

Integrating Social Media in Tertiary Education

Experiences and Predicaments

Werner Beuschel

University of California
Bren School of Information & Computer Sciences
Irvine, CA 92697, USA
beuschel@ics.uci.edu

Susanne Draheim

University of Hamburg
Office of Quality Management and Legal Affairs
20354 Hamburg, Germany
Susanne.Draheim@verw.uni-hamburg.de

Abstract—High hopes and positive assumptions accompany the advent of social media use in learning and teaching environments. The careful examination of social aspects of technology and experiences based on case studies show nevertheless that there are predicaments that should be pondered when courses for tertiary education with hybrid learning concepts are set up. This paper outlines an introductory freshmen course at a university, shows its evaluation, and discusses sensitive areas for successful social media use.

Keywords - case studies; educational implications; hybrid learning; social media; tertiary education; weblogs.

I. INTRODUCTION

A whole new generation of internet users grows up using applications like Weblogs, Social Networking Sites, Wikis, and other web-based technologies on a day-to-day basis [1, 7]. Some of them may opt to use a system for very personal reasons like a photo and video sharing service. Others may sign up to a system for finding people with similar ideas and interests and still others may use an application to buy and sell items. The personal, group and economic aspects form different and nevertheless intertwined aspects of applications, usually combined under the umbrella terms of social media, social software or Web 2.0 [6, 12, 17]. The greater social context supports ideas of people interacting to accomplish personal aims, exploring and shaping their identity through social groups, and exploring online marketplaces. They may become persistent users and invite others to use the application, due to the social opportunities.

In the educational context the question evolves, how these recent internet phenomena could and should be used for teaching and learning purposes [2, 3, 8, 14]. High hopes have been expressed by educators on using social media in education, expressed by the term “Education 2.0”. But it seems that in a pedagogical context the appropriation of social media is different from everyday applications and possibly more difficult. Creating learning environments that foster social interaction is not such an easy task. While there is reason to assume that we are only in the early stages of a very broad movement towards user-generated data production, implications for the educational system seem nevertheless to be important if we do not want to risk an ever

widening gap between learners and teachers, not only but specially in institutions of tertiary education where students usually have all media freely at hand.

The topic at stake is whether or not the undoubted relevance and promise of social media and software applications hold up in the context of educational use, specifically in tertiary education. To answer this question, three aspects shall be reflected in this paper, derived from case studies: what are prerequisites of using social software successfully under institutional and formal circumstances? How well does an application support the user’s need for social exchange and integration? What conclusions can we draw in relation to designing didactic scenarios for courses?

The paper starts with a literature review, putting special focus on experiences with Weblogs as one of the main instances of social media. Then a course is outlined which provided the background for two case studies at a medium-sized German university of applied sciences. Analysis and evaluation of the studies follow suit. The discussion brings up six pedagogical issues. The conclusion considers inherent tensions and predicaments in applying social media in education; a number of open research questions are articulated.

II. LITERATURE REVIEW

The following theories are considered with regard to our main focus, integration of social media for tertiary education: Web 2.0 as „two-way-web“[1], namely as place, structure, tool, and media for social networking and digital self-expression [4, 5, 6]. Weblogs considered as “micro publishing tools” [7, 8] in (informal) learning environments. Hence, we will concentrate on aspects of Weblogs as one important and well-researched tool in the sphere of Web 2.0.

Literature research provides the following characteristics of Weblogs:

Weblogs can be viewed as tools of publication, based on the principles of hypertext. That means they are “fringeless text”, oscillating between the traditions of oral and written communication [16]. They transcend formal teaching and learning contexts and are not immediately amenable to a direct representation of analogue practices in the World Wide Web. This could also be interpreted as “liminal space” as described by Boyd [4].

The individual perspective (personalized expression) is central for blogging [10, 11]. Activities comprise: doing research, processing information, building knowledge, reflecting, commenting, and representing personal identity. Thus, the process of fabricating thoughts becomes visible and in this course vulnerable, by means of its own sequential documentation.

Identity representation seems to be the central motivator for the widespread adoption of social software tools. But it is not immediately clear how we can use this in learning environments. Proposals to use Weblogs comprise learning diaries, e-portfolios, comments for projects or courses.

Social software tools, being offered by teachers for learning purposes, are not self-sufficient. The adaptation through learners has to be strongly motivated and moderated, so that something like a ritualized routine is reached [15].

