EVOLVING COLLABORATION AMONG TEACHER TRAINEES – ANALYSIS OF COLLABORATIVE DISCOURSE

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Abstract: The main focus of the study was to investigate group-mechanisms and collaborative small-group learning. Participants (n=20) were pre-service English teacher trainees of a methodology seminar. Group mechanisms and collaborative activities were analysed and made visible with the help of online discussions that evolved in the discussion forums of the course management system (CMS) Moodle. Quantitative data on student participation, online activity and frequency of messages were gained from the log files of the CMS. Through the qualitative content analysis of forum discussions, nine stages of collaborative discourse were identified in the presented pedagogical scenario. Methods for integrating the identified stages in the design process of blended learning in teacher training courses are suggested and best practices for similar courses are offered. However, due to the limited number of participants, further investigation of the relevance of the identified stages on a larger set of sample is needed.

Keywords: teacher training, blended learning, collaborative learning, online communication, collaborative discourse

1 Introduction

The present paper deals with the concept of online collaborative learning in small groups. Our study, which is part of the European Knowledge Practices Laboratory research, focuses on the "knowledge-building community" (Scardamalia & Bereiter, 1994) whose members invent knowledge and skill together that none of them would likely have constructed alone (Stahl, 2003). Our experiment took place at a Hungarian university, with a group of students studying ELT methodology. We used the Moodle CMS for online collaborative tasks that we had planned especially for the group. In the analysis, we investigate group-mechanisms and collaborative small-group learning which are analysed and made visible with the help of online discussions that evolved in the forums of the Moodle CMS. Interaction created during the teaching and learning process is considered as "direct evidence of learning," thus its interpretation is a powerful method of empirical analysis (Stahl, 2003, p. 35). Our aim is to identify the stages of evolving collaboration in the present pedagogical scenario. In addition we intend to find relevant methods of integrating the identified stages in the design process of blended learning courses. We also draw conclusions and describe best practices for courses. Quantitative data on student participation, online activity and frequency of messages are gained from the log files of the CMS, to which we add the results of the qualitative content analysis of forum discussions.

1.1 Collaborative vs. cooperative learning

The notion of ***cooperative learning*** prevailed in both the professional literature and the practice of computer-supported group-based learning of the 70s and 80s. The concept of ***collaborative learning***, however, first appeared in the 90s. It is described as a social activity during which new problem-solving knowledge is constructed collaboratively, and involving negotiation as well as sharing meaning relevant to the problem-solving task. Thus, collaboration "is a coordinated, synchronous activity that is the result of a continued attempt to construct and maintain a shared conception of a problem" (Roschelle & Teasley, 1995, p. 70).

Cooperative learning should be distinguished from *collaborative learning* since the former involves a division of labour among the participants where each person is responsible for a portion of the task/problem and the results of the activity will be presented individually (Dillenbourg, Baker, Blaye, & O'Malley, 1996). In group-based cooperative learning members split the work ***hierarchically***, and are responsible for independent sub-tasks (Roschelle & Teasley, 1995) (the same mechanism is tagged by Dillenbourg (1999) as ***vertical*** division of labour). In cooperation, since group members do their tasks individually, coordination is only required when summarising partial findings.

Collaborative learning, however, entails group members' engagement in a joint effort to solve a problem. Spontaneous division of labour may occur in collaboration as well but in a ***heterarchical*** (Roschelle & Teasley, 1995) or ***horizontal*** (Dillenbourg, 1999) manner, i.e., cognitive processes are divided into intertwined layers. While in the case of cooperation roles are fixed until the end of the learning process, in collaboration roles may shift every few minutes depending on the contributions participants may be able to deliver. In the latter case permanent coordination is an essential part of the synchronous workflow.

1.2 Knowledge building in collaborative learning

The concept of collaborative knowledge building is pioneered by Scardamalia and Bereiter's research (1991). Central to their work is the transformation of a traditional classroom into a knowledge-building community where the system itself is computer supported. In their view, instead of knowledge building, knowledge reproduction strategies focussing on copy-delete mechanisms are overemphasized (p. 38). This latter mechanism is less effective as far as cognitive development is concerned, while the former one strongly supports cognitive development.

Collaborative knowledge building is a sequential learning process that involves personal understanding (our individual personal beliefs are shaped) and social knowledge building (personal understanding is transformed when entering into a social process of interaction with other people and with our shared culture) (Stahl, 2006). As the first step of the process, a member of the community/group articulates her personal belief, the participants then discuss this public statement from multiple perspectives. The discussion consists of conflicting arguments and rationales for different points of view. As a result of this discussion, clarification of differences in interpretation and terminology may evolve and "the interchange may gradually converge on a shared understanding" (Stahl, 2006, p. 197).

1.3 Collaborative knowledge-building discussions

Strijbos, Martens and Jochems (2004) claim that group interaction is affected by two important principles, called ***positive interdependence*** (PI) and ***individual accountability*** (IA), which were introduced in the 80s connected to research on group dynamics and group cohesion. PI refers to the degree to which the performance of a single member is dependent on the performance of all others (Johnson, 1981, as cited in Strijbos et al., 2004). It can be achieved through the task, resources, goals, rewards or the environment (Brush, 1998, as cited in Strijbos et al., 2004). IA refers to the extent to which group members are held individually accountable for jobs, task or duties, central to group performance or group efficiency (Slavin, 1980, as cited in Strijbos et al., 2004).

Knowledge-building discourse (interactions among group/community members) is an essential constituent of collaborative learning (Scardamalia & Bereiter, 1994). The process of collaborative learning is not merely accomplished interactionally, but is constituted of the interactions between participants. This is what Suthers (2005) called ***intersubjective learning*** or, as Stahl (2006) described it, as ***group cognition***. Scardamalia and Bereiter (1994) divided characteristics for knowledge-building discourse into three categories: (a) focus on problems and depth of understanding; (b) decentralized, open knowledge environments for collective understanding; and (c) productive interaction within broadly conceived knowledge-building communities, e.g., peer-review.

