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BLOG VS. WIKI AS A REFLECTION TOOL IN MOODLE: A CASE STUDY

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Abstract

Lifelong learning is said to encompass “lifelong”, “lifewide” and “voluntary and self-motivated” learning (Department of Education and Science, 2000) and it has been increasingly important to provide a foundation for this as part of higher education (Bologna Process - European Higher Education Area, 2014)(Leuven/Louvain-la-Neuve Communiqué, 2009). Marjan Laal (2011) also states “LLL will not only develop individuals to become responsible to themselves and their communities, but understand and involve actively at all levels of their societies”. Research has shown that students need to have a metacognitive awareness to be able to learn, unlearn and relearn. Metacognition refers to the your knowledge concerning your own process of learning and the strategies you use to reach a goal. Self-reflection is one way of achieving this knowledge. Noroff University College (NUC) has been using the integrated blogs in Moodle as reflective journal tool for a Bachelor program in Digital Forensics (DF). However, some issues have surfaced such as the lack of interaction between the students on these blogs and the assessment of the blogs. In an attempt to mitigate these issues, two of the courses offered in the DF program have included the Wiki activity in Moodle to be used as a reflective journal in addition to the blogs. Six students have participated in these courses and they were instructed to use both their blogs and the Wiki, and the information in one should not differ from the other. Two lecturers were involved in both delivering the two courses and assessing the reflective journals. This paper will compare the use of the two tools, with a specific focus on the ease of use, the level of interaction encouraged by the tools, and the benefits and drawbacks of the two. We have also conducted an interview with the students involved regarding the use of the tools and the level of interaction. The authors of this paper have also included a summary from the lecturers involved. Based on this summary and the interviews with the students, we have provided a table showing the benefits and drawbacks of using these tools as a reflective journal and concluded on a recommendation.

Keywords: e-learning, Moodle, Blog, Wiki, Reflective Journal, Self-reflection

1. Introduction

According to the Cambridge English Dictionary and Thesaurus, the term *Lifelong Learning* refers to the process of gaining knowledge and skills throughout your life (Cambridge English Dictionary, 2016), and as such it has become increasingly important to implement this explicitly in higher education (Blewitt & Cullingford, 2004) (Dunlap & Lowenthal, 2011). Dunlap also argues that those students succeeding in lifelong learning are “able to learn and adapt because they reflect on the quality of their understanding and seek to go beyond what they know” (Dunlap, 2005). They have this ability because of a metacognitive awareness, which refers to the knowledge students have about their own learning strategies and processes used to achieve certain goals (Mani & Mazumder, 2013). The importance of self reflection as an active part of the learning process is also emphasized explicitly in Kolb’s learning cycle (Kolb & Kolb, 2005), with ‘reflection’ being one of the key aspects of the experiential learning cycle, with the ability to reflect upon experience and development and thus engaging in a process of continuous learning, also being a key component of becoming a professional practitioner (Schön, 1983).

The importance of this concept to the development of each individual's knowledge, skills and competence is demonstrated through the creation of the European Qualifications Framework (EQF) for Lifelong learning, upon which qualification systems across the European Higher Education Area are based (European Commission, 2010). The EQF is implemented in Norway through the National Qualifications Framework for Lifelong Learning (NQF) (NOKUT, 2014), since its adoption by the Ministry of Education and Research in 2011.

Active self-reflection is one way to obtain insight into personal learning and development, and as such NUC has been incorporating the use of the integrated blogging platform within the Moodle Virtual Learning Environment as a

Reflective Journal for all students studying the NUC Bachelor program in Digital Forensics (DF). This ensures all students actively undertake self-reflection throughout their studies, reflecting upon their actions and experiences during their learning journey. Both the assessment of these Moodle ‘blogs’ by academic staff and the interaction between students across student blog pages has proven to be challenging. In an effort to mitigate these challenges we chose to include the use of the in-built Wiki activity within Moodle in two courses, to be used as a reflective journal in addition to Moodle’s integrated blogging platform. This paper compares the use of these two tools, with a specific focus on the ease of use in assessing the reflective journals, the level of interaction between both students and staff encouraged by the tools, and the benefits and drawbacks of the two. This is the start of an ongoing study into the use of technology to support the implementation of reflective journals for students across NUC. This paper presents the results of our initial study, paving the way for further work with an increased number of students in order to thoroughly explore our initial findings, the issues, challenges and benefits of this approach.

2. Reflective Journals for Pedagogic Development

The reflective journal typically counts for 20-30 per cent of all course grades throughout the program of study. Standardized assessment criteria are used for the reflective journal across all courses, with every course journal assessed according to the following four criteria: **Usage, Relevance, Interaction** and **Reflection**. The instructions provided to students clearly express that students are required to interact with fellow students through reading, discussing and commenting on posts, aka ‘Journal Entries’, made by their peers on their respective blogs. An important element of this interaction is providing constructive feedback on the work done and learning undertaken by others, and the assessments of this is equally important. Usage is normally pretty easy to understand and assess, as is the relevance and reflection. The interaction category has proved to be a challenge as there are technical aspects of the blog element in Moodle that makes it difficult.