A reverse way to use social software tools could refer to those tools which were adopted by students beforehand and are being used as support for informal learning and communication [2]. Examples are instant messaging, Social Networking Platforms, Wikis, podcasts, RSS, peer-to-peer exchange. This requires a high degree of media competency on either side, teacher or learner, and the consideration of privacy aspects. This approach incorporates as well the conflict between motivation and control.

Media competency means to support the ability to handle personal data turned public. According to many stories in current media reports this fluctuates between “too much” and “not enough” of personalized information. So students need to develop sensitivity toward the specifics of social and communicative aspects in Web-based environments. Context-specificity makes the task even more difficult, determining an ever-shifting but appropriate amount of data and information, represented by style or scenario.

III. CASE STUDIES WITH SOCIAL MEDIA IN TERTIARY EDUCATION

Insights drawn from the relevant items above led to designing the following course, which was also the basis for the case studies. In addition, prior to the project case studies, an exploratory study on integrating Weblogs into courses was executed [3] and results were also employed for the course design. Especially a cautioning experience from the exploratory case study was considered, namely that Weblogs cannot be ascribed to students like any ordinary learning tool. They demand active participation in discussions, what in the class room is not every student's strength. As course participants realized that entries are possibly visible to the outside world - and the lecturers - not everyone was eager to join in contributing or commenting.

The following two case studies describe an effort to integrating social software tools, in this case Weblogs, into regular courses. In the background they employ a variety of didactic concepts (self-organized learning, group work, feedback groups). Evaluation results are lined out in quantitative as well as qualitative ways. The courses relate to the curriculum of informatics, which is a subfield of applied computer science. The overarching goal of the courses was

to find ways to enhance coordination and collaboration of freshman student groups.

Case study 1: Project course for Computer Science freshmen (Bachelor of Science)

This case study drew on the evaluation of the exploratory study, probing the use of Weblogs as part of a regular course. The course and study took place in the winter semester of 2006/07. Beginners at the department of Informatics and Media at a medium-sized German university of applied sciences are generally required to start with the course “Project-oriented Studies”. Right at the beginning, course concept and the purpose of Weblogs within this framework are explained. At the end, the course is evaluated and the results presented to the students.

Didactic intentions and their objectives of the course were defined as:

- Social event: beginners get to know each other
- Propaedeutics: introduction for students of the program with relation to practical application
- Learning competency: the ability of “learning to learn” is supported through group processes and self organization
- Experimental culture of learning: project-oriented studies are an integral part of the department, providing innovative impulses for teaching and learning.

These objectives were intended to ease the introduction process for beginning students and help them to get acquainted with each other. Furthermore, the practice-oriented claim of the department should be related to students. Finally, focussing on student group work as one of the essentials from the beginning should help the willingness to cooperate as well as the motivation to actively participate in the studies.

Within this context the introduction of a Weblog was aimed at serving students to organize the temporal and local requirements of their group work. Based on an earlier investigation in which one of the authors took part [9] the hypothesis was defined that upper-division students are able to use Weblogs for self organization and personal knowledge management. This supported the introduction of Weblogs in the beginner's course.

The project oriented study started with a first phase of orientation where students need to be present. Topics of this first and second day are workshops for scientific writing, library usage being an integrated part, information on the IT-infrastructure in the department, curricula and enrolment procedures, touching even mathematical and logical riddles. The second day concludes with a kick-off meeting for the eight-week part that represents the complex phase of the study, where lecturers present themselves with their projects. Their topical tasks can be chosen by the students in combination with enrolling in the basic study modules. These group processes are presented by students in a rotating procedure. The challenge of this procedure is that the traditional roles and frameworks of studies are transcended and both sides, lecturers and students, are required to organize themselves in flexible ways and meet “in between” the formal structures.

A Weblog from Wordpress was used to support this process, serving as a blackboard for news as well as a platform for information exchange on project results. Group supervisors sent e-mail to students to make them aware of this new tool at the beginning of the project phase. They were asked to register after groups were set up. Supervisors received different access rights for the Blog being "editors" while students represented "authors". Certain fixed posts in the Weblog were installed to serve as basic information for use procedures and the concept of project-oriented studies.

Following the introduction phase the student groups were required to organize themselves via Weblog communication for another phase of about 8 weeks. The participating observation of the study organizer provided data for a provisional analysis, depicted in the items below:

- *Participants:* 37 registered users, 5 writing, about 20 reading guests
- *Who is writing:* 6 lecturers, 25 students, of which 5 are actively writing, out of 11 groups
- *Weblog content:* 53 posts, 3 pages, 74 comments (work results, schedules for work and coordination, announcements, feedback, social comments, hints for usage, polls, informal items.
- *Who writes in which style:* Students comment posts, questions are frequent; lecturers inquire about group organization and work results.