As opposed to the dominant position of cognitive psychology and artificial intelligence in the 70s and 80s whereby social interaction was seen as background for individual information processing, today the focus has shifted to group-level processes and the properties of group interactions (Dillenbourg et al., 1996). Thus, "the focus [is] no longer on what might be taking place 'in the heads' of individual learners, but what [is] taking place between and among them in their interactions" (Stahl, Koshmann, & Suthers, 2006, p. 7)

1.4 Qualitative interaction analysis

In collaborative learning ***constant scaffolding*** is extremely important, in which ***interaction between participants*** plays a crucial role. Members of a community are not isolated nodes, but are in a network, react to each other and are in interaction when working collaboratively (regardless of shared time and space). Creative collaboration and joint learning evolve from interaction, since group members share and negotiate meanings, formulate opinions and ideas, and discover jointly.

Analysis and interpretation of online group-interactions stored in a ***virtual learning environment*** (VLE) – in our case the Moodle ***course management system*** (CMS) – make collaborative knowledge-building and group processes "visible" and thus, are powerful methods of empirical analysis (Stahl, 20003, p. 35). Analysis and interpretation of collaborative learning have to be performed at least at two levels, differentiating the ***process*** (group functioning) from the ***product*** (task performance) of collaboration (Collazos, Guerrero, Pino, & Ochoa, 2002, as cited in Daradoumis, Martinez-Mones, & Xhafa, 2006).

Several interaction analysis models have been employed for analysing online interactions in a qualitative manner (Henri, 1992; Newman, et al., 1995; Zhu, 1996; Gunawardena, et al., 1997; Fahy, et al., 1999; Garrison; 2000; Rourke, et al.; Anderson, & Archer, 2001). One of the first frameworks of analysis is Henri's (1992) content analysis

model, which focuses on three aspects: (a) what is said on the subject, (b) how it is said, and, (c) processes and strategies. The framework itself has five dimensions: participative, social, interactive, cognitive, and metacognitive. Henri established operational definitions of each and then identified indicators, which would allow one to recognise and identify their occurrences in the text.

Gunawardena, Lowe and Anderson's (1997) model is based on Henri's framework; however, it exclusively focuses on the examination of the social construction of knowledge. According to their model, interactions were grouped into five categories based on their characteristics. In this framework as well coding is supported by operational definitions and identified indicators.

- Phase I: Sharing/comparing of information
- Phase II: The discovery and exploration of dissonance or inconsistency among ideas, concepts or statements
- Phase III: Negotiation of meaning/co-construction of knowledge
- Phase IV: Testing and modification or proposed synthesis or co-construction
- Phase V: Agreement statement(s)/applications of newly-constructed meaning

This model is a qualitative interaction analysis framework in which messages were considered as the units of analysis.

Daradoumis et al. (2006), based on the theoretical principles and indicators of effective collaboration of McGrath (1991), Webb (1992), Sfard (1998), Soller (2001) and MacDonald (2003), specified four indicators: (1) **task performance** (learning outcome), (2) **group functioning** (participation/interaction behaviour), (3) **social support** and (4) **help services** (task/process scaffolding). Qualitative analysis, by applying these indicators or categories, enables the detailed description of collaborative processes and the evaluation of group and personal performance by the tutor (Daradoumis et al., 2006).

1.5 Designing group interactions in Computer-Supported Collaborative Learning (CSCL)

Online collaborative learning environments enable the participants of the teaching and learning process to collaborate and work jointly on a problem/task (in pairs or groups) overcoming the limitations of time and space. CSCL as referring to "the practices of meaning making in the context of joint activity" focuses on the essentially social practices of joint meaning making (Stahl, 2006, p. 221). Such learning environments present complex problem situations and provide students with a rich variety of tools that support their attempts to control complex relationships of learning tasks (Lehtinen, 2003).

Strijbos et al. (2004) identify five critical elements for process oriented CSCL design: (1) learning objectives; (2) task type; (3) level of pre-structuring; (4) group size; (5) computer support. As for the latter element, Lipponen (2001) argues for the distinction between "collaborative use of technology" and "collaborative technology". The former one refers to technology that supports basic aspects of communication, collaborations and coordination (e.g., WebCT, Blackboard, Moodle). Collaborative technology refers to tools designed to provide specific support, such as dialogue structuring (C-HENE) (Baker & Lund, 1997) or thinking types (CSILE, Knowledge Forum) (Scardamalia & Bereiter, 1991).

As regards learning objectives, Strijbos et al. (2004) argue for two categories: the development of **closed skills** and **open skills**. In the context of collaborative learning the closed skills will not likely elicit intensive interaction, i.e., the interaction threads contain chains of reactive remarks on task delivery. In contrast, open skills involve argumentation and negotiation, where "students not only react but reciprocally build on each other's contributions" (p. 411).

In the case of the second dimension **task type**, Strijbos et al. (2004) make a distinction between **well-structured tasks** and **ill-structured tasks**. Well-structured tasks elicit less interaction since there is only one correct solution (Jonassen & Kwon, 2001), while ill-structured tasks have no clearcut solution, thus finding the appropriate solution entails more intensive discourse.

Although pre-structuring (third dimension) may evolve spontaneously in a collaborative activity within the group, the chances are low. Thus, it is the task of the facilitator (teacher) to ensure positive interdependence and individual accountability in the process of moderation and establishing the appropriate learning environment. The continuum of this dimension ranges from "high pre-structuring" to "low pre-structuring".

