ARGUMENTATIVE INTERACTION IN AN ACADEMIC E-MAIL COURSE

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Introduction

The shift from the information society towards the network society has brought with it new challenges to human communication. Now that we are used to sending e-mail messages and gathering information from the www, the question arises of how to make the best use of these technological tools. The easy and rapid way in which messages can be exchanged provides a good basis for developing communication skills, especially in a country like Finland where people prefer silent consideration to argumentative questioning. Previous studies (Steffensen, 1996) on higher education in Finland have indicated that the typical Finnish student lacks both a critical attitude towards knowledge and a willingness to engage in critical discussion. Similar results have also been reported by Mauranen (1993), Laurinen (1996) and Hirsjärvi, Böök, and Penttinen (1996), who found that even though students were approaching the end of their studies, they nevertheless found it difficult to participate in seminar debates. They hesitated to criticize each others' opinions or that of the teacher, who was regarded as an authority whose views should not be called into question.

Electronic mail can be regarded as an appropriate medium for developing Finnish students' argumentation skills at the university level. It has been shown that students' e-mail messages improved as discussion conducted by e-mail proceeded during a six-week course on argumentation (Marttunen, 1997). Ruberg, Moore and Taylor (1996) have also indicated the facilitating effect of e-mail in establishing interaction between students.

E-mail as a communication medium possesses many features that facilitate person-to-person communication. First, e-mail discussions are *asynchronous* (time and place independent) in nature, which means that e-mail messages can be written and read at any time convenient to the user. Second, e-mail has been characterized as a *democratic* medium that allows various kinds of people regardless, for example, of personal appearance, occupational status, and level of education, to participate in interaction on an equal basis. Third, when communication is textual and the participants cannot see each other *the threat of loss of face* (for Goffman's use of this term, see Brown & Levinson, 1987) in the course of discussion is not so great as in face-to-face situations. Fourth, the *informal* nature of e-mail language also makes it easier for one to put forward opinions and arguments: a typical feature of the nascent e-mail culture is that texts do not have to be carefully

revised, but it is enough that the writer's ideas can be understood. Fifth, the participants have *time to consider* how to express their thoughts and arguments since they have to be formulated as written text.

Recent studies have indicated that the use of networks, especially e-mail, has increased and enriched communication between students (Kearsley, Lynch & Wizer, 1995; Ruberg et al., 1996) and promoted students' learning results in terms of subject contents (Alavi, 1994; Hacker & Sova, 1998). Studies in which the content of e-mail and face-to-face discussions has been compared (Marttunen & Laurinen, 1999; Newman, Johnson, Cochrane & Webb, 1996) suggest that students' argumentation is more developed and more carefully structured when e-mail is used. Furthermore, studies based on experimental pretest-posttest designs have indicated that students' argumentation skills have improved during academic e-mail courses (Marttunen, 1997; Marttunen & Laurinen, in press).

Although e-mail has proved its usability as a learning environment and as an argumentative forum, knowledge about the most effective ways of arranging learning situations and assignments is lacking. Up to now, the focus has largely been on the role of the teacher. Marttunen (1998) found that students produced more developed arguments when the teacher acted as a facilitator and respected their self-directiveness than when of acting as an authoritative tutor. However, there is insufficient knowledge on how students' e-mail working can best be arranged for the purposes of practising argumentation skills.

This article describes a teaching experiment in which academic argumentation was practised in a ten-week course in a Finnish university. In the course two forms of discussion were used: free debate and role play. The aim of the study was to clarify how these two forms of discussion activate students in mutual argumentative dialogue and affect its quality.