The following paragraphs show results of the student questionnaire. One of the somewhat unexpected results was that the general evaluation received positive grades, while Weblog use did not.

Regarding Weblog usage in the course¹ only 14 persons (n=78) stated to use the Weblog in a regular manner. 11 did not see any necessity as they claimed to meet face-to-face, while 23 indicated to use "other" media – specifically a forum created by the same cohort of students. In sum, 19 persons answered the question on improvement suggestions, stating that the Weblog should be replaced by a forum. Reasons given were "better overview" and the opportunity to stay anonymous in face of the supervisors and lecturers. 23 persons suggested improving the Weblog according to criteria like „better introductory information, surveyability, usability, group areas, and more motivation”.

The following table shows results from the quantitative evaluation² of three closed questions on Weblog usage, concerning the course of winter 2006.

¹ Cf.: <http://zeus.fh-brandenburg.de/pst2006>.

² Legend:

- 1) Is correct to a high degree
- 2) Is correct to a large degree
- 3) Is neither correct nor incorrect
- 4) Is correct to a low degree
- 5) Is not correct

TABLE I. QUANTITATIVE EVALUATION OF WEBLOG USAGE

	Question 1:	Question2:	Question 3:
Number of answers "1"	5 (7%)	3 (4%)	17 (23%)
Number of answers "2"	12 (16%)	8 (11%)	23 (32%)
Number of answers "3"	20 (28%)	10 (14%)	14 (19%)
Number of answers "4"	16 (22%)	24 (33%)	9 (12%)
Number of answers "5"	20 (27%)	28 (38%)	10 (14%)
N =	73	73	73

Question 1: 23% of participants answer „to a high degree“ or „to a large degree“. 28 % think the answer is „neither correct nor incorrect“, while 49% subscribe to „a low degree“ or „not correct“.

Question 2: 15% of participants agree with „to a high degree“ or “to a large degree”, 14 % think it is “neither nor”. 71% find the statement to be “correct to a low degree” or “not correct”.

Question 3: 55% of participants answered with 1) and 2). 19 % choose 3), while 26% statements 4) or 5) assume.

Being an integral part of this course „Project-oriented Studies“, the Weblog has only been used selectively by students, though it was introduced with much enthusiasm by course organizers and lecturers. 2 out of 11 groups participated regularly, 3 on occasion. The active groups were “very content” with the tool. Reasons for non-usage or rejection were “not accustomed/not clear”, pointing to the new course structure. Also the previous knowledge of beginners with regard to their internet-related skills turned out to be very uneven, so that other media were preferred or the groups met face-to-face.

Case study 2: Project course for Computer Science freshmen, B. Sc.

In the subsequent winter semester of 2007/8 the course was repeated at the same German university, just a few elements were changed. In order to support all working groups the learning management system MOODLE was integrated. Version 1.8.2 of MOODLE includes Web 2.0 components (such as Weblog, Wiki, RSS, etc.) as a standard.

Drawing consequences from the preceding year's evaluation result that students in their first semester should be made familiar with communication tools as Weblogs or Wikis (which only seem to be self-explanatory), a special workshop on using these tools was provided in the context of the introduction of MOODLE. Two teachers were selected to present the communicative principles of Weblog and Wiki technology first in an intuitive way, without using computers. The students had to produce paper prototypes for Weblogs, Wikis, and - as the so far best known tool - forums.

The title of this experiment was „Social Software Tools“, its aim being to confront the students with the communicative, cooperative and social specificity of the respective medium. As for Weblogs, the principles of personalization (presenting identities) and connectivity (interlinking and tagging) were central. Wikis were presented as mainly concerned with the principle of cooperation and the production of knowledge. The prototype of the Forum gained a certain autonomy in the course of group work, since the students were already relatively familiar with its principles. They began to use the question-response structure of the diverse threads for getting into contact with one another (e.g. with questions such as „Who lives in the dorm?“, „Where may I go sailing?“, or „Who has a free room to offer?“).

In the second part of the introductory workshop the students began to adopt MOODLE step by step, from the first login and course enrolment to the design of a personal profile. They also transferred the content of the paper prototypes to the respective medium to create initial content for the group work phase. Interestingly, in this phase only the general POS Forum was successful as a group connecting communication platform, while personalized Weblogs remained practically unused and Wikis only where put to practice when teachers and their assignments motivated their use.

