

Workshop

Interaction Analysis and Visualization: Analysis' Methods, Tools and Research Questions

-Focusing on Asynchronous Discussion Forums, lists, blogs-

Organizers:

Eric Bruillard, STEF, ENS Cachan, 61 av. du Président Wilson, 94235 Cachan Cedex, France
eric.bruillard@creteil.iufm.fr

Angelique Dimitracopoulou, LTEE laboratory, University of the Aegean, 1, Av. Democratias, 85100, Rhodes, Greece; adimitr@aegean.gr

Peter Reimann, CoCo Research Centre, Education Building, University of Sydney, NSW 2006, Australia;
p.reimann@edfac.usyd.edu.au

Organizing Committee:

M.-L. Betbeder (LIFC, Franche-Comte University), F.-M. Blondel (STEF, ENS Cachan), T. Bratitsis (University of Western Macedonia), G. Fesakis (LTEE laboratory, University of the Aegea), E. Giguet (Caen University), N. Lucas (Caen University), C. Reffay (LIFC, Franche-Comte University)

Abstract: Indicators, graphical views, reading and exploration tools can be attached to discussion lists and forums to better access, understand and analyze discussions, for researchers, moderators or participants. During last years, several researchers have proposed and tested different computer based Interaction Analysis tools and it is time to find a first agreement among researchers about which tools can be provided on a standard basis and explore new tools (for example linguistic tools), methods and visualizations approaches.

Keywords: interaction analysis, visualization, asynchronous discussion, forum, blogs, linguistic analysis

Workshop Purpose: theme and goals

Asynchronous communication and collaboration tools, such as discussion forums certainly have an important role in many informal or formal education organizations. They intervene in many different contexts and therefore have different significances according to situations in which there are used. To study the dynamics and content of discussions, or even to inform participants, moderators and administrators, several processes (automatic, semi-automatic or *manual*) have to be performed: coding messages, calculating indicators, developing alternative reading interfaces and analysis tools...

On the one hand, we may observe strong debates about these different processes, for example concerning coding methods (Rourke & al., 2001; De Wever & al., 2006; Erkens & Janssen, 2008; Rosé & al., 2008) and the necessity of shared methods that can be reproduced. On the other hand, analyses are motivated by very different purposes, leading to specific methods, while contextual factors are not to be neglected (Henri et al., 2007; Bruillard, 2007). It is certainly needed to progress on the level of analysis and also to better compare and test methods used by researchers, to provide tools, interaction analysis indicators and interpretation frameworks to different stakeholders.

Actually a significant number of Interaction Analysis (IA) tools have been used and described. During the last years we try to promote tools that are independent of specific learning environments (Dimitracopoulou 2008; Bratitsis & Dimitracopoulou, 2008) define XML formats with connectors to this format (for BSCW, soon for Moodle, for Sympa lists...) and develop tools that use this specific format and can be freely used in an open platform (CALICO platform, <http://wims.crashdump.net/www/calico/>). These tools will soon be usable freely with a simple subscription. The purpose is to allow researchers and designers to share data corpus, to compare approaches, but most important to satisfy vivid needs for IA tools in every day use of communication and collaboration environments, where moderators and students need supporting so as to be able to regulate and selfregulate their activities.

In this workshop we are interested in automatic and semi-automatic methods and tools providing Analysis Indicators and multiple visualizations and views. We will focus on IA tools that analyse

asynchronous and content oriented communication and collaboration tools, such as forums, discussion lists and blogs.

Currently, there are IA tools that provide a variety of IA indicators: (a) participation and interaction oriented indicators (b) Content analysis indicators or even mixed approaches, There are also IA tools that provide interface alternatives in CMC tools (e.g. alternative reading views in forums). Moreover, there are IA tools that are directly linked to a specific learning environment (e.g. a specific forum) or others that are independent of them; also recently some others are designed so as to be open to every kind of data.

It is now certainly time to try to achieve a consensus on: (a) IA tools basic functionalities, (b) categories of IA indicators for different purposes. It is also time to discuss more intensively the research design methods applied so as to study the use of these IA tools (by teachers, moderators, students), as well as their effects in learning activity processes.

