

ASSESSMENT THROUGH THE USE OF BLOGS — COULD IT FACILITATE PEER-TO-PEER LEARNING IN ONLINE HIGHER EDUCATION?

Anders D. Olofsson
Department of Education
Umeå University
Sweden

J. Ola Lindberg
Department of Education
Mid Sweden University
Sweden

Trond-Eiliv Hauge
Department of Education
Umeå University
Sweden

&

Department of Teacher Education and School Development
University of Oslo
Norway

Abstract

In this paper, the use of student blogs as an assessment tool is analysed to better understand how blogs could provide possibilities for and facilitate reflective peer-to-peer learning. The empirical setting comprised an online higher education course. Twenty three students were enrolled and wrote individual blogs. Data is the total amount of blogs and related comments published online. For the analysis the concept ICE (Ideas, Connections, and Extension) (Fostaty Young, 2005) was used. The students expressed ideas, connections, and extensions. The use of blogs as tools for formative peer-assessment in online higher education can enhance the students' peer-to-peer learning through technology.

Introduction

Over the last five years or so, higher education in Sweden has in many ways turned into an interactive and technology enhanced net-based venture (Hrastinski, 2007; Olofsson &

Lindberg, 2007). Traditional campus education has in a considerable way integrated the Internet into its curriculum and related activities and higher education carried out online have expanded rapidly. This trend seems also to be present in other parts of the world (see, for example, Lindberg & Olofsson, 2009; Salmon, 2000; Sweet & Svinicki, 2007). Within this development the implementation and use of different social software for learning (see, for example, Klamma et al., 2007; Parker & Chao, 2007) and assessment (see for example JISC, 2007) has been significant.

One way to understand this development might be the particular focus on the social dimension of learning in higher education that was established in educational research in the late 1990s (see for example Balacheff, Ludvigsen, de Jong, Lazonder, & Barnes, 2009; Beldarrain, 2006; Jonassen & Land, 2000; Sorensen & Takle, 2002). It seems that both in theory and practice there has been a move in focus from the individual towards the community, from individual learning towards collaborative learning. Within this development, different kinds of theoretical frameworks and related ideas for designing for enhanced learning have been established (see, for example, Kirkwood & Price, 2005). In this paper, light is shed on one of these ideas: formative assessment through peer-to-peer learning (compare Korsgaard Sorensen, 2008).

The question of assessment and its related practices has been around for a rather long time in educational research. Over the last 20 years or so assessment designed and carried out formatively seems to have gained more interest (Black & William, 1998; Sadler, 1989; Shephard, 2009). According to Sadler (1989) such form of assessment shall be used for creating an ongoing process of shaping the students' learning and improving their understandings and competences. Further, it is used to create opportunities for students to, by means of feedback, develop a better understanding of their own learning activities combined with an understanding of learning for life, not for the test (Cooper, 2000; Stout, 2002; Williams, 2008).

This move towards a more process-orientated character of assessment seems to have happened simultaneous with increased interest for a social dimension in learning practices. This seems in addition to have directed research towards investigation of collaborative learning activities in which the students receive feedback or review from not only the teacher but also from their co-students. That is — peer-to-peer learning framed by the practice of assessment (see for example O'Donovan, Price, & Rust, 2004; Price, O'Donovan, & Rust, 2007; Tseng & Tsai, 2007).

Turning to the concept of peer-to-peer learning, the main thrust seems to be creating shared educational environments for the students — environments that can function as physical and/or virtual spaces in which the students among other things can engage in communication with each other, discuss course-related issues, help each other in order to deepen their understandings, and facilitate learning processes (Scott, Castaneda, Quick, & Linney, 2009). The frameworks for the students' collaborative and peer-to-peer activities can range from rather regulated and teacher intervened to scenarios in which the students could both set the agenda for the content to be focused on and for the way their collaborative work should be carried out. This can be understood in terms of scaffolding.

