

Media's Impact as Implicit Learning Objectives: COMETS as an Example of Chances for Internet-Learning viewed from both Media-Theory and Constructivism

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McLuhan's media theory and the constructivistic view on learning cultures demand a look on psychological and social effects of real and virtual learning arrangements. E-Learning systems should concentrate on facilitating communication and self-determination of learners. COMETS – as a chat system for online-tutorials – is an example for sophisticated tools to achieve this.

Keywords CSCL; JITOL; Media Theory; Constructivistic Learning; Learning Cultures; Social Software

1. Motivation

Current work on evaluation of current E-Learning systems conclude that E-Learning has no higher learning outcome for itself compared to common learning arrangements [1, 2]. After the failure of practical or economical oriented technicians, who were dominating the earlier E-Learning approaches, pedagogues emphasize there is “no reason for the assumption that the adoption of certain media technologies is able to provoke innovations or even revolutions” [3] and deny that media have meanings and effects for the learning in themselves.

This opinion refers to evaluations of the learning of explicitly formulated learning contents. However, media bring very well a “secret curriculum”. The young term “learning culture” [4] expresses an arrangement of a learning environment that consists of people, things and actions. Learning cultures teach implicit learning objectives that are mostly closer to demanded key qualifications such as independence, interest, willingness to learn or flexibility than explicit learning objectives do.

What influence has media on this area of the implicit learning? The media theory expands the media concept so far that the medium used for learning encloses the all around lying learning culture, and argues—historical experiences including—that media even have huge effects on social, psychic and physical structures. With this work these experiences should be made utilizable for the area of E-Learning.

2. The Consolidation of Medium and Learning Culture

Media science and constructivistic didactics describe similar characteristics and effects of a medium and a learning culture. In order to explain these effects first the old concepts of usual terms must be opened out.

2.1. Unclear concepts are a sign of weak effects

What is E-Learning? What is Multimedia? These nouns are hard to define while even the sense of media differs between the sciences and authors within. Kerres [3], especially Schulmeister [1] and many others discuss different definitions of multimedia on several pages of their work and even the wide term “E-Learning” is used differently. Why do we feel some media belonging to multimedia, and others not, but cannot explain in a clear way? I can only think of two reasons:

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- 1 1. These new terms are invented just for economic reasons (at least science-economic ones)
- 2 2. The difference and the effects of systems belonging to multimedia and E-Learning are not sig-
- 3 nificant enough compared to other, even traditional learning strategies.

4 It seems obvious to take a look for more suitable concepts.

6 2.2. Borrowing of a media concept from media science

8 Since the introduction of the media topic to the general didactics by Heimann the separation between
9 contents, learning organization, method and used medium is usual and sensible for planning- and analys-
10 ing purposes. [3] The media term is ambiguous and means either a category of tools to transport informa-
11 tion in the teaching process, or it means the concrete instances of these.

12 With the spreading of computers and their appreciated possibility to use them as a transport medium
13 for learning content, it came in mind suddenly that the teacher appears to be a medium itself, too.

14 In the scope of E-Learning, the technically defined media term will not satisfy the application on a
15 learning context and should be extended. Even media didactics criticise the take out of the medium from
16 didactical consideration. [3]

17 McLuhan's media theory founded modern media science and communication science. [6] Especially
18 in [5] he identified strong impacts of media from analysing them in the history of mankind. Media influ-
19 ence individual people and they form the society in total. Defining media as "extensions to man" ex-
20 plains the power of these effects, because media not just facilitate – they belong to us and extend the
21 human body. Thus, especially the environment of people has to be explored to identify media.

23 2.3. Learning cultures and implicit learning objectives

25 When thinking of a learning environment first school comes in mind. While pedagogues mostly use the
26 term media in a technical sense there has been no term for the social and technical environment for long
27 time. In the last years, the term "learning culture" came up and Holtappels defined this as the following:

- 28 ▪ The form of the learning arrangement and the learning organisation
- 29 ▪ The offer und facilities of learning in total
- 30 ▪ The quality of didactical funding and methodical determination [4]

31 Traditional learning in schools is criticized because of its tension just to focus on the explicit learning
32 content in an objectivistic way while the learning of methods becomes more and more important. "Im-
33 plicit learning becomes a strong meaning regarding learning cultures. This consists of the adoption of
34 attitudes, understandings, customs as well as competence, which is provided unspoken, by the way and
35 subliminal. It is in particular this implied learning which seems to be of central meaning for the acqui-
36 sition or non-acquisition of key qualifications, learning attitudes, problem solving strategies and independ-
37 ence of central meaning." [4]

38 But not only school may be an environment: children explore a real environment and also virtual envi-
39 ronments can be used as learning media. [7]

41 2.4. The impact of media on learning

43 When a medium is used, McLuhan speaks of numbing, which strikes the organ that was extended with
44 the help of the medium. The use becomes a habit and, nevertheless, remains unaware. Thus it is trans-
45 ferred easily and inwardly to other fields. The individual and the society respectively have learned un-
46 consciously. [4, 6]

47 From a media-historical view it is clear that the prevailing medium influences the way in which learn-
48 ing takes place. The village was the first important medium according to McLuhan's remarks. As an
49 expansion of the feeling of an oral stamped culture, the village also offers a learning arrangement with
50 which various is learned besides and individually and, nevertheless, in groups with others. [4, 8]

1 Even today's classrooms could fit into this media-model. By using the phrase “you don't learn for
2 school, you learn for life” (meaning future life) many teachers feel well with their frontal oriented teach-
3 ing culture when they explain things they consider to be important. According to McLuhan's theory, I
4 interpret the usual classroom as an extension of the 6th sense, an unsure look into the future. And it
5 shows the dilemma: students are often not really interested in the subjects because the subjects' needs
6 seem to be too far away. But I do not want to blame school in total: looking into the future *could* be a
7 very exciting thing.