3. Moodle

Moodle is an open source platform for educators and it’s based on a modular system that lets educators put together online courses as they see fit. There are plugins for a large number of collaborative activities, such as for instance blogs and wikis (Moodle, 2016).

Typically, students use either the integrated blog tool within the Moodle environment “as is”, or connect their Moodle blog page to an external blogging platform, such as WordPress, whereby all posts made to the external blog appear automatically within the Moodle platform. All students enrolled in the NUC Moodle Environment are therefore able to access and interact with the ‘blogs’ of all their peers, irrespective of their year of study or enrolled degree program.

3.1. Reflective Journal in the form of a Blog

Although the Moodle blog platform provides a single location for the reflective journals of all students, navigating this environment can be problematic.

As a student exploring the reflective posts of peers relating to a common course or study, you would click into the participants section in the course page in Moodle, click on one of the participants from the list of available names- and then select ‘View all blog entries’. For some strange reason - you will not find anything there - as shown in the picture below. In this instance ‘view all blog entries’ does not equate to ‘all’, but rather only those posts made specifically within that course.



Picture 1: Sample image of viewing all blog entries from within a Moodle course

However, navigating your way into Site pages -> Participants, then locate the same user, and selecting (again) ‘View all blog entries’, you will find all blog entries this particular student have posted from all courses.



Picture 2: Sample image of viewing all blog entries from the Moodle participants list

It can be a somewhat tedious job to find fellow student blogs that way. If you navigate your way into the Site blogs, which provides a direct link to all blog posts made by members of the learning community, you will find the latest published blog post on top. This however is not filtered in any way, resulting in the potential for information overload, as you are likely to be faced with many posts written by student studying on a different degree program, therefore not being relevant to the topic at hand.

As many students use external blogging sites linked directly into the Moodle integrated blogs, such as Wordpress, it can become even harder to determine exactly where to post comments, such as feedback, on individual journal entries. This is due to there being no explicit link between the comments section in Moodle and that in the external blog. This therefore may adversely affect the level of interaction between students through these reflective blogs, thus adversely affecting the quality of self-reflection.



Picture 3: Comments section for blog post interaction

There are no logical links between original blog posts and comments from different students, so assessing how students interact is also a challenge. There are no alarm mechanisms to tell when someone have posted something or commented on other blogs, so one would have to navigate into every single student, check the latest post and read through all posts in a course to manually check who has commented on each post.

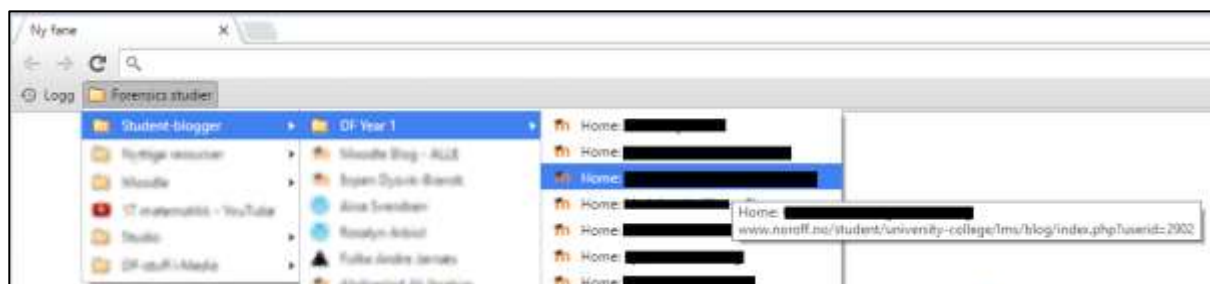
One alternative solution to view a student's blog, is to manually add the students Moodle user-id to the blog URL:
<https://www.noroff.no/student/university-college/lms/blog/index.php?userid=2102>

However; if the student is blogging about multiple courses then all the posts will show and one would need to sort out the blog posts that is relevant to a specific course.

One solution for this is if the students use the Tag-function in the Moodle blog, and tag each post with its associated course ID. One can then add the tag to the each URL:

<https://www.noroff.no/student/university-college/lms/blog/index.php?userid=2102&tag=UC1NPR051>

There is no automatic way to create these URL's, so in cases where there are many students it can be a time consuming job to create custom shortcuts for all students and their various courses.