Method

Teaching arrangements

Two small groups ($n = 5$, $n = 6$) of students (8 female, 3 male) took part in course in argumentation that was organized during the spring term of 1998 in the Department of Education at the University of Jyväskylä, Finland. The course involved 1) e-mail seminar discussions based on learning material, 2) lectures on argumentation (2 x 2 hours), and 3) exercises. The learning material consisted of argumentative writings taken from newspapers and periodicals as well as scientific texts. The writings were based on four educational topics: 1) sex roles and equality in education; 2) discipline problems in school: causes and proposed solutions; 3) the compulsory teaching of Swedish in school (a currently controversial educational topic in Finland); and 4) physical punishment as a child-rearing

method. The learning material also included exercises in argumentation. The exercises introduced the students to the content and argumentative structure of the text material, and in this way prepared them for the subsequent argumentative discussions relating to the texts that formed the basis of the seminar sessions. The purpose of the lectures was to provide the students with theoretical knowledge on argumentation to be utilized during the seminar discussions. In the first lecture the main conceptual apparatus used to describe the argumentation process was introduced and in the second lecture the fundamentals of argumentation analysis.

Free debate and role play were used as working methods in organizing the students' e-mail discussions. During *free debate* the students' discussions were based on themes 1 (Sex roles) and 2 (Discipline problems). Students freely selected from the seminar texts the discussion topics and the claims they wished to defend. Thus, the students were able to focus on topics they found interesting, contradictory, or important. During *role play* the students discussed themes 3 (Compulsory Swedish) and 4 (Physical punishment). Here the task of half of the students was to defend a given standpoint, while the other half had the task of supporting the opposite position. In this way the discussion was polarized.

Data

The total number of messages sent by the students during the course was 326. The number of messages sent by the 8 female students was 219 (67%), and by the 3 male students 107 (33%). The proportion of messages relating to the different working methods and discussion topics is given in Table 1.

Table 1. The distribution of messages by method of working and discussion topic

Discussion topic	Free debate		Role play		Total	
	f	%	f	%	f	%
Sex roles	84	50	0	0	84	26
Discipline problems	83	50	0	0	83	25
Compulsory Swedish	0	0	84	53	84	26
Physical punishment	0	0	75	47	75	23
Total	167	100	159	100	326	100

Data analysis

The analysis was carried out in two phases. In the first phase the references to messages sent by other students were identified from the messages sent during the course. The messages were then classified

into three categories: monologue, dialogue and web-messages (c.f. Lai, 1997). A *monologue message* did not include any references to messages sent during the course. It consisted of a student's opinion or point of view of the discussion topic. A *dialogue message* consisted of references that indicated that only two students had participated in the discussion on the topic. If more than two students had engaged in the discussion on the same topic the message was classified as a *web-message*. Dialogue and web-messages together were classified as interactive messages.

In the second phase of the analysis the reference was used as the unit of analysis (c.f. Henri & Rigault, 1996). The students' references were classified along two dimensions. The first dimension (Position taking) showed whether the students *disagreed, agreed* or had taken a *neutral position* in relation to the standpoint of a fellow student. The other reference categories were *questions, answers to questions*, and *other* (mainly short comments).

The second dimension (Role) described the writer's role in the argumentative discussion. It consisted of six main categories: problematization, attack, defence, counterattack, admission, support, and participating. In a reference indicating *problematization* a student had taken a critical attitude towards the issue in question. The writer had, for example, pointed out deficiencies in a fellow student's message or put forward alternative ways of approaching the issue. A reference classified as an *attack* included targeted disagreement with a fellow student's position. A *defence* was a reply to an attack already put forward. It indicated that the writer defended his/her original argument by clarifying the reasons given or by adducing new reasons. In the case of a *counterattack* the writer defended him/herself from an attack by reattacking the arguments the attacker had used, while in the reference classified as an *admission* the writer accepted the attacker's criticism and indicated a readiness to change his/her original argument. References classified as a *support* indicated the writer's willingness to support or strengthen a fellow student's standpoint, and in a reference classified as *participating* the writer did not reply to a fellow student's standpoint but mainly participated in the discussion by adding something to the topic. The inter-rater ($n = 37$) reliability coefficient (C) for the two variables was .87 for Position taking and .82 for Role.

Results

The students wrote a total of 73 (22%) monologue messages, 153 (47%) dialogue messages, and 100 (31%) web messages during the course. The number of the different types of messages was approximately the same regardless of the working method. When the messages relating to the different discussion themes were compared monologue messages were found to be more common when discipline problems were being considered as compared to messages on sex roles (29% vs.

