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Wikis in elearning and student projects

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Abstract: The paper presents a study which was based on the hypothesis that wikis that are initiated bottom up by students might be used more deliberately than wikis which are introduced top down by teachers. Therefore it examines the specific effects observed in nine different wiki projects at the university of Frankfurt ranging from student wiki projects up to wikis used in seminars and as information tool for institutions.

1 Introduction

The usage of wikis covers many different scenarios: they are used for collaborative text production in knowledge management systems, in elearning settings, or to provide online information around projects, institutions, or special topic areas. Their ease of use and common availability within learning management systems make them an attractive tool for teachers and learners. Teachers use wikis to edit webpages in order to provide information to learners [Ko07]. Also universities and educational institutions also use wikis in order to provide study relevant information. Examples are the *Campus-Wiki* of the University of Hamburg, *Unipedia* at the University Koblenz, the wiki of the student association at the University Bremen, the university library's wiki at the University Rostock [Kl07], the *L-Wiki*[1] for teacher students at the University of Frankfurt, and the information platform for students *Studiger*[2] described by [BS08, BS10].

[1] http://www.l-wiki.uni-frankfurt.de
[2] http://www.studiger.tu-dortmund.de

Some wikis are rather subject related such as the *wiki portal for teaching and learning with digital media*[3] at the University Potsdam which addresses teachers and students in order to provide them an opportunity for exchange around options and challenges of new media in learning processes. In other cases, learners produce content collaboratively. An example for both types is the *Pflegewiki*[4] which was started as a student project and meanwhile became an information portal in the area of health care [PT08].

Besides the provision of information, wikis are also used as a discussion tool nearly like bulletin boards [Be02], and especially for collaborative text production with students [BIW07, Br06, BS08, BS10, EGH08, GT09, Ko07]. [BH09] describe a wiki based community project where students can find material for the preparation of their exams. Since learners also provide content to the platform it combines information and communication aspects. According to the authors, the quality of the exams were improved because through the wiki the teachers could also learn more about the reflection and preparation process of their students [BH09].

One of the earliest reports on the usage of wikis in learning processes can be found in [Gu99] who describes the CoWeb which already was published in 1999. While at the beginning, wikis were mainly used in the field of computer science [EFT+05] meanwhile, wikis can be found in nearly every subject area [ARW04, La04, SCC+04]. Examples at universities are well described in literature [Br05, BH05, EFT+05, Do05a, Do05b, FW06, GT09, Go03, Kl07, Ko07, La04, SCC+04, Xu07]. Besides these examples, wiki projects can also be found in schools [BS10, Jo05], companies, and adult educational institutions [Ba06, Ro06].

Research questions of the study

Studies on the participation in text producing processes in wikipedia [St09, EGH08] and about wiki usages in learning settings [TG05] show rather low voluntary participation rates. Based on these results, the University of Frankfurt conducted a study in order to better understand what motivates students' encouragement in text production processes in wikis. Especially, wikis which were introduced by students' elearning projects financed by the university seemed to be a good vantage point for bottom up participation.

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[3] http://www.uni-potsdam.de/db/wiki/elearning/index.php/Hauptseite
[4] http://www.pflegewiki.de/wiki/Hauptseite

The study focused on collaboration and participation processes within the teams as well as on motivational aspects around the students' participation and their contribution of material. The following aspects were analyzed and compared

- The purpose of the usage of the wiki
- The existence of an 'editor team'
- Number of people involved in this team, number of members in an inner circle of writers, a circle of readers, different target groups
- Do people overwrite each others' articles? How is the collaborative text production organized? Are rules applied? How are rules developed?
- Are quality checks applied? Are articles reviewed and/or approved?
- Is the target group of readers reached? Are the objectives achieved?
- What is the motivation of the writers to participate, to get involved?
- What kind of incentives are applied?

Is was also examnined whether group members participate equally, or whether role differences occur such as described for wikipedia by [St09]. Also aspects such as motivation through open access, self organization, autonomy, personal relevance and interest, diversity, and serendipity effects as described by [MK08] were examined (see also [Mo08]).

For the study, nine different wiki projects were examined: four of those wikis were started by students in order to provide study relevant material to their fellow students. Two wikis were applied in university seminars in order to provide students a platform to produce content. Another three wikis are used by some kind of university institution, either department or center, in order to provide study relevant material to students.

The results were collected through a first round of oral interviews conducted one-on-one with the teachers of the seminars or members of the editorial of the wikis based on a questionnaire. Subsequently, an expert round took place which was used for a deeper discussion with around five of the student projects and two departmental projects. Further results were gained through additional interviews with two projects.

Results of the study

Overall, as one major result of the study, a deeper understanding of editing and cooperation processes in wikis as well as on motivational aspects could be gained. But first results rather were disillusioning. Mainly, students were motivated extrinsically to collaborate in text production processes if this was part of the compulsory output they had to produce in seminars. But besides this extrinsic motivation other motivational aspects occurred in the two seminar settings. In both seminars the provision of information to a larger group showed to have positive effects. In the *Excursion-Wiki* which was used in the seminar *Geography of differences* teacher students describe excursions in the area in and around Frankfurt which later are to be provided to teachers, teachers in training, and other teacher students who want to conduct excursions themselves. The target groups are supposed to edit and comment the description of excursions which are planned to be opened to the public by winter term 2012/2013. In the seminar *BasisReliPaed* teacher students of theology produced learning material for schools to be used in religion class in the ninth grade . While in the *Excursion-Wiki* the working environment (the wiki) is equal to the planned platform of publication (the wiki will be opened up to the public), in the case of *BasisReliPaed*, the wiki was the working environment for the students and the final learning material was published on an online educational portal of the state Hessen. In both cases, aspects of communal constructivism [HTG+01] or service learning [We98] applied which means that the production of material for a larger group, maybe even the public (which here in both cases were teachers and schools) motivated the students to raise the quality of the material they produced.