Concerning **group size**, Fuchs et al. (2000) claim that interacting in four-member groups resulted in more cognitive conflicts than in dyads (as cited in Strijbos et al., 2004). Small-group interactions (three-six members) can form three patterns according to Rafaeli and Sudweeks (1997): (1) interaction is dominated by one student; (2) all group members participate, but do not build on each other's contributions; (3) interaction is spread across episodes and messages built on the input of preceding messages. Although generally only a few studies report on the effect of group size on collaborative learning, when designing tasks for interaction in CSCL environment it should definitely be considered as a dimension.

2 Research questions and methodology

As indicated above, the aim of this study is to identify the stages of collaboration in the present pedagogical scenario. Therefore, central to our investigation is the question *how collaboration evolves* (if it does at all) among students participating in a teacher training course that is designed in a blended form, and *what are the implications (and effects) of this new educational paradigm and instructional design* in classroom practice at university-level. In addition we intend to find relevant methods of integrating the identified stages in the design process of blended learning courses. Thus, the question of *how to integrate collaborative tasks* in the methodological inventory of instructors of courses alike is highly relevant.

According to our expectations, the process of collaboration can be traced and made visible within the online interactions, which evolved in the course of joint work among the group members. Hence, our primary source of data is the online interactions stored in the CMS. We employed the method of qualitative content analysis as a research instrument in order to undertake the thorough analysis of the evolving online discussions *a posteriori,* thus gaining insights into the assumed flow of collaborative processes. However, quantitative data on student participation, online activity and frequency of messages were also considered as an important source of information since they might be relevant as potential confounding variables.

3 Context: Parameters of the methodology seminar

Our sample was an ELT methodology seminar group at a university in Budapest (autumn term, 2007), the number of participants was 20, with two moderating tutors: the authors of this article. Our experiment was carried out as an addition to the established, rather rich curriculum of the course (topics of ELT methodology, microteaching, observation, etc.). The students were processing modules (coherent task series) within the Moodle CMS on methodology related topics, which were not dealt with during the classes.

From a group dynamics point of view, it is important to mention that the students attending the course came from two different training programmes. The majority were students choosing teacher training as part of the university level American Studies programme (11 students), the remainder were attending a four-year college-level teacher training programme. Although we were not prepared to examine the differences between the kinds of population, during the research it became clear that they did not socialise very much with each other and their attitudes were very different. This is why we had the explicit aim of mixing the two groups as well.

Before presenting the process of developing a collaborative learning environment with this special group, we should mention that both tools used in the experiment, i.e., online communication and collaborative learning, are rather new and unusual in the present practice of teacher training, or even higher education in Hungary. Although online tools and virtual learning environments are gaining more and more ground in the learning process, their function is primarily to facilitate the presentation, delivery and collection of information, and they are rarely used for practising genuine online communication. Consequently students are increasingly 'forced' to use these tools but their multiple functions are far from being exploited adequately. Students' general attitude to the tools of information and communication technology (ICT) is also influenced by some other factors than the ones mentioned above, like access to computers and internet, or previous positive or negative experience, which we tried to identify with the help of a questionnaire. The results will be processed in a further study.

3.1 Learning objectives

In the light of the above, at the beginning of our experiment we formulated the following aims, which, according to Strijbos et al. (2004), belong to the category of 'open skills':

Students should have the opportunity to…
- become aware of their own beliefs and attitudes to education and recognise alternatives,
- get to know theories of online communication and collaboration,
- discuss and argue about theories,
- apply theory in realistic situations,
- discover and try out the possibilities of the online surface,
- work in small groups,
- acquire and develop skills and procedures,
- give reflective feedback on the learning process and on the facilitators' contribution.

When planning the research framework, we focussed on creating a learning environment that, when completed with special subject characteristics, could be used in a

secondary school class as well. In other words, we were trying to motivate the teacher trainees to experiment with similar projects as teachers in the future.

3.2 Task types

The online component of the course was based on modules, i.e. two broader topics that are not included in the curriculum for the face-to-face seminars. For both topics a series of tasks was prepared for smaller groups within which the subtasks were precisely allocated. Every member was responsible for the initiation and/or the summary of a discussion or putting together a 'group product'. As a result of online collaboration, the groups prepared a 'final product' (course object~learning object) jointly. The discussions in each thread were planned to be rounded off by a summary of the main arguments and ideas by the person in charge of the moderation (group cognition). At the end of the module self-evaluation and peer evaluation was requested (reflective approach). The subject of the online modules was connected to EFL methodology (e.g., evaluation in an EFL classroom context, usage of ICT tools in EFL methodology). The modules were constructed as follows:

1. Introduction to the topic of the module (reading a short, motivating text) – well-structured
2. Online discussion of first impressions (collecting pros cons of a method, for example) – ill-structured
3. First readings – well-structured
4. Open-ended questions (aiming at the explanatory, analytical, synthesising, evaluative levels of cognitive engagement) to discuss within the group (one group member responsible for opening and closings i.e. kick-off and summary of the main arguments/ideas collected jointly) with the mentor 'present' in each thread – ill-structured
5. Discussion forum exclusively for creating the group product (necessary links, materials attached there) – ill-structured
6. Evaluation of the group-product, peer-evaluation, self-evaluation.

3.3 Level of pre-structuring

In our experience, pre-structuring is probably the most determinative in creating the learning environment. The teacher, the facilitator, continuously has to make decisions on how much autonomy the students should have in completing the tasks and to what extent determining the aims of the task or the task itself is necessary. For example, when asking the students to have a forum discussion on 'the advantages and disadvantages of email communication in teaching', the question is whether the teacher should clarify how long each argument or explanation should be and exactly how many of them should be included in the summary. Our experience shows that the more concrete the instructions were the more feedback and contributions we received, especially in the beginning, even if this might have had a 'spoon feeding effect' and possibly reduced the scope of autonomy. If the task is left open, it might lead to going blank, or demotivating the group.