16%). Interactive messages (dialogue + web messages) were, however, more common (84% vs. 71%) when sex roles was the topic (chi-square = 4.37, $df = 1$, $n = 167$, $p = 0.42$). No differences were found between messages relating to compulsory Swedish and physical punishment.

Almost a half (44%) of the students' references ($n = 362$) to other messages indicated that the writer had taken a neutral position in relation to a fellow student's standpoint (Table 2). In 25% of the references a student had shown disagreement and 24% of the references indicated agreement. References indicating disagreement were more common during role play than during free debate (33% vs. 18%), whereas the students produced more references indicating agreement during free debate (33% vs. 15%). The proportions of references indicating a neutral position were about the same during both free debate and role play.

Table 2. Types of references in the students messages in terms of position taking and role

Type of reference	Free debate			Role play			Total
	Sex $f(\%)$	Dis $f(\%)$	Total $f(\%)$	Com $f(\%)$	Phy $f(\%)$	Total $f(\%)$	$f(\%)$
Position taking							
Disagreement	18(17)	15(19)	33(18)	33(36)	24(29)	57(33)	90(25)
Agreement	35(33)	27(33)	62(33)	15(16)	11(13)	26(15)	88(24)
Neutral	43(41)	35(43)	78(42)	39(42)	41(50)	80(46)	158(44)
Question	0(0)	2(3)	2(1)	3(3)	2(2)	5(3)	7(2)
Answer	4(4)	1(1)	5(3)	1(1)	2(2)	3(2)	8(2)
Other	6(6)	1(1)	7(4)	2(2)	2(2)	4(2)	11(3)
Total	106(100)	81(100)	187(100)	93(100)	82(100)	175(100)	362(100)
Role							
Problemati-zation	8(8)	13(16)	21(11)	28(30)	31(38)	59(34)	80(22)
Attack	13(13)	14(17)	27(14)	21(23)	18(22)	39(22)	66(18)
Defence	5(5)	2(3)	7(4)	9(10)	4(5)	13(7)	20(6)
Counterattack	1(1)	0(0)	1(1)	2(2)	3(4)	5(3)	6(2)
Admission	3(3)	1(1)	4(2)	0(0)	1(1)	1(1)	5(1)
Support	39(37)	28(35)	67(36)	12(13)	9(11)	21(12)	88(24)
Participating	37(35)	23(28)	60(32)	21(23)	16(20)	37(21)	97(27)
Total	106(100)	81(100)	187(100)	93(100)	82(100)	175(100)	362(100)

Sex: Sex roles and equality in education; *Dis*: Discipline problems in school: causes and proposed solutions; *Com*: The compulsory teaching of Swedish in school; *Phy*: Physical punishment as a child-rearing method.

The most common roles assumed during discussions were those of participant and supporter: 27% of references indicated participation and 24% indicated support. During role play, however, the students more often attacked a fellow student's standpoint (22% vs. 14%) or presented a problematizing view (34% vs. 11%) than during free debate. The students, however, produced more references showing support (36% vs. 12%) and participation (32% vs. 21%) during free debate.

The most common type of reference that indicated a response to a previous attack was a defence (6%). It is, however, worth noting that on most occasions students did not respond at all to attacks on their own arguments: although there were 66 (18%) attack references, there were only 31 references indicating a response (20 defences, 6 counterattacks, 5 admissions) to an attack.

Discussion

The most common references in the students' messages were those that indicated a neutral position in relation to other students' positions. This result supports previous results according to which Finnish students are not willing to participate in critical discussions (Steffensen, 1996). However, when the students were assigned opposed roles in the role play sessions critical discussion and argumentation increased notably, while during free debate the students mainly agreed with each other or expressed neutral positions.

The roles most commonly taken by students during the course were those of participation and support. This indicates that an active argumentative role was not often taken during the discussions, but students tended merely to either support or ignore each others' arguments. The small number of replies to other students' attacks on one's position also indicates that Finnish students prefer to keep silent than respond to criticism. Participation and support as roles were typically emphasized during free debate, while role play activated the students to attack each others' opinions or, at least, to take a problematizing role in the discussion.

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