8 Students spend time in education about one decade sitting and watching the teacher and the black-
9 board – only half-day, of course. It would be naive to deny, this arrangement would not be burned into
10 everyone's head. Thus an inherently criticising view on this traditional teaching in class comes from
11 Arnold for example. In this current institutional learning culture students learn “that it does not depend
12 on their own considerations, that they merely have to understand what is given to them, that they should
13 become active only on behest and that, in the end, the achievement of the purposes is an affair of the
14 teachers and superior.” [4]

15 As well as the frequent repetition of activities and impressions works for its adoption as a mental
16 structure, the frequent use of media also causes that certain competence is strengthened. Media may
17 provide deeper insights here, which would not be learnable in everyday real life.

18 However, media may also reduce options by limiting actions - in comparison to the pool of applicable
19 action patterns in real live. As well as a wall excludes the option to speak with one's neighbour, most
20 learning environments raise the competition of learners by their deliberate separation, which is driven by
21 the organization of practises and exams and therefore wastes valuable learning resources.

22 23 24 2.5. Sourcing out human power

25 Media relief the organs they are extending. McLuhan compares this outsourcing with an amputation of
26 an organ, which leads to psychological and biological consequences. [5] Cars relieve the musculature;
27 the electronic address book relieves the retentivity for numbers. The actions the user is eased of, he must
28 put no further energy in and he becomes in these areas unchallenged, until his competence decreases in
29 it.

30 In the classroom, students have to concentrate on the content and give out the responsibility for their
31 learning process and let the teachers do the arrangement. By that, they also give up their self-confidence.
32 [4]

33 In general, every medium, thus every E-Learning system, relieves the user of certain things to enhance
34 the concentration on other. Building new media, the consideration is important of which tasks the user
35 should be relieved, so that he loses no key competence.

36 37 38 2.6. The distinctiveness of Internet-Learning

39 In the age of an “electric network” new media are not just useful to learn certain objectives. McLuhan
40 demands “learning a living” [5] in a world of ubiquitous media, a methodical competence as constructiv-
41 ists would say [4]. An electric network like the internet will lead to living in a “global village” [5], which
42 means that society will resume to structures like they has been once in the village. Thus just from the
43 characteristics of an electric network the more personal constructivism in science [10] and even the
44 learning method is deduced that will be as self-estimated, individual, networked and “hands-on” as it is
45 also demanded by constructivistic pedagogues [4, 8, 9, 11].

46 Besides my explanations in [12] this is another reason why Internet-Learning is the most significant
47 part of E-Learning. Because of its correlation with constructivistic learning it gives also chances to estab-
48 lish a more appropriate learning culture in educational institutions, if they are designed to fulfil new
49 didactical objectives.

3. Analysing COMETS

The Communication Enhanced Tutorial System (COMETS) has been developed together with university students and is described in [13, 14]. It is “Social Software” [15] that has been designed especially to facilitate cooperative learning [16, 17] with a simple but sophisticated Just-In Time Open Learning (JI-TOL) environment for Internet-Learning. [9, 17]

3.1. Networked readers become peer tutors

COMETS uses the tension of users to read common online-tutorials when they have a problem and they are intrinsically motivated to go deeper into the subject. When they reached such COMETS enhanced tutorial, the system networks those readers that are working on the same topic anyway to facilitate cooperative learning between them. COMETS organizes the peers for peer tutoring and offers a well known chat, so that readers can ask questions to other learners that work on the same or related content. Therefore, the system identifies related interested co-readers automatically from tracing the learner's way through the tutorial. The ideal tutor is another learner who is on the page or has visited it just before. General competence of other users is irrelevant, because they will probably not answer questions that are far away from their own problem oriented learning context they currently work on. Thus the system has not to deal with persistent personal data.

COMETS works best if there are many people participating and no one is excluded. Therefore it is a free system (General Public License) designed for freely offered content. Learning should be improved without demanding further work done by voluntary authors to set up the system and keep it running, therefore sophistication was made easy.

3.2. COMETS proposed impact

The use of COMETS leads to a learning strategy, where learners ask others immediately instead of delaying their work or giving up. Of course, they could try to ask everything instead of reading. But those, who explain, want to perform their own task. Thus, the level of help is negotiated.

By these means, also the competence for social interaction is practised automatically. On the other hand, it could be criticized that this system is another medium that makes people get too much accustomed to the constant presence of other people. With COMETS, the social network is not controlled and users are free to decide how they want to use this system, which is similar to other very popular social software such as Wikiwikis and Blogs [18]. Users can live and form their own learning culture here.

3.3. Identifying probable alleviation and sourced out capabilities

One goal of E-Learning systems is the efficiency of learning. Facilitation is convenient but it is also a critical point, if proposed key abilities are incurred by the system, which avoids practising them. With COMETS just the discovering of a thematically similarly interested interlocutor is made easier. This is something real life cannot offer, because texts are read alone at most places. Today we can think of no risk of losing abilities.

4. Conclusion

Especially in the area of Internet-Learning comes clear: the media defined by McLuhan and learning cultures according to constructivistic didactics aims at the same thing and may be considered to be identical. The example of COMETS shows that compared to other e-learning tools especially social software is suited to mediate today's key qualifications. At least, Internet-Learning may become a great advantage additional to usual learning.

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