

APPENDICES

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Appendix 1

ICT-metrics on computer use and Internet ability (Török, 2007)

The following questionnaire asks about computer use and Internet ability. Please, tick one box on each row.

How well can you do these tasks (on a computer)?

	Without any help	With some help	With significant help	I cannot do it
File management				
Moving files	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Arranging files into directories	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Compressing files	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Renaming files	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Word processing				
Using word processing programs in general	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Text formatting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Changing the view of the text	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Checking spelling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inserting text and pictures into a text	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Printing a text	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Internet usage				
Downloading and saving pictures from the internet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Downloading and saving texts from the internet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using search engines on the internet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Navigating back to previously visited websites	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Saving links of important websites	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Downloading files from the internet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Creating a simple website (homepage)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E-mail				
Creating an e-mail box	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forwarding an e-mail	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sending an e-mail to more addressees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sending an attached file	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Subscribing/unsubscribing to lists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Opening files received as e-mail attachments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spreadsheets				
Knowing a program for creating spreadsheets in general	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Creating simple spreadsheets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Making simple calculations in a spreadsheet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preparing diagrams, graphs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Formatting spreadsheets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preparing slides				
Preparing a slide show with multimedia constituents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preparing a slide show with pictures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inserting a video in a slide show	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Photo editing				
Preparing labels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Resizing photos	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Changing the file format of the photos	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other				

Using LOGO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using a scanner for digitalizing pictures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using a scanner for digitalizing texts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Taking a photo with a digital camera	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using a virus scan program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Operating a projector, connecting it to the computer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Saving file from a pendrive to the computer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Without any help	With some help	With significant help	I cannot do it

Please, indicate the following information:

Your group number:

Age:

Sex: ☐female ☐male

Thank you.

Appendix 2

Participant Satisfaction and Communication Questionnaire

Dear Participant,

with the following survey we would like to receive feedback from you as a participant about your experience. The results of the survey will be used to increase the quality of learning. All the data are handled with care, they are treated as strictly confidential – also in the case of a possible dissemination.

Part I.

Please, indicate the degree to which you Agree/Disagree with each statement as it relates to your experience.

		strongly disagree	disagree	agree	strongly agree
1	I enjoyed the course.				
2	I found the content of the course interesting and useful.				
3	My experience with the course would encourage me to use ICT in the future as well.				
4	My experience with the course would encourage me to apply ICT for pedagogical purposes (teaching).				
5	Access to facilitators /staff members was adequate.				
6	The benefits gained from participating the course justified my efforts.				
7	The level of teaching and learning processes that took place in this course was of the highest quality.				
8	Overall I am satisfied with the course.				
9	The facilitator provided help for the group members.				
10	The facilitator created a feeling of an online community.				
11	The instructor facilitated online discussions within the group, thus enhanced collaborative learning				
12	The feedback received from the facilitator enhanced my learning.				
13	Overall the facilitator for this course met my expectations.				
14	I felt comfortable collaborating through this medium.				
15	I felt that participating in on-task course discussions was useful.				
16	I felt comfortable participating in off-task course discussions.				
17	I felt that other participants in the course acknowledged my point of view.				
18	The feedback received from my tutorial group enhanced my learning.				
19	This form of learning allowed for the in-depth				

	analysis of the discussion topics and answering the relevant questions.				
20	Group work allowed for opportunities to learn from other's expertise, skills and competence				
21	I was able to form distinct individual impressions of some course participants.				
22	I was able to form distinct individual impressions of the facilitator in this course.				
23	I felt comfortable conversing with the instructor through this medium.				
24	My point of view was acknowledged by the facilitator.				
25	Online or web-based education is an excellent medium for social interaction.				

Part II.

During this course, you had several tools available to you on the course web site for accessing information and for communicating with colleagues and the facilitator. Please rate the following (put a cross to the relevant answer):

	Not used	Less Important tool	Important tool	Very important tool	Crucial tool
26. Course information	_____	_____	_____	_____	_____
27. Course documents	_____	_____	_____	_____	_____
28. Forum	_____	_____	_____	_____	_____
29. Upload/download	_____	_____	_____	_____	_____
30. Other:					

Part III.

Mark the statement that applies to you.

31. I would rate my level of computer expertise as:

Novice _____ Intermediate _____ Expert _____

32. Where did you most frequently use a computer for this course?

Home _____ Work _____ Other _____ If other, specify: _____

33. Online Experience:

_____ This is my first online course

_____ I have taken two online courses including this course.

_____ I have taken more than two online courses including this course.

34. How often do you use the Internet?

_____ Several hours a day _____ daily _____ 2-3 times a week _____ weekly _____ less frequently

35. On average, regardless of whether you posted a message or not, how often did you access the course Web site?

_____ daily _____ 2-3 times a week _____ weekly _____ 2-3 times in a month _____ monthly

36. How much time did you spend working on the course Web? (minutes) _____

37. How did you contact other students? (Mark more than one if appropriate)

___ Only the CMS ___ Email ___ Telephone ___ Personal

38. On average, how often did you post a message to the Forum each week?

___ once a week ___ twice a week ___ three times a week ___ four times a week ___ five or more times a week ___ other.....

39. On an average, how many (on-task) messages did you post in a week? ___

On an average, how many (off-task) messages did you post in a week? ___

40. How much interaction did you have with your facilitator on the Forum?

___ daily ___ 2-3 times a week ___ weekly ___ 2-3 times in a month ___ monthly

General (Personal) information

Group number:

Institution: _____

Age: _____

Sex: Female ___ Male ___

Date: _____

Thank you for your time!

Dorner Helga

Appendix 3

Coding scheme for *cognitive presence* in discussion (Bloom, 1956; Gunawardena et al., 1997; Henri, 1992; Zhu, 2006)

Question	
Indicator	Description/ Example
Seeking information (Vertical)	Question that has a direct and correct answer (e.g. What is an asynchronous discussion?)
Inquiring or starting discussion (horizontal)	Question that has no direct and correct answer (e.g. How can we facilitate an online discussion?)
Responding (knowledge or elementary classification)	Statement <ul style="list-style-type: none">▪ A statement that is made in direct response to a previous message, offering feedback, opinion etc.▪ A statement of observation/opinion/of agreement from one or more other participants▪ Definition, description or identification of a problem
Informative (comprehension or in-depth clarification)	<ul style="list-style-type: none">▪ A statement that provides information (anecdotal or personal) related to the topic under discussion.▪ Restating the participants' position, advancing arguments or considerations in its support by references to the participant's experience, literature, formal data collected, proposal of relevant methodology, allegory etc.
Explanatory (application or application for strategies)	<ul style="list-style-type: none">▪ A statement that presents factual information with limited personal opinions to explain related reading materials.▪ Negotiation or clarification of the meanings of terms
Analytical (analysis)	<ul style="list-style-type: none">▪ A statement that offers analytical opinions about responding messages or related reading materials.▪ Identification of areas of agreement or overlaps among conflicting concepts.▪ Negotiation of new statements embodying compromise, co-construction
Synthesis (synthesis or inferencing)	<ul style="list-style-type: none">▪ A statement that summarises or attempts to provide a summary of discussion messages and related reading materials.
Evaluative (evaluation or judgment)	<ul style="list-style-type: none">▪ A statement that offers evaluative or judgmental opinions of key points in the discussion/related readings.
Reflective of changes	Reflection <p>A statement that reflects on changes in personal opinions and behaviours.</p>
Reflective of using cognitive strategies	<p>A statement that explains or reflects on one's use of cognitive strategies/skills in accomplishing certain learning tasks.</p>

Coding scheme for *social presence* in discussion (Rourke et al, 1999)

Affective Category	
Indicator	Description/ Example
Expression of emotions	"I just can't stand it when..." "ANYBODY OUT THERE"
Use of humour	Teasing, cajoling, irony, sarcasm
Self-disclosure (present details of life outside of class, or express vulnerability)	"Where I work this is what we do..." "I just do not understand this question"
Interactive category	
Continuing a thread (using reply function of software rather than starting a new thread)	Subject Re:.....; Branch format
Quoting from others' messages Referring explicitly to somebody's message	"Martha writes ..."
Asking questions (students ask questions of other students)	"Anyone had experience with...?"
Complementing, expressing appreciation	"I really like your interpretation"
Expressing agreement	"I was thinking the same thing. You really hit the nail on the head."
Cohesive category	
Vocatives (referring to participants by name)	"I think John made a good point." "John what do you think?"
Addresses or refers to the group using inclusive pronouns (addresses group as we, us, our group)	"Our textbook refers to..." "I think we are off the track here..."
Phatics, salutations (communication that serves purely social function)	"Hi all..." "That's it for now" "We are having lovely weather..."

Coding scheme for *teaching presence* in discussion (Anderson et al, 2001)

Instructional Design and Organisation	
Indicator	Description/ Example
Setting curriculum	"This week we are discussing..."
Designing methods	"I am going to divide you into groups..."
Establishing time parameters	"Please, post a message by Friday..."
Utilising medium effectively	"Try to address issues that others have raised when you post"
Establishing netiquette	"Keep your message short"
Facilitating Discourse	
Identifying areas of agreement/disagreement	"Joe, Mary has provided a compelling counter-example to your hypothesis. Would you like to respond to it?"
Seeking to reach consensus/understanding	"I think Joe and Mary are saying essentially the same thing"
Encouraging, acknowledging, or reinforcing student contributions	"Thank you for your insightful comments."
Setting climate for learning	"This is a place to try out ideas after all"
Drawing in participants, prompting discussion	"Any thoughts on this issue?" "Anyone care to comment?"
Assess the efficacy of the process	"I think we are getting a little off track here"
Direct Instruction	
Present content/questions	"Bates says...what do you think"
Focus the discussion on specific issues	"I think that's a dead end. I would ask you to consider..."
Summarise the discussion	"The original question was...Joe said... Mary said...we concluded... We still haven't addressed that..."
Confirm understanding through assessment and explanatory feedback	"You're close, but you did not account for... this is important because"
Diagnose misconceptions	"Remember, Bates is talking from an administrative perspective, so be careful when you are saying..."
Inject knowledge from diverse sources, e.g. textbook, articles, internet, personal experiences	"It was at a conference with Bates, and he said... You can find the proceedings at..."
Responding to technical concerns	"If you want to include a hyperlink to your message, you have to..."