Another key challenge of planning is putting the students into smaller groups. The most important question here is whether it is necessary to appoint a 'group head', a student responsible for completing the tasks, i.e., who is 'driving them' and helps the work of the facilitators, or the group should be given full autonomy in allocating the tasks. In our context, where students are socialised in a rather individualistic learning environment, the latter solution is not very effective. What would probably happen is that one or two enthusiastic members of the group would complete the task without drawing in the others, thus without real collaboration. In the case of the observed group we appointed group heads, but even so in some small groups another student took the lead or we did not manage to involve each and

every participant. In a later experiment of ours we appointed students to be responsible for smaller sections of each task (e.g., starting the discussion, or writing up a summary) in an attempt to involve everybody and define the tasks as meticulously as possible.

Consequently, task and course design automatically raises the issue of the role of the facilitators, especially with regard to being a 'teacher'allocating tasks or a 'group member' taking part in the discussions, and to what extent these two functions can be reconciled.

3.4 Group size

The study group was divided into four smaller groups of 4-5 students, since from a research point of view collaboration and interaction in small groups is more traceable, and intersubjective learning, knowledge building and the formation of group cognition more observable (Stahl, 2003). Most of the challenging issues raised are connected to the way groups are formed as well, since for example the decision about how to break down the tasks is highly influenced by how many people can work together ideally in a small group.

3.5 Computer support

For practical reasons we used the central Moodle VLE of Eötvös Loránd University, Budapest. This was advantageous because the students did not have to register separately for the Moodle course, but once they had registered for the course within the university's electronic administration system (ETR) they were automatically members of the Moodle course as well.

At the same time we struggled with some problems typical of huge systems serving several units. First of all, since the system is not yet operating at full capacity we had to cope with some technical difficulties. One of these was that sometimes it was impossible to upload a file. Secondly, from among the various and broadening functions of Moodle we could only use the centrally introduced and approved ones. For example, uploading any material or text for public access was the exclusive right of the tutor, which contradicts the basic philosophy of Moodle, namely constructivist learning. This caused quite a lot of extra work for the tutors, although we have to admit that it made the process of the course easier and more traceable. Still we feel that this feature is rather teacher centred and supports the more traditional forms of the teaching and learning process: the teacher uploads the material 'to be learnt', and the students 'prepare' from that. Mentioning all these circumstances is important because we would like to emphasise how novel and strange our experiment was for the students. Many who had been using Moodle for some time had never come across most of the functions we worked with, like the forum discussions or online groupwork.

3.6 Student participation and online activity

Information on the frequency of student logins was collected from the log files of the Moodle CMS. The online component of the course kicked off in mid-September 2007 (Figure 1), since only by that time did most of the students manage to register for the course and the facilitators (together with the help-desk support) to solve the unexpected technical problems concerning the online accessibility of the course. In the first month (until mid-October), the first group task was the main focus of the online activity. As suggested by Figure 1 below, the frequency of student logins reached its highest point right before the submission deadline of the first group task (45%). The figure also shows that the frequency of logins decreased steadily until the end of the course. The decrease stopped in mid-November for a short period

(23%), then in December the frequency reached the kick-off value (13%). The course continued in the following semester (spring 2008), thus the zero value was not reached.
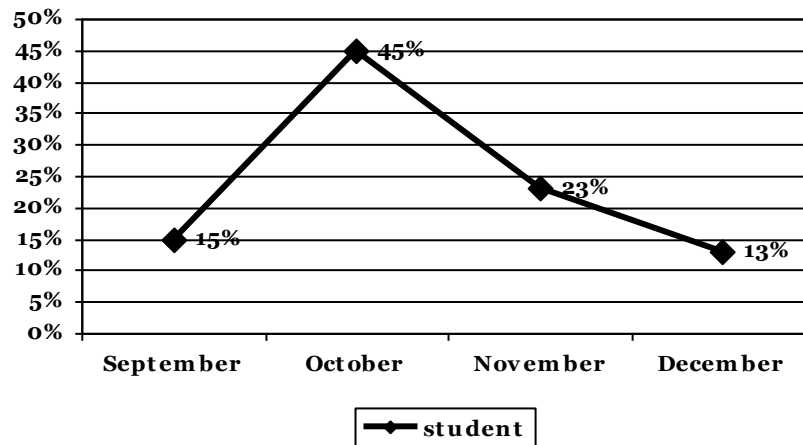

Figure 1. Frequency of student logins on the Moodle CMS

Students' online activity, i.e., how active the individual students were, how often they commented on the forum, uploaded materials, read each others' contributions (shown in Figure 2), resembles to a great extent that for the frequency of logins: first steeply rising, then slowly decreasing. In the course of post-evaluations (interviews with the students and evaluation done by the facilitators) we found two factors to have had an influence on the frequency of student logins and online activity. The first group task (whose deadline is visible as the only peak of the curve in the diagram) *lacked evaluation and follow-up*, which was a general shortcoming of the course schedule. From the post-perspective this had a negative effect on any further activity. The lack of post-task evaluation is strongly linked to the second factor we referred to, namely, *keeping to the deadlines*. In several cases the more motivated groups finished the group tasks earlier, but the other half was way behind schedule. Taking this into consideration, the facilitators should have adjusted the deadline according to the course of events. The facilitators' lack of reaction had a negative impact on the groups, who preferred a faster workflow and this generated an unbalanced fluency of work in the seminar group as a whole. From the didactical aspect the greatest dilemma for the facilitators was whether it was right to adjust the tempo of the workflow to the needs of the slow groups, and by doing so neglecting the general schedule and risking the loss of student motivation and enthusiasm. In the present pedagogical scenario this decision was not right.
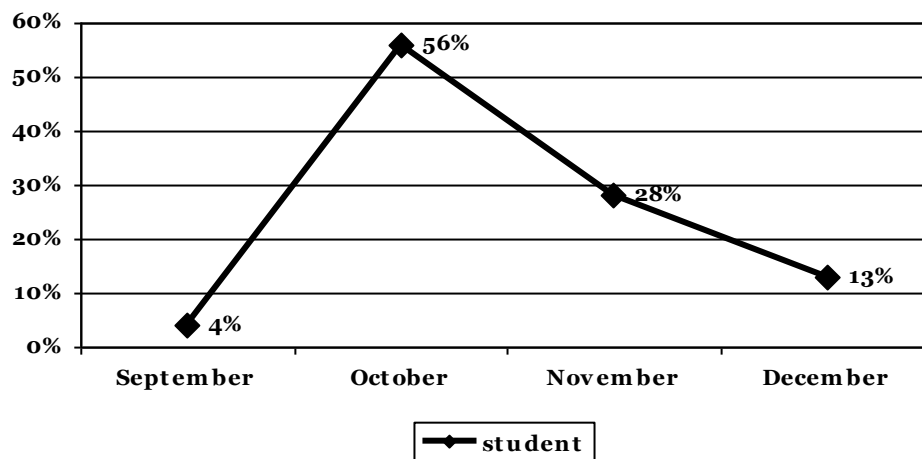

