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Social software for reflective dialogue: Questions about reflection and dialogue in student teachers' blogs

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Abstract

This paper presents a study of 57 Swedish pre-school student teachers' experiences and achievements in using blogs for reflective dialogue over the course of 2007–2008. In order to examine the extent to which students engaged in reflective dialogue, text analyses of their blogs were carried out. Furthermore, 13 narrative interviews were conducted to illuminate students' understanding of *reflection*, and to establish what circumstances influenced their engagement in reflective dialogue. The framework developed by Kreber and Cranton (2000) was used to analyse the blogs in order to determine the level of reflection, while that of Gorsky and Caspi (2005) was used to illuminate students' engagement in dialogue. The paper presents a discussion of the circumstances in which students engaged in reflective dialogue. Furthermore, it illuminates the relationship between engagement in dialogue and level of reflection. The importance of students' understanding of reflection, social interaction, and the methods of assessment are highlighted.

Keywords: teacher education, educational blogs, dialogue, reflection, social interaction

Introduction

The use of blogs on the Internet has increased over the last decade, as has interest in their potential to be used for educational purposes. Indeed, there are numerous examples of teachers who have used blogs to support students' learning processes (Salen, 2007). The idea of using educational blogs encouraged teacher-educators at a Swedish university to offer a class in the pre-school teacher education programme the opportunity to use blogs for reflection in their study groups. The study looks at the students' understanding of the process of reflection and the extent to which they engaged in reflective dialogue. Teacher-educators in this paper are referred to as "teachers" and student teachers as "students".

Aims and research questions

The aim of this study is to illuminate students' understanding of reflection as an educational concept, and their engagement in reflective dialogue using blogs. Furthermore, the study aims to provide insight into the relationships between students' understanding of reflection, their understanding of the assignment, and their participation in reflective dialogue.

The research questions arising from this study are as follows:

- How can students' understanding of reflection be described?
- To what extent do students, using blogs, engage in written dialogue?
- What type and level of reflection do the students reveal?
- What influence will characteristics of the assignment, how it is assessed, and students' understanding of reflection have on their engagement in reflective dialogue?

Background

This background section first presents a selection of relevant research that outlines the purpose, aims and achievements of educational blogging in teacher education and, thereafter, the concepts of reflection and dialogue. The analytic tools used to search for evidence of reflection and dialogue in the students' blogs will also be presented.

Educational blogs

Different blog genres have emerged since the blogging era began in the 1960s. Blogs are used for personal diary writing, for the discussion of topics, and for political, journalistic or other purposes. A variety of media such as text, pictures and videos are used to mediate the bloggers' thoughts. Even if personal blogs are most common (Herring et al., 2004), group blogging (where the ownership of the blog is shared) has become more widely used, albeit less reported on (Philip & Nicholls, 2009). Blogs for learning, or educational blogs, can, depending on their purpose and the assignments provided, integrate these genres. Students can make use of different media while blogging, can engage in individual reflection and receive comments on a personal blog, or discuss and collaborate in a group blog. Blogs can serve as a 'middle space', integrating students' face-to-face and virtual activities (Oravec, 2003) and the introduction of blogs to campus courses can be described as a way of integrating face-to-face and digital learning environments (Salen, 2007).

One of the aims of using educational blogs in the context of teacher education could be described as encouraging individual reflection and critical thinking in support of the learning process, and there are positive reports about blogs encouraging reflective practice (Rinke et al., 2009; Stiler & Philleo, 2003; Wassel & Crouch, 2008; Yang, 2009). Another reason for introducing student teachers to blogging (e.g., group blogging) is to enhance collaboration, reflective discussions and peer support. In order to succeed with, for example, blogs for learning, it is important that students engage in their writing. Engagement—in other words, what the students actually choose to do in practice, in this case reflective blog dialogue—is essential to their learning process (Shulman, 2002). The successful use of group blogging, during which students have engaged in collaborative processes that reflect one another's texts, have been described by a number of scholars (Hsu, 2009; Philip & Nicholls, 2009; Rinke et al., 2009). These studies have shown that a pedagogical design that aims for blending written reflection using blogs with face-to-face activities has been the most successful. Furthermore, it is highly important that the purpose and advantages of using educational blogs are made clear to the students (ibid.).