⇒ The **goals** of the present workshop are:

- (A) Use and test the analysis tools, provided by workshop participants, addressed to: (a) teachers-moderators, (b) students (c) researchers (this last category will be studied under the scope of contributing to the two first categories)
- (B) Compare IA tools
 - (a) Compare tools' features
 - (b) Compare tools' functionalities
- (C) Compare IA indicators that constitute the output of IA tools
 - (a) Compare Interaction Analysis Methods for similar IA indicators
 - (b) Compare visualization approaches
 - (c) Compare sets of IA Indicators and analysis output that are offered to each one of the potential IA tools users (moderators, students, etc)
- (D) Compare research design methods applied for the study of IA tools use and their effects

⇒ The workshop **scope** is to:

- (I) Achieve a consensus on minimum standard features and functionalities of IA tools
- (II) Identify complementarities in methods and indicators, so as to start to improve or enrich them
- (III) Identify common IA indicators or even common sets of indicators needed for the analysis of asynchronous interactions taking place in different environments (forums, lists, blogs, etc): for instance, a consensus on lists of indicators and visualizations that can be attached to any discussion list and forum to be considered as the *signature* of such discussion list or forum. It can include for example: total duration, number of participants, senders, posts, threads; list of authors, graph including daily/monthly posts, etc)
- (IV) Identify range of questions that we reach to answer with the existing IA indicators sets, as well as open questions that correspond to unsatisfying needs of IA tools users.
- (V) Achieve a consensus on minimum steps of research design studies, when intending to design and develop IA tools for teachers, moderators and students

Intended Audience

Main participants:

- Researchers that are involved in the design and production of IA tools for asynchronous communication and collaboration tools (IA tools that provide indicators sets for moderators, students, researchers, or even reading tools that offer alternative interfaces)
- Researchers that are involved in the design and production of IA tools for other categories of technology based learning environments
- Educators-researchers that have some previous experience by the use of existing IA tools

Additional Participants:

Senior or junior Researchers that are in process to produce work related to the research direction of IA for regulation and selfregulation or they are strongly interested to

Max number of participants : 15 main participants and 15 additional participants

Expected Output and Contributions

Output:

- Know and Test the available tools
- Define needs on IA Indicators
- Define IA tools requirements
- Identify complementarities (this is a core output), as well as improvement and enrichment points.

Contributions:

- Incite to exchange/share: data corpus, tools, methods
- Encourage more profound collaborations between partial groups of attendees and stimulate the growth of research, understanding, utilizations of IA tools.

Description of Format and Activities Planned

The format of the workshop is based on 'question axes' oriented organization with hands-on activities and lively discussions rather than a mini-conference or symposium like format. The working methodology for the workshop is made up of the following phases and steps.

(I) Pre workshop phase:

- (i) The position papers submitted are reviewed by three members of the organising committee to provide feedback from different angles
- (ii) The organizers synthesize position papers in groups, and raise additional challenging questions structured in a series of axes.
- (iii) A social environment is set up by organizers so as to facilitate open discussions among workshop participants previous to the workshop day.
- (iv) IA tools, data corpus, as well as previous discussion reports on workshop issues are exchanged between workshop registered participants.

(II) Workshop phase:

- (i) Introductory Panel: Organisers make a short presentation and pose key questions while workshop main participants provide answers to the questions on the base of their own work. [This means that the "main participants will not fully present their 'papers'. It is supposed that all participants have to study the position papers during the pre-workshop phase.]
- (ii) Hands on activities with/around Pcs (small groups of two max three participants per PC): During the hands on activities, the groups members have to answer questions on structured sheets. Moderators synthesise groups answers and reflections with the help of the participants after a fixed period of time (40 min). The participants will work on the same data corpus agreed during the pre-workshop phase
- (iii) Round tables are settled, each managed by a Moderator (from the Workshop organising Committee). The tables have A-1 sheets and markers. A brief overview of each of topics is done, raising the challenging questions. The ideas are written down in the sheet. When the sheet is full, they are stuck on the wall. In addition two interactive blackboards will be used.
- (iv) Synthesizing Panel: (a) Moderators present the conclusions to the audience. (b) Open questions with all participants are expected to be risen. The coordinators summarize the conclusions with the help of the group.

The previous three activities (maximum duration of each activity ~45 minutes) will be repeated at least two times (e.g. morning and afternoon session) during the workshop day.