Figure 2. Students' online activity

3.7 Number of sent messages

Information on the number of messages sent by each student was also retrieved from the log files of the CMS. Table 1 shows the total number of messages (posts) sent by the students during the semester. All of the students sent at least one message. The values in bold represent the number of messages sent by the group leaders, which shows that in all groups the most active students were the ones who had the responsibility of 'leading' the small group. The values in italics refer to the least communicative participants: four students in the seminar group (one student per small group) sent only one message during the semester. In their case we cannot make reference to collaboration, or even to any tendency into that direction. Further elaboration is needed as regards the reasons for their lack of interaction.

Students	Total of messages %	Number of messages
ST 1	9%	**12**
ST 2	6%	8
ST 3	7%	10
ST 4	7%	9
ST 5	12%	**16**
ST 6	7%	10
ST 7	1%	*1*
ST 8	2%	3
ST 9	1%	*1*
ST 10	5%	7
ST 11	1%	2
ST 12	6%	8
ST 13	1%	*1*
ST 14	1%	*1*
ST 15	13%	**17**
ST 16	7%	9
ST 17	4%	5
ST 18	8%	**11**
ST 19	1%	2
ST 20	2%	3
TOTAL	100%	136

Table 1. Messages sent by the students

The ratio of student and facilitator posts is shown in Table 2. The total number of messages sent by the two facilitators is approximately the quarter of the total number of posts during the semester, which is the appropriate ratio suggested by the relevant literature. It has to be added, however, that despite the appropriate ratio of student-teacher communication the students' activity decreased during the course. Thus, providing the 'healthy' balance of student-teacher communication is a necessary but not sufficient condition of evolving collaborative discourse within the small groups, in other words the level of pre-structuring and ad-hoc decisions have an effect on student participation and activity.

	Messages %	Number of messages
Facilitators	24%	44
Students	76%	136
TOTAL	100%	180

Table 2. Messages sent by students and facilitators

4 The process of evolving collaborative discourse – Phases in the development of interaction

As mentioned above, the main focus of the research project was the analysis of learning and collaboration in an online learning environment. By examining all the written communication within the Moodle VLE during the course our aim was to explore and characterise the participation and activity of the learning group, to bring into view the process of evolving collaboration and to identify the phases of the group level learning process.

When analysing interaction we partly followed previous research methods. Having consulted the relevant literature, we concentrated on the online interactions and after several thorough readings, communication in the given pedagogical scenario served as a basis for developing our own analytical categories.[1] When identifying the phases, we used Salmon's (2000) five-stage model as a point of reference, which by describing the online learning and teaching process demonstrates primarily the steps of online community formation. Salmon's model specifies the following five stages: (1) access and motivation (2) online socialising; (3) information exchange; (4) knowledge construction; (5) development (providing links outside). In the course of our analysis we identified nine phases, which we introduce and illustrate with examples in the next section.[2]

Phase 1 Expressing uncertainty

In the initial phase (in spite of the thorough preparation beforehand) the contents of the messages can be mostly characterised as 'path-seeking'. However, as the examples show, this is a collective action as well - aiming at joint problem solving – even if the goal is not more than answering one or two operative questions. In this phase most interactions reflect the uncertainty of the participants. Besides allocating sub-tasks, the students clarify among themselves what the task is exactly, in what format they are expected – or it is possible – to solve it and how to share responsibility. At this stage the facilitator is recommended to be frequently available online, since in many cases it is only she who can answer certain questions, so her absence might hinder the start of intensive work.

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[1] We would like to emphasise that in the analysed extracts we did not examine the contents of the students' contributions but we were trying to trace the process of thinking and creating ideas.
[2] The extracts are authentic, since during the EFL Methodology course the students communicated in English. We did not correct accuracy mistakes, but in some cases we quote only parts of a contribution, which is clearly indicated.

Example 1

Subject: Group 1 – Readings
by Student 1 – Sunday, 7 October 2007, 04:55 PM

It's OK from me, although I still don't get what we are supposed to do exactly... Anyway, when do we have to
read this? Or when is the "deadline" for the reading?
Thanks for the answer!
A.

Example 2

Subject: Re: Group 1 – Readings
by Student 2 – Tuesday, 9 October 2007, 08:53 AM

oh, and one more thing!
there is an exercise when we have to deal with our emails and collect some things from it as a group... Have you
found that one? Is that clear for you? can you tell me what am I supposed to do exactly, because it's not very
clear for me...?

Phase 2 Short, individual email-like messages I

In the next phase messages of an administrative character are still dominant. The
contributions are short, and their topic is generally closely connected to organisational issues,
deadlines and procedures. For the time being the forum is used rather for formulating email-
like, brief and substantial questions and instructions. At the same time there are examples of
an initial willingness to collaborate and share the job (e.g., the use of the first person plural:
'we now have to…; or reacting to a group mates idea: 'I think B's idea is good').