Research on educational blogging has reported on setbacks as well. Attempts to offer students educational blogs and trusting them to find the blogs useful for reflection without a clear aim and pedagogical design have not been very successful. Students need to fully understand the purpose and aim of their blogging, and the design of blog and assignments must agree with one another (Chan & Ridgway, 2006; Divitini, Haugalokken & Morken, 2005; West et al., 2006).

Educational blogs can serve a variety of purposes and the design varies considerably between teacher training contexts. However, no matter the purpose and design of blogs, the practice of *reflection* seems to be considered as crucial when blogging.

Reflection

Reflection is seen as essential to the learning process and is thoroughly discussed in the education literature (Boud et al., 1985; Mezirow, 1981; Schön, 1983). Even though there is no agreement on its definition, there seems to be some common understanding of reflection as a process starting with an awareness of a ‘problem’ followed by critical analysis in order to reach new perspectives and, in turn, new knowledge (Atkins & Murphy, 1993; Hatton & Smith, 1995; Moon, 2007).

Even if we, as human beings, reflect every day in our private lives, reflection is not as easy when it comes to undertaking reflective assignments in educational contexts. Reflection is a complex activity, as Boud and Walker (1998) discuss: students perceive various obstacles when they are given an assignment involving reflection. Three of these are discussed here. The first entails the very understanding of reflection. When students do not understand what they are supposed to do during reflection, teachers tend to give them guidelines on how to solve the task. Boud and Walker (ibid.) describe the obstacle as ‘recipe-following’, which does not give students any room for actual reflection. The second difficulty, reflection without learning, is described as a situation in which students are given time to reflect, but where they lack motivation and spend their time focusing on private interests instead. The third obstacle is the risk of an assessment mismatch, where the methods of assessment themselves obstruct the reflective process.

Since reflection is a complex process, it is difficult to determine whether students have actually reflected. As such, a range of methods have been developed to identify the nature and quality of their reflection. For the research reported here, the framework devised by Kreber and Cranton (2000), which is built on Mezirow’s (1991) work, has been chosen.

According to Mezirow’s Transformation Learning Theory, individuals engage in critical reflection and learning through three levels: content, process and premise reflection. Content reflection concerns what we already know, and answers questions such as ‘What do I know about this method?’ Process reflection focuses on solving ‘problems’, and answers questions like ‘How do I know if my methods are effective?’ Premise reflection has a more critical focus, and answers questions like ‘Why does it matter what methods I use?’

However, Mezirow’s Transformative Learning Theory does not merely consider learning environments. In order to use the theory for evaluating levels of reflection within teaching, Kreber and Cranton (2000) adapted the hypothesis to suit reflective teachers. They discuss the variety of actions involved in teaching and investigate the actions that teachers should focus on when they reflect on their daily work. They also highlight three different types of knowledge that are involved in active teaching, which they describe as instructional, pedagogical and curricular knowledge. If teachers are engaged in the three given levels of reflection in relation to these three teaching activities, a matrix will be created (see Table 1).

<i>Teaching</i>	Instructional Knowledge	Pedagogical Knowledge	Curricular Knowledge
Content Reflection (What)	What should I do in course design, searching materials and methods?	What do I know about how children learn?	What do I know about the goals and rationale for my future teaching?
Process Reflection (How)	How do I know if my design, material and methods are effective?	How will I know if I am successful in facilitating children's' learning?	How did we/I arrive at the goals and rationale for our teaching?
Premise Reflection (Why)	Why does it matter what methods, materials or course design I use?	Why does it matter if I consider how children learn?	Why do goals and rationale matter?