These effects also occurred in most student projects where the participants produce study relevant material for their fellow students. The project *Podcast Wiki Physics*[5] was started by students who wanted to provide more information about the research fields in physics in order to help students to decide where to write their bachelor or master thesis. This idea was adopted by the project *Biochemika*[6] adopted this idea. While it started out by providing learning material for the usage of databases in chemistry to fellow students, the networking among the student projects which was encouraged by the University led to an exchange of ideas so they influenced each other.

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[5] http://th.physik.uni-frankfurt.de/elearning/goto.php?target=wiki_2151_PodcastWiki
[6] http://biokemika.uni-frankfurt.de/wiki/BioKemika:Hauptseite

All the student projects showed to have similar problems as online platforms have in general. Although they were initiated bottom up, only small groups of students got actively involved in the writing process and explicit extrinsic motivational aspects had to be applied in order to motivate fellow students to get involved into an active writing process. In the case of *BioKemika*, students either got awarded by credits points they received in an introductory seminar for their text contributions or they received gifts sponsored by companies and distributed by the *BioKemika* team. In all other student projects, contributions were mainly made by the inner circle of the team, counting for five up to a maximum of twenty members. While collaborative writing in the wiki itself was fostered by the teachers of the seminars, the student projects mainly showed individual writing processes. In the case of *BioKemika* the members of the editorial team produce articles, send them to the others by email, giving their fellow team members one week to react. Unless there is any comment, subsequently the article gets published in the official wiki. The team also reported that students beyond the editorial team also preferred to provide their text contributions per email which then were edited and published by an editorial team member. They editors assume that the reason for this procedure lies in the insecurity of contributors about the quality or style of their text or a lack of technical competencies to edit the text in the wiki.

Exactly this procedure was used in the *L-Wiki*[7], a project which is run by the university's center for teacher students with the intention to provide study relevant information to its target groups. Here, students were not allowed to directly contribute text into the wiki but had to hand in contributions by email. Accordingly, participation was low and text production mainly limited to the editor of the platform, an person employed at the center. The same situation occurred in *OKAPI*[8], a wiki run by the department of philosophy with the intention to provide learning material on scientific working techniques to students. Here it showed even more, that as soon one person became officially responsible for the wiki, others withdrew their contribution, relying on that one person to take care of the wiki.

A specialty is the *Ka-Wiki* in which all members of the department of cultural anthropology are allowed to edit the wiki which is used as content management system, learning management system, and for the provision of web pages of the department all at once. Although, every teacher and student as well as guest teachers can edit and add pages, only a small group

[7] http://www.l-wiki.uni-frankfurt.de
[8] http://okapi.uni-frankfurt.de/index.php?title=Hauptseite

of people makes use of this opportunity, mainly the ones who have initiated the project. Besides them, teachers use the wiki to document their lectures and seminars. Although every page up to the main page is open to every registered user, no vandalism was ever observed.

Summary

As the results show, even the bottom up started wikis, made by students, had difficulties to engage more active writers into the teams. Being doubtful about the quality of their contributions might prevent students from participating, especially if experts and people from higher status groups are involved [EGH08].[9] This uncertainty can be reduced by provision of examples, training and consulting as well as feedback loops as part of quality control procedures. Some projects such as *BioKemika* applied creative and effective mechanisms to encourage students to participate, some projects managed to become part of the study program in their department. Despite some disappointments and unmet expectations, overall, almost all of the projects provided satisfying results according to the interviewed team members and teachers.

But real collaborative writing process among two or more students only occurred in projects where teachers demanded this from their participants and where teams were set up in class (*BasisReliPaed*, *Exkursion Wiki*, and the *Blended Learning* project, a wiki used in a student tutor group by psychology students. But as soon as the obligatory examination fell away due to the new bachelor study program, the *Blended Learning* tutor groups vanished and so the wiki). The student wikis proved to be successful in terms of active members (10 – 20), regular meetings for decision making on how to design to main page, how to secure quality if articles and so on. It showed, that if the wiki is directly accessible by the public, writing and quality assurance processes mainly are conducted by email. But in case the wiki is used as a working environment and the public gets access at a later point of time (*Exkursion Wiki*) or in another platform (*BasisReliPaed*), the collaborative writing process might happen in the wiki itself. In all student wikis, texts were mainly produced by individual members of an editorial team and distributed per email until the final version was published. Finally, the allocation of responsibility for the wiki to one single person who is partly paid for its maintenance and the provision of new material, resulted in the withdrawal of other potential writers (*L-Wiki*, *Okapi*).

[9] On the loss of motivation due to low subjective ranking og the own contribution see [KB83]

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