Example 3

Group 1 – Readings
by Student 3 – Thursday, 4 October 2007, 09:07 PM

Dear All!
If I'm not mistaken, **we now have** the reading list uploaded. Which readings would you like to read?
Have a nice weekend, L.

Example 4

Subject: tasks
by Student 4 – Monday, 8 October 2007, 11:55 PM

Hi Guys!
I've just checked the reading list and since I spend 8 hours a day in front of my computer and I also have
constant access to the internet so **I would like to choose** the Beasenbach-Lucas and the Shea,V essays (**if it is
still possible**). Gy.

Example 5

Subject: Group 4 – Tasks)
by Student 5 – Sunday, 4 November 2007, 05:37 PM

Hi Everybody,
we have a new task, so please, be active!
Bye, J.

Example 6

Subject: Is there a need for e-mail style manuals in EFL contexts? What are the drawbacks of using e-mail communication in EFL learning and teaching processes?
by Student 6 – Friday, 19 October 2007, 09:57 AM

Hi,
I can read the Gonglewski article or maybe something else too. **I think B's idea is good**, so I also try to post my part by Friday night.
K.

Phase 3 Short, individual email-like messages II

We established a separate phase for demonstrations of active participation, i.e., interactions referring to the collective operation of the group. In these forum posts we spotted references to the task and duty allocation and to the moderate formation of a community. Example 8 reveals an interesting aspect of the blended learning scheme. The student expects feedback from her peers – which is an indispensable requirement of cooperation –, however, she defines a different communication tool than the online environment, the telephone. She gives an explanation for her preference, i.e., she makes clear that she has no internet access at home. The questionnaire survey we did at the beginning of the course showed that 3 out of 20 students had no internet access at home, which, as it turned out from the process evaluation, made regular online work difficult to some extent.

Example 7

Subject: Group 4 – first task as a group
Student 7 – Sunday, 21 October 2007, 10:40 AM

I copied the task here into our forum so as to **make it visible for everyone**.
So, people we are a bit late but please try to join and give some idea – **we have to do this task together** and the deadline is today – I hope midnight ☺

Example 8

Subject: Group 1 – Readings
Student 8 – Friday, 19 October 2007, 07:15 AM

Hi! I checked my letters, as well. My results:
(…)
I hope that this was what we were supposed to do. Have a nice weekend, and if we have to do something else additionally, please **send me an sms or give me a call** because I go home and I do not have Internet there.
Thanks
Zs.

Phase 4 Short, individual messages on professional issues

In this phase the contributions are of a more professional nature, but the students summarise their opinion in a relatively concise way, in just one or two sentences. These posts are usually still not connected to others' ideas. In Salmon's model (2000), this can be compared with stage three, when the students of the online course enter into interaction with each other in order to exchange information. The purpose of communication – similarly to the

quoted messages in this phase of ours – is primarily connected to the course (course material), but it is supplemented by supporting each other in reaching individual goals. Consequently, in this phase group goals are pushed into the background, but collaboration, even if in a rudimentary form, does manifest itself.

Example 9

Subject: Re: Is there a need for e-mail style manuals in EFL contexts? What are the drawbacks of using e-mail communication in EFL learning and teaching processes?
by Student 5 – Friday, 19 October 2007, 10:08 AM

As for an e-learning course or an email project, well, it is not only about clicking the send icon. I think in these cases not only English, but also appropriate use of a computer is very important. In this way we can connect two different things. Can I call this a multidisciplinary approach of EFL?
K.

Example 10

Subject: Group 1 – EFL
Student 5 – Saturday, 27 October, 11:39 AM

I think yes, appropriate e-mail exists in EFL context if both the students and the teacher are motivated to write to each other regularly on different topics connected to learning. The teacher should monitor the style of writings.
K.

Phase 5 Reaction to administrative issues

The type of communication characteristic of Phase 5 can hardly be separated from the interactional mechanisms experienced in Phase 4, which is why Salmon (2000) in his model does not separate these two. On the basis of our sample we still thought it important to emphasise that in this phase contributions become a little longer: they more often contain reactions to previous posts even though the main topic of the interactions is still the detailed clarification of tasks, deadlines, duty allocation or the description of an initial solution.

Example 11

Subject: Group 1 – Readings
Student 4 – Sunday, 18 November 2007 08:39 PM

Hi All!
The homepage is available, the problem is only that the last "e" is missing in this link we've got.

It's OK if we start the task with the openings and endings from our first task, that's a good idea. Also, Anna's ideas about our netiquette are really useful (meaning the two ponts she included).

My suggestions are the following:
(…)
Do the others have any suggestions?

See you on Tuesday ☺
L.

Example 12

Subject: Group 1 – Readings
Student 1 – Wednesday, 17 October 2007, 09:28 AM

If you agree, we could do the following: everyone could check his or her mails in a few minutes and list max. 5 openings and endings or some special structures, and I collect the whole thing to one sheet and give it in, if we have to give it in.
 My openings are
(…)
My endings are:
(…)
Thank you, see you, bye, take care,
A.

Phase 6 Reaction to a previous message on professional issues

In this phase, interactions relate to real professional issues, and reactions to other group members' ideas as well as the expression of agreement or disagreement. Even personal and cooperative opinions emerge, which can be called the beginning of collaboration. In comparison with the model of Gunawardena et al. (1997), these contributions belong to the category of reconciliation of interpretations, or the common construction of knowledge. In Salmon's model (2000) this is the stage of knowledge building. Thus this phase, besides focusing on on-task interactions, also contains rough dialogues of knowledge building within the group.