Table 1. A matrix derived from Kreber & Cranton (2000) circular model of the scholarship of teaching. Three levels of reflection concerning three teaching activities

However, the students' blog assignments concerned the role of the teacher, the curriculum, classroom activities, and enhancing children's understanding of complex concepts. In order to succeed, the students—as novice teachers—needed to consider the same teaching activities as those described by Kreber and Cranton (*ibid.*). Consequently, students should be engaged in reflective dialogue concerning three different teaching activities (the top row of the matrix) at three different levels (the left-hand column of the matrix). As a result, the above framework was found suitable for analysing the students' blogs in order to examine the extent to which students were engaged in reflection in relation to learning activities.

Dialogue and reflection

The literature review by Atkins and Murphy (1993) describes reflection as a largely individual activity. As the socio-cultural perspective on learning has developed, the notions of learning and reflection have broadened in context, involving not only our individual minds, but also our social and cultural environments. Vygotsky (1986) described our 'inner speech' as being reduced when we do not need to explain or clarify our own thoughts to ourselves. However, when we communicate our thoughts verbally or through written dialogue, we need to clarify our internal dialogue—both to our audience and to ourselves.

Tsang (2007) takes Bakhtin's theory (1981) of dialogism into account when he describes reflection as a process that involves external as well as internal dialogue. Tsang (*ibid.*) claims that before students can confront their ideas with other students, they need to take part in an internal dialogue to process individual understandings and experiences. As a next step, they will interact in an external dialogue, sharing ideas and perspectives that can either be acknowledged or challenged, and will then return to an internal dialogue. Reflecting in study groups could, therefore, be described as an alternation between internal and external dialogue. Furthermore, as opposed to its verbal counterpart, written dialogue puts greater demands on the writer because the reader needs help to understand the writer's intentions. Thus, writing is a powerful means of developing one's understanding (Dysthe et al., 2002). Ong (2002) described this process of writing as 'restructuring one's consciousness'. In this line of reasoning, blogs are an example of how digital arenas could be used to enhance written reflective dialogue in study groups.

Gorsky and Caspi (2005) present a theoretical framework in relation to internal and external dialogue. External dialogue is defined as a ‘message loop’: socially-oriented, sometimes subject matter-oriented, and mutually coherent. In order to define this loop of messages as a dialogue, at least one of the following activities should be evident in an interaction: hypothesising, questioning, interpreting, explaining, evaluating and rethinking. Furthermore, Gorsky and Caspi (ibid.) describe two types of resources that support dialogue: structural and human. Structural resources for internal dialogue include all kinds of instructional material, including books, video, and information and communications technology (ICT). Teachers and fellow students constitute human resources by supporting external dialogue. Furthermore, this also depends on structural resources such as course design, group size and accessibility of social interactions. The definition dialogue offered by Gorsky and Caspi has been used in this study to examine students’ engagement in dialogue in their blogs.

A research study of students’ educational blogs

A group of 57 students participated in a pre-school teacher education programme over the course of 2007–2008, and their courses were based on face-to-face as well as digital interactivity. This programme was administrated by the teacher education programme at a Swedish university, and formed part of a national project funded by the Swedish National Agency for Networks and Co-operation in Higher Education (NSHU) project. The aim of the project was to explore the use of blended learning involving a variety of ICT tools to support such communication, such as digital portfolios, blogs, video papers and video conferencing.

During their first courses in September 2007, the students were introduced to personal educational blogs. An open-source blog software programme, Roller Weblogger, was set up and administrated by the ICT department at the faculty of teacher education. The long-term aim was to provide the students with a tool for individual reflection using text, pictures and video, and which would accompany them throughout their teacher training. These personal blogs were also used for group blogging when the students, divided into ten smaller groups of five to six students each, participated in five blog discussions. During these collaborative assignments, one student in each group invited the other group members to discuss the assignments by publishing a question for argument on his or her blog. The discussion was held via comments on each other’s entries. Through this process, their blogs became a combination of personal and group blogs, in that the ownership of each blog was personal but the ownership of the discussions was shared. The first blog task could be described as a virtual book seminar in which the students were assigned to read one of the course books, formulate questions in relation to the role of the teacher, and engage in reflective dialogue concerning what constituted a good teacher. The latter four tasks concerned the following themes in which the students, through reflection and discussion, transformed course content into classroom activities:

- democracy and human rights;
- inter-cultural competence, racism and hostility towards foreigners;
- an ecologically sustainable society and its relation to social and economical development; and
- sustainable development.

