

Blogging Activities in Higher Education: Comparing Learning Scenarios in Multiple Course Experiences

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Abstract. Blogging has been used in education with various goals and within various contexts. While many benefits of its application have been shown, it is not always clear what kind of blogging tasks should be used, and what is the proper methodology for their implementation, given certain educational goals. In this paper, we provide a large scale experience report on the use of blogs in several courses, run in two universities over multiple years, with more than 1500 students enrolled overall. A catalogue of blogging activities used for learning is provided, outlining their purpose and structure; their integration in four courses (different in terms of curriculum, student background and instructional approach) is also described. A set of findings and practical guidelines are drawn from our experience, which could prove useful to other educators who want to foster student learning through blogging.

Keywords: Social media in education · Blogging · Learning scenario · Experience report

1 Introduction

Various social media services, such as blogs, wikis, microblogging tools or social networking tools, have started to be used as communication and collaboration platforms in educational contexts. There are many reasons behind this, including the ease of use, effectiveness, familiarity and attractiveness of these tools for digital native students [7]. In this paper, we focus specifically on blogs, which have a distinctive position in this area, a large number of applications and are particularly well aligned with modern learning theories such as constructivism, constructionism and connectivism [11, 18, 20].

Several studies have shown empirical evidence of positive impact of blogging activities on students' learning gain [1, 4, 9, 19]. However, these positive effects are attributable mainly to how blogging is used, and not simply to the technology [8]. Therefore, it is very important to focus on the types of learning activities and

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the pedagogical scenarios in which blogging is integrated. Especially in blended learning settings and in cases where blogging activities are incorporated within organized curricula, there are questions related to how to combine them with more traditional teaching activities, such as lectures, labs, homework etc.

In this paper, we focus on selected blogging activities and their suitability for various learning goals within blended instructional scenarios. We provide a detailed experience report, which builds on a decade of practical use of blogs in two universities from two Eastern European countries. Our situation is specific in that many university students in Eastern Europe are not always well motivated, their engagement patterns with similar activities are often irregular and they require increased teacher guidance [2,5,10]. The blogging activities were integrated in four different courses, which vary in terms of curriculum, student background and instructional approach; a total of more than 1500 students were enrolled in these courses up to the present.

From this large scale experience we abstract a number of observations. Some of them are specific to our context, but many of them are fairly general and we contend that they will be useful to educators who want to use blogging as an effective tool for their teaching. Thus, the rest of the paper brings the following main contributions: (i) a systematic description of blogging activities used for learning in Sect. 2; (ii) an experience sharing from the various courses taught in Sect. 3; (iii) a summary of findings and practical guidelines drawn from our observations in Sect. 4. A short conclusion and future outlook complete the paper.

2 Blogging Activities

In what follows we describe the different blogging activities that we have tried in our courses, outlining their purpose and structure.

2.1 Presentation of Self-acquired Information

Description: After studying resources connected to a certain topic, the students are tasked to write a blog post on that subject. They may either be given both the topic and the references to suitable resources, or they may be required to select the topic and find the resources themselves. The subject matter may be directly part of the curriculum or the task may also be to find some relevant related topic based on the student's interests.

Purpose: The goal is to stimulate higher engagement with a selected theme (either part of or related to the curriculum). This task also allows students to have a higher involvement with a topic of their particular interest. If the activity is combined with reading and commenting on peers' postings, it further widens the students' outlook in the area and allows for exchange of opinions among learners.

Structure: (i) selection of the topic; (ii) looking for and studying of relevant resources; (iii) blog post composition and publishing; (iv) optional comments phase.

2.2 Reflection on the Lectures

Description: The activity is combined with an organized course comprising lectures (or possibly also different types of learning sessions). After each lecture, or just after some selected ones, the students are asked to write a blog post reflecting on the material discussed during the lecture, or their experience learned from the lecture. Optionally, the students may be asked to research and process additional related resources (similar to Activities 2.1 and 2.6).

Purpose: The main purpose is to stimulate reflection, further engagement, and alignment of the knowledge acquired during the lectures (or other educational activities) [12]. The activity may be done individually, but since it is useful for the students to compare their learning experiences and points of view, it is also often combined with commenting on each others' blog posts.

