

E-Portfolio in Indonesian Private University

Differences in Blogging Behavior, Productivity, and Popularity of Student's Blog

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Abstract—The utilization of weblog will provide more time and learning materials for students in the teaching and learning process. However, its success depends much on the students' independency and self-disciplines to study and write outside of the classroom. The objects of this research are 69 students of Informatics Engineering and Psychology Study Programs. The result reveals that students of Psychology is more active in using community blog than students of Informatic Engineering. The students of Informatic Engineering prefer using individual blog rather than community blog. The number of writings, web pages in the individual blog, and external backlinks constitute significant predictors in the differences of blogging activities between the students from both Study Programs.

Keywords—digital potfolio, e-learning, virtual class

I. Introduction

The utilization of Information and Communication Technology in higher educations has been implemented intensively nowadays. Internet tools are becoming increasingly popular in education [1]. Various concepts of internet-based learning such as e-learning or distance learning enable teachers and students to have interactions out of classrooms. Distance education as a primary means of instruction is expanding significantly at the college and university level [2].

Students' activities in the process of learning can be in the form of blogging. In this activity, students post their writings or assignments that have relations with their course subjects to their blogs. Blogging practice can help us develop a range of new ways to address our literacy as learners and educators and it can help initiate students into an understanding of learning as an ongoing, dynamic conversation with self and others [3]. Instructors also reported observing positive effects on student engagement [2].

The research questions proposed are (1) does the utilization of internet give positive impacts to the learning process, (2) does the utilization of internet improve the students' performance. The dynamics of blogging provide a tool that can help us not only to think pedagogically but to rethink pedagogy [3]. Academic blogging has been found to foster individual expressions, reflection, social networking, and peer support [4]. Blogging has the potential to be a transformational technology for teaching and learning [5]. But, success in world of weblogs is not easily achieved [6].

The aim of this research is to explore the utilization of the blogs – either individual blogs or community blogs made by students of a private university in Jakarta, Indonesia. The blogging activities were recorded in students' digital portfolio as the criteria of students' evaluation. The discussion is mainly focused on the productivity and popularity of individual blog of students from Informatics Engineering and Psychology Department of a private university, in Jakarta, Indonesia.

II. Related Research

Using weblogs (or blogs) for courses, as an enhancement to the traditional class or for a fully online course, is becoming more and more important and popular [7]. The activities of writing in blogs as track-records of students' academic activities have become the objects of researches in higher education. The track-records of students' academic activities can be seen in the blog and e-portfolio. An e-portfolio is an extensive résumé that links to an online repository of a student's papers, problem sets, pictures from study-abroad stints, and anything else that demonstrates the student's accomplishments and activities [8]. According [9], three aspects of e-portfolio are getting popular nowadays, namely student work which is now mostly in electronic form, the web which is everywhere, and databases which are available through Websites.

A blog is often employed to enhance communication environments in education domain [10]. According to [11], weblogs are a relatively new knowledge sharing technology, which enables people to record their thoughts in diary form and publish those diaries. Weblog success is associated with the type of blogging tool used [6]. Weblogs are the development of traditional learning logs for students and teachers, whether as a complement to traditional lectures or as a e-learning tool [12].

Both instructors and students were satisfied with blogging and found it to be an effective teaching and learning strategy [13]. Many educators have attempted to implement a blog in educational contexts to enhance the communication environment among students and teachers [10]. For student a blog can be used as a group work tool, to share course related resources, and to submit assignments and home work [7]. Reference [14] stated that students who used blogs as an assignment posting platform used significantly more words, and possibly spent more time working on the assignment.

Blogging was found to be an effective tool for class interactions that reach beyond the classroom, augmenting knowledge creation, and supporting the development of communities [15]. Reference [16] stated that the effort of participants to engage in communicatively demanding situations, adopting different roles and behaviours. Reference [17] stated that there were positive correlations between learning motivation, Internet self-efficacy, and e-Portfolio satisfaction.