Appendix 4

Data on the second phase of regression analyses (MULTIPED SITE)

<i>Components of the model</i>	<i>β</i>	<i>Df</i>	<i>F</i>	<i>Significance</i>	<i>Importance after transformation</i>	<i>Importance</i>
<i>1st step: Course satisfaction as dependent variable</i> ($R^2 = .78$)				<i>MULTIPED</i> <i>N=43</i>		<i>Calibrate 1</i> <i>Calibrate 2</i>
Facilitator's role (independent variable)	.12	2	1.64	p = .21	-	.07
Social presence (independent variable)	-.04	3	.20	p = .901	-	-.01
Online communication (independent variable)	.86	3	110.06	p < .001	.734	.94
<i>2nd step: Online communication as dependent Variable</i> ($R^2 = .77$)						
Facilitator's role (independent variable)	.21	2	4.88	p = .013	.135	.17
Social presence (independent variable)	.75	2	63.28	p < .001	.641	.83
<i>3rd step: Social presence as dependent variable</i> ($R^2 = .1$)						
Facilitator's role (independent variable)	-	-	-	-	-	-

Appendix 5

Data on the second phase of regression analyses (DELP site)

<i>Components of the model</i>	β	<i>Df</i>	<i>F</i>	<i>Significance</i>	<i>Importance after transformation</i>	<i>Importance</i>
1st step: Course satisfaction as dependent variable ($R^2 = .58$)						
				DELP ELT Methodology 1 N=20		Spring 2007
Facilitator's role (independent variable)	.16	2	2.37	p = .109	.062	.04
Social presence (independent variable)	.11	2	1.18	p = .319	.058	.03
Online communication (independent variable)	.73	4	47.39	p < .001	.879	.51
2nd step: Online communication as dependent variable ($R^2 = .51$)						
Social presence (independent variable)	.09	1	4.33	p = .004	.175	.12
Facilitator's role (independent variable)	.33	2	13.47	p < .001	.165	.11
3rd step: Social presence as dependent variable ($R^2 = .51$)						
Facilitator's role (independent variable)	.61	2	26.67	p < .001	.868	.39

<i>Components of the model</i>	β	<i>Df</i>	<i>F</i>	<i>Significance</i>	<i>Importance after transformation</i>	<i>Importance</i>
1st step: Course satisfaction as dependent variable ($R^2 = .70$)						
				DELP ELT Methodology 2 N=20		Fall 2007
Facilitator's role (independent variable)	.29	3	9.63	p < .001	.215	.15
Social presence (independent variable)	-.18	2	3.67	p = .06	-.109	0
Online communication (independent variable)	.79	5	113.35	p < .001	.773	.54
2nd step: Facilitator's role as dependent variable ($R^2 = .62$)						
Social presence (independent variable)	.59	2	57.87	p < .001	.910	.56
Online communication (independent variable)	.11	3	2.17	p = .008	.260	.16
3rd step: Online communication as dependent variable ($R^2 = .75$)						
Social presence (independent variable)	.59	6	87.85	p < .001	.624	.47

<i>Components of the model</i>	β	<i>Df</i>	<i>F</i>	<i>Significance</i>	<i>Importance after transformation</i>	<i>Importance</i>
1st step: Course satisfaction as dependent variable $(R^2 = .70)$						
				DELP ELT Methodology 3-4 N=36		
Facilitator's role (independent variable)	.29	3	9.63	p < .001	.186	.13
Social presence (independent variable)	-.18	2	3.67	p = .07	.000	.0
Online communication (independent variable)	.79	5	113.36	p < .001	.716	.50
2nd step: Facilitator's role as dependent variable $(R^2 = .62)$						
Social presence (independent variable)	.60	2	57.87	p < .001	.812	.50
Online communication (independent variable)	.12	3	2.17	p = .038	.325	.20
3rd step: Online communication as dependent variable $(R^2 = .75)$						
Social presence (independent variable)	.59	6	87.85	p < .001	.544	.41

<i>Components of the model</i>	β	<i>Df</i>	<i>F</i>	<i>Significance</i>	<i>Importance after transformation</i>	<i>Importance</i>
1st step: Course satisfaction as dependent variable $(R^2 = .51)$						
				DELP ELT Methodology 5 N=21		
Facilitator's role (independent variable)	-.24	1	9.26	p = .043	.019	.01
Social presence (independent variable)	.14	3	2.69	p = .051	.007	0
Online communication (independent variable)	.70	6	62.73	p < .001	.938	.48
2nd step: Facilitator's role as dependent variable $(R^2 = .32)$						
Social presence (independent variable)	.29	4	8.34	p < .001	.373	.12
Online communication (independent variable)	.50	5	18.58	p < .001	.685	.22
3rd step: Social presence as dependent variable $(R^2 = .46)$						
Online communication (independent variable)	.46	5	20.79	p < .001	.857	.39

<i>Components of the model</i>	β	<i>Df</i>	<i>F</i>	<i>Significance</i>	<i>Importance after transformation</i>	<i>Importance</i>
<i>1st step: Course satisfaction as dependent variable</i> ($R^2 = .50$)				<i>DELP</i> <i>ELT Methodology 6</i> <i>N=19</i>		<i>Spring 2009</i>
Facilitator's role (independent variable)	-.20	2	7.91	p < .001	.040	.02
Social presence (independent variable)	-.21	1	8.39	p = .055	-.017	-.01
Online communication (independent variable)	.80	6	119.49	p < .001	.796	.40
<i>2nd step: Facilitator's role as dependent Variable</i> ($R^2 = .43$)						
Social presence (independent variable)	.15	3	4.01	p = .009	.187	.08
Online communication (independent variable)	.64	5	60.99	p < .001	.280	.12
<i>3rd step: Social presence as dependent variable</i> ($R^2 = .51$)						
Online communication (independent variable)	.26	2	4.52	p = .017	.804	.41

Appendix 6

Kano model summary

Barriers of satisfaction

<i>Model N= 159</i>	<i>R</i>	<i>R Square</i>	<i>Adjusted R square</i>	<i>Std. Error of the Estimate</i>	
1	.79	.62	.56	13.59	
<i>ANOVA</i>	<i>Sum of Squares</i>	<i>Df</i>	<i>Mean Square</i>	<i>F</i>	<i>Significance</i>
Regression	10226.00	5.00	2045.20	11.07	.000
Residual	6280.72	34.00	184.73		
Total	16506.72	39.00			
<i>Predictors</i>	<i>Coefficients Beta</i>	<i>Std. Error</i>	<i>Coefficients Beta</i>	<i>t</i>	<i>Significance</i>
(Constant)	13.61	18.94		.72	.477
Facilitator's role	.09	.17	.07	.54	.591
Social presence	.01	.16	.01	.06	.954
Online communication	.98	.19	.73	5.09	.000
IHK	14.56	6.04	.35	2.41	.022
SZHK	15.98	4.90	.46	3.26	.003

Drivers of satisfaction

<i>Model N = 159</i>	<i>R</i>	<i>R Square</i>	<i>Adjusted R square</i>	<i>Std. Error of the Estimate</i>	
1	.48	.23	.16	11.95	
<i>ANOVA</i>	<i>Sum of Squares</i>	<i>Df</i>	<i>Mean Square</i>	<i>F</i>	<i>Significance</i>
Regression	2271.23	5.00	454.25	3.18	.014
Residual	7562.72	53.00	142.69		
Total	9833.95	58.00			
<i>Predictors</i>	<i>Coefficients Beta</i>	<i>Std. Error</i>	<i>Coefficients Beta</i>	<i>t</i>	<i>Significance</i>
(Constant)	17.98	24.91		.72	.474
Facilitator's role	-.17	.14	-.17	-1.24	.221
Social presence	.05	.14	.05	.34	.736
Online communication	.57	.17	.49	3.28	.002
IHK	.73	6.36	.02	.11	.909
SZHK	5.92	5.66	.18	1.05	.300

Appendix 7

Total number of participant and facilitator messages in Calibrate 1 and Calibrate 2

<i>Calibrate 1</i>	<i>Humanities</i>	<i>Foreign language</i>	<i>Mathematics & Informatics</i>	<i>Sciences</i>	<i>Total</i>
<i>Without the facilitator</i>	72	240	95	179	586 <i>M</i> = 26.63 <i>SD</i> = 21.11
<i>Number of facilitator messages</i>	40	46	35	18	189
<i>With the facilitator</i>	112	286	130	197	775 <i>M</i> = 29.81 <i>SD</i> = 21.37
<i>Calibrate 2</i>	<i>Humanities</i>	<i>Foreign language</i>	<i>Mathematics & Informatics</i>	<i>Sciences</i>	<i>Total</i>
<i>Without the facilitator</i>	N/A	N/A	N/A	N/A	985 <i>M</i> = 51.84 <i>SD</i> = 25.67
<i>Number of facilitator messages</i>	N/A	N/A	N/A	N/A	70
<i>With the facilitator</i>	N/A	N/A	N/A	N/A	1055 <i>M</i> = 52.75 <i>SD</i> = 25.31

Appendix 8

Total number of participant and facilitator messages in the ELT Methodology cases

	<i>ELT Methodology1 Spring 2007</i>	<i>ELT Methodology2 Fall 2007</i>	<i>ELT Methodology3 Spring 2008</i>	<i>ELT Methodology4 Spring 2008</i>	<i>ELT Methodology5 Fall 2008</i>	<i>ELT Methodology 6 Spring 2009</i>
<i>Without the facilitator</i>	148 M = 8.22 SD = 7.64	136 M = 6.8 SD = 5.02	220 M = 14.23 SD = 15.25	158 M = 11.06 SD = 7.09	155 M = 7.75 SD = 5.30	76 M = 4.47 SD = 2.83
<i>Number of facilitator messages</i>	64	44	70	42	32	44
<i>With the facilitator</i>	212 M = 10.6 SD = 10.36	180 M = 8.2 SD = 6.57	290 M = 15.26 SD = 14.76	200 M = 10.53 SD = 7.07	187 M = 8.5 SD = 6.12	120 M = 6.05 SD = 5.50

Appendix 9

Results and detailed analyses of the interaction patterns at the individual level based on the in- and out-degree centrality values of the participants and the graphical representation of the interactions

ELT Methodology 1

In Group 1, out of the six group members two had higher out-degree values, hence they were more eager to make connections than the others; they eventually had more influence than the others. These participants were not the facilitators but Student 1 and Student 3. As for the facilitators' role, when considering the network centrality data column without them, the in-degree centralisation values dropped, indicating that a popular 'receiver' was excluded from the network. As concerns the individual in- and out-degree centrality, we witnessed the same process.

As the graphical representation of the interaction patterns demonstrates (Figure 1), three participants had more intensive relations, Student 1, Student 3 and Student 2. Unfortunately, Student 2 and Student 3 were not linked to each other, thus we can claim that even though belonging to one group, they formed pairs of interacting (and collaborating) group members.

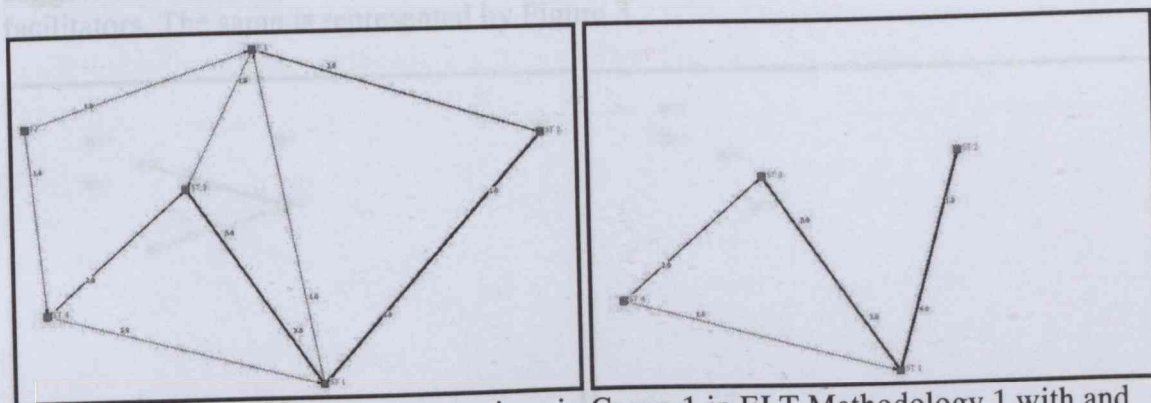


Figure 1 Sociogram of the interactions in Group 1 in ELT Methodology 1 with and without the facilitator

Group 2 consisted of one highly active participant and three active participants (as identified based on the descriptive statistics). The individual in- and out-degree centrality values revealed the same in the network. The highly active group member (Student 1) whose out-degree measure was four times higher as compared to the other members dominated the interactions. As concerns the in-degree values, in the case of the three participants, the values were almost the same, indicating that these participants received approximately the same amount of messages. The in- and out-degree results without the inclusion of the facilitator suggested the same, the individual in- and out-degree values dropped in the case of all the group members. The out-degree was higher than the in-degree only in the case of the most active student. This suggests that this participant dominated the interactions and established links to other members of the small group. The sociogram of the interactions also supports this claim (Figure 2).