In the context of online education and computer mediated communication (CMC) there are signs implying that carefully designed scaffolding is important for a productive peer-to-peer learning situation to occur (see, for example, Sharma & Hannafin, 2007; Westera, de Bakker, & Wagemans, 2009). Critical aspects of such scaffolding present in research literature imply that such scaffolding disturbs equal important self-directed learning strategies among the students (compare Scott et al., 2009).

Parallel to the development of learning designs (as for example the design of peer-to-peer learning and assessment activities in higher education) different kind of social software has been implemented in the educational environment in order to support the learning activities hoped for by the educational provider and/or the teachers. Examples are research on games (Kennedy, 2004); blogs (Klamma et al., 2007); pods (Lee & Chan, 2007); videopaper (Hauge & Norenes, 2009a; Hauge & Norenes, 2009b); and wikis (Parker & Chao, 2007). The students in this study performed collaborative and peer-to-peer activities via CMC using blogs that were located on a shared online space. Activities that, aside from the instructions given by the teachers on what to focus on in the blogs, were totally handed over to the students.

Blogs, such as the ones being investigated in this paper, can be described as “simple content management tools enabling non-experts to build easily updatable web diaries or online journals” that are “networked between several users who post thoughts that often focus upon a common theme” (Kamel Boulos & Wheeler, 2007, p. 5). Nowadays, blogs no longer need to consist solely of written text or postings (Hain & Back, 2008). By using different kind of media and sign systems the possibilities for using other forms of blogs in education have increased. Lately, blogs using video postings, so-called v-logs, have become popular and more frequently used in different kind of online environments, among these educational (Warmbrodt, Sheng, & Hall, 2008). Characterising and intertwining all types of blogs is their location in a shared online environment with an intention to facilitate the learners’ reflective thinking. According to Hatzipanagos and Warburton (2009), these reflective practices are two fold. They have a meta-reflective function as well as they function as reflections concerning other learners’ comments related to one’s own posting in the blog.

Given this brief background in which peer-to-peer learning, formative assessment, and blogs build the triad of research interest, the aim with this paper is to analyse, through an interpretative approach, the use of student blogs as an assessment tool in online higher education, and further to investigate if the use of blogs provides possibilities for, and facilitates, reflective peer-to-peer learning. Before discussing the findings in relation to the aim, a few other parts of the paper need presentation. In the next part of the paper, the empirical setting is described.

Methodological Considerations

The empirical setting is an online higher education course with focus on “ICT and new media as learning support.” In this paper, the course is understood as a case (Stake, 1995;

Yin, 2003). The course comprised of both individual assignments as well as assignments to be conducted within a study group. Assignments were both text-based (as in the case of the blog) as well as directed towards media production for educational purposes. In total 23 students were enrolled in the course. It was mandatory for assessment purposes that all students should both publish blogs of their own online as well as comment upon their peer-students' blogs. The theme for this task was "knowledge about research." The students had learning resources to be used in the form of podcast-lectures and course literature and their task was to write comments and reflections in a blog on the issue. The study guide also stated that the students should read and comment on their co-students' blogs; as well as replying to comments in the blogs commenting and engaging in discussions were allowed. The resources available as podcasts were to be connected to the readings in the course literature. This made the blogs a way to visualise the students' knowledge on the issue, and open for the students to learn from and with each other using the blog as a tool for learning. Data in this study is the total amount of blogs and related comments published online. In total the 23 students wrote 26 blogs (three students wrote two blogs) and 123 comments. Nine of the comments were made replying to comments posted by other students on other people's blogs. One student did not comment on any blog of the others; the number of comments from other students ranged from 1–11 with a median of 5 comments. One blog was not commented on by any other student (one of the double blogs); the other blogs received from 1–10 comments with a median of 5 comments.

Analytic Framework

For analysis of the blogs and comments the theoretical concept ICE (Ideas, Connections, and Extension) (Fostaty Young, 2005; Fostaty Young & Wilson, 2000) was used. ICE is an approach to assessment that does not relate student progress to standards and norms, but to their own previous state (Fostaty Young & Wilson, 2000) comparing students to their own progress and making ICE possible to understand as a process approach.