Evaluation: Table 2 shows the results for the learning system MOODLE in context of the students' evaluation of „Project Oriented Studying“ in winter semester 2007/8. As in the preceding year, this was a questionnaire exploring the acceptance and subjective satisfaction of the students with the whole teaching unit. Concerning the use of MOODLE, the following questions were to be answered on a scale from 1 to 5³.

³ Legend:

- 1) Is correct to a high degree
- 2) Is correct to a large degree
- 3) Is neither correct to a high nor to a low degree
- 4) Is correct to a low degree

- 1) MOODLE supported the individual organization of learning within POS.
- 2) MOODLE supported group communication within POS.
- 3) MOODLE supported content-oriented group work within POS.

The compressed results show as follows:

Question 1) = 31% (1+2), 29% (3), 40% (4+5), n= 108

Question 2) = 20% (1+2), 23% (3), 57% (4+5), n= 107

Question 3) = 21% (1+2), 28% (3), 51% (4+5), n= 107

The numerical data unequivocally show that there was no majority accepting the learning environment MOODLE as supportive or satisfactory. With 31% assent (meaning a 1 or a 2), the function of „individual learning support“ (question 1) is still relatively well evaluated, compared to the functions of „group communication support“ (question 2) and „content-oriented work support“ (question 3), where assent was only given by 20% respectively 21%, that is one fifth of the whole cohort. Questions 2 and 3 also strike with more than one half of the students, 57%, respectively 51%, who could confirm the proposed statement only to a low degree or not at all.

More specific information about the background of these results may be gained indirectly from the way the four open questions were answered:

- 1) What, on the whole, did you find especially positive?
- 2) What, on the whole, did you find especially negative?
- 3) Which propositions for enhancing and optimizing the learning program would you like to make?
- 4) Which further comments, hints, and ideas do you have concerning POS?

Results of the open questions: Comparable to the POS Weblog in the preceding year, MOODLE was only used selectively by the POS groups. Although heavy users were quite content with the tool, a majority of all students wished that MOODLE would be used „more uniformly and more content-oriented“, i.e. more groups should mainly work with the system, for coordinating purposes as well as directly and visibly content-related (for instance in filing documents).

Within MOODLE, students especially used the Forum as an „informal“ discussion platform. The effort of some committed students to establish an own, access restricted Forum failed. The individual Weblogs MOODLE offers were basically not used, and the Wiki was used only in cases of its use being required by the teachers. Still MOODLE did perform its function as a supporting tool of learning organization for at least 31% of the participants. It was also MOODLE where links to external social networking platforms as StudiVZ (the German social networking site equivalent to Facebook) were published.

On the platform StudiVZ, students create and cultivate their personal networking profile, connect and communicate with friends and fellow students on the basis of shared

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- 5) Is not correct

attributes like the same institution, photos, likes and dislikes, and so on. Communicating in StudiVZ is rather informal, oral and ephemeral, textual messages are akin to SMS messages with only a few signs, while emoticons and abbreviations find rich use. Communication seems to consist more of *poking* than constituting a coherent conversation, or hinting to other contexts as the math course or the last party which are digitally edited at other places.

IV. DISCUSSION

Although expectations are generally high, it seems that the use of Weblogs (and to a certain degree all of social media) in formal tertiary education creates some predicaments that need attention:

- According to their media character, Social Software systems are not just tools to be used. As new media they need time, motivation and careful preparation if used in education.
- Requirements in formal education sometimes run the opposite way of activities in Social Software use: ability to ascribe results to single students versus cooperation.
- The work-in-progress character of Weblogs makes it difficult to evaluate and archive results.
- The expectations towards the reflective aspect of Weblog use are usually too high and need more support.

One important result, supported by earlier investigations on learning environments is that social software media cannot just be “prescribed” in an institutional setting. The share of informal activities, non-planned and spontaneous, is higher than with other application. The target groups need time to appropriate the systems. As a consequence the early process in the course should devote more time to explain blogging and the specifics of Weblogs. Informal media need much extensive work on motivation and moderation.

The purpose of the case studies was to find out about the challenges with which lecturers are confronted who are willing to include instances of social software into their regular courses, in our case Weblogs. These examples may not be representative in all circumstances, but they should provide the basis for some conclusions. The following theses are derived from the material, pointing to requirements of social media use in education:

Thesis 1:

Usage of social media by students cannot simply be administered. A unified and obliging policy for both, users and administrators, needs to be developed and applied, especially if there are several lecturers involved. If this is not available, active users can get discouraged by non-actives.