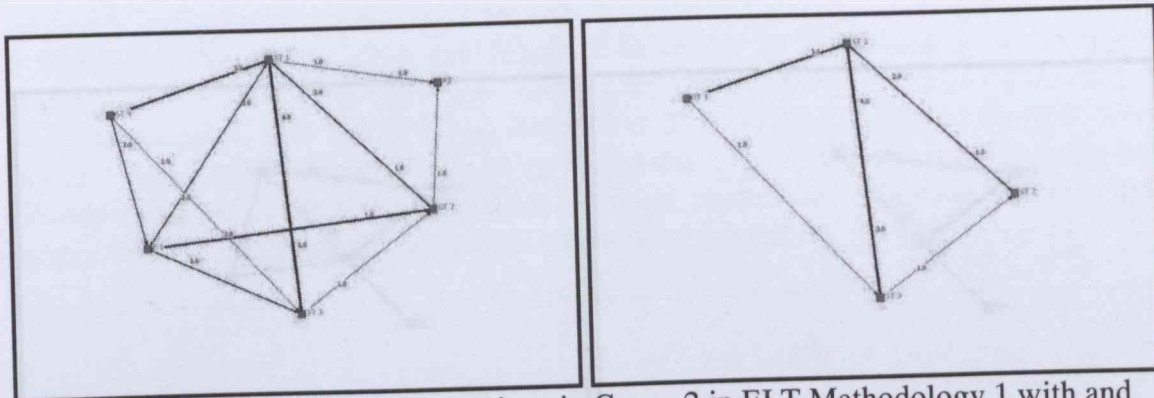


Figure 2 Sociogram of the interactions in Group 2 in ELT Methodology 1 with and without the facilitator

Group 3 was identified as the loosest network in the ELT Methodology 1 case. As a network, it even ceased to exist when we excluded the facilitators in the analyses. Accordingly, the group was made up of four passive students, two of which were inactive during the online mentoring, teaching and learning process. The most active participant was one of the facilitators. Her/his out-degree centrality values were somewhat higher than the in-degree values, signalling the effort to trigger interactions and establish connections in the network, with not much success, though. When excluding the facilitator, the low in- and out-degree values became zero, which clearly suggested that there were not any relations established without the involvement of the facilitators. The same is represented by Figure 3.

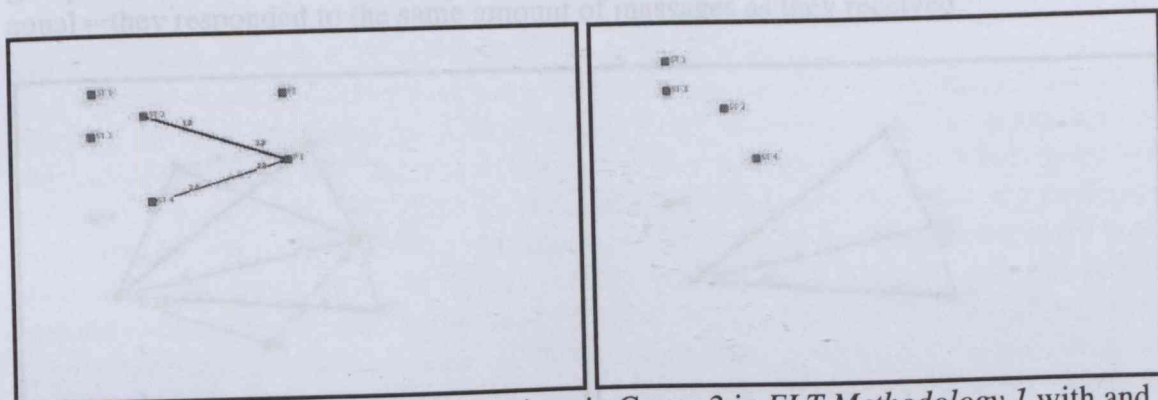


Figure 6.14 Sociogram of the interactions in Group 3 in ELT Methodology 1 with and without the facilitator

Group 4 was composed of two active participants and a passive one. Both facilitators belonged to the passive participants, as the individual in- and out-degree centrality values suggested. Just as in Group 2, there was one participant (Student 1) who was more active in establishing connections than the others, thus her/his out-degree value was higher than that of her/his group mates. Interestingly however, if we consider the results without the facilitators, we see that the in- and out-degree measures of Student 1 did not change, but the out-degree values of the others decreased. This suggests that Student 1 communicated with the rest of the group, initiated interactions (without the facilitator), but the rest of the group preferred interaction with the instructors, thus sent messages towards them, or decided not to communicate at all. The visual representation of the relations verified the above. The sociogram (Figure 4) demonstrates that only one of the facilitators took part in the interactions, and the direction of the lines (arrows) shows that it was Student 1 who tried to establish connections to the other group members.

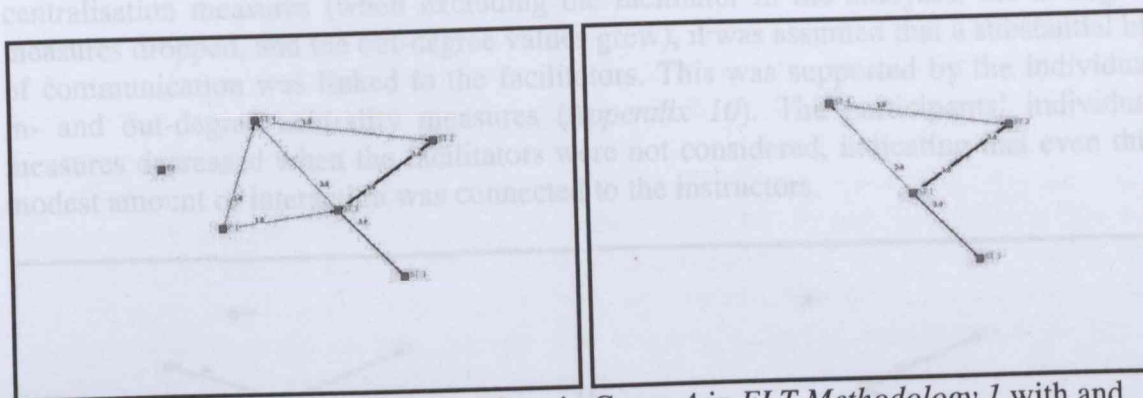


Figure 4 Sociogram of the interactions in Group 4 in *ELT Methodology 1* with and without the facilitator

Based on the network density analysis, Group 5 was described as the densest network in the ELT Methodology 1 case. This group included the most active communicators in the study group. The facilitators again maintained different activity patterns: one of them was active; the other one was rather passive. The network centralisation values suggested that there was more outbound communication than incoming. This was supported by the individual in- and out-degree centrality values as well: the out-degree of Student 1 was the triple/double of the other members' out-degree values. Accordingly, it was Student 1 who was more ambitious than the rest of the group to establish relations. The in- and out-degree values of the others were almost equal – they responded to the same amount of messages as they received.

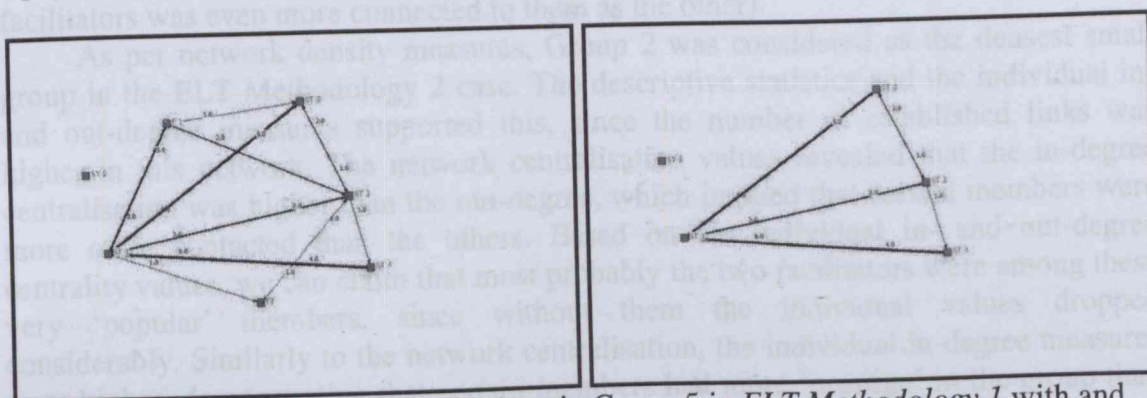


Figure 5 Sociogram of the interactions in Group 5 in *ELT Methodology 1* with and without the facilitator

If we consider the results without the facilitator, the in- and out-degree values did not change substantially, which means that participants interacted with each other even without the involvement of the instructors (Figure 5). There was a decrease of measures in the case of Student 1, which signals that she/he communicated more with the facilitator than the others. Student 1 controlled the communication in the network (by establishing strong links to three other group members and the facilitator), but there were initiations of evolving interactions (weak ties) in the rest of the group.

ELT Methodology 2

Group 1 merely consisted of less active and passive participants. The facilitators belonged to the less active group members. At the same time, based on the network

centralisation measures (when excluding the facilitator in the analyses, the in-degree measures dropped, and the out-degree values grew), it was assumed that a substantial bit of communication was linked to the facilitators. This was supported by the individual in- and out-degree centrality measures (Appendix 10). The participants' individual measures decreased when the facilitators were not considered, indicating that even this modest amount of interaction was connected to the instructors.

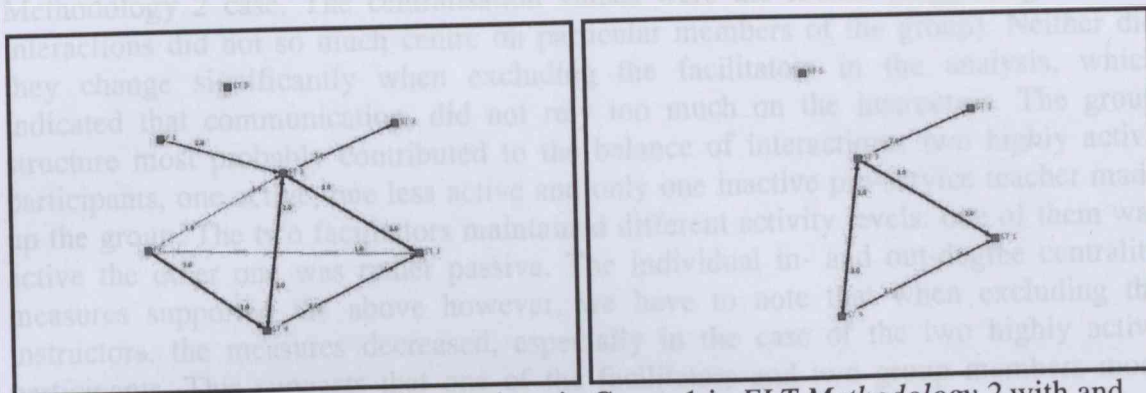


Figure 6 Sociogram of the interactions in Group 1 in *ELT Methodology 2* with and without the facilitator

The visual representation of the interaction patterns supports the above: the more active participants (Student 1, Student 3 and Student 4) communicated with each other, forming a triad. Strong ties, implying intensive interaction and work in mutual collaboration, were established between them and the two facilitators (one of the facilitators was even more connected to them as the other).

As per network density measures, Group 2 was considered as the densest small group in the *ELT Methodology 2* case. The descriptive statistics and the individual in- and out-degree measures supported this, since the number of established links was higher in this network. The network centralisation values revealed that the in-degree centralisation was higher than the out-degree, which implied that certain members were more often contacted than the others. Based on the individual in- and out-degree centrality values, we can claim that most probably the two facilitators were among these very 'popular' members, since without them the individual values dropped considerably. Similarly to the network centralisation, the individual in-degree measures were higher, demonstrating that certain members had more 'prestige' in the group than the others. The same was suggested by the sociograms of the interactions in the group (Figure 7).