Example 13

Subject: Using e-mail successfully
by Student 1 – Tuesday, 16 October 2007, 08:00 AM

I agree that successful email use is when a student can communicate, but not necessarily with a native speaker, but maybe with other learners from other countries, too. This might give the student a sense of success which motivates him or her in learning. However, email use in the class as a compulsory thing raises a very serious problem, too: What if someone doesn't have the internet? What if the student cannot afford it? Then we put him or her in a disadvantaged position compared to the classmates. So **I believe** that it can work only **if we know that** in our class there is nobody who lacks the opportunity to get connected to the net.
A.

Example 14

 Subject: Question2
by Student 2 – Thursday, 18 October 2007, 06:43 PM

In my opinion, it is a drawback in teaching via Internet that children who do not have a computer or Internet connection may feel that they are excluded from the teaching-learning process because they have difficulties with the access to the information and with the communication with their mates and teachers.

I think that another problem is that learning and doing activities via computer is impersonal, and it can contribute to the alienation, which is a characteristic for our modern society.

In connection with the first question: **Does manual mean a book?**

Phase 7 Towards specifying or narrowing down a problem

Interactions of Phase 7 are higher level manifestations of the collaborative knowledge building illustrated in Phase 6, since here reactions are completed by interpretations and explanations, and the main point of an interaction is to clarify or narrow down an issue.

Example 15

Subject: Re: Subject: Discussion
by Student 4 – Friday, 19 October 2007, 08:02 PM

I agree that students have to be prepared for the "cyber space"; **now the question is how the teacher introduces them to Internet**. **I'm not an expert**, **but I think that** in a (relatively) big city the majority of the students have access to Internet at home as well as at school so they are familiar with the basic terms and rules. **However, in a typical Hungarian village Internet is unavailable**. In the best possible case, their school provides them computers, but students do not use them because they simply do not need (and have) Internet. **Moreover, a great number of Hungarian teachers,** especially the seniors, have not been taught how to use computer (and they have never heard about such thing as Internet). **So, at first** the teachers must be familiar with the "cyber space" (I still believe that the majority of the Hungarian teachers can not use Internet) **then** this cyber space should be available at every Hungarian school. It does not guarantee that students would use Internet, but maybe it offers a choice for better education.

Phase 8 Debating, challenging peers, wording dilemmas

This phase is a synthesis of the previous two, since here as well the contributions are about interactions connected to professional reactions, but personal interpretation plays an even more fundamental role. At the same time, we can also witness some debates, which are part of the process of formulating the group's collective standpoint (group cognition). The students represent a case for or against a group mate's or a smaller group's opinion, or define a dilemma.

Example 16

Subject: Re: Subject: Discussion
By Student 1 – Sunday, 21 October 2007, 04:36 PM

(………..)
And I would say that they should be taught somehow, as emailing is a different context, requiring different skills -- and they have to become "appropriate" also in electronic communication, which makes us teachers responsible for this too. **My personal experience in whether students of today are at home with the internet is different from Gy's.** My mother teaches ECDL, within which Internet Skills is one subject. Just as her, **I was amazed** how much students, not just adults or the older generation, are so illiterate in searching/using the net. It IS something to teach. For many people it is not self-evident.

Example 17

Subject: EFL
by Student 2. – Tuesday, 13 November 2007, 09:02 AM

I'm not that sure whether an "appropriate" e-mail exists or not... I think that the main goal of an e-mail is to communicate the message. If it does communicate it, then the form does not matter that much. **However, I also think that** if a student is made aware of the conventions of email use, then it makes writing easier... **I'm not sure about this question, I just wanted to add my dilemma.**
A.

Phase 9 Sharing experiences and reflection

It is a characteristic phenomenon of any collaborative activity and professional discourse that the participants compare professional arguments with their own experience, or certain ideas or utterances provoke intensive emotional reactions. The last phase emerging from our sample was the open and honest sharing of personal experience, i.e., a higher level of reflection. We discovered and found it important to illustrate that the contributions containing strong emotional reactions were usually combined with high level cognitive presence, i.e., the knowledge-building discourses of Phases 6, 7 and 8 in the case of some students culminated in the interactions of Phase 9.

Example 18

Subject: video
by Student 3 – Monday, 3 December 2007, 08:07 PM

It is so amazing what technology can do nowadays. This computer system must have a huge motivating power on kids. It must be very exciting to participate in this kind of program. **I would definitely like to** work on this kind of project. It provides so many interesting activities that I could never try out in real world. I think that it could be relevant in Hungary if the question of money did not exist.

Example 19

Subject: our group
by Student 4 – Tuesday, 4 December 2007, 12:51 AM

My first impression was that it is very scary. **I totally have goose bumps all over when just thinking of this idea**. I guess it is the future, if we want to go copying the US-based education system with all its positive and negative effects but **I am quite against** this future. I might be a conservative, but I see more harm in it than benefice. I do however see the value in some simulations that have already been used, in medicine or in navigating etc. -this gives a good possibility to experience something and avoiding the possibility of causing any damage.

However, I don't think computer programs that were designed by men can bring back reality as it really is, there are much more to life than a simple binary system... I mean many things can happen that cannot be foreseen.

What really freaks me out is the where all this tendency could lead to. I will never forget one time when I was in Melbourne and I went to the City museum to see the exhibition they had on, it was about aboriginals and the art of Australia. The museum was basically nowhere near my concept of a museum, it was more like an interactive display-show... There were very few old-styled labels or anything that simply had to be read, instead, there were a lot of machines, gadgets, sound, screens etc that instantly turned on when I went pass them and then an aborigine started crying out to me the story of how her family was massacred in the past. I could do nothing to stop these effects, and if I wanted more information on anything they had little machines where I could finally go to read about it....