Structure: (i) the activity is preceded by a lecture, exercises, or some other educational activity; (ii) a time period to reflect and organize their knowledge, or optionally to explore further resources on the topic; (iii) blog post composition and publishing; (iv) typically also a comments phase.

2.3 Project Diary

Description: If a project is included among the course activities, blogs can be used as a space for publishing the ongoing report on the project development and/or the project results. This type of project diary is suitable both for individual and group projects. In the former case, the students are asked to regularly post information about their progress in handling the project tasks, about the methods used for problem solving, how well they stick to the schedule, etc. In the latter case, the indicated activities are complemented by dividing the roles in the group and assigning the partial tasks to each group member.

Purpose: One of the most important purposes is to encourage the continuous and regular work of students. The blog helps to maintain a learning log, while also showcasing the project progress and status update. While writing about the project development, the students gain a better insight into their assignment and are able to identify particular sub-problems and the procedures to solve them. Also, reading the reports on peers' projects can help students to work out potential problems in their own project. Furthermore, blog reports enable the teacher to track the activity and progress of students in the project development [3]. In case of group projects, blog posts help the teacher to estimate the share of work per particular group member.

Structure: (i) project assignment; (ii) regular publishing on the blog about the project progress; (iii) optionally, reading and commenting on the peer project reports.

2.4 Professional Blogging

Description: Professional blogging is similar to Activity 2.1 – students are asked to write blog posts on topics related to the course subject. Additionally, they are asked to develop a full professional blog, including their background information, professional interests, etc.; it may also be similar to writing for a company blog. Their articles are required to have all features of a real blog post – the proper form and structure, appropriate formatting, correctly cited resources, respected copyright, etc.

Purpose: Beside encouraging learners' interest in course topics and deepening their knowledge, this activity also aims to raise students' awareness of professional writing and rules of blogging. Furthermore, the purpose is to try the experience of developing their own professional profile via maintaining a professional blog, which some of the students may continue doing also in the future.

Structure: (i) selection of the topic; (ii) study of relevant resources; (iii) blog article writing and publishing; (iv) commenting by instructor; (v) reading and commenting on peers' postings; also, since the blogs are open, external comments should be welcome and the students should be encouraged to react to them.

2.5 Web Content Publishing Practice

Description: This activity is combined with a course that includes web content publishing among its topics. Students are tasked to post content on their blog, however the main focus in the evaluation is not on the content itself, but especially on its form and adherence to quality standards.

Purpose: The purpose is to learn web publishing technology, and the required web content publishing skills such as writing and structuring content for the web, proper formation of titles, usage of links, images and multimedia content. The students may pick the content freely, but some requirements should be in place, regarding number of articles, post length and different types of content that should be present (i.e., images, links, code samples, tables, etc.).

Structure: The activity may be as simple as iterating between (i) publishing a blog posting; and (ii) instructor feedback. But it can also be enhanced by (iii) reading and commenting on peers' postings.

2.6 Gathering and Sharing Learning Resources

Description: This activity complements an assignment or homework, for which students need to autonomously find support resources (e.g., tutorials, algorithms, code samples, software libraries, technology description, etc.). The resources which are considered interesting, useful and relevant to the task can be shared with peers by means of blog posts, which also include a short description or appraisal of the educational material.

Purpose: The collection of resources is not a goal per se, but a means to solving a task or completing a project. The activity fulfills two main roles. First, students benefit from the resources already gathered by peers; these have the advantage of being generally relevant to the students, since they reflect the preference of a relatively homogeneous learning community (i.e., classmates with similar backgrounds, completing the same curriculum and having to solve a similar task) [16]. Secondly, students practice their critical assessment skills by filtering the large number of available resources and providing recommendations and assessments.

Structure: The activity entails three main steps: (i) search for resources of interest; (ii) evaluate the quality and usefulness of the resources; (iii) share and recommend relevant resources.

2.7 Requesting and Providing Help/Feedback

Description: Students can use the blog for describing the problems and difficulties encountered in their work and asking for help; peers can offer solutions and advice based on their own experience. Furthermore, in case of team work, students may present their ideas and proposed approaches on the blog and ask for their teammates' feedback and approval.