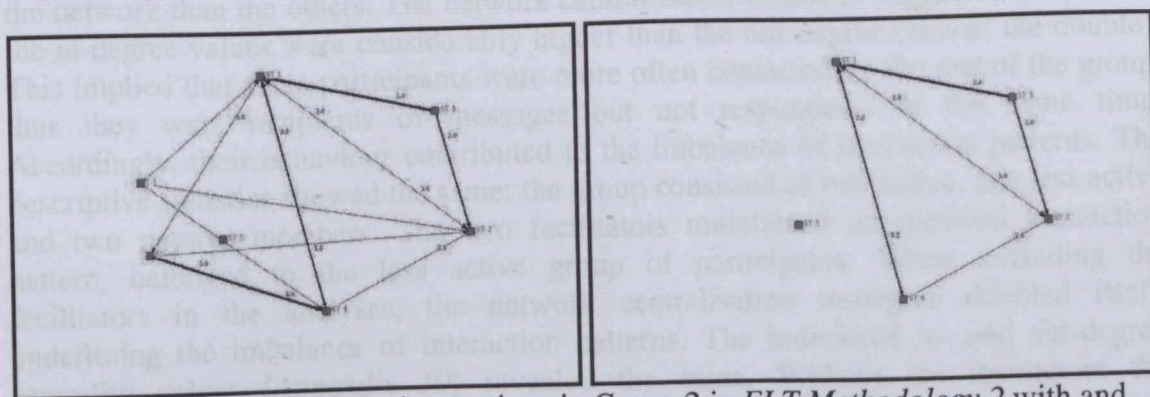


Figure 7 Sociogram of the interactions in Group 2 in *ELT Methodology 2* with and without the facilitator

One of the facilitators was more included in the discussions than the other, but without their contributions Student 1, Student 3 and Student 4 established strong ties to each other. These participants however, communicated and worked with each other in pairs, rather than forming a triad or a group, which would have been more ideal for potential collaborations.

Group 3 was considered as the most balanced community in the ELT Methodology 2 case. The centralisation values were the lowest (suggesting that the interactions did not so much centre on particular members of the group). Neither did they change significantly when excluding the facilitators in the analysis, which indicated that communication, did not rely too much on the instructors. The group structure most probably contributed to the balance of interactions: two highly active participants, one active, one less active and only one inactive pre-service teacher made up the group. The two facilitators maintained different activity levels: one of them was active the other one was rather passive. The individual in- and out-degree centrality measures supported the above however, we have to note that when excluding the instructors, the measures decreased, especially in the case of the two highly active participants. This suggests that one of the facilitators and two group members more intensively interacted with each other and worked in mutual collaboration.

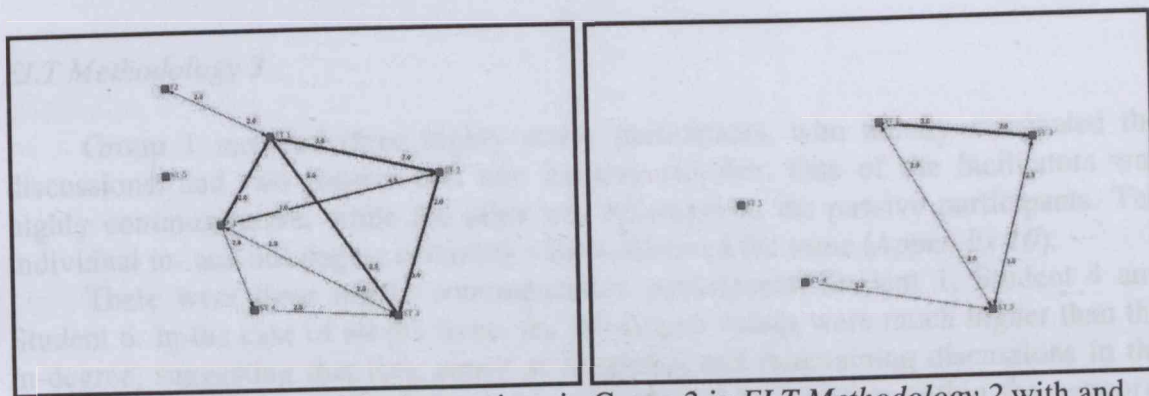


Figure 8 Sociogram of the interactions in Group 3 in *ELT Methodology 2* with and without the facilitator

Similarly to the above, the visual representation (*Figure 8*) demonstrates that three group members (Student 1, Student 2 and Student 3) together with one of the facilitators formed a circle of more intensive communicators, which existed also without the facilitator.

In Group 4 as well, there were certain group members who had more prestige in the network than the others. The network centralisation measures suggested this, where the in-degree values were considerably higher than the out-degree (almost the double). This implied that some participants were more often contacted by the rest of the group, thus they were recipients of messages but not respondents at the same time. Accordingly, their behaviour contributed to the imbalance of interaction patterns. The descriptive statistics showed the same: the group consisted of two active, one less active and two passive members. The two facilitators maintained an identical interaction pattern, belonged to the less active group of participants. When excluding the facilitators in the analyses, the network centralisation in-degree doubled itself, underlining the imbalance of interaction patterns. The individual in- and out-degree centrality values (*Appendix 10*) revealed the same. Without the instructors the individual centrality measures decreased, which showed that the interactions were intensively linked to the online instructors. The sociograms (*Figure 9*) also demonstrated that three participants and especially one of the instructors communicated

more intensively with each other. However, the established links were not mutual i.e. recipients were not respondents at the same time. When we excluded the facilitator it became even more obvious that in this group as well participants formed pairs rather than a triad or a group, which could have provided sufficient background for collaborations.

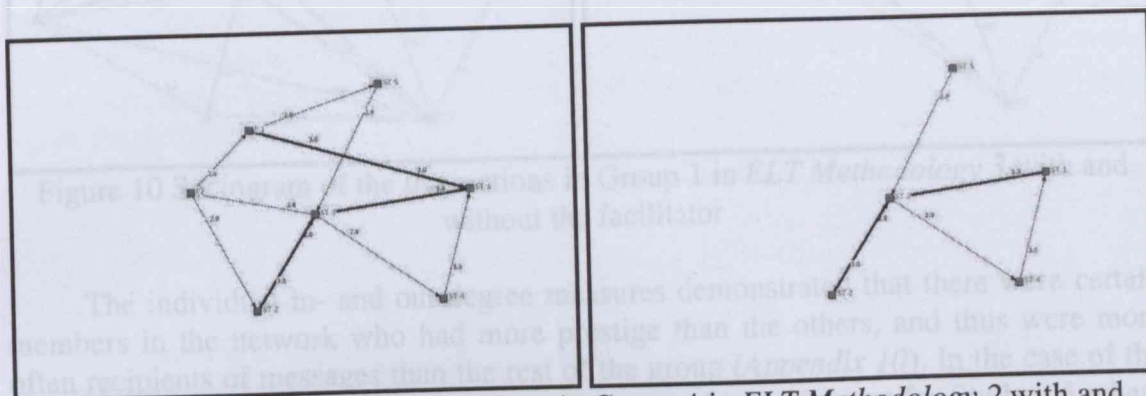


Figure 9 Sociogram of the interactions in Group 4 in *ELT Methodology 2* with and without the facilitator

ELT Methodology 3

Group 1 included three highly active participants, who mostly dominated the discussions, and two passive and one inactive member. One of the facilitators was highly communicative, while the other one belonged to the passive participants. The individual in- and out-degree centrality values mirrored the same (*Appendix 10*).

There were three highly communicative participants: Student 1, Student 4 and Student 6. In the case of all the three, the out-degree values were much higher than the in-degree, suggesting that they aimed at triggering and maintaining discussions in the network. They acted as 'crucial cogs' i.e. channelled information within the network. The out-degree values of one of the facilitators were higher than the in-degree, thus she/he was also considered as an ambitious participant wishing to establish contacts with the rest of the group.

The quadrangle of four participants where Student 1, Student 4, Student 6 and Facilitator 1 were connected by strong ties is clearly visible in the sociogram of the interactions (Figure 10). The other participants, Student 5, Student 3 and Facilitator 2, were linked by weak ties. However, when excluding the facilitators, the network consisting of only two strong ties (linking three students) and some weak ties established without the instructors, survived. Consequently, even if one of the instructors substantially impacted the interaction patterns in the community, the group still managed to build a modest network of communicators, in which at least three pre-service teachers interacted more intensively. They presumably attempted to collaborate.

Group 2 was a densely knit network where four highly active and two passive students interacted. Both facilitators actively participated in the online mentoring, teaching and learning processes, one of them belonged to the highly active network members. As the descriptive statistics revealed, this group was one of the most communicative ones.

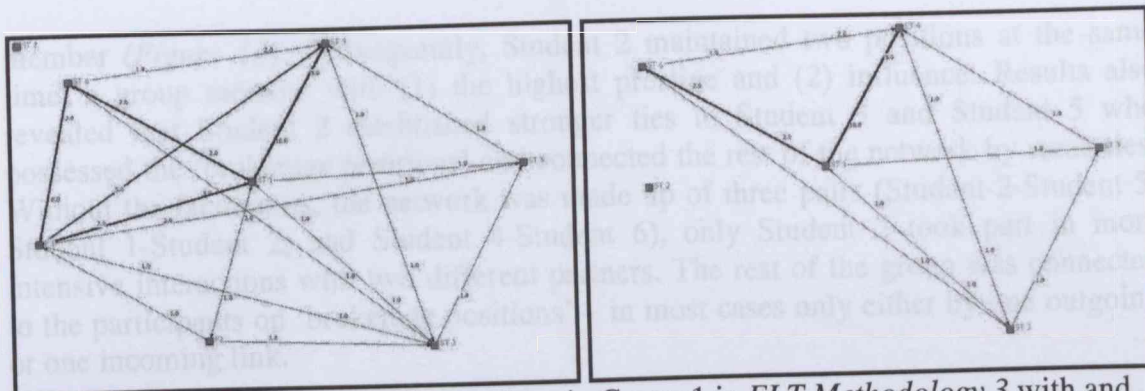


Figure 10 Sociogram of the interactions in Group 1 in *ELT Methodology 3* with and without the facilitator

The individual in- and out-degree measures demonstrated that there were certain members in the network who had more prestige than the others, and thus were more often recipients of messages than the rest of the group (*Appendix 10*). In the case of the highly active participants, the in-degree values were higher (except for Student 5 where both measures are equal), which suggests that these group members, as recipients of most messages, domineered group interactions. When excluding the instructors in the analyses, the measures considerably dropped. Based on this, we assume that the facilitators were involved in many of these interactions. The visual representation of the interaction patterns provided additional information (*Figure 11*). When the facilitators were considered in the analysis, members seemed to form a network where all of them were connected. A substantial part of the links was weak, this way the information provision did not exclusively depend on the pentagon of the five strongly connected 'crucial cogs' (including Facilitator 1). The network of communicators 'lived on' and mutual relationships were established even without the instructors' presence.