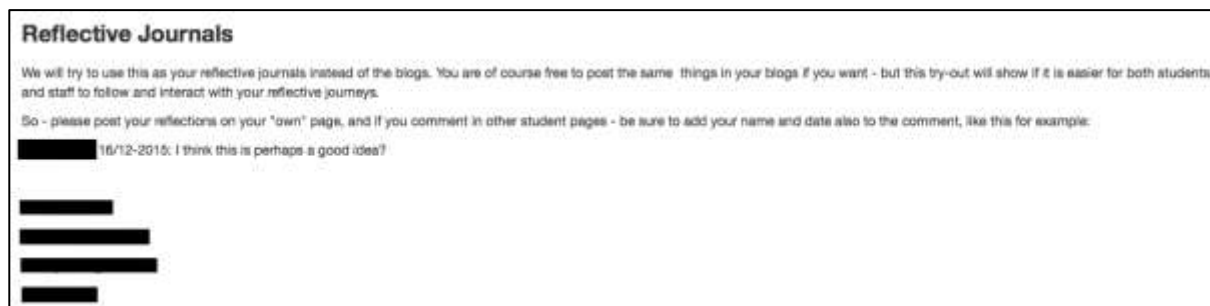


Picture 4: Accessing student blogs via direct URLs

There is also a risk that the student forgets to tag the blog post with the associated course ID, which can cause the blog post not being read by fellow students and teachers.

3.2. Reflective Journal in the form of a Wiki

After using the blogs for a while, discovering the challenges when assessing the reflective journals of students with an emphasis on **Usage, Relevance, Reflection** and **Interaction**, we (academic staff and course students) decided to try out the Wiki element in Moodle. The instructions provided to students for this trial was that they should post in both their blogs as before and in the Wiki, in order to determine through comparison whether the different tools would make any impact on the level of interaction in the reflective journals (picture 5). We would of course also see if it made it any easier to assess the interactions between students.



Picture 5: Student instructions for the WIKI vs. BLOG experiment

The course leader prepared the first page of the Wiki with the instructions. A suggestion on how to post comments and mark them with name and date was also included along with links to each of the students' own Wiki pages. A tutorial video on how to edit Wiki pages was also included in the course and the students was urged to look at this before they started editing the Wiki in order to avoid pitfalls such as renaming a page after writing it - which actually could make the original page "disappear" depending on the type of Wiki and the permissions of the user.

4. Evaluation from staff and students - pedagogical advantages & challenges

4.1. Student Experience

While a header, plus creation and editing time, are automatically added to all Moodle blog posts, this information must manually be added to Wiki entries. The Moodle blog also creates each post as a separate document, while in the Wiki you either have to edit and continue writing in an existing post - or manually create a new Wiki pages. Creating a Wiki page will on the other hand require you to first edit another page and create a link to it (in the usual Wiki style).

It is possible for the student to edit a Moodle blog post and a Wiki page. The Wiki in addition offers version control so that previous versions of a document can be recovered. Images and attachments can be added using a file browser in both systems. In the Wiki these attachments are saved in a common Files-folder, while they are saved separately within the blog posts in the Moodle blog. The students can change/delete attachments in the Moodle blog; in the Wiki on the other hand they are by default not permitted to change/delete.

Commenting in another student's Moodle blog is possible using a built-in commenting feature, the comments are then added to the end of the post together with the commenting student's name, profile picture and a time stamp. In the Wiki commenting is done by editing a document and adding the comment in an optional place. None of the systems offer any alert when a post is commented, however the Wiki offers a "Recent Activity" block that will tell that a document has been updated.

4.2. Lecturer Experience

To comment on a student's blog post one would have to either navigate through the Site pages -> Participants, find the student in question and open all blog posts from there, or create a list of shortcuts directly in the browser, adding the all the userID's and courseID's directly to the URL of the blog. To comment in the Wiki one would have to navigate through the course content where the Wiki will be located.

Inside the wiki one would click on the link to the student page in question and edit this page with the name of the commenter and the date the comment was made in an agreed format.



Picture 6: Student interaction in a wiki

All staff and all students have full access to editing all sections of the Wiki, while students do not have permissions to edit blog posts from other students. The blog seems easier for students to handle as we get very little questions about how to create text and pictures in the blogs. We get more of that when it comes to the Wiki, especially when students want to upload pictures. When comparing the usage and interaction levels on these two courses compared to the previous two courses, we found that the usage was the same but the level of interaction between the students on each other's posts decreased by 50% in the courses using Wiki. This is in contrast to a earlier research showing that students are more satisfied using wiki's than blogs (Miyazoe & Anderson, 2010). We suspect this is due to the ease of use in the blogs compared to the wikis and the familiarity our students have towards the blogs. Another thing we discovered is that since the wikis are placed within each specific course, they are only accessible for students participating in that particular course. The blogs are accessible site-wide, and we therefore experience interactions between students in different year of study.