Web 2.0 applications can be successfully exploited for technology enhances learning [18]. According to [19], there are a number of ways blogs can be employed for pedagogical benefit. Students can use them as a journal or portfolio, demonstrating their thoughts, reflections and discussions on the subject area. If students are constantly engaged in journaling/blogging activities, their reflective thinking level demonstrated by their journal entries would increase over time [20]. Reference [21] stated that there was no significant evidence to indicate that students were using the *iPortfolio* to reflect on skills arising from their extracurricular activities or on their professional development, except when required for assessment purposes.

The activity of utilizing blogs in the learning process has become a research topic in higher educations recently. The previous researches used as the references and comparisons are as the following:

No.	Researcher	Subyek	Samples
1.	Blau et al (2012)	Blogging activity	56
2.	Brady et al (2010)	Weblog perception	53
3.	Faqeeh (2011)	Blog assignment	50
4.	Cobanoglu et al (2011)	Blog usage	52
5.	Deng et al (2010)	Community blog	19
6.	Du et al (2005)	Weblog performance	31
7.	Ducate et al (2008)	Steps of blogging	50
8.	Huang et al (2011)	Eportfolio satisfaction	443
9.	Early et al (2007)	Weblog perception	52
10.	Makri et al (2007)	Blogging activity	48
11.	Ullrich et al (2008)	Micro-blogging	48
12.	Konsky et al (2012)	iportfolio usage	339
13.	Lin et al (2008)	Blogging activity	28
14.	Xie et al (2008)	Weblog usage	44
15.	Ehley (2006)	iportfolio usage	324

III. Methodology

The respondents of the research are 69 students of Informatics Engineering and Psychology Study Programs. They are in the fourth year now and take the course subjects which are adaptive to softskill in the academic year 2011/2012. Instead of students' writing, the academic activities, seminars, trainings, and other innovations made by students can also be saved in portfolio. Students are obliged to have individual blogs to post their assignments during one semester.

Students' digital portofolio becomes one of the requirements to take a course subject which is adaptive with softskills. Every student takes such subject in every semester. The observation toward blogging behavior is focused on the

community blogs rather than individual blogs of students from Informatics Engineering and Psychology Study Programs.

The students' blogging activities are performed in one semester. The data observed in this research are the number of writings, the use of individual blogs compared to the community blogs, the popularity, and the number of webpages in students' blogs. The data are taken in the end of semester after all blogs are assessed by the lecturers and grade point average is taken. Students' grades and demography are retrieved from the database of university academic affair.

Productivity and popularity are also measured for several community blogs which are utilized by students. Productivity in blogging are measured based on the number of webpage which are indexed in Google search engine. The popularity of the blogs are measured based on history index of the external backlink and reffered backlink using MajesticSEO search engine. The data were taken in the first week of January 2013.

The comparison between blogging activity and behavior of both departments were analyzed using independent sample t test and discriminant analysis. The analysis of correlation between blogging activity and students' grades or learning outcomes refers to the previous researches done by Du and Wagner who stated that web blog performance is a significant predictor for learning outcome, while traditional coursework is not [11].

IV. Result and Discussion

A. Student Digital Portfolio

Students must write the assignments in the individual or community blogs provided by campus. The content of the writings consist of assignments related with the course subjects and other topics which accommodate the interest of students to improve the softskills competence. All writings that have been posted to the blogs are recorded electronically in the media called student digital portfolio. Reference [9] stated that a portfolio, electronic or paper, is simply an organized collection of completed work [9].

Every student has his own digital portfolio in student digital locker. Through this system, students are able to access academic records, news from campus, information from lecturers, writing in the community blog, completing the digital portfolio, registering seminars, and other academic services. Completing portfolio is only for individual blog, while writing in the community blog will be automatically delivered into the digital portfolio.

The lecturers are able to access the recapitulations of the students' writings through digital locker. The writings can be retrieved from the students' individual blog and community blog. The number of students' writings are used as one of the components to pass the exams of course subject that is adaptive to softskill.

The utilization of the blog must be integrated with the teaching-learning process in the classroom. Blogging must be understood not just as isolated phenomena [3]. Lecturers and

students may have interactions through the blogs, so that students are encouraged to write actively in the blogs.