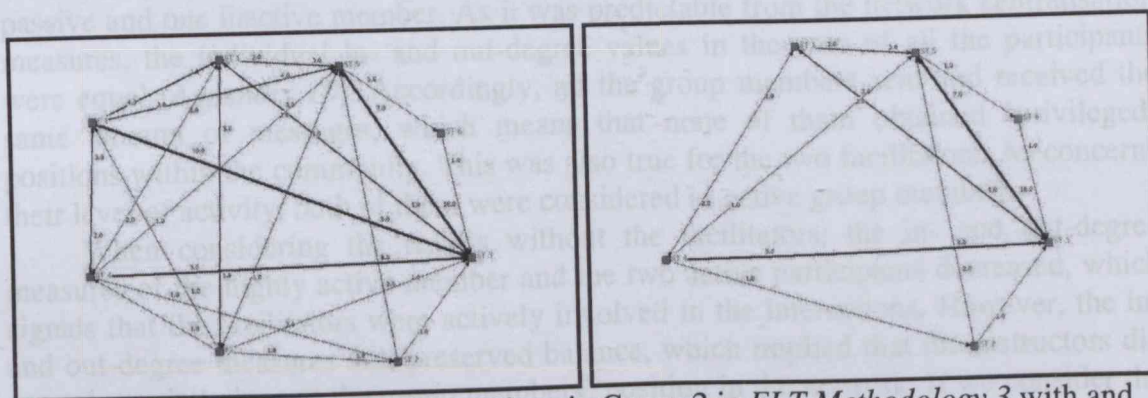


Figure 11 Sociogram of the interactions in Group 2 in *ELT Methodology 3* with and without the facilitator

In the *ELT Methodology 3* case, Group 3 was the loosest network. As the descriptive statistics revealed, the participants of this network were the least communicative ones in the case. There was more outbound communication provided by certain participants. However, as the individual in- and out-degree centrality values demonstrated, there was only one active student (Student 2) who attempted to link members of the community – with not much success, though. The activity level of the rest of the group remained rather low. Only one of the facilitators maintained the same activity level as the referred Student 2.

As the graphics shows, Student 2 was not only the participant who established most of the outgoing linkages, but she/he was also the most often contacted group

member (Figure 12). Consequently, Student 2 maintained two positions at the same time: a group member with (1) the highest prestige and (2) influence. Results also revealed that Student 2 established stronger ties to Student 3 and Student 5 who possessed the 'brokerage positions' and connected the rest of the network by weak ties. Without the facilitators, the network was made up of three pairs (Student 2-Student 5; Student 1-Student 2; and Student 4-Student 6), only Student 2 took part in more intensive interactions with two different partners. The rest of the group was connected to the participants on 'brokerage positions' – in most cases only either by one outgoing or one incoming link.

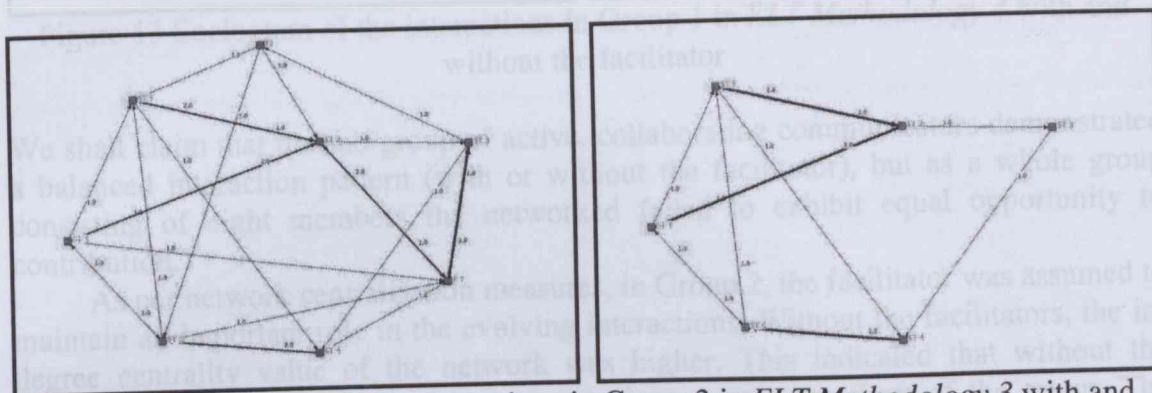


Figure 12 Sociogram of the interactions in Group 3 in *ELT Methodology 3* with and without the facilitator

ELT Methodology 4

Group 1 consisted of one highly active participant, three active participants, two passive and one inactive member. As it was predictable from the network centralisation measures, the individual in- and out-degree values in the case of all the participants were equal (Appendix 10). Accordingly, all the group members sent and received the same amount of messages, which means that none of them obtained 'privileged' positions within the community. This was also true for the two facilitators. As concerns their level of activity, both of them were considered as active group members.

When considering the results without the facilitators, the in- and out-degree measures of the highly active member and the two active participants decreased, which signals that the facilitators were actively involved in the interactions. However, the in- and out-degree measures still preserved balance, which implied that the instructors did not substantially impact the group members' position in the network. If we consider the visual representation of the interaction patterns (Figure 13), the triangle consisting of the strong links between Facilitator 1, Student 2 and Student 3, was clearly identifiable. The relationships were mutual as the arrows demonstrate. Student 1 and Facilitator 2 were both intensively connected to this triad. Two participants, Student 4 and Student 5 were weakly tied to the three aforementioned active group members. In this group the number of incoming and outgoing messages was the same, which revealed a balanced network where the two instructors obtained similar positions as the other group members. Nevertheless, since there were two passive members and one member located on the periphery, the above statement should be revisited and slightly modified.

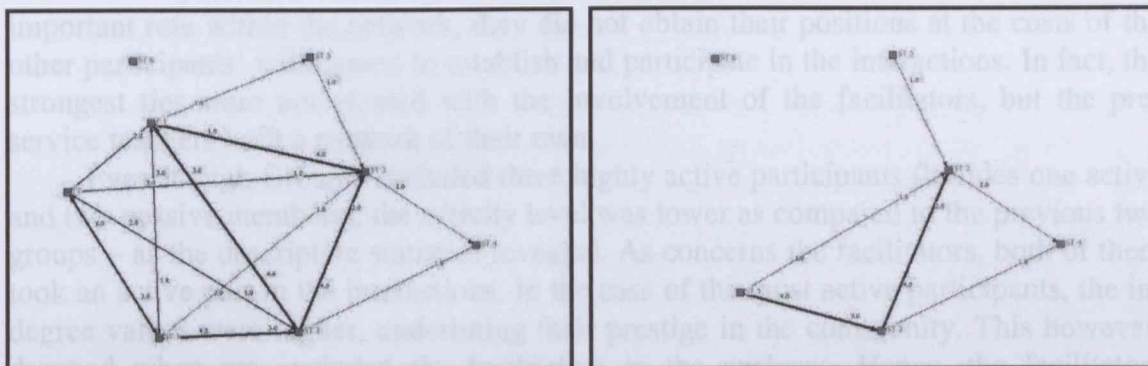


Figure 13 Sociogram of the interactions in Group 1 in *ELT Methodology 4* with and without the facilitator

We shall claim that the sub-group of active, collaborating communicators demonstrated a balanced interaction pattern (with or without the facilitator), but as a whole group consisting of eight members the networked failed to exhibit equal opportunity to contribution.

As per network centralisation measures, in Group 2, the facilitator was assumed to maintain an important role in the evolving interactions. Without the facilitators, the in-degree centrality value of the network was higher. This indicated that without the facilitators the discussions were more centred on certain members of the group. The individual in- and out-degree centrality measures also verified this (*Appendix 10*). Both the degree values and the descriptive statistics showed that the group consisted of three highly active members and three active participants. In their cases, the in-degree values were higher, which implied that they were very often addressees of messages but not respondents at the same time. Both facilitators belonged to the group of active members however, their position somewhat differed. In the case of Facilitator 1, the out-degree value was considerably higher than the in-degree, which meant that she/he was more eager to establish relations to the others, than the rest of the group wished to interact with her/him. The ratio of incoming and outgoing linkages, in the case of Facilitator 2, was balanced.

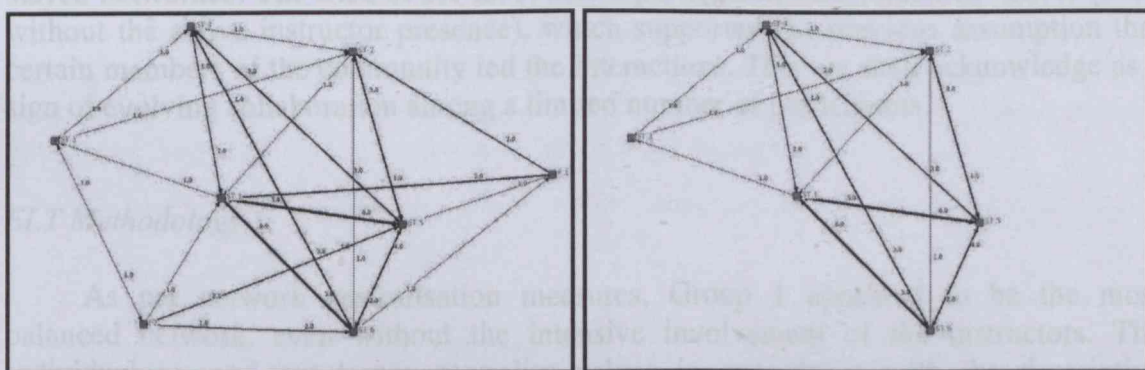


Figure 14 Sociogram of the interactions in Group 2 in *ELT Methodology 4* with and without the facilitator

When considering the network without the facilitators, the in- and out-degree measures did not change significantly. The visual representation of the network (*Figure 14*) confirmed this finding. The highly active and active group members were linked by strong ties: Student 1, Student 4, Student 5 and Student 6 established a collaborating quadrangle. At the same time however, they were linked to Student 2 and Student 3, even if with weak ties. Consequently, even though the facilitators maintained an

important role within the network, they did not obtain their positions at the costs of the other participants' willingness to establish and participate in the interactions. In fact, the strongest ties were not created with the involvement of the facilitators, but the pre-service teachers built a network of their own.

Even though Group 3 included three highly active participants (besides one active and two passive members), the activity level was lower as compared to the previous two groups – as the descriptive statistics revealed. As concerns the facilitators, both of them took an active part in the interactions. In the case of the most active participants, the in-degree values were higher, underlining their prestige in the community. This however, dropped when we excluded the facilitators in the analyses. Hence, the facilitators actively contributed to the discussions maintained by the referred pre-service teachers.

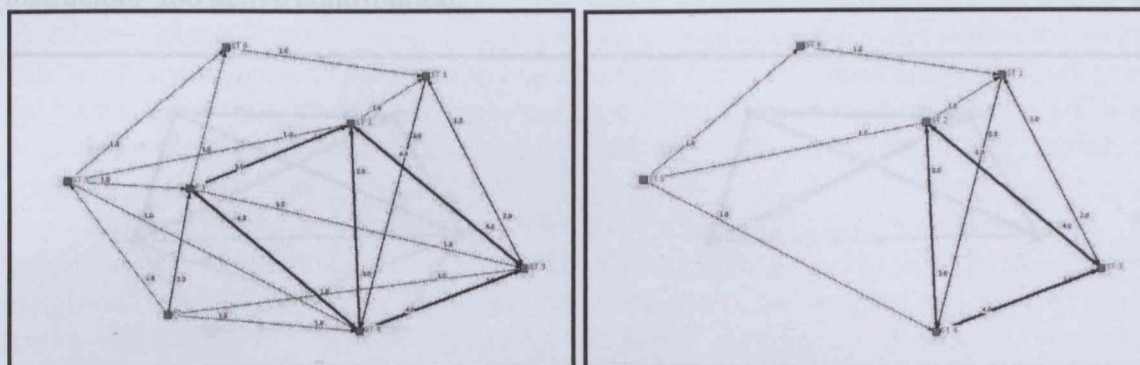


Figure 15 Sociogram of the interactions in Group 3 in *ELT Methodology 4* with and without the facilitator

The sociogram of the interaction patterns (*Figure 15*) confirmed the above finding, since Facilitator 1 established strong ties to Student 2 and Student 4. By doing so she/he was member of the quadrangle consisting of the three of them and Student 3. The relations within the quadrangle were balanced (mutually established incoming and outgoing links are visible). The rest of the group was also connected to each other, the relations were somewhat weaker, but when excluding the instructors the participants stayed networked. The triad of the most active participants also remained visible (even without the active instructor presence), which supported the previous assumption that certain members of the community led the interactions. This we shall acknowledge as a sign of evolving collaboration among a limited number of participants.