Thesis 2:

Severely recommended for any course is an introduction into media aspects and usage of social software tools, especially for beginner’s courses. Beginners will be more at ease to question and change their organizational competence when it comes to learning.

Thesis 3:

When students acknowledge the added value of social media for their own learning organization, group communication, or knowledge management, their satisfaction is significantly high. In concordance with thesis 1 intrinsic motivation seems to be an important factor for dealing with social software tools successfully.

Thesis 4:

Social media tools are suitable to bridge the „empty space“, that frequently occurs in collective activities. The tools are able to fill these gaps by means of their “digital orality”, a quality of their media character. This aspect can be used as motivating support for the learning process, provided the communication policy stays intact.

Thesis 5:

Social media tools enable - for the first time in education - a digital representation of oneself that is based on the presumptions of continuous exchange and expandability. Supposedly, this is what makes these tools so attractive for young people. The challenge still is to incorporate this communicational fervor into a didactic framework in a way that the boundary between private and public data becomes negotiable.

Thesis 6:

Building up media competency is usually imagined to be the remedy for the field of tension as described in thesis 5. But, as every teacher may experience by him- or herself, the development in the realm of social media is so versatile, diverse, and dynamic, that it is not easy to keep pace. From a pedagogic point of view the reflection of one’s own “Web-persona” could be a good starting point. Teachers could establish scenarios for discourse, which are critical and emancipatory by reflecting on key issues of privacy, identity and anonymity. Aspects of privacy in the realm of commercial use of personal data should be discussed as well. Styles of communication and group processes in specified platforms and systems should be analyzed.

Thesis 7:

The field of tension between individual achievement of students using social media and collective action by a group remains at all times. Students like to work in groups, but they are aware of grading necessities. The tension may be eased in the framework of this course, as cooperation on projects is introduced and argued as being the main goal. Nevertheless, social media seem to create this predicament as soon as any individual attribution comes into play. Interestingly enough, this tension is also present in professional activities. Here, collective cooperation with electronic media is even more valued, while individual assessment is usually a stable element of organizational and personnel development. Any objective policy in any environment needs to take that inherent double tension into account: within a cooperative situation and along development from student to professional.

V. SUMMARY AND RESEARCH PERSPECTIVES

The paper set out to investigate the implications for using social software as media in tertiary education. Along two case studies, which employed Weblogs and other tools in diverse student classes and group work, the analysis showed that the promises of Web 2.0 are not easily fulfilled. Rather it can be seen that dilemmas arise from the transfer of social media into educational environments.

Based on the analysis we discussed how these predicaments could be avoided by carefully reflecting the lecturer's position and adapting the didactic framework.

For school teachers and university docents alike it may be interesting as well as confusing to observe that students are sharing private details of their lives with unknown people by means of Weblogs or Social Networking Sites. At the same time we observe that other students in the same environment are hesitant to collaborate on a project Weblog in a *formal* learning environment. That leads to the conclusion that the "communicative hub on the web" [16], which Weblogs are supposed to constitute, is limited in formal settings.

One of the main characteristics of Weblogs, described as "unedited personal voices" by Efimova and Fiedler [7], seems to be controlled and repressed by the formality of context in a tertiary learning environment. That induces an ambivalent tension between blogging as a self-determined and social activity [10, 11] and the necessity of a didactic framework.

We stated in the beginning that media competency means to support the student's sensitivity of handling personal data turned public, among other things. That ability might be the key to overcome problems in lacking student's participation. Thus, further course concepts need to support the development of knowledge toward the specifics of social and communicative aspects in Web-based environments.

Another continuing research question is to what *degree* non-controlled environments are a necessary prerequisite for broad and successful student contributions. One of our evaluation results is that a small number of students are very enthused about blogging in their project study group. We do not know much about their motivations yet because our present data did not bring them out. Future students may develop a better understanding of what their personal surplus is, but meeting the grading demands might be a plausible reason for them as well.

Although the course that served for the studies had its fair share of problems in experiencing integration requirements, it was and still is successful in introducing freshmen into organizational matters of their studies. It is part of the regular curriculum since several years now. Following up on the first courses described here, onto the present year, another department of the university adopted

the course, serving freshmen introduction as well. So the course can also be seen as an example for the ongoing necessity to adapt and co-develop the web-based and face-to-face elements in didactic frameworks for hybrid learning.

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