By integrating the blogging activities, students are obliged to write their assignments in the blog. This activity results in the improvement of the students' writing skills, although students feel uneasy toward the implementation of this policy. This can be seen from the comments in their blogs. Students tend to be in favor of blogs as an aid in blended learning environments [15]. However, at last, students give positive responses toward the implementation of this policy. This is line with the result of the research done by [22] that students have had positive attitudes towards Weblog use.

The lecturers can monitor the students' blogging activities from lecturer digital locker at any time. If the number and the content of materials do not fulfill the lecturers' expectations, they will inform the recapitulations of students' writings in the classrooms. Students are encouraged to have more writings, and to have various topics of writings in order they can broaden more knowledge. Reference [23] recommend faculty diminish their facilitation and instruct students to focus on sharing experiences rather than information.

B. Individual Blog vs Community Blog

Every student must have individual blog as one of the requirements to attend the course that is adaptive to softskill development. The course is offered every semester by Study Program. The students employ free blog named wordpress.com (23.19%), blogspot.com (75.35%), and the rests use other platforms.

Students are able to complete the digital portfolio through community blogs which contain general information such as various rubrics, and community blogs which contain specific topics such as linux community, robotic community, banking community, Islamic economic community, capital market community, architecture community, and photography community. The number of webpages and referred back link of the community blog can be seen in the following table.

TABLE I. WEBPAGE AND BACKLINK OF NUMBER OF COMMUNITY BLOG

No.	Type of community blog	webpage ^a	backlink ^a
1	wartawarga.gunadarma.ac.id	160000	70394
2.	pasarmodal.blog.gunadarma.ac.ic	4340	2052
3.	fotografi.blog.gunadarma.ac.id	2300	3231
4.	banking.blog.gunadarma.ac.ic	2140	3383
5.	insurance.blog.gunadarma.ac.id	1020	136
6.	linux.blog.gunadarma.ac.id	946	5095
7.	ekonomisyariah.blog.gunadarma.ac.id	401	3903
8.	robotika.blog.gunadarma.ac.id	124	4055
9.	arsitektur.blog.gunadarma.ac.id	115	1577
10.	tax.blog.gunadarma.ac.id	52	63

a. measured at January 6, 2013

There are two kinds of community blogs. The first contains more various rubrics and popularity. The second contains specific topics that have less pages and popularity.

Students from Psychology have more writings in their blogs than students from Informatics Engineering. The ratio is 64.71 : 45.71. One of the reasons toward this phenomenon is students of Informatics Engineering prefers their personal blogs in which they can design and modify the features by themselves. This condition is due to the fact that they have better skills to design and modify texts than students of Psychology.

The technical difference can be seen from the features found in the blogs created by students of Psychology which are simple. This difference indicates that there is digital divide between the two study programs. Reference [12] say that another source of disadvantage would be computer illiterate users, especially in those countries with a wide digital divide.

The result shows that students from Psychology are more productive in writings than students from Informatics Engineering. This can be seen from the number of the writings in the blogs of students of Psychology in one semester. The number of writings ranges from 3 to 24 and the average is 11 writings in one semester. For students of Informatics Engineering, the number of their writing ranges from 2 to 16 and the average is 8 writings in one semester.

The result shows that the students of social study program have higher ability in writing than students of computer or engineering. In some instances, students of psychology write longer articles with various choices of words. This is in line with the result of research done by [14] that conclude in his research that students used more words in their assignments when they posted it on a blog.

C. Blog Presence and Popularity

All students' writings have been indexed in google.com with various numbers of pages. The total web pages of students' blog indexed in google.com are 6112 pages. The least webpage of a blog is 2 pages. The highest one is 506 pages. The average numbers of web pages created by students of psychology are higher than those which are created by students of informatics engineering. The ratio is 111 and 67. The number of web pages denotes the accumulation of students' writing activities in their blogs at the end of semester as the assignments of softskill subjects.