ELT Methodology 5

As per network centralisation measures, Group 1 appeared to be the most balanced network, even without the intensive involvement of the instructors. The individual in- and out-degree centrality values in accordance with the descriptive statistics revealed that the group was mainly composed of active students (four active participants), and there was only one inactive member. The network centralisation values suggested that the instructors did not dominate the interactions. The individual degree centralities also confirmed this. In fact, both facilitators participated in the discussions only moderately. Their lack of dominance was also implied by the data without computing the facilitators' activity: the participants' individual in- and out-degree centrality values did not change, which showed that the active group members most often mutually contacted each other, and established balanced interaction patterns

as a small community. Hence, none of them acquired monopol positions within the network.

The sociogram of the interactions demonstrates the same (Figure 16): Student 1, Student 2, Student 4 and Student 5 were connected to each other by strong ties. It is very important that those students whose positions were quite remote (Student 2 and Student 5 or Student 1 and Student 1) established relations to each other. The two crossing lines in the middle of the quadrangle represent this. Consequently, the participants of Group1 (except for the only one inactive member who did not post any messages) formed a small team, which the facilitators were able to join whenever they considered it as necessary. However, the four active participants engaged in active mutual interactions and most probably collaborated as a micro network without their instructors' too active contribution.

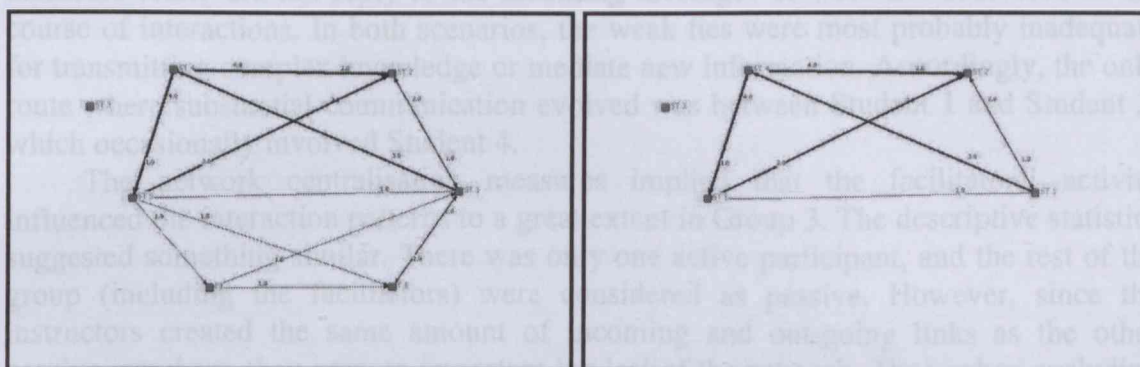


Figure 16 Sociogram of the interactions in Group 1 in *ELT Methodology 5* with and without the facilitator

Group 2 displayed considerable differences as compared to the previous community. The group consisted of two highly active participants, two active and one passive member – as the descriptive statistics suggested. One of the facilitators maintained a very active participation in the discussions, while the other one withdrew from the conversations, and kept a low profile. Thus, she/he behaved the same way as in Group 1. Even though only one of them participated more intensively in the discussions, the in-degree network centralisation value dropped substantially when we excluded them in the analyses. This suggested that at least one of the crucial members on which considerable amount of interactions centred, 'left' the network. The individual in- and out-degree centrality measures revealed the same (Appendix 10).

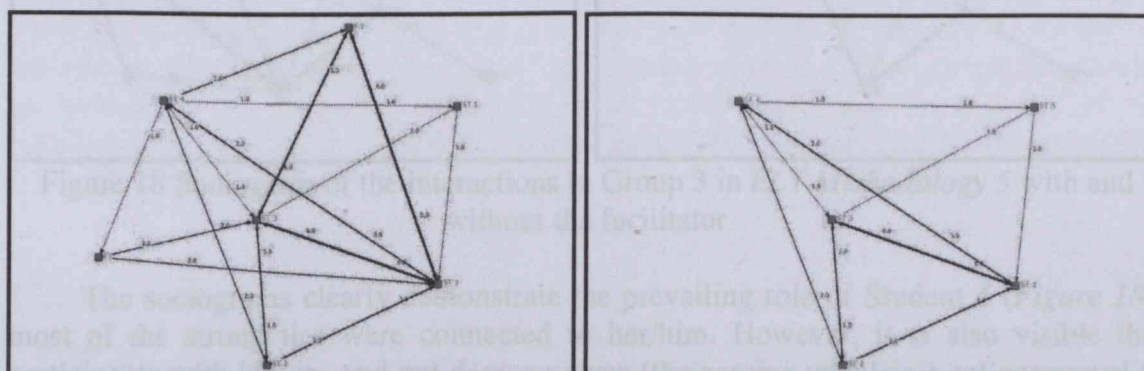


Figure 17 Sociogram of the interactions in Group 2 in *ELT Methodology 5* with and without the facilitator

In the case of the two highly active members both measures dropped, while the two less active participants' values did not show any changes. From this it follows that the active facilitator and the two highly active participants formed a triad to which the three other members (including the second facilitator) got connected at certain times in the course of the mentoring, teaching and learning process. As the visual representation of the network displayed (*Figure 17*), Student 1 and Student 3 (the two highly active communicators) grew to the central figures of the community. The almost star-shaped bunch of lines prevails around them. Together with the facilitator, the three of them created the strongest connections, and established a triad within the group.

When excluding the facilitators in the network, the strongest ties linked Student 1 and Student 3. They established weaker connections to Student 2 and Student 4. The evolving weak relations however, in most cases were not bi-directional. These group members either did not reply to the incoming messages or were not addressed in the course of interactions. In both scenarios, the weak ties were most probably inadequate for transmitting complex knowledge or mediate new information. Accordingly, the only route where substantial communication evolved was between Student 1 and Student 3, which occasionally involved Student 4.

The network centralisation measures implied that the facilitators' activity influenced the interaction patterns to a great extent in Group 3. The descriptive statistics suggested something similar. There was only one active participant, and the rest of the group (including the facilitators) were considered as passive. However, since the instructors created the same amount of incoming and out-going links as the other passive members, they grew to important 'nodes' of the network. Thus, when excluding them in the analysis, the in-degree centralisation values dropped to a considerable extent, indicating that popular addressees of the group withdrew. The individual in- and out-degree centrality measures supported the above (*Appendix 10*). In general, the number of incoming and outgoing linkages was very low in Group 2. The only active participant (Student 1) and the two instructors carried out a substantial bit of communication. It was not surprising that the in-degree network measures seriously dropped when we did not consider the online instructors in the analyses.

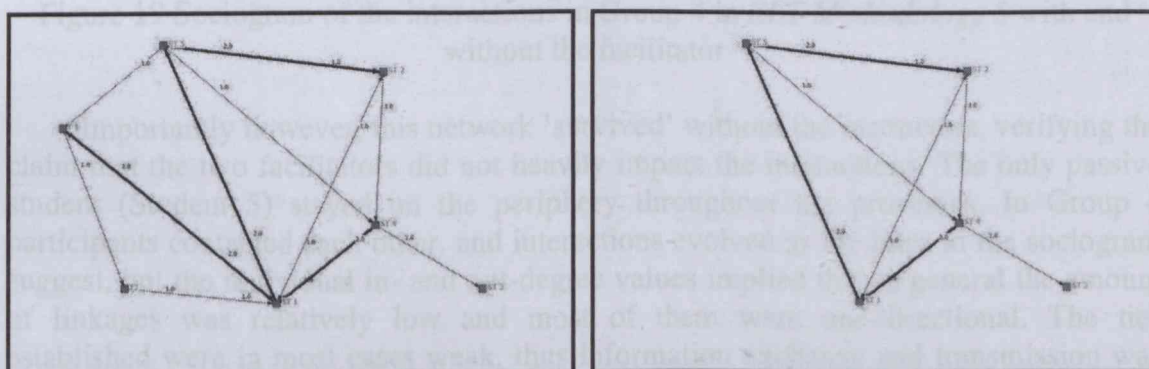


Figure 18 Sociogram of the interactions in Group 3 in *ELT Methodology 5* with and without the facilitator

The sociograms clearly demonstrate the prevailing role of Student 4 (*Figure 18*): most of the strong ties were connected to her/him. However, it is also visible that participants with low in- and out-degree values (the passive members) got connected to each other and Student 1. These one-directional weak ties (suggesting that the relations were not mutually established) existed without the instructors, but most probably were not appropriate for effective information exchange. Consequently, group-level

discussions and collaboration presumably did not evolve in this community. Nevertheless working pairs were created whose activity level stayed at the minimum.

In the last network of the ELT Methodology 5 case, in Group 4, the network centralisation analyses revealed that certain members were more often contacted by the others, and that most probably the network and the interactions centred on these participants. Also the individual in- and out-degree centrality measures verified that in this community the incoming linkages were more than the outgoing ones, which supported that certain participants were addressed more often as the others. As the highest in-degree value suggested, Student 2 had the most prestige among the active members. This participant got also connected to other group members by strong ties as the lines in the sociogram demonstrate (Figure 19). The facilitators kept themselves back from the interactions, participated only in a modest way. Thus, they belonged to the less active group members. The individual in- and out-degree values confirmed this, since when excluding them in the analyses, the respective participant measures did not change significantly. What can be concluded from both the individual in- and out-degree values and the visual representation of the interaction patterns is that most of the links were connected to Student 2. Hence, this person stood in the focus of the interactions. Student 1, Student 3 and Student 6, the active participants established incoming and outgoing linkages among themselves, they created a network of weak ties (we can claim this on the basis of the degree measures).

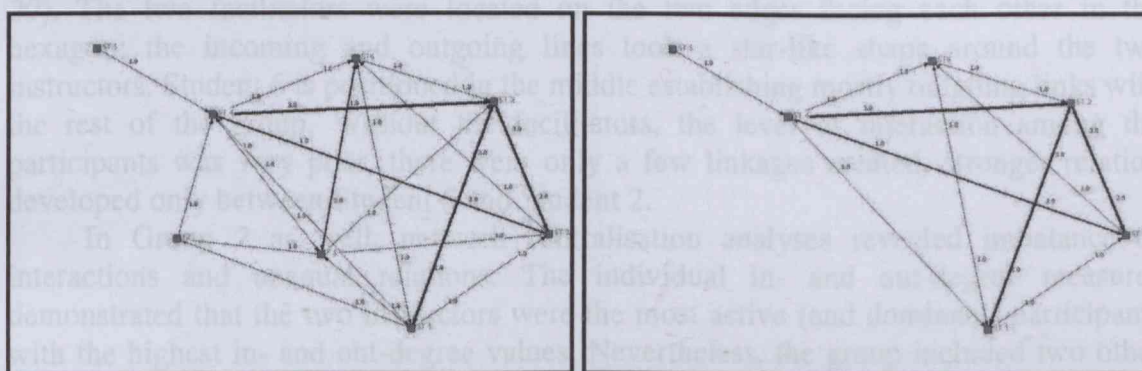


Figure 19 Sociogram of the interactions in Group 4 in *ELT Methodology 5* with and without the facilitator

Importantly however, this network ‘survived’ without the instructors, verifying the claim that the two facilitators did not heavily impact the interactions. The only passive student (Student 5) stayed on the periphery throughout the processes. In Group 4 participants contacted each other, and interactions evolved as the lines in the sociogram suggest, but the individual in- and out-degree values implied that in general the amount of linkages was relatively low and most of them were one-directional. The ties established were in most cases weak, thus information exchange and transmission was not sufficiently carried out.