Purpose: This activity is based on peer tutoring approach, in which learners help each other and learn by teaching [6]. The goal is to rely on peers' experience, eliciting the wisdom of the crowd for solving a problem. Furthermore, a repository of problems and solutions is created, which is helpful both for other students (who may be faced with the same issues) and for the instructor (who can better understand the learning difficulties encountered by the students).

Structure: The activity involves two basic steps: (i) post a description of the problem encountered; (ii) receive comments with solutions and advice from peers. Additional clarifications may be asked in subsequent comments.

Finally, it should be noted that students can also use the blog as a **communication tool** and many of the activities described above already imply some information exchange between learners. Especially in case of cooperative or collaborative work, the blog serves as a medium for discussing ideas, sharing experience and imparting knowledge. Furthermore, personal interactions through blogging are also encouraged (e.g., expressing emotions and appreciation, congratulating and encouraging peers for their activity); some off topic and small talk posts (e.g., phatics, salutations, greetings, humour) may also be useful, since they foster interaction between students, enhance group cohesion and team spirit.

3 Our Experience

In this section we describe the experience with the above listed blogging activities, as they have been implemented in multiple courses from two different universities – Comenius University in Bratislava, Slovakia and University of Craiova, Romania.

3.1 Experience from Comenius University in Bratislava

Course 1. Since 2006 we have continually used blogging in a Web Design course [2, 9, 10]. The course was offered in both bachelor and master curricula of Applied Informatics and Computer Science. Throughout these past nine years, more than 800 students were enrolled in this course, the cohort size varying from 54 to 158 attendants per year.

As a practical project, the students were tasked with creating the design of their blog, and then with posting meaningful articles on their blog (as two separate assignments). During 2006–2013 we used professional blogging (Activity 2.4), that is the students were required to maintain a “web design practitioner blog”, and post interesting articles related to the topic of the course, their own experiments and projects with web technology, etc. The aim was to reinforce learning outcomes from the project work by providing meaningful content for the blogs, to stimulate further engagement with related topics, and to stimulate social learning via mutual comments.

In the first 3–4 runs the course was voluntary, and the results were encouraging, albeit a smaller number of students participated regularly (the blogging part was not compulsory). In the following years, we tried to attract students to the assignment by allocating it a larger share of evaluation points. While the participation was higher, many students did not have a deep interest in it and they only posted very weak articles to get a few grading points. Furthermore, students were not interested in peers’ postings and comments were very sparse. Hence, in the past few years we made a number of changes. We introduced a stricter publishing schedule, with alternating weeks dedicated to publishing and reading respectively, which was further reinforced with structured peer reviews. In the last two years we also deviated from professional blogging, which the students found too demanding, to simple web content publishing practice (Activity 2.5). Both changes brought some positive results – the participation increased from less than 36 % on average in previous years to more than 92 % and learning outcomes also significantly improved (see [2] for more details), however we still have to work on improving the students’ satisfaction with the activity.

Course 2. The course on Algorithms and Data Structures (ADS) is an obligatory subject in the bachelor study program of Applied Informatics. Blogging was incorporated into this course in 2009, 2010 and 2012, with the aim to stimulate reflection and engagement with further related topics [10]. The task combined Activities 2.1–2.3. That means students were allowed to choose among the presentation of a new topic related to the course subject, reflection on the lectures or project diary. The first two topics were selected more often, whilst the project diary occurred quite rarely.

The total number of students attending the ADS course in the years in question was 371 (135 in 2009, 124 in 2010 and 112 in 2012). In the first two years, the blogging assignment ran in three rounds, approximately one month each. During each round students were asked to regularly publish several blog posts, which were evaluated by the instructor after the round was over. The activity was voluntary. Although the bloggers were rewarded by some extra points, the

number of participating students was low and varied from 5 % to 15 % in different rounds. Moreover, students often participated only partially, just in one or two rounds, and they posted a limited number of articles. We tried to encourage students to read the posts of their peers and to comment on these posts, but our efforts did not bring expected results.

Therefore, we restructured the activity in 2012 and integrated peer review with it. The whole blogging assignment period was divided into six two-week rounds, first week being dedicated to publishing blog posts and the second week to peer reviewing. Similarly to the experience gained in the Web Design course, although the activity remained voluntary, the students' involvement with it increased significantly (to 67 %) and the learning outcomes improved as well.