The idea of introducing group blogging was to create a space in which students could engage in reflective dialogue over a longer period of time, in which their contributions would be documented and, as a result, enable them to use these contributions in their ongoing work. The five teachers involved in the blog tasks commented on their blogs mainly after the discussions were completed. The blogs were merely summatively assessed; when the students were required to make two entries each to pass the assignment, the grading became solely quantitative. The study guides, student's narratives and the blogs showed that, aside from providing students with blogs and technical support, there were no instructions given regarding how to reflect and, with very few exceptions, no teacher feedback was given during the blog discussions supporting the reflective work.

Methodology

Reflection and learning are concepts we interpret and construct together within a social context. As such, students' understanding of these concepts may influence their way of solving their assignments. Working as an ICT teacher, taking constructivism as an epistemological starting point and aiming for understanding students' engagement in written dialogue, the author chose to use a blend of quantitative and qualitative methods. In order to study the relationship between students' experiences of and achievements in educational blogs, text analyses of these blogs have been combined with the interpretation of students' narratives describing their engagement in their blogs. In order to increase the validity of the study, the process of collecting and analysing data has been described in detail, and data consisting of blogs, interviews, course plans and course guides were triangulated during the process of analysis. Furthermore, the text analysis of the blogs has been conducted twice, with a time space in between the analysis to strengthen its reliability.

Methods

The students' understanding of reflection was explored through narrative, semi-structured interviews. All 57 students were invited to volunteer, with 13 responding. The interviews, lasting between 40 and 70 minutes, were digitally recorded and transcribed. Furthermore, a text analysis of 20 student blogs was carried out in order to examine the presence, type and level of students' reflective dialogue. All students except for one gave their permission to have their blogs read and analysed; as a result, one of the 57 blogs is not part of this study. Two blog discussions from each of the ten groups were chosen, namely the book seminar and the third thematic discussion regarding the ecologically sustainable society. The book seminar was chosen to compare it with the thematic discussion in order to examine if there were any differences in student engagement between the two different assignments. The theme assignment was chosen randomly among the four thematic assignments set. Course plans and course guides were used as additional data.

The analysis was carried out in two steps, the first of which aimed to search for external as well as internal dialogue. When Gorsky and Caspi's (2005) definition of dialogue was used, blog entries like 'I think your idea is great!' without any further comment were not coded as message loops (i.e., as external dialogue). Internal dialogue was observed by searching for references, in interviews and blogs, to students' processing of their experiences,

course literature, lectures, seminars, blog reading and so on, as well as students' references to their inner speech, such as: 'I have thought about', 'I have compared', and 'I have changed my mind'. The next step was to examine the extent to which the students had been engaged in reflection. In terms of what constitutes evidence of reflection, the work of Kreber and Cranton (2000) was used as a theoretical starting point for analysis. To clarify how the tool for analysis has been used to categorise students' reflections, some examples of students' written reflection and how they are categorised are presented in Table 2. For example, a clause in a blog entry that answered the question '*What design, material and methods will I use?*' (Table 1) and suggested that experiments can be useful has been coded as a 'content reflection on instructional knowledge' (Table 2). Blog entries that described *how children learn* (Table 1) by suggesting that children learn by observing, were coded as a 'content reflection on pedagogical knowledge' (Table 2), and so on.

Teaching	Instructional Knowledge	Pedagogical Knowledge	Curricular Knowledge
Content Reflection (What)	'We can use experiments to help children understand how this works'	'Children learn by observing how adults do'	'As a pre-school teacher I am obliged to consider and encourage children's differences'
Process Reflection (How)	'The teachers started a compost and involved the children, and suddenly even the smaller ones became interested in what happen with everything we throw away'	'If you set good examples and always throw paper in the right tin, you may discover that the children will follow your example.'	'We must reflect on our own understanding and values. We need to discuss and agree on how we shall work in order to treat boys and girls equally'
Premise Reflection (Why)	'You can not expect children to change their way just by nagging. 'In order to change they need to understand why. You have to involve them in the work '	'You must be aware that children learn and create their social values during their very first years. You therefore have to work with these questions from the early start.'	'If we do not have common goals that we follow the children will be confused and frustrated not knowing what is right and wrong.'