In general, students' blogs are relatively less popular than other websites that link to students' blogs viewed from the data of total backlink. The total students' bloh which have backlink are 24 blogs (34.78%). The biggest total backlink is 1958 to students of Psychology and 74 to students of Informatics Engineering. The percentage of blogs created by students of Informatics Engineering which have backlink is 37.14% and students of Psychology is 32.35%. However, the total average backlink of students from Psychology is bigger than students from Informatics Department. The ratio is 88 : 6 link. The relation between the number of webpage and external backlink and referred backlink of the two study programs can be seen in figure 2 and 3 below.

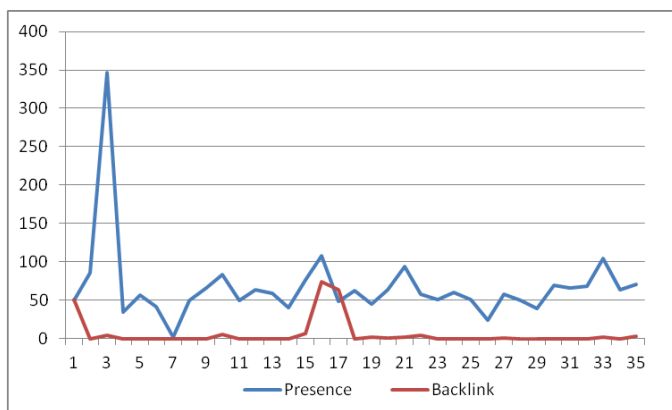


Figure 2. Webpage and backlink for Informatics

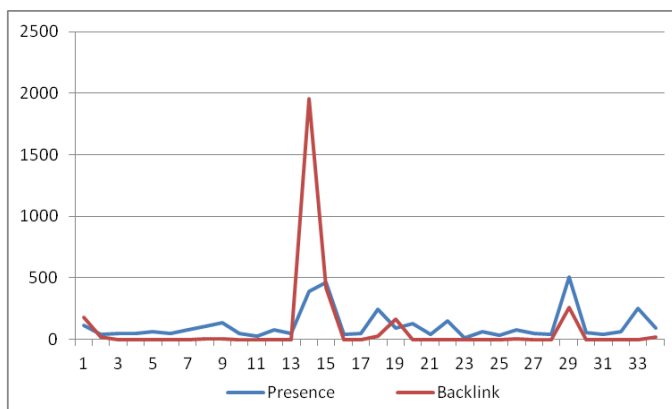


Figure 3. Webpage and backlink for Psychology

The productivity in writing in the blog is much influenced by the fact that students would like to pass the course subject, because writing in the blog is one of the parameters in the final evaluation. The most dominant factor in the willingness to write in the blogs is the grade of the assignments given by the lecturers toward the writings in the blogs. Writing in the blog is a compulsory for them. Writing has not become a hobby for them. Such phenomenon is relevant with the statement that students are more likely to use a tool like an e-portfolio if they see the benefit in doing so, and if it is compatible with their existing values and practices [21].

The popularity is determined not only by the number of blogs, but also the ability to create networks among bloggers, such as link exchange or blog walking that can increase the students' blog popularity. The significance or uniqueness can also increase the visibility of students' blog. Another technical aspect is related with the friendliness of the Search Engine, called Search Engine Optimization (SEO). Students of Informatics Engineering know this feature better than students of Psychology.

The findings say that the number of web pages and blog popularity of students from Psychology is higher than those created by students of Informatics Engineering. This means that blogging activities are not a matter of technology.

Technology characteristics affect the ability of weblogs to create and deliver content, as well as to nurture social circles around them [6]. This research shows that technical competence of students from Informatics Engineering, particularly in designing or creating blogs, does not guarantee that they are productive in writing in their blogs and their blogs are popular.

Another interesting aspect is the comments are rarely found in the students' blogs. This condition shows that the habits or culture to read blogs and give comments in the blog is still low. Several comments found in the students's blog do not discuss the content of the writings. The comments found are about the information communication. The "one line comment" phenomenon is still dominant. In other words, there is no deeper or further discussion related with content of the writings. This situation is relevant with the previous research which states that some users seemed not to be aware (or not to care) that their messages were readable by all other users and posted pejorative messages [18].