Anyway, the whole point of my story is the following: I realized that no one payed any attention to the exhibited articles unless they could actually do something with them, they could push different buttons, touch things etc. **I think this is by far a very bad thing,** because it could mean that in the future unless we make whatever it is we want to present interactive nobody would be interested in it. If we continue on this paved road, my opinion is that, there will be no surprises to see the demand for this and the total neglegation of the valued old system -which is a great risk because the free interpretation of something is then basically lost. There is a limit to these systems whereby the possibilities of deciding about something yourself, of not being a victim of no influence or manipulation is basically lost. The system is designed by someone who decides on its content and it is not the person who actually experiences the system who has the right to think freely about it.
(…)
Sorry if I wrote too much…

Example 20

Re: Group 1 – Readings
by Student 1 – Sunday, 14 October 2007, 08:57 PM

Sorry, I did not write so long but I have been ill and I had to go home. I wrote my reaction to the article at home and I couldn't read your answers, **so sorry if I write something down you already mentioned.**

Reaction to Gongelowski Meloni…

All the given ideas sound very well; however, there is a very big problem with these. The article does not set the prerequisites for these. The only problem the article mentions is that the teachers might have too much work by reacting to student's written works in e-mail. It seems to take it for granted that every student does have a computer and constant Internet-connection at home. **Sorry, it is my private thought that I think tha**t before such an assignment, the teacher should collect information whether the tasks and the readings are available for all students. For example, I live in a dormitory in Budapest and I have three room-mates. I can't constantly tell them that I need the Internet, and at home, I do not have Internet at all. This can make the Internet-tasks quite difficult. **I agree that** they are very useful but if you do not have the requirements for this, it is rather tiring and takes too much time. And I think that it is more important in a high school (in Hungary) because the universities expect computer and e-mail-work in a certain level. I think that we can encourage our students to e-mail-partners from another country or from a native EFL-learner or from the target language community if they have the requirements for this. **And what do you think about supplemental** activities per e-mail in case of a high-school student? I think that we should get information whether they do have time for this because next to this they might have different sport training, language courses or preparatory courses for the university. I do not think that one e-mail per week is too much but project works (per computer) can make problems for some students.

Oh, and I realized that we do quite much from the tasks mentioned in the article, for example: the forum work in little groups (we have to share the readings and we have to make a common project work), the e-mail communication with an EFL learner, the assignments and the articles are put in the Internet

However, the article answered our question for Module 1. It is very important that the effective e-mail communication does not have to be based on perfectly correct grammar. The emphasis is on the mutual understanding between the participators of the communication. It means that they can understand each other and they can reflect to each other's opinion or suggestions. The focus is on communication, on the authentic input the students can get due to this.

The highlighted part of our last example (*Oh, and I realized that we…*) is especially interesting because some elements of reflection and conscious learning can already be pinpointed. The student discovers that the experiment they are working on together is actually the realisation of what they have read about, and this awareness is probably the first step towards conscious collaborative learning, which is the fifth and last phase of Salmon's (2000) model, and in the interpretation of Gunawardena et al. (1997) it is the phase of proposed synthesis, or testing and modifying collective construction and applying the newly constructed meaning.

5 Lessons learnt

Additional to the above described stages identified in the present pedagogical scenario (which in themselves are the answer to our main research question concerning ***how collaboration evolves*** in a teacher training course designed in a blended form), we detected ***various implications*** and drafted ***useful suggestions*** concerning the integration of this new educational paradigm and instructional design in classroom practice at university-level. We summarise these as ***lessons learnt*** in the following paragraphs.

Where the blended or online course is the participants' first encounter with VLEs and their use of this medium, the first few months are absolutely necessary for them to familiarise themselves with the system, to learn and experience what a forum discussion or a contribution is like and to get used to the fact that it is possible 'to learn' in this way. The type of discourse going on during this initial period does not yet reflect high level collaborative processes, but it will probably go through similar phases as the nine ones we introduced, which we believe are indispensable as a starting point for collaborative learning. In our case this has happened only when we 'had a second go' during the following term.

It was a very clear lesson for us to draw that the students should experience the experiment as 'learning'. The post-course discussions and the feedback the participants gave showed unambiguously that although they had come across the notion of collaborative learning during their studies, they generally had no personal experience of it. Their views and beliefs about learning are naturally based on their own experience, and in their usual learning environment 'learning is an individual activity', the main sources of which are the teacher and the library. It is difficult for them to take groupwork and its final product seriously because according to tradition 'this is only a kind of game', and they expect evaluation to refer to individual performance rather than to the process or to the group product.

At the same time, we experienced that a considerable advantage of online communication affecting group dynamics as well is the fact that those members of the group who are usually quiet during the classes might take part in the professional discussions through this medium. In addition, working in small groups made it possible for certain group members to get to know some peers more profoundly.

It was a significant finding for us that in the case of groups who are relatively inexperienced in collaboration (or who experience their first encounter with online communication), detailed and thorough planning, step-by-step guidance (defining sub-tasks, deadlines, products) is of paramount importance. As mentioned above, the 'level of pre-structuring' plays a vital role in the success of experiments like this. This is why it is an absolute necessity to set goals in advance together with the participants. To make the students aware of the purpose of the experiment is a decisive motivational factor, so it is extremely risky not to discuss it thoroughly with the students at the beginning.

Evaluation is an essential part of the learning and teaching process, which is absolutely necessary when a task has been completed. As we mentioned before, with this group we omitted evaluation after the first module, and this unfortunately decreased the motivation for further work to a great extent. Our later experiments proved conclusively that all products (sub-tasks, summaries, etc.) should be evaluated immediately with regard to activities within the small group, or the comparison of the achievement of all the groups.

This is how far we got in our own learning process with this group experiment and we are trying to make use of all this experience in moderating and facilitating online collaboration with new groups in the future. We believe that the online element has a definite place in teacher training courses, since teachers of the future can no longer be efficient without using these tools as an integral part of their own metholodogical toolkit.

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