Table 2. Examples of students' written reflections and how they have been categorized in this study

Ethical issues

All necessary ethical requirements set by the university and as outlined by the Swedish Research Council (2001) were followed in this study. Accordingly, the aspects of beneficence, non-maleficence, informed consent and anonymity have been taken into account in planning and carrying out the study, and approval for the research design was achieved at the appropriate level of the organisation. The author is employed as an ICT teacher at the university, but has not taken an active part in the courses concerned.

Results

The results are divided into two sections. The first section concerns the students' understanding of the concept of reflection. These results are derived from 13 interviews, in which the students described their way of responding to assignments that included reflection. The names used in this presentation are fictitious. The second section deals with the result of analysing 20 blogs from ten study groups, using Gorsky and Caspi (2005) to search for dialogue and Kreber and Cranton (2000) to analyse students' level and type of reflection.

Students' understanding of reflection

The 13 interviewees were all women between the ages of 19 and 48. While they described the concept of reflection in very different ways, they all used a synonym of 'think' in their definitions, and all described a cognitive process, internal to themselves, through which they thought about what they had read, heard, experienced or done. Furthermore, the interviewees expressed their wish to share their ideas and listen to others in face-to-face discussions or in written dialogue, pointing out that sharing one's thoughts was a way of clarifying them to oneself. They experienced what Tsang (2007) would describe as the interaction between internal and external dialogue, and Vygotsky (1986) as clarifying our inner speech. Tracy provided one example: *'It is not until I have put my thoughts into words, written or spoken, that I really know what I think.'* All but one stated that they had never actually learned how to reflect, and that teachers' understanding of the concept varied widely. Annette expressed confusion: *'Some teachers consider "reflection" and "discussions in groups" as the same idea. Others just want me to add my own opinions. Another will fail me if I have not taken a critical position.'*

More than half of the interviewees, particularly the younger ones, described the problems they had in defining what they did when assigned to reflect. Cora put it this way: *'I never know what to do when teachers ask me to reflect. But they have never failed me so I guess I have been reflecting after all.'* These interviewees described *reflection* as something embedded in the assignment, as Ann explained: *'Reflection is something you have done when you have solved the assignment.'* Older interviewees (i.e., those over 30 years of age) tended to relate reflection to their experiences, values, and individual development to a greater extent than the younger ones. They were more likely to describe their aim for reflection as something they did 'for their own learning', and not simply to satisfy the teacher. Tracy explained *reflection* as a process: *'When I reflect, I discover what I already know and stand for, but also what I have learned, and how I can use my new skills in the future. It is about me changing.'* The older students more often described the importance of taking a critical position, as Jill explained: *'To me, reflection is about the "why" question: why did I do as I did? Is there a better way? Why did the author think like that? Do I agree?'*

When it comes to social interaction, two-thirds of the interviewees stated that they preferred to discuss and reflect face-to-face. They pointed out that face-to-face meetings were more social and brought more information to the listener in the form of body language and intonation. Furthermore, talking was easier and less time-consuming than writing. One-third of the interviewees that preferred written dialogue expressed the advantage of having time to reflect before responding, not having to struggle to get one's voice heard, and the social acceptance to refer to all contributions in the discussion no matter when they were published. As Lucy explained: *'When we are having group discussions [face-to-face] I am too slow. When I want to say something they have already changed the subject. It is never too late in a blog.'* All interviewees agreed that written dialogue put greater demand on the writer to be more explicit in order to help the reader understand.

Dialogue and reflection in students' blogs

From the analysis of 20 blog discussions, two blogs from each of the ten study groups, combined with the analysis of 13 interviews, showed that three categories of study groups

could be identified, depending on their engagement in dialogue as well as reflection. The first category (A) consists of five study groups that aimed for ‘just passing the assignment’ by making two entries each. The second category (B) was made up of three study groups that used the blogs to share and develop ideas. The third category (C) represents two study groups that aimed to scrutinize their collaborative planning of classroom activities. The following sections will present these three categories as A, B and C, respectively.