- (v) Concluding Panel: Organisers with the contribution of main and additional participants synthesise orally the main conclusions of the workshop, while then they discuss on the continuation of workshop activities (groups collaborations, Journal special issue publication, etc)

III) Post-Workshop phase : Final conclusions are structured and uploaded in the workshop website to be shared with CSCL2009 community. Moreover the community of interest set up in the social environment for the workshop will be kept and extended with people interested in the topics, exchanging tools, data corpus, and related papers.

Call for Position Papers

For your active participation:

- Please, submit **position papers 3-5 pages** that present aspects related to the present workshop goals, as well as related references of your own work. Please follow the [CSCL2009 Conference Publication Guidelines](#) (template). Portable Document Format (*.pdf) files are preferred.
- Send your position paper to the Workshop Organisers via e-mail: eric.bruillard@creteil.iufm.fr; adimitr@aegean.gr ; p.reimann@edfac.usyd.edu.au;
- In addition, don't forget to send us (via e-mail to bratitsis@uow...) links that have related interesting references or any IA tools material, so as to post them in the Links area of the present website.

Additional participants: You could also send us a short message, informing us about your intention to participate in this WS.

Important Dates:

- Paper submission deadline: March 10, 2009
- PC review: March 30, 2009
- Community review: April 10, 2009
- Notification of acceptance: April 15, 2009
- Pre-Workshop Phase: May 4th- June 4th, 2009
- Workshop Day: June 8th, 2009

Prior relevant experience of Organisers

Eric Bruillard was the organizer of several conferences (Hypermedia and apprentissages, 1996; IARTEM, 2006 http://www.caen.iufm.fr/colloque_iartem/acte.html, Didapro 3, <http://didapro.mutatrice.net/>, etc.) and was responsible of the Symfonic Symposium (<http://www.dep.u-picardie.fr/sidir/index.htm>) devoted to forum and education, followed by the JOCAIR conferences (<http://www.jocair.u-picardie.fr/index.php>). He is chief editor of STICEF scientific journal (www.sticef.org) and has edited a special issue concerning forum and education (http://sticef.univlemans.fr/num/vol2006/sticef_2006_ns_edito.htm). More info: <http://www.stef.ens-cachan.fr/annur/bruillard.htm> Eric Bruillard is responsible of the CALICO network in France, mainly devoted to the study of discussion forum in higher education.

Angelique Dimitracopoulou, Professor of University of the Aegean, [www.ltee.gr/adimitr]. During the last years, she has proved a special research interest in “computer based Interaction Analysis for selfregulation support”. She has leded research projects, supervised Doctoral dissertations, organised workshops [IA Workshop in CSCL SIG Symposium, Lausanne 2004; Kaleidoscope European Symposium, 2007], while she was invited for keynote talks in conferences (among others: CELDA2007 conference; 4rth Int Educational Symposium on School of Tomorrow) and summerschools (SummerSchool: Personnalisation des EIAH, July 2007) related to this research direction. She has also published related journal and conference papers [-20 publications: http://ltee.org/adimitr/?page_id=64 (computer based Interaction Analysis) ; & <http://ltee.org/adimitr/?p=11> (selected publications)].

Peter Reimann is Professor in the Faculty of Education and Social Work at the University of Sydney, where he co-directs the Centre for Research on Computer-supported Learning and Cognition -CoCo (<http://coco.edfac.usyd.edu.au>). Peter received his Masters and PhD from the University of Freiburg, in Psychology. He has worked at the University of Freiburg's Psychology department, in the Learning Research and Development Centre in Pittsburgh, and at the University of Heidelberg, where he was Professor for Educational Psychology before he moved to Sydney. His primary research areas has been cognitive learning research with a

focus on educational computing, multimedia-based and knowledge-based learning environments, e-learning, and the development of evaluation and assessment methods for the effectiveness of computer-based technologies. Current research activities comprise among other issues the analysis of individual and group problem solving/learning processes and possible support by means of ICT, and analysis of the use of mobile IT in informal learning settings (outdoors, in museums, etc.). Concerning methods and methodology, he has a special interest in cognitive modelling, computational analysis of process data, and application of e-research methods to learning research.

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