ELT Methodology 6

There were not any highly active students in Group 1, it included only less active and passive participants. Both facilitators contributed to the interactions, one of them was the most active member of the group (with the highest in- and out-degree values). When excluding them in the analyses, the in- and out-degree values dropped, suggesting that important members of the community withdrew. When the facilitators were not

considered, the individual in-degree measures dropped. This implied that the facilitators established a considerable amount of incoming linkages. At the same time, the out-degree values decreased, demonstrating that the group members created an extensive number of outgoing connections to the two instructors. A prevailing example is the most communicative participant, Student 6, whose in-degree measure dropped to 1, meaning that she/he engaged in the interactions most often with the two instructors.

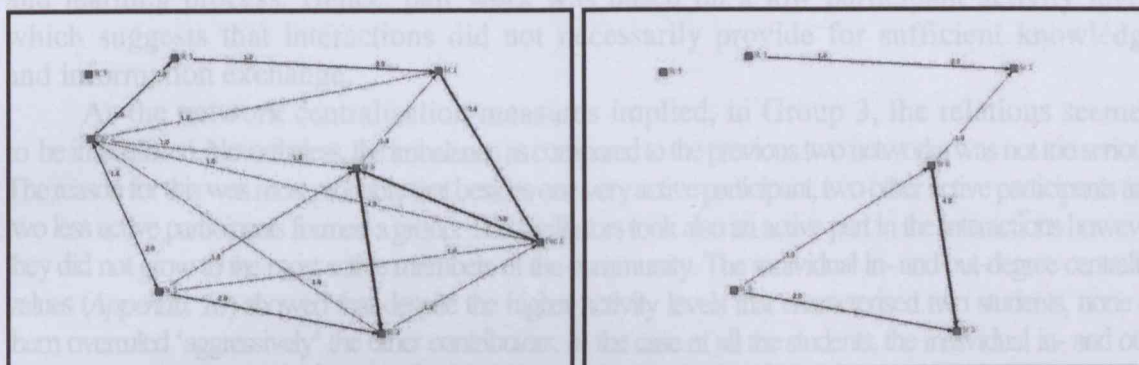


Figure 20 Sociogram of the interactions in Group 1 in *ELT Methodology 6* with and without the facilitator

The visual representation of the interaction patterns supported the above (Figure 20). The two facilitators were located on the two edges facing each other in the hexagon; the incoming and outgoing lines took a star-like shape around the two instructors. Student 6 is positioned in the middle establishing mostly outgoing links with the rest of the group. Without the facilitators, the level of interaction among the participants was very poor, there were only a few linkages created, stronger relation developed only between Student 6 and Student 2.

In Group 2 as well, network centralisation analyses revealed imbalance of interactions and unequal relations. The individual in- and out-degree measures demonstrated that the two instructors were the most active (and dominant) participants with the highest in- and out-degree values. Nevertheless, the group included two other active group members as well, but the participant activity of the rest of the group stayed very low. When excluding the instructors in the analyses, the in- and out-degree values dropped (even by 50%) – especially in the case of the two active group members. This suggests that their interactions were most probably directly linked to the instructors. The same is displayed by the visual representation of the interactions (Figure 21). The two facilitators and the two active members (Student 1 and Student 2) formed a quadrangle.

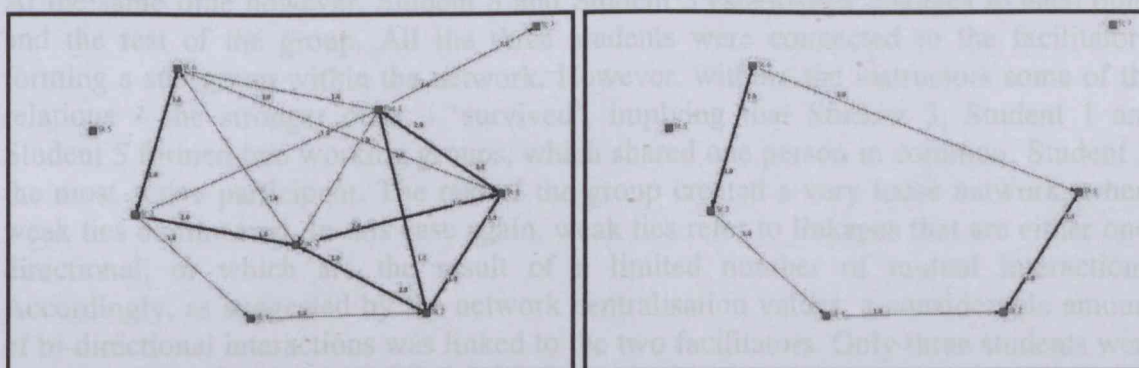


Figure 21 Sociogram of the interactions in Group 2 in *ELT Methodology 6* with and without the facilitator

Interestingly however, on the other end of the sociogram, Student 6 and Student 3 created a pair. Thus, when excluding the instructors in the network, it becomes visible that the two strongly tied pairs (Student 1-Student 2 and Student 3-Student 6) were weakly tied to each other (by a one-directional linkage). Both the individual data and the visual representation supported that in this network, despite the efforts of the facilitators, two separate working pairs evolved in the course of the mentoring, teaching and learning process. Hence, pair work was based on a low participant activity level, which suggests that interactions did not necessarily provide for sufficient knowledge and information exchange.

As the network centralisation measures implied, in Group 3, the relations seemed to be imbalanced. Nevertheless, the imbalance as compared to the previous two networks was not too serious. The reason for this was most probably that besides one very active participant, two other active participants and two less active participants formed a group. The facilitators took also an active part in the interactions however they did not grow to the most active members of the community. The individual in- and out-degree centrality values (*Appendix 10*) showed that despite the higher activity levels that characterised two students, none of them overruled 'aggressively' the other contributors. In the case of all the students, the individual in- and out-degree measures were identical, suggesting that each person (regardless of whether they were highly active or less active) established an equal amount of incoming and outgoing linkages. These measures however, dropped when not considering the facilitators, which indicated that especially in the case of the highly active participant and the two active members, a substantial bit of communication was linked to the online instructors.

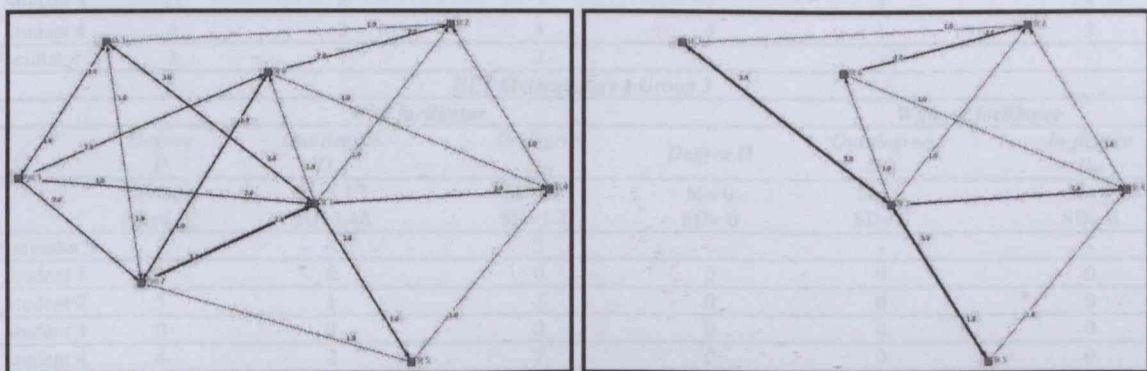


Figure 22 Sociogram of the interactions in Group 3 in *ELT Methodology 6* with and without the facilitator

As the visual representation of the interactions displays, Student 1 is at the centre of the interactions (*Figure 22*). The lines around this participant took the shape of a star. At the same time however, Student 5 and Student 3 established linkages to each other and the rest of the group. All the three students were connected to the facilitators, forming a sub-group within the network. However, without the instructors some of the relations – the stronger ones – 'survived', implying that Student 3, Student 1 and Student 5 formed two working groups, which shared one person in common: Student 1, the most active participant. The rest of the group created a very loose network, where weak ties domineered. In this case again, weak ties refer to linkages that are either one-directional, or which are the result of a limited number of mutual interactions. Accordingly, as suggested by the network centralisation values, a considerable amount of bi-directional interactions was linked to the two facilitators. Only three students were engaged more actively in discussions, they formed two working pairs, and most presumably exchanged information in this form. The rest of the group appeared to be cut off from the information route.

Appendix 10

Individual in- and out-degree values for the participants of the ELT Methodology cases

In- and out-degree values for the participants of the ELT Methodology 1 case

<i>ELT Methodology 1 Group 1</i>					
<i>With facilitator</i>			<i>Without facilitator</i>		
<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>	<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>
M=8.00 SD=5.03	M=4.00 SD=2.94	M=4.00 SD=3.11	M=9.00 SD=4.74	M=4.50 SD=2.96	M=4.50 SD=2.69
Facilitator 1	5	2	-	-	-
Student 1	17	7	16	9	7
Student 2	9	8	3	3	0
Student 3	11	6	10	5	5
Student 4	4	1	7	1	6
Facilitator 2	2	0	-	-	-
<i>ELT Methodology 1 Group 2</i>					
<i>With facilitator</i>			<i>Without facilitator</i>		
<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>	<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>
M=10.00 SD=5.03	M=5.00 SD=3.61	M=5.00 SD=1.92	M=7.50 SD=3.77	M=3.75 SD= .83	M=3.75 SD=3.27
Facilitator 1	12	5	-	-	-
Student 1	19	7	13	9	4
Student 2	9	6	4	1	3
Student 3	11	7	9	4	5
Student 4	6	3	4	1	3
Facilitator 2	3	2	-	-	-
<i>ELT Methodology 1 Group 3</i>					
<i>With facilitator</i>			<i>Without facilitator</i>		
<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>	<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>
M=2.33 SD=2.62	M=1.17 SD=1.46	M=1.17 SD=1.21	M= 0 SD= 0	M= 0 SD= 0	M= 0 SD= 0
Facilitator 1	7	3	-	-	-
Student 1	0	0	0	0	0
Student 2	3	2	0	0	0
Student 3	0	0	0	0	0
Student 4	4	2	0	0	0
Facilitator 2	0	0	-	-	-
<i>ELT Methodology 1 Group 4</i>					
<i>With facilitator</i>			<i>Without facilitator</i>		
<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>	<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>
M=5.00 SD=4.20	M=2.50 SD=3.07	M=2.50 SD=1.80	M=6.25 SD=3.49	M=3.25 SD=3.49	M= 3.25 SD= .43
Facilitator 1	2	0	-	-	-
Student 1	13	4	12	9	3
Student 2	7	4	6	2	4
Student 3	3	3	3	0	3
Student 4	5	4	4	1	3
Facilitator 2	0	0	-	-	-
<i>ELT Methodology 1 Group 5</i>					
<i>With facilitator</i>			<i>Without facilitator</i>		
<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>	<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>
M=12.57 SD=10.45	M=6.29 SD=5.84	M=6.29 SD=4.92	M=12.00 SD=8.41	M=6.00 SD=5.02	M=6.00 SD=3.58
Facilitator 1	11	3	-	-	-
Student 1	35	16	26	15	11
Student 2	15	8	14	7	7
Student 3	13	8	9	4	5
Student 4	11	7	11	4	7
Student 5	0	0	0	0	0
Facilitator 2	3	2	-	-	-