Category A: Managing the assignment

Five of the ten study groups merely engaged in superficial discussions for all of the assignments. Although all students contributed to answering the initial question, these five study groups did not develop their external dialogue. The message loops did not include implications of reflection other than interpretation and confirmation of others’ suggestions. However, internal dialogues could be observed within several entries when the students referred to their own experiences of children and when ideas that could be traced back to course literature and lectures were presented. Nonetheless, few references to further structural sources could be found in their blogs. The students in this category published two entries each, kept them rather short (95 words on average), and related mainly to either of the two latest entries. Three of these groups engaged in the thematic discussion for only one to two days, despite having a whole week at their disposal.

Figure 1 presents one representative example of dialogue from one of the study groups (A1) in Category A. The figure is a visualisation of the students’ dialogic message loops in their blog discussion. The 11 dots represent the 11 blog entries, while the white dot indicates the first entry. Each arrow shows a message loop that relates to an earlier entry corresponding to any of dialogue indicators devised by Gorsky and Caspi. Loops referring to the first entry are not shown.

Figure 1. A visualization of group A1’s dialogic message loops in their blog discussion.

The level of reflection by students in Group A1 is presented in Table 3, while the numbers represent a summary of their reflections. The figure shows reflections made during two of the group blog assignments: the book seminar and a thematic discussion, during which each student was assigned to make at least two entries per discussion. The reflections are merely on

the content level—the students did not discuss the relationships between instructional, pedagogical and curricular concepts. They also did not present arguments to support their ideas, or question the ideas in searching for alternatives.

Group A1 5 students		Instructional Knowledge	Pedagogical Knowledge	Curricular Knowledge
Book Seminar	Content Reflection	0	0	6
	Process Reflection	0	0	0
	Premise Reflection	0	0	1
Thematic Discussion	Content Reflection	13	1	0
	Process Reflection	0	0	0
	Premise Reflection	0	0	1

Figure 3. Reflections made by the students in group A1

Six of the students in Category A, all women between the ages of 19 and 48, were interviewed. In these narratives, the informant described a situation in which she was very focused on managing the assignment. Four respondents related the concept of reflection to the ‘assignment’—an activity one performed in order to pass a subject, or something one did when one concluded the task. Five of these interviewees discussed the two entries they needed to pass the assignment. Ann described it as follows: ‘*It is difficult to know how to use these two entries you need to pass the assignment.*’ The ‘two entries’ issue was discussed in the groups as well. Cora continued: ‘*We never created a dialogue. We decided to write two contributions each and then we considered the assignment as done.*’ A majority of these interviewees were not satisfied with their discussions. June, for example, described her disappointment at not concluding the discussion: ‘*... everything was just hanging in the air: all these questions that nobody cared to answer.*’

All interviewees but two in this category preferred to have face-to-face dialogues, and described the initial difficulties in holding a virtual dialogue. Writing takes time and puts more demands on the student As Laura described: ‘*I talk much faster than I write. Therefore, I prefer to reflect face-to-face.*’ Sarah continued: ‘*It is difficult to express one’s thoughts in writing. It takes time, and you need to be very explicit if you want them [the readers] to understand.*’

Category B: Creating think tanks

Three of the ten study groups in Category B engaged in dialogue that was more lively than that of the students in Category A. These three groups used interpreting, conforming, asking, and building on ideas while they explained and argued for their suggestions.

The three groups contributed mainly by writing two entries each. However, their comments were longer than those of the students in Category A (180 words on average), and

they referred to entries published earlier in the dialogue. Figure 2 presents a representative example of dialogue from Group B1.

Figure 2. A visualization of group B1's dialogic message loops in their blog discussion.

The level of reflection by students in Group B1 is presented in Table 4; the numbers represent a summary of their reflections. Like the students in Category A, these students reflected mainly on the content level. However, they engaged in discussions relating curricular knowledge to methods suitable for small children in their book seminar and discussed their suggested methods in the thematic dialogue using pedagogical arguments.