Course 3. In 2009 we started a new course on using Web Technologies in Education. This subject is offered as a voluntary course in the master study program for Pre-Service Teachers in Informatics. Blogging was introduced as a main learning activity from the first course run. Students were asked to regularly post their subjective view on the topic discussed during each lecture (Activity 2.2); the aim was to stimulate reflection and opinion exchange. This task was mandatory and the score gained for it made up a significant part (one third) of the overall student grading. Since the course is voluntary, only students who agreed with this rule enrolled in it. This is a smaller course, with 3 to 8 attendants per run, giving a total number of 34 students for the whole period 2009–2014.

In the first three runs of the course, students had no previous experience with blogging. Although they were not too enthusiastic about this activity at the beginning, their blog posts brought many interesting and useful ideas and suggestions towards the integration of web technologies into educational process at primary and secondary schools. Starting with 2012, two changes occurred: (i) the students enrolled in this course had some previous experience with educational blogging (from other courses); (ii) peer review was integrated with the blogging activity. The new settings brought an improvement in the blog contributions and an increased number of blog comments, leading also to more fruitful face-to-face discussions between students in subsequent seminars.

3.2 Experience from University of Craiova

Course 4. Our practical experience with educational blogging at University of Craiova took place in the context of a course on Web Applications Design (WAD), taught to 4th year undergraduate students in Computer Science. Blogs were first included as support tools in the instructional scenario in the academic year 2009–2010 and have been used in all subsequent installments (6 course runs up to the present) [13–15]. A project-based learning (PBL) approach was used, in which learning was organized around the development of an authentic web application; students collaborated in teams of 3–6 peers, in order to build their chosen system (e.g., a virtual bookstore, an online auction website, a professional social network, an online travel agency etc.). The PBL scenario was implemented in blended mode, with weekly face-to-face meetings between each team and the

instructor complemented by the use of social media tools for communication and collaboration activities between team members. In particular, the blog was used mainly for Activities 2.3, 2.6 and 2.7: reporting the progress of the project, sharing ideas and resources, providing feedback and solutions to peer problems; each team had its own blog, but inter-teams cooperation was encouraged as well. The student assessment took into account both the final product delivered at the end of the semester and the continuous collaborative work carried out by the students, including the blogging activity.

It should be noted that the blog was used in conjunction with other social media tools, such as wiki (for collaborative writing of the project documentation) or microblogging tool (for short news, announcements and status updates). The settings were refined from one course run to the next, to take into account students' feedback and results. Thus, we found out that the introduction of four compulsory intermediary presentations engaged students more and discouraged the practice of activity peak at the end of the semester. Also, students' involvement was increased by introducing a peer evaluation mechanism, both for milestone presentations and for the collaborative activity on the social media tools.

A total of 304 students were enrolled in the WAD course throughout the 6 semesters and were involved in the educational blogging activities. According to the opinion surveys applied at the end of each semester, the majority of the students were satisfied with the use of blogs for their projects; most of them found it easy or very easy to learn how to use the blog as well as actually use it, and did not encounter any technical problems. The main roles fulfilled by the blog (as perceived by the students) were: (i) learn how to use the tool; (ii) exchange experience; (iii) help organize knowledge; (iv) find interesting/useful information; (v) improve writing skills; (vi) receive feedback; (vii) improve collaborative skills; (viii) increase competitiveness. However, several drawbacks of the blogging activity were also revealed: (i) significant variation among students and teams in the number of blog contributions; (ii) relatively low level of interaction between students (as reflected in the lower number of comments compared to the number of posts); (iii) relatively high amount of time and effort necessary for accomplishing the blogging tasks.

4 Findings and Practical Guidelines

In what follows, we summarize the findings from our experience report and we draw some practical recommendations for other instructors interested in using blogs in educational settings.