The components of ICE are Ideas, Connections and Extensions. Ideas are described as the first steps in the process, the fundamentals, facts, information that the students collect. Connections are described by Fostaty Young and Wilson (2000) as the established and articulated relationships between the fundamentals, the way the ideas are connected. Connections relate back to previous knowledge and associate new bits to things we already know. Extensions denote the final stage, a stage where ideas and connections are internalised to a degree where they help to answer deeper questions such as how new knowledge provides for a view of the world.

Ideas are demonstrated in terms of fundamentals, basic facts, vocabulary, definitions, details, elemental concepts. Signs of connections are when students demonstrate relationships or connections among basic concepts, or between what was learned and what the already knew. Extensions reveal themselves when students use new learning in novel ways, displays answers to questions such as what this means or how this shapes my view of the world.

The ICE approach will be used as the framework from which the student postings and comments in the blogs are analysed. At first, each blog is interpreted within the framework as containing ideas, connections and extensions. Thereafter, the comments are interpreted. Even though the ICE approach opens for analysis each student blog and comments, thereby revealing potential progress on an individual level, the analysis in this paper will only consist of the content of each blog and comment as such. The main reason for this is the complexity of analysing each student's blogs and comments on an individual level since the students produced their blogs and comments over time.

Analysis and Findings

The 26 blogs were all interpreted within the framework of the ICE approach. In a few of the blogs the content were interpreted to primarily show ideas with few if any further connections or extensions. Examples of how the students formulate the ideas in the literature and in the pod-casts without relating it to other sources are when one blog gives the content one by one¹:

XXXX tells in his podcast that. . .

YYYY tells in her podcast that. . .

ZZZZ described in his book that. . . (Blog no. 4)

Another blog is built on paragraphs in a similar way:

XXXX means that the computer gives the students opportunities. . .

In book-title YYYY mentions the public spaces. Within these there are no certain rules for spreading information. . .

ZZZZ talks a lot about discussions and how ICT can help when studying at a distance. . . (Blog no. 10)

Another way of not relating the ideas of the content with connections between the sources is when a student summarises issues and closing the paragraphs with a statement such as:

Information technology changes the conditions for how information and knowledge is communicated and it changes the how we humans get in contact

¹ In order to avoid providing information about which researcher discussed in the students' blogs and comments, we have instead of using their real names in the quotations chosen to replace them with letters like XXXX or ZZZZ.

with, view, and act in the world. These first paragraphs are based on reasoning from XXXX. . .and from YYYY. . . (Blog no. 3)

In the main parts of the blogs, the content was interpreted to include both ideas and connections. Connections are in this case interpreted as the signs where students not only display that they have accessed (read and listened to) the course resources, but also made connections between different sources as well as connections to previous knowledge and experiences.

Examples of content in blogs interpreted in this way are:

XXXX writes that in the middle of the mediaflow of different quality we also find qualified knowledge and information concerning humanity, for example environment, science, society and such. I study here at X university to become a teacher and I consider it to have been a great help to search for information on the university website. . . (Blog no. 2)

. . .and there the real opportunities for dialogue that XXX talks about appear and also the community learning that YYY mentions in his lecture. . . (Blog no. 5)

. . .one thing I miss in the reasonings of XXX and YYY is how to implement ICT in compulsory schools. In ZZZ and AAA's book BBB show how a good idea might be. . . (Blog no. 14)

In less than a handful of the blogs, the content was interpreted as containing not only ideas and connections but also extensions. In one blog a student gives a background from her own childhood, with her mother's child raising techniques and ways of passing on knowledge, and connecting this to the course literature in this way:

We can not always tell in what way we ourselves are. . .our young grow up using computers with a certainty, as certain as my mother was that a hen could walk, as certain as we now know that. . . (Blog no. 1)

More obvious extensions towards new and deeper insights are displayed in another blog:

I can honestly say that XXX podcast made me look upon dialogue with totally new eyes (Blog no. 11)

Another way of describing insights into behaviour that can be viewed in a new light is when one student writes:

I will try to explain what I mean. . .All the things I ought to do are fully available to me all day around. . .I might chat even though my essay is a mouse-click away. . .I might watch TV, even though I could think of ideas for a group assignment. . .I want us to think about what this might mean. (Blog no. 19)

In the comments, about a fourth of them were interpreted as containing primarily ideas. Many of the were short replies in which the main content of the blog was agreed upon or repeated or short replies were students only stating opinions of their own. One clear example is:

I understand what you write and share your thoughts. But I cannot see the connection to the course literature. (Comments by student no. 13 on blog no. 19)

Another comment displaying primarily ideas is:

I think that what you write is highly relevant and up to date!! It is important that we have a dialogue and not a discussion working on the net. It is as you say, something that all should know. (Comment by student no. 14 on blog no. 20)

A comment relating to a more personal view that nevertheless has been interpreted as displaying primarily ideas is:

I think it was interesting how you look upon things with blog. Some blogs are useful other less interesting. I am of an older generation, but feel that you have to keep up, among other things with the digital world. . . (Comment by student no. 22 on blog no. 23)

In the main parts of the comments, about two thirds, students not only comment by restating content but also add connections in relation to literature, ideas at large, experiences of their own, and previous knowledge. By doing this they support, expand and elaborate on the accounts of the writer of the blog, and actively help to further the learning in the group. An example of this is:

As you write, there are many issues concerning how to carry it out, pupils that don't want or may not be filmed and so on, that needs to be thought of but I think most things could be solved in some way! Good writing! (Comment by student no. 16 on blog no. 2)

Supporting and expanding can also be seen in parts of a comment such as:

I think you make a good connection between your own professional reality connected to course literature and podcasts about recent research in your blog. I share your opinion that of course schools and preschools should use ICTs and new tools as help in learning. But it is important to keep in mind that. . . (Comment by student no. 3 on blog no. 5)

In a minority of comments, about ten of them, students' comments were interpreted to contain not only ideas and connections, but also extensions. One example of parts of such a comment is:

I wasn't raised with computers and new technology. I can remember my mother telling about her first encounter with the telephone and how she was afraid and ashamed to ask how it worked. (Comment by student no. 23 on blog no. 21)

Discussion

As can be seen in the analysis, the students' use of blogs contained reflected and relevant issues concerning the course assignment displaying the students' knowledge. Since the assignment in its character was a reflected exercise, this is not especially surprising. The extent to which the students actually commented the contents of the blogs, and the extent to which the students in their comments not only restated the content of the blog are more surprising. In most cases, the blog worked as a tool to make the students' learning transparent. And since the teachers in the course remain invisible in the blog exercise, the students are left to produce a practice of their own, a practice that is more supportive, and show a willingness to help others to further understanding rather than to correct and patronise. The main impression of the blog assignment is one of peer-to-peer learning. But this should be said with some critical considerations concerning the framework of analysis and the interpretations.

The interpretations were now and then a bit difficult to conduct with a reasonable amount of reliability, mainly because the blog assignment was to write a reflective blog based on the course learning resources and with connections between the different sources. A difficulty arose in interpreting the blogs and comments as singular statements, not as parts of a process of gaining insight into the issue at hand. It is not always an easy task to separate a comment showing connections between sources and also relating the content to previous knowledge and experience from a comment with extensions towards new knowledge and new and deeper insights, especially when there is no further knowledge of the students than their blogs and comments. Given the teacher's knowledge of each student, these interpretations would probably have been easier to conduct for the teacher. But in relation to this paper, interpretations were difficult. But at the same time, the use of the ICE framework reveals an interesting potential to provide the teacher with good opportunities for formative assessment. It also displays the peer-to-peer learning and support that the students gave each other, perhaps because the assignment gave them a free space to explore the possibilities without normative remarks or comments made by teachers within the course.