Group B1 6 students		Instructional Knowledge	Pedagogical Knowledge	Curricular Knowledge
Book Seminar	Content Reflection	3	0	8
	Process Reflection	0	0	0
	Premise Reflection	1	0	1
Thematic Discussion	Content Reflection	21	5	0
	Process Reflection	1	0	0
	Premise Reflection	1	0	0

Table 4. Reflections made by the students in group B1

Five of the students in Category B, all women between 19 and 48 years old, were interviewed. Three of them explained how they prefer to reflect in writing before face-to-face discussions. All but one of the interviewees pointed out that they were supposed to make two entries but none of them discussed the question of how to pass the assignment. All interviewees described their activities as sharing ideas, and their blogs became think tanks containing rather detailed descriptions about methods and material that they argued would work for smaller children. Mary: *'We wrote about ideas we had about how to work with the children,*

and our ideas matured during our blog discussion.' Three of the interviewees described how they 'go' between internal and external dialogue. Tracy is one example: *'The more I read the others entries and reflected on lectures etc., the more ideas came up in my head that I could add to the blog.'*

Category C: Evaluating ideas

Two of the study groups engaged in intensive dialogue by publishing long entries (260 words on average). These Category C students participated in internal as well as external dialogue during the virtual book seminar and the thematic assignment. When they reflected and contributed to their blogs, they made use of human and structural resources, and referred to lectures, literature, the Internet, people in their personal environment, and personal experiences. Their external dialogue could be described as a network in which they interpreted, summarised, questioned, evaluated and confirmed each others' contributions before adding or suggesting further development. They referred to entries discussing the same matter regardless of when they were published (Figure 3).

Figure 3. A visualization of group C1's dialogic message loops in their blog discussion

The level of reflection by students in Group C1 is presented in Table 5, and the numbers represent a summary of their reflections. This group of students has, to some extent at least, been engaged in process and premise reflection. They related curricular and instructional knowledge to pedagogical ideas, and they questioned methods, curriculum and their own way of living. They created arguments as a group, scrutinising their ideas and moving between internal and external dialogue. Three students engaged in the following dialogue:

- *'We can't consider sustainable development as a "classroom activity" that we engage in for some weeks just because the national curriculum demands us to teach about the environment.'*
- *'Yes, I agree, our environment is not just a project you teach. I have not thought about this before, but we must change our way of dealing with our resources everyday in pre-school.'*

- ‘Yes, but I do not know if that is enough. I have done some re-thinking, and I have come to the conclusion that I have to change myself. Children will know if I do not really believe in using environment-friendly products, etc.’

Group 3 (A3) 6 students		Instructional Knowledge	Pedagogical Knowledge	Curricular Knowledge
Book Seminar	Content Reflection	1	1	10
	Process Reflection	0	0	2
	Premise Reflection	1	0	4
Thematic Discussion	Content Reflection	29	3	2
	Process Reflection	3	2	1
	Premise Reflection	4	2	3

Figure 8. Reflections made by the students in category C, group C1

Two Category C students, both of whom were older than 30, were interviewed. When one of them expressed their preference for written reflection over verbal reflection, the other (Meg) expressed her change in attitude: *‘In the beginning I felt ridiculous discussing things in the blog with students I met face-to-face only yesterday. Eventually, I discovered that I felt more free to express myself in writing: I can evaluate and rewrite my contribution before publishing it.’* One of the interviewees related reflection to a learning activity. Both respondents expressed satisfaction with the blog assignments and described them as beneficial.

All categories

Taking all categories into account, it becomes obvious that process reflection is the most difficult type of reflection to engage in. This is not surprising, since a majority of these students had not been working as pre-school teachers and had not had the opportunity to test and evaluate their ideas.

There is a pattern of premise reflections not appearing during the first third of the blog entries. There seems to be a need for content reflection to discuss, and time to relate, question and evaluate what has been written before students have the means to make critical reflections.