Student's Acceptance: The proper selection of blogging activity type for the given educational goals is very important; inappropriate tasks can discourage students from blogging. For example, at Comenius University in Bratislava students of Computer Science and Applied Informatics displayed a dislike for professional blogging or lecture reflection. On the other hand, blogging as a reflection on lectures was successfully used for several years with groups of pre-service

teachers at the same university. Similarly, Computer Science students at University of Craiova acknowledged the benefits of using blogs in activities such as project diary, sharing ideas and resources, and providing feedback and solutions to peer problems. Hence, *a successful integration of the blog in the educational activity requires a carefully designed instructional scenario, based on a sound pedagogy; the blogging activity should be harmonized with the curriculum and the learning objectives.*

Irregular Engagement: As shown also by other studies [2, 5, 10], some students in Eastern Europe have a reserved attitude towards the use of social media tools in education, which is a different approach from what they are used to do in other courses. They may not perceive the benefits at the beginning, which leads to highly irregular engagement, with activity peaking only towards the end of the semester for many of them. Results from both universities show that this can be greatly amended by *improving guidance and introducing intermediate reporting, deadlines, and stricter structure to the blogging/reading activity.* Furthermore, there are significant disparities between students in terms of involvement with the blogging activity, with highly active learners versus virtually inactive peers. This can be frustrating especially in case of teamwork, where students have to rely on the work of their peers who refuse to collaborate. *A solution would be to try to engage students more uniformly in blogging and learning activity in general, by increasing their accountability through multiple checkpoints during the semester.*

Voluntary vs. Compulsory Activity: The problem of irregular engagement can also be addressed by making the blogging activity compulsory to a certain extent and making it a part of the grading scheme. The experience from the Slovak university shows that the activity should be rewarded by a certain number of evaluation points, but these have to be carefully set. If the blogging activity is completely voluntary, only a small number of students will invest their time into it. On the other hand, if the share of grading points for the activity is perceived as too high by the students, some of them may feel that they are forced to do it; at the same time, some learners may feel they are not evaluated properly, since they regard the blogging activity as secondary to more traditional evaluation approaches. The experience from the Romanian university reinforces the conclusion that *the blogging task should be mandatory and explicitly graded; at the same time, ensuring also an intrinsic motivation is equally important* – this could be done by allowing students to take control over their own learning and by providing a meaningful and authentic task, highly relevant to the student [17].

Instructor's Feedback: Since students are often not experienced in educational blogging, an immediate feedback from the instructor helps them to identify and remove the flaws in their blog posts. It can also serve as support for students who experience difficulties with blogging (both technical and motivational) and boost their activity. According to the surveys, students reported that thanks to the instructor feedback they improved their blog contributions in subsequent rounds, they selected their topics better and they were more aware of copyright

issues. *Overall, the recommendation for the instructor is to provide continuous technical support, clear guidelines for interaction as well as adequate feedback to the students.*

Peer-feedback: While blogging can be beneficial also as self-centered reflective activity, its effectiveness is further enhanced by engaging students with each other's postings, encouraging experience and opinion exchange. However, it may not always be easy to involve students in this activity: based on our experience at Comenius University, few students read and commented on peers' postings. We have successfully addressed this issue by *introducing peer reviews, defining a dedicated reading/reviewing period, and explicitly assigning students the postings they are supposed to read and review.* This led to an enhanced participation in blog reading, better learning outcomes, and an improved perception on the meaningfulness of the reading/reviewing activity. On the other hand, observations from University of Craiova reveal that many students are interested to read other teams' blogs as well, in an attempt to search for information and solutions to problems encountered, but also out of curiosity and for checking out competition. *Therefore, instructors should encourage students to ask for peer help and to share their questions and obstacles encountered; the potential fear of exposure that students may feel when making their ideas public could be alleviated by ensuring a positive group climate and creating an atmosphere of trust and confidence [15].*

5 Conclusions

This paper provided an experience report on using blogging in educational settings, in the framework of multiple courses taught at two Eastern European universities. We introduced blogs as learning support tools a decade ago (the first course running in 2006), and we are still using them in the present, after several refinements of the learning scenarios. Overall, our experience as instructors has been generally positive; we believe the catalogue of blogging activities, the experimental findings and the practical guidelines drawn from our experience will prove useful to other educators who want to foster student learning through blogging.

As future work, we would like to perform a more detailed content analysis of students' blog contributions. Further comparisons with similar educational blogging experiences in other universities are also envisaged.

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