In- and out-degree values for the participants of the ELT Methodology 2 case

<i>ELT Methodology 2 Group 1</i>					
<i>With facilitator</i>			<i>Without facilitator</i>		
<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>	<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>
M=6.86 SD=5.46	M=3.43 SD=2.77	M=3.43 SD=2.82	M=5.60 SD=3.88	M=3.00 SD=2.76	M=3.00 SD=1.90
Facilitator 1	2	0	-	-	-
Student 1	9	4	8	3	5
Student 2	2	2	2	0	2
Student 3	16	8	10	5	5
Student 4	12	6	8	5	3
Student 5	0	0	0	0	0
Facilitator 2	7	4	-	-	-
<i>ELT Methodology 2 Group 2</i>					
<i>With facilitator</i>			<i>Without facilitator</i>		
<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>	<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>
M=12.86 SD=8.39	M=6.43 SD=3.81	M=6.43 SD=4.81	M=6.80 SD=4.53	M=3.40 SD=1.86	M=3.40 SD=3.07
Facilitator 1	10	5	-	-	-
Student 1	27	14	13	5	8
Student 2	16	7	10	5	5
Student 3	4	0	4	4	0
Student 4	15	9	7	3	4
Student 5	0	0	0	0	0
Facilitator 2	18	10	-	-	-
<i>ELT Methodology 2 Group 3</i>					
<i>With facilitator</i>			<i>Without facilitator</i>		
<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>	<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>
M=11.43 SD=8.03	M=5.71 SD=4.27	M=5.71 SD=4.30	M= 8.40 SD= 6.22	M= 4.20 SD= 3.06	M= 4.20 SD= 3.60
Facilitator 1	15	6	-	-	-
Student 1	20	13	14	5	9
Student 2	22	9	15	9	6
Student 3	15	8	11	5	6
Student 4	4	2	2	2	0
Student 5	0	0	0	0	0
Facilitator 2	4	2	-	-	-
<i>ELT Methodology 2 Group 4</i>					
<i>With facilitator</i>			<i>Without facilitator</i>		
<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>	<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>
M=7.71 SD=3.33	M=3.86 SD=1.46	M=3.86 SD=2.03	M=5.60 SD=3.38	M=2.80 SD= .75	M= 2.80 SD=2.71
Facilitator 1	9	4	-	-	-
Student 1	10	5	5	3	2
Student 2	7	4	5	3	2
Student 3	14	8	12	4	8
Student 4	4	2	4	2	2
Student 5	4	2	2	2	0
Facilitator 2	6	2	-	-	-

In- and out-degree values for the participants of the ELT Methodology 3 case

<i>ELT Methodology 3 Group 1</i>					
<i>With facilitator</i>			<i>Without facilitator</i>		
<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>	<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>
M=19.50 SD=15.19	M=9.75 SD=7.76	M=9.75 SD=7.92	M=10.00 SD=10.20	M=5.83 SD=4.34	M=5.83 SD=5.64
Facilitator 1	39	23	-	-	-
Student 1	40	18	27	13	14
Student 2	9	5	0	0	0
Student 3	0	0	6	4	2
Student 4	29	11	21	8	13
Student 5	6	3	3	2	1
Student 6	28	15	3	8	5
Facilitator 2	5	3	-	-	-
<i>ELT Methodology 3 Group 2</i>					
<i>With facilitator</i>			<i>Without facilitator</i>		
<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>	<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>
M=23.75 SD=16.00	M=11.86 SD=7.66	M=11.86 SD=8.61	M=17.00 SD=12.32	M=8.50 SD=6.10	M=8.50 SD=6.32
Facilitator 1	32	19	-	-	-
Student 1	21	10	12	6	6
Student 2	6	4	4	3	1
Student 3	54	25	36	19	17
Student 4	26	11	20	9	11
Student 5	36	18	28	13	15
Student 6	2	1	2	1	1
Facilitator 2	13	7	-	-	-
<i>ELT Methodology 3 Group 3</i>					
<i>With facilitator</i>			<i>Without facilitator</i>		
<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>	<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>
M=7.25 SD=2.17	M=3.63 SD=1.22	M=3.63 SD=1.22	M=5.00 SD=1.63	M=2.50 SD=.96	M=2.50 SD=.76
Facilitator 1	10	5	-	-	-
Student 1	7	4	6	3	3
Student 2	11	6	7	4	3
Student 3	7	3	2	1	1
Student 4	5	2	4	2	2
Student 5	7	3	6	3	3
Student 6	7	3	5	2	3
Facilitator 2	4	3	-	-	-

In- and out-degree values for the participants of the ELT Methodology 4 case

<i>ELT Methodology 4 Group 1</i>					
<i>With facilitator</i>			<i>Without facilitator</i>		
<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>	<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>
M=12.00 SD=8.66	M=6.00 SD=4.33	M=6.00 SD=4.33	M=6.00 SD=5.26	M=3.00 SD=2.52	M=3.00 SD=2.83
Facilitator 1	18	9	-	-	-
Student 1	18	9	9	5	4
Student 2	24	12	14	7	7
Student 3	18	9	10	4	6
Student 4	2	1	2	1	1
Student 5	2	1	1	1	0
Student 6	0	0	0	0	0
Facilitator 2	14	7	-	-	-
<i>ELT Methodology 4 Group 2</i>					
<i>With facilitator</i>			<i>Without facilitator</i>		
<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>	<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>
M=16.50 SD=9.50	M=8.25 SD=4.41	M=8.25 SD=5.29	M=16.67 SD=8.40	M=8.33 SD=4.57	M=8.33 SD=3.99
Facilitator 1	7	6	-	-	-
Student 1	29	14	25	14	11
Student 2	10	4	8	4	4
Student 3	6	3	4	2	2
Student 4	16	7	16	7	9
Student 5	31	15	27	14	13
Student 6	24	12	20	9	11
Facilitator 2	9	5	-	-	-
<i>ELT Methodology 4 Group 3</i>					
<i>With facilitator</i>			<i>Without facilitator</i>		
<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>	<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>
M=11.75 SD=6.72	M=5.86 SD=3.22	M=5.86 SD=3.69	M=9.33 SD=5.62	M=4.67 SD=2.98	M=4.67 SD=2.98
Facilitator 1	15	9	-	-	-
Student 1	7	3	7	3	4
Student 2	19	9	15	8	7
Student 3	19	9	16	7	9
Student 4	20	9	13	7	6
Student 5	5	3	3	2	1
Student 6	3	1	2	1	1
Facilitator 2	6	4	-	-	-

In- and out-degree values for the participants of the ELT Methodology 5 case

<i>ELT Methodology 5 Group 1</i>					
<i>With facilitator</i>			<i>Without facilitator</i>		
<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>	<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>
M=8.57 SD=5.37	M=4.29 SD=2.71	M=4.29 SD=2.81	M=9.20 SD=5.27	M=4.60 SD=2.65	M=4.60 SD=3.07
Facilitator 1	5	2	-	-	-
Student 1	11	6	7	5	2
Student 2	14	6	14	6	8
Student 3	0	0	0	0	0
Student 4	14	8	14	8	6
Student 5	13	6	11	4	7
Facilitator 2	3	2	-	-	-
<i>ELT Methodology 5 Group 2</i>					
<i>With facilitator</i>			<i>Without facilitator</i>		
<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>	<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>
M=18.00 SD=11.45	M=9.00 SD=5.32	M=9.00 SD=6.16	M=13.60 SD=6.68	M=6.80 SD=3.54	M=6.80 SD=3.37
Facilitator 1	22	11	-	-	-
Student 1	36	17	23	12	11
Student 2	11	5	11	5	6
Student 3	32	16	19	10	9
Student 4	14	7	11	4	7
Student 5	4	3	4	3	1
Facilitator 2	7	4	-	-	-
<i>ELT Methodology 5 Group 3</i>					
<i>With facilitator</i>			<i>Without facilitator</i>		
<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>	<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>
M=6.00 SD=3.46	M=3.00 SD=2.07	M=3.00 SD=1.41	M= 5.20 SD= 2.14	M= 2.60 SD= 1.36	M= 2.60 SD= .80
Facilitator 1	6	3	-	-	-
Student 1	13	7	7	4	3
Student 2	6	3	6	3	3
Student 3	1	0	1	0	1
Student 4	6	3	6	3	3
Student 5	7	4	6	3	3
Facilitator 2	3	1	-	-	-
<i>ELT Methodology 5 Group 4</i>					
<i>With facilitator</i>			<i>Without facilitator</i>		
<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>	<i>Degree D</i>	<i>Out-degree D_{od}</i>	<i>In-degree D_{id}</i>
M=9.25 SD=4.55	M=4.63 SD=2.34	M=4.63 SD=2.40	M=8.67 SD=4.03	M=4.33 SD= 2.13	M= 4.33 SD=2.21
Facilitator 1	9	5	-	-	-
Student 1	11	5	9	3	6
Student 2	15	7	14	7	7
Student 3	12	7	11	6	5
Student 4	13	7	10	6	4
Student 5	1	1	1	1	0
Student 6	10	4	7	3	4
Facilitator 2	3	1	-	-	-

In- and out-degree values for the participants of the ELT Methodology 6 case

ELT Methodology 6 Group 1						
With facilitator				Without facilitator		
	Degree D	Out-degree D _{od}	In-degree D _{id}	Degree D	Out-degree D _{od}	In-degree D _{id}
	M=7.75 SD=3.38	M=3.88 SD=1.97	M=3.88 SD=1.97	M=3.67 SD=2.05	M=1.83 SD=1.77	M=1.83 SD=2.03
Facilitator 1	9	4	5	-	-	-
Student 1	8	5	3	4	2	2
Student 2	8	2	6	6	0	6
Student 3	7	3	4	3	1	2
Student 4	0	0	0	0	0	0
Student 5	7	5	2	3	3	0
Student 6	11	6	5	6	5	1
Facilitator 2	12	6	6	-	-	-
ELT Methodology 6 Group 2						
With facilitator				Without facilitator		
	Degree D	Out-degree D _{od}	In-degree D _{id}	Degree D	Out-degree D _{od}	In-degree D _{id}
	M=6.89 SD=4.31	M=3.44 SD=2.36	M=3.44 SD=2.22	M=2.57 SD=1.76	M=8.33 SD=4.57	M=8.33 SD=3.99
Facilitator 1	12	8	4	-	-	-
Student 1	11	5	6	4	2	2
Student 2	10	4	6	4	1	3
Student 3	8	4	4	4	2	2
Student 4	2	1	1	2	1	1
Student 5	0	0	0	0	0	0
Student 6	6	3	3	4	3	1
Student 7	2	1	1	0	0	0
Facilitator 2	11	5	6	-	-	-
ELT Methodology 6 Group 3						
With facilitator				Without facilitator		
	Degree D	Out-degree D _{od}	In-degree D _{id}	Degree D	Out-degree D _{od}	In-degree D _{id}
	M=11.5 SD=5.83	M=5.75 SD=2.82	M=5.75 SD=3.11	M=7.33 SD=3.09	M=3.67 SD=1.97	M=3.67 SD=1.25
Facilitator 1	10	6	4	-	-	-
Student 1	24	12	12	14	8	6
Student 2	7	3	4	7	3	4
Student 3	12	6	6	7	3	4
Student 4	5	3	2	5	3	2
Student 5	6	3	3	5	2	3
Student 6	12	6	6	6	3	3
Facilitator 2	16	7	9	-	-	-

Appendix 11

Reliability measures of Calibrate 1 and Calibrate 2 cases

<i>Coding scheme</i>	<i>Holsti coefficient of reliability</i>	
	<i>Calibrate 1</i>	<i>Calibrate 2</i>
Cognitive presence	.92	.98
Social presence	.96	.85
Teaching presence	.91	.87

Appendix 12

Reliability measures of the ELT Methodology cases

<i>ELT Methodology cases</i>						
<i>Holsti coefficient of reliability</i>						
<i>Coding scheme</i>	<i>Case 1</i>	<i>Case 2</i>	<i>Case 3</i>	<i>Case 4</i>	<i>Case 5</i>	<i>Case 6</i>
Cognitive presence	.71	.65	.92	.98	.95	.96
Social presence	.64	.70	.96	.85	.86	.90
Teaching presence	.65	.67	.91	.87	.84	.92