Concluding Remarks

It seems the use of blogs as an assessment tool in online higher education provides possibilities for, and facilitates, reflective peer-to-peer learning. The students enrolled in the course show, for example, signs of demonstrating connections between what was learned and their prior knowledge and that they use new learning in novel ways. In addition the use of blogs seems to provide feedback to the teacher of, for example, in

what way future tasks should be designed in order to create more opportunities for productive peer-to-peer learning to occur online. But at the same time one might ask if such educational design and use of blogs as part of the assessment practice also can have a disciplinary function for the students. As they, as research has shown almost consistently, adjust their behaviour and writing in line with what is wanted by the teacher and specified in the tasks given the possibilities for self-directed learning decrease and the creativity among the students is held back. One might also ask how the students feel about writing and posting comments in an online arena open for not only the teacher but also for all their co-students — individuals they do not know except from what is learnt by reading each student's personal presentations present in, for example, the Learning Management System (LMS) integrated and used in the online higher education course. Will such circumstances impede what the students really want to share in the online arena and will that affect their learning activities? Questions like these will be target areas for further research.

References

- Balacheff, N., Ludvigsen, S., de Jong, T., Lazonder, A., & Barnes, S. (Eds.). (2009). *Technology-enhanced learning. Principles and products*. Milton Keynes: Springer.
- Beldarrain, Y. (2006). Distance education trends: Integrating new technologies to foster student interaction and collaboration. *Distance Education*, 27(2), 139–153.
- Black, P., & William, D. (1998). Assessment and classroom learning. *Assessment in Education: Principles, Policy & Practice*, 5(1), 7–74.
- Cooper, N. J. (2000). Facilitating learning from formative feedback in level 3 assessment. *Assessment & Evaluation in Higher Education*, 25(3), 279–291.
- Fostaty Young, S. (2005). Teaching, learning, and assessment in higher education: Using ICE to improve student learning. *Proceedings of the Improving Student Learning Symposium*, London, UK, 13, 105–115. Imperial College, London, UK, September 2005. Oxford Centre for Staff and Learning Development.
- Fostaty Young, S., & Wilson, R. J. (2000). *Assessment & Learning the ICE approach*. Winnipeg, MB: Portage & Main Press.
- Hain, S., & Back, A. (2008). Personal learning journal — Course design for using weblogs in higher education. *The Electronic Journal of e-Learning*, 6(3), 189–196.
- Hatzipanagos, S., & Warburton, S. (2009). Feedback as dialogue: Exploring the links between formative assessment and social software in distance learning. *Learning, Media and Technology*, 34(1), 45–59.
- Hauge, T. E., & Norenes, S. O. (2009a). Changing teamwork practices: Videopaper as a mediating means for teacher professional development. *Technology, Pedagogy and Education*, 18(3), 279–297.
- Hauge, T. E., & Norenes, S. O. (2009b). Videopaper as a bridging tool in teacher professional development. In J. O. Lindberg & A. D. Olofsson (Eds.), *Online learning communities and teacher professional development: Methods for improved education delivery* (pp. 209–229). Hershey: IGI Global.
- Hrastinski, S. (2007). *Participating in synchronous online education*. (unpublished doctoral thesis). Lund: Sweden.