Assessing the student reflections was a lot less time consuming having all reflections and all comments in the same place, not having to manually navigate to each individual student. A little more hassle to edit pages to add comments, but the fact that you can comment directly by the text you are commenting and that it is all gathered in the same place is a plus. You do however have the feeling of uncertainty because of the possibility of everyone being able to edit others posts.

Blog		Wiki	
<ul style="list-style-type: none"> Easier to edit 	<ul style="list-style-type: none"> Challenging to locate 	<ul style="list-style-type: none"> Offers different layouts 	<ul style="list-style-type: none"> Formatting issues
<ul style="list-style-type: none"> Easier to add comments (once you have found the post you want to comment 	<ul style="list-style-type: none"> Challenging to add comments because of the location issue 	<ul style="list-style-type: none"> Easier to locate inside any particular course 	<ul style="list-style-type: none"> Cumbersome to edit
<ul style="list-style-type: none"> Pictures stored within the blog post 	<ul style="list-style-type: none"> No alarm to indicate new posts and/or comments 	<ul style="list-style-type: none"> Easier to assess, since both posts and comments are found in the same location 	<ul style="list-style-type: none"> Anyone can alter and/or delete other students posts
<ul style="list-style-type: none"> All comments are named with who commented and when 	<ul style="list-style-type: none"> Without userID or courseID tags, blogs from all students and 	<ul style="list-style-type: none"> A Recent Activity box that indicates 	<ul style="list-style-type: none"> You manually have to add name and date to each comment

	all courses are stored together	when changes have been made in the wiki	
<ul style="list-style-type: none"> Attachments in a post can be deleted by user 		<ol style="list-style-type: none"> A history log is created, allowing you to restore previous entries 	<ul style="list-style-type: none"> Not accessible for students in other courses or other years of study

5. Summary and Conclusions

The test-implementation of the Wiki element in Moodle during two courses did not have any overall impact on the usage of reflective journals when comparing it to the previous two courses. One student however, increased the amount of posts by 60% in the courses using the wikis. The number of overall comments decreased by 50% consistently among the students. The student with increased number of posts obviously got better grades on the reflective journal assessment in the courses using wikis due to the increased usage. Apart from that, the grades remained stable across all four courses. The fact that we instructed students to keep both the blog and the wiki probably affected the usage more than it would have if we have used only the wiki. On the other hand, establishing routines and clear instructions on how to tag the blogs and where to implement them will greatly reduce the time spent navigating to the different blogs. In addition to this, there is the element of wider interaction between students in different year of study and the element of motivation this creates for students early in their educational journey. Based on this our recommendation would be to use the blog element in Moodle as reflective journals, but establish routines and clear instructions on the use of them - both to ease the assessment for teachers but also to encourage students to increase level of usage and interactions.

6. Further work

The results of the preliminary study presented in this paper may have been different if we were to implement Wiki's from the start, but then again - we all also get familiarized with using the blogs in better ways. Further work is needed with an increased number of students in order to thoroughly explore our initial findings, the issues, challenges and benefits of this approach. It could also be an idea to implement a software tool that summarize and organize all posts made by students, list who is commenting, what is commented and perhaps also the possibility to "Rate" or "Like" posts. Everything could then be gathered in a database to accommodate graphic analysis of several hundred students.

7. Biography

Tom Drange has a Masters in Computer Systems Security and he is currently working toward a PhD with the title "Establishing a framework for developing online courses to improve the facilitation of appropriate learning and assessment for students in the Digital Security and Forensics domain." He is responsible for the educational programs Networking and System Administration and Network and IT security in addition to lecturing at Noroff University College.

Mikhaila Burgess is an Associate Professor in Digital Forensics at Noroff University College, Norway. Her research interests include Digital Forensics, Information Security, Data Management and Big Data. She is a Fellow of the Higher Education Academy (UK) and professional member of BCS, the Chartered Institute for IT.

Espen Dysvik-Brandt is a self-employed IT consultant with more than 15-year experience within IT operations and support. He is currently studying for a Bachelor degree in Digital Forensics at Noroff University College Norway, ending mid-2017.

Glenn Nor works as Chief Technical Officer at Noroff in Oslo. He has an Associate of Applied Science in Network and IT Security, and a Bachelor of Digital Forensics. Currently he is doing research in the field of cyber defense;

more specifically in industrial cyber protection. Plans on pursuing a PhD in Digital forensics and joining international projects in his field, in the hopes of one day making the Internet a safe place.

Alastair Irons is a Professor of Computer Science in the Department of Computing, Engineering and Technology (CET) at the University of Sunderland – where his subject interests focus on computer forensics, cyber security and big data. He has worked at ONE North East, Northumbria University and ICI. Alastair became a National Teaching Fellow in 2010. He serves on the management boards of DYNAMO, Digital Leaders North East, and the North East Fraud Forum. He is chair of BCS Academic Accreditation Committee, Cybercrime Forensics Special Interest Group and the BCS NE England branch.

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