Based on the observations toward several blogs created by students, the interaction activities through the comments have not been done intensively by students. This condition will result in the unpopularity of the blogs. This is due to the facts that the blogs are rarely visited and commented by others. This situation is similar with the previous research which states that blogs are not very good at supporting dynamic and interactive online discussions [4].

D. Differences in Blogging Activity

The independent t test shows that there are differences in the number of writings, the number of webpages in the individual blog, and the popularity of the blog found in both Study Programs. The differences are then analyzed using Discriminant Analysis. The result of the prediction can be seen in the following table.

TABLE II. CLASSIFICATION RESULT

		Predicted group membership			Total
		Informatics	Psychology		
Original	Count	Informatics	9	4	13
		Psychology	4	7	11
	%	Informatics	69.2	30.8	100.0
		Psychology	36.4	63.6	100.0

a. 66.7% of grouped cases correctly classified

Discriminant analysis uses blog which have backlink or 24 samples of the blogs. The level of prediction from the discriminant analysis is 66.7%, or this level is moderate. The factor that has highest discriminating power is the number of the postings. The second is the number of webpages (presence) and the third is the total backlinks. This result shows that the main discriminant factor that influences the blogging productivity between students of Psychology and Informatics Engineering is the number of postings. Students of Psychology are more productive in writing in the blog than students of Informatics Engineering.

v. Summary

The utilization of blog in the teaching-learning process becomes a supplement for the students in the classroom learning activities. They use blog to post all assignments and information about the lecture that they take. In general, they prefer individual blogs rather than community blogs. The topics that they choose for their writings in the blog, mostly, have no relation with the assignments given by the lecturers.

There are fewer number of writings in the individual blogs rather than community blogs. This is due to the fact that the habit or culture of writing is relatively low. They write in the blogs because of the assignments from the lecturers, not because they like writing in the blogs. Besides, the variety of the knowledge and skills in managing blogs influences the students' blogging activities. This can be seen from the number of the web pages and the popularity of the blogs that are relatively low. This research does not investigate the period of the blog and the possibility of the students to change the address of their blog in the previous semesters. Such limitation does not influence the performance of the blog which is measured in the end of the semester.

Students of social science prefer blogging activities rather than students of informatics engineering. However, the average result reveals that blogging activities of both groups are still low. This condition shows that blogging activities have not been a habit or culture to them. They feel obliged to do the assignments in blog because this is one of the parameters in learning evaluation. This conclusion needs further investigations. This can be done by involving more samples in the research and employing other variables that may result in the behavior differences, such as students' perception toward internet and computer self-efficacy. Other analysis techniques can also be employed, such as Technology Acceptance Model or Unified Theory of Acceptance and Use of Technology (UTAUT).