The assignment itself affected the students’ engagement. All interviewees found it more difficult to engage in reflective dialogue during the book seminar. A majority described the book to be too difficult to discuss without support from teachers. Furthermore, the students’ content reflection related very much to the character of the assignment, curricular reflections at a content level when it came to discussing teachers’ qualities, and instructional content when they were assigned to convert course content into classroom activities.

Discussion

The following discussion relates to the research questions, beginning with students' understanding of reflection and their engagement in reflective dialogues. Finally, an argument of what may influence students' engagement is presented.

The complex nature of reflection described by Boud and Walker (1998) emerged in the students' narratives as well. The very understanding of the concept seemed to be a process of its own. The students' varying definitions of the concept, their experiences of teachers' inconsistency with the concept, and the result that older students seemed to have a clearer picture of what they did when they were reflecting, indicate a process through which we each create an individual understanding of the concept rather than adopting a strict definition. The fact that more than half of the students described reflection as something embedded in the assignment could relate to one of the obstacles that Boud and Walker (*ibid.*) described as 'recipe-following': in order to help students reflect, teachers tend to give more explicit guidelines such as 'Please reflect by answering these questions'. Such guidelines will embed the reflective activity in the assignment itself, rather than 'problematise' the reflective activity. The non-uniformity that students experienced from teachers, together with their own vague understanding of reflection, shed some light on their insecurities when it came to reflective tasks.

All students pointed out that written reflection takes time and puts great demand on the writer in order to be understood. What they have experienced is the process of transforming Vygotsky's (1986) inner speech, and Tsang's (2007) internal dialog into external communication. Some of students were aware of this process and used the same arguments as Dysthe et al. (2002) and Ong (2002) when they considered the writing process as important for becoming aware of one's thoughts. However, other students did not see the benefit of this transformation and regarded it solely as time-consuming. Experiences of positive results as well as setbacks that were described in the literature review above could be observed among these study groups as well. The study has shown that in order to reach deeper levels of reflection and integrate different types of reflection, students need to engage in reflective dialogue for a longer period of time. Engagement, as described by Shulman (2002) is essential for the learning process. Two blog entries each is insufficient for participating in the internal-external processes that are required. Only two groups, both in Category C, engaged in dialogue long enough to reach premise reflection. As Oravec (2003) suggested, their blogs became a middle space in which they interpreted, shared, and criticised structural resources, moving between internal and external dialogue.

Boud and Walker (1998) could describe some of the answers to the question of why at least half of the study groups did not succeed in reaching deeper reflection as a mismatch between assignment and assessment. The aim of the assignment was to create classroom activities through reflective dialogue and collaboration—a qualitative assignment. However, the assessment of the assignment was solely quantitative, based on counting blog entries. The students who chose to aim for 'just passing the assignment' did not engage in their dialogue long enough to even have a chance of creating deeper reflections.

However, all students had the same mismatch, were unused to blogging, lacked information about what to do when they reflect, and did not, with very few exceptions, receive support from teachers during blogging. But while Category A students chose the easy

way out in terms of doing the minimum required to pass the assignment, the students in Category B engaged in sharing ideas and the students in the Category C chose to participate in true reflective dialogue. As a group, the students seemed to adjust to a level of engagement. As described by Philip and Nicholls (2009), blogs make the students' contributions and individual engagement in the discussion visible. That may influence the students within a group to adapt to a certain level of engagement.

Conclusion

Teachers need to be reflective practitioners (Schön, 1983), reflecting on what, how and why different material and methods should be used in relation to how children learn and what they are supposed to learn (Kreber & Cranton, 2000). Reflective practice is therefore an important part of teacher education. However, in order to succeed in engaging students in reflective collaborative writing on, for example, blogs, it seems important that teachers and students agree on the purpose of reflective dialogue, how to reflect and why that is important. Furthermore, if teachers want students to engage in reflective assignments that are assessed, teachers must create reflective assignments as an integrated part of the course and choose methods that assess the quality of the reflections and not the number of entries. Finally, teachers and students must allow the process of reflection through internal and external dialogue to take its time. Reflective work, as one of the students expressed, 'is about me changing' and this cannot be done in haste.

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