle, Wenche (1995): *Tilnærminger til tekst. Modeller for språklig tekstanalyse*. [Approaches to text. Models for text analysis.] LNU, Cappelen Forlag.

Wagner, Ellen D. (1994): "In support of a functional definition of interaction". In *American Journal of Distance Education*, vol. 8, no. 2.

Østerud, Svein (1999): Norsk skole baklengs inn i det neste årtusen? [Norwegian schools backwards into the next millennium?] *Bedre skole*, No. 2.