References

- [1] L.C. Ducate and L.L. Lomicka, "Adventures in the blogosphere: from blog readers to blog writers", *Computer Assisted Language Learning*, Vol. 21, No. 1, February 2008, 9–28.
- [2] K.P. Brady, L. B. Holcomb, and B. V. Smith, "The Use of Alternative Social Networking Sites in Higher Educational Settings: A Case Study of the E-Learning Benefits of Ning in Education", *Journal of Interactive Online Learning*, Volume 9, Number 2, Summer 2010.
- [3] M. O'Donnell, "Blogging as Pedagogic Practice: Artefact and Ecology", *Asia Pacific Media Educator*, Issue No.17, Dec. 2006.
- [4] L. Deng and A.H.K. Yuen, "Exploring The Role Of Academic Blogs in a Blended Community: An Integrative Approach", *Research and Practice in Technology Enhanced Learning* Vol. 5, No. 2 (2010) 53–71.
- [5] J.B. Williams, "Exploring the use of blogs as learning spaces in the higher education sector", *Australasian Journal of Educational Technology*, 2004, 20(2), 232-247.
- [6] H.S. Du and C. Wagner, "Weblog success: Exploring the role of technology", *International Journal Human-Computer Studies* 64 (2006) 789–798.
- [7] S. L. Mora, "A Survey of Use of Weblogs in Education", *Current Developments in Technology-Assisted Education* (2006), <http://gpsl.dlsi.ua.es/proyectos/webeso/pdf/micte06.pdf>, retrieved December 31, 2012.
- [8] J.R. Young, "Creating Online Portfolios Can Help Students See 'Big Picture,' Colleges Say". *The Chronicle of Higher Education*, 2002, <http://www.udel.edu/present/aaron/digitalstory/Readings/Online%20Portfolios.pdf> Retrieved December 30, 2012.
- [9] T. Batson, "The Electronic Portfolio Boom: What's it All About?", http://www.msmla.edu/include/learning_resources/emerging_technologies/eportfolio/ePortfolio_boom.pdf, Retrieved December 30, 2012.
- [10] H.N. Kim, "The phenomenon of blogs and theoretical model of blog use in educational contexts", *Computers & Education* 51 (2008) 1342–1352.
- [11] H.S. Du and C. Wagner, "Learning with Weblogs: An Empirical Investigation", *Proceedings of the 38th Hawaii International Conference on System Sciences – 2005*.
- [12] S.J. Mora and S.J. Espinosa, "The Use Of Weblogs In Higher Education: Benefits And Barriers", Department of Software and Computing Systems, University of Alicante, <http://gpsl.dlsi.ua.es/proyectos/webeso/pdf/inted07.pdf>, Retrieved December 30, 2012.
- [13] J.O. Early and S. Burke, "Entering the Blogosphere: Blogs as Teaching and Learning Tools in Health Education", *International Electronic Journal of Health Education*, 2007; ?FZLDFYL/C/10:186-196.
- [14] C. Cobanoglu and K. Berezina, "The impact of the use of blogs on students' assignment engagement", *Journal of Hospitality, Leisure, Sport and Tourism Education*, vol. 10(1), 99 – 105.
- [15] Y.M. Lin and M.v.Hooft, "The Impact of Blogs on Student Perceptions toward Social Interaction and Learning Satisfaction in Blended Learning", 16th International Conference on Computers in Education, Taipei, Taiwan, October 27-31, 2008.
- [16] K. Makri and C. Kynigos, "The Role of Blogs In Studying The Discourse And Social Practices of Mathematics Teachers", *Educational Technology & Society*, 10 (1), 73-84.
- [17] J.J.S. Huang, S.J.H. Yang, and M.C.W. Chang, "The Effect of ePortfolio Satisfaction on Students' Learning Motivation and Internet Self-efficacy", *Journal of Educational Technology Development and Exchange*, 4(1), 103-118.
- [18] C. Ullrich, K. Borau, H. Luo, X. Tan, L. Shen, and R. Shen, "Why Web 2.0 is Good for Learning and for Research: Principles and Prototypes", *International World Wide Web Conference Committee (IW3C2)*, April 21–25, 2008, Beijing, China.
- [19] M. Weller, C. Pegler, and R. Mason, "Use of innovative technologies on an e-learning course", *Internet and Higher Education* 8 (2005) 61–71.
- [20] Y. Xie, F. Xe, and P. Sharma, "The effect of peer feedback for blogging on college students' reflective learning processes", *Internet and Higher Education* 11 (2008) 18–25.
- [21] B.R. von Kinsky and B. Oliver, "The iPortfolio: Measuring uptake and effective use of an institutional electronic portfolio in higher education", *Australasian Journal of Educational Technology*, 2012, 28(1), 67-90.
- [22] A.I. Faqeeh, "EFL Learners' Use Of Blogging For Developing Writing Skills And Enhancing Attitudes Towards English Learning: An Exploratory Study", *Journal of Language and Literature*, ISSN: 2078-0303, Vol. 2. No. 1. 2011.
- [23] I. Blau, N. Mor and T. Neuthal, "Interacting for learning: Digital portfolios for a learning community in a university course", *Learning, Media and Technology*, 2012, 1–15.