- JISC. (2007). *Effective practice with e-assessment: An overview of technologies, policies and practice in further and higher education*. Retrieved October 25, 2009, from <http://www.jisc.ac.uk/media/documents/themes/elearning/effpraceassess.pdf>
- Jonassen, D. H., & Land, S. M. (Eds.). (2000). *Theoretical foundations of learning environments*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Kamel Boulos, M. N., & Wheeler, S. (2007). The emerging Web 2.0 social software: An enabling suite of sociable technologies in health and health care education. *Health Information and Libraries Journal*, 24, 2–23.
- Kennedy, R. S. (2004). Multimedia reviews: Weblogs, social software and new interactivity on the web. *Psychiatric Services*, 55(3), 247–249.
- Kirkwood, A., & Price, L. (2005). Learners and learning in twenty-first century: What do we know about students' attitudes towards and experience of information and communication technologies that will help us design courses? *Studies in Higher Education*, 30(3), 257–274.
- Klamma, R., Amine, M., Chatti, A., Duval, E., Hummel, H., Hvannberg, E. T., Kravic, M., Law, E., Naeve, A., & Scott, P. (2007). Social software for life-long learning. *Educational Technology & Society*, 10(3), 72–83.
- Korsgaard Sorensen, E. (2008). Design of dialogic elearning-to-learn: Meta-learning as pedagogical methodology. *International Journal of Web Based Communities*, 4(2), 244–252.
- Lee, M. J. W., & Chan, A. (2007). Reducing the effects of isolation and promoting inclusivity for distance learners through podcasting. *Turkish Journal of Distance Education*, 8(1), 85–104.
- Lindberg, J. O., & Olofsson, A. D. (Eds.) (2009). *Online learning communities and teacher professional development: Methods for improved education delivery*. Hershey, PA: IGI Global.
- O'Donovan, B., Price, M., & Rust, C. (2004). Know what I mean? Enhancing student understanding of assessment standards and criteria. *Assessment & Evaluation in Higher Education*, 9(3), 325–335.
- Olofsson, A. D., & Lindberg, O. J. (2007). Enhancing phronesis. Bridging communities through technology. In L. Tomei (Ed.), *Online and distance learning. Concepts, methodologies, tools, and applications* (6 vols.) (pp. 3157–3175). Hershey, PA: Information Science Reference.
- Parker, K. R., & Chao, J. T. (2007). Wiki as a teaching tool. *Interdisciplinary Journal of Knowledge and Learning Objects*, 3, 57–72.
- Price, M., O'Donovan, B., & Rust, C. (2007). Putting a social-constructivist assessment process model into practice: Building the feedback loop into the assessment process through peer review. *Innovations in Education and Teaching International*, 44(2), 143–152.
- Sadler, D. R. (1989). Formative assessment and the design of instructional systems. *Instructional Science*, 18, 119–144.
- Salmon, G. (2000). *E-moderating. The key to teaching and learning online*. London: Kogan Page.
- Scott, P., Castaneda, L., Quick, K., & Linney, L. (2009). Synchronous symmetrical support: A naturalistic study of live online peer-to-peer learning via software videoconferencing. *Interactive Learning Environments*, 17(2), 119–134.

- Sharma, P., & Hannafin, M. J. (2007). Scaffolding in technology-enhanced learning environments. *Interactive Learning Environments*, 15(1), 27–46.
- Shephard, K. (2009). e is for exploration: Assessing hard-to-measure learning outcomes. *British Journal of Education Technology*, 40(2), 386–398.
- Sorensen, E. K., & Takle, E. S. (2002). Collaborative knowledge building in web-based learning: Assessing the quality of dialogue. *International Journal of E-learning*, 1(1), 28–32.
- Stake, R. E. (1995). *The art of doing case study research*. London: Sage.
- Stout, W. (2002). Psychometrics: From practice to theory and back. *Psychometrika*, 67(4), 485–518.
- Sweet, M., & Svinicki, M. (2007). Why a special issue on collaborative learning in postsecondary and professional learning? *Educational Psychology Review*, 19, 13–14.
- Tseng, S-C., & Tsai, C-C. (2007). On-line peer assessment and the role of the peer feedback. A study of high school computer course. *Computers & Education*, 49, 1161–1174.
- Warmbrodt, J., Sheng, H., & Hall, R. (2008). Social network analysis of video bloggers' community. *Proceedings of the 41st Hawaii International Conference on System Sciences*. January 7–10, 2008, Hilton Waikoloa Village Resort, Waikoloa, Big Island, Hawaii.
- Williams, P. (2008). Assessing context-based learning: Not only rigorous but also relevant. *Assessment & Evaluation in Higher Education*, 33(4), 395–408.
- Westera, W., de Bakker, G., & Wagemans, L. (2009). Self-arrangement of fleeting student pairs: A Web 2.0 approach for peer tutoring. *Interactive Learning Environments*, 17(4), 341–349.
- Yin, R. K. (2003). *Case study research: Design and methods* (3rd ed.). Thousand Oaks, CA: Sage.