Videoconferencing in open learning

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Abstract

This paper presents naturalistic videoconferencing interactions hosted in an online technology enhanced learning environment, providing open educational resources and collaboration tools. We argue that apart from synchronous online collaboration, videoconferencing is a technology that can be used in other ways in virtual learning environments, and that its products can be considered as reusable learning objects in an open learning context. In this study, we give some insights into how the tool is used by different communities.

Introduction

As online learning can be a lonely experience with no teachers or co-learners physically present round, social software can be used to enhance communication in virtual learning communities either moderated by educational practitioners or including independent open learners. Collaborative media can enhance the sense of community in self-motivated learners and online learners in general, connecting them through wikis, forums, instant messaging, email, videoconference, ambient awareness tools.

This paper presents naturalistic videoconferencing interactions hosted in an online technology enhanced learning environment, providing open educational resources and collaboration tools (**http://labspace.open.ac.uk/**: an experimental zone for educational professionals and self-motivated learners). We argue that apart from synchronous online collaboration, videoconferencing is a technology that can be used in other ways in virtual learning environments, and that its products can be considered as reusable learning objects in an open learning context. In this study, we give some insights into how the tool is used by different communities.

Findings

FlashMeeting is a lightweight videoconferencing application, which runs in a web page with the Adobe Flash browser plug-in. It allows up to 25 attendees to be connected from anywhere in the world by just clicking on a URL. Once the booking details are submitted via an online form, the system generates a URL, which can then be forwarded to meeting attendees by the person who booked the event. During the videoconference, while only person can broadcast at any one time, the other users queue by raising a symbolic hand and wait for their turn or interrupt the current speaker in order to broadcast (see Figure 1). Other ways of communicating include text chat, URL sharing, voting and mood indicators. All meetings are recorded, and all interactions are logged for research purposes. Usually, data generated by public meetings is published or private data is anonymised. The meeting replay can be browsed by clicking on each participant's name (see Figure 2), and edited or annotated. The minute's meetings are made available to the meeting bookers, with all interactions logged, together with a visual representation of the meeting, including the chat logs, the duration of broadcasts and attendance maps, showing the

unique IPs logged in the live FlashMeeting plotted on a world map. Users are encouraged to syndicate some of their meetings and share them with the world to contribute to the culture of open content. Syndicated meetings appear in a folksonomy of keywords, added by the meeting bookers.

Figure 1. A mock-up example of a live FlashMeeting and its replay

Figure 2. A mock-up example of a FlashMeeting replay

We report on a quantitative analysis of the user logs denoting meeting attendance to visualise the tool use. The tool has been released in the learning environment of LabSpace in October 2006. Currently, 518 meetings have been booked on the LabSpace – FlashMeeting server. 384 meetings were attended, while 287 meetings did not include the word 'test' in the title or keywords of the meeting details. Test meetings are not observed as they are not naturalistic meetings with the goal of communicating and knowledge transferring. While during the first few months, FlashMeeting was used by two communities initially, it is now used by established communities, holding events in regular temporal intervals. Figure 3 shows the server load, by representing the meetings booked in a week towards the end of the first month of its existence (29/10/06–04/11/06), representing 12 bookings made on Monday and Tuesday of that week. Figure 4 represents 24 meetings booked recently (20/05/07–26/05/07), which is double than the bookings shown in Figure 3, noting an increase in the number of participants. Simultaneous meetings are portrayed with different colours.
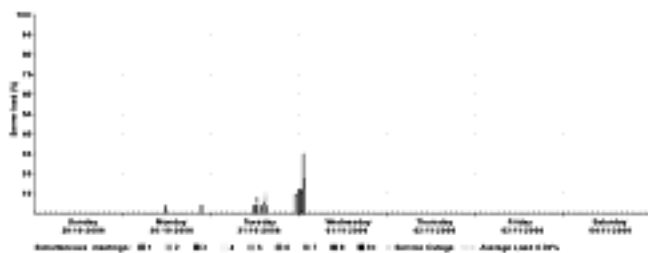
Figure 3. The FlashMeeting server load during the week (29 October 2006–4 November 2006)
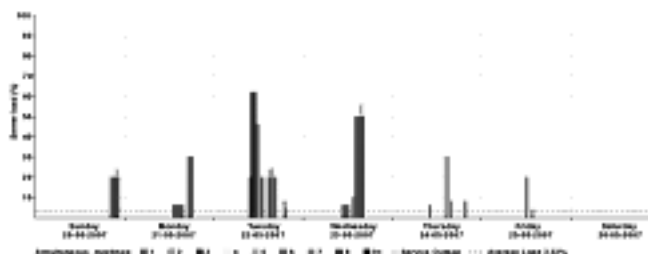

Figure 4. The FlashMeeting server load during the week (20 May 2007–26 May 2007)

A range of communities communicate via videoconferencing in LabSpace; EU project participants, academics teaching elearning courses, elearning professionals, organisations offering peer-to-peer counselling and others. The participation in the community, i.e. how many attendees per meeting and how many meetings held by a specific community in combination with meeting linear visualisations and attendance maps (2) may give some insights into what kind of events are held in an open learning environment.

We extend the logs visualisation approach to show the activity noted by a number of communities using FlashMeeting in different ways. Virtual lectures, web-casts of physical lectures, presentations and others (1).

Virtual lecture

Patterns of interaction include the teacher broadcasting via the audio-visual channel, while the students communicate via text chat. In Figure 5, we can see the linear representation of the teacher (in brown colour) broadcasting for most of the time, with many chat messages exchanged (small red lines).
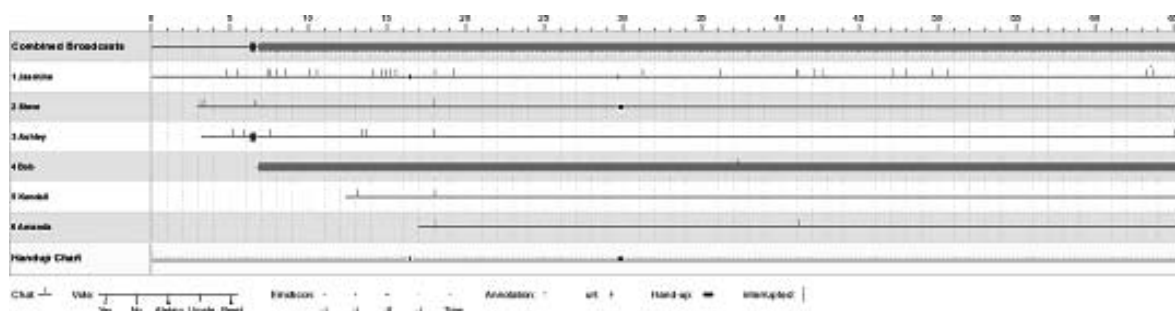

Figure 5. The linear representation of a video lecture, showing the broadcast by 2 participants (blue and brown) and the chat messages exchanged on the timeline (small red lines)

The world map below shows activity in North America, with 6 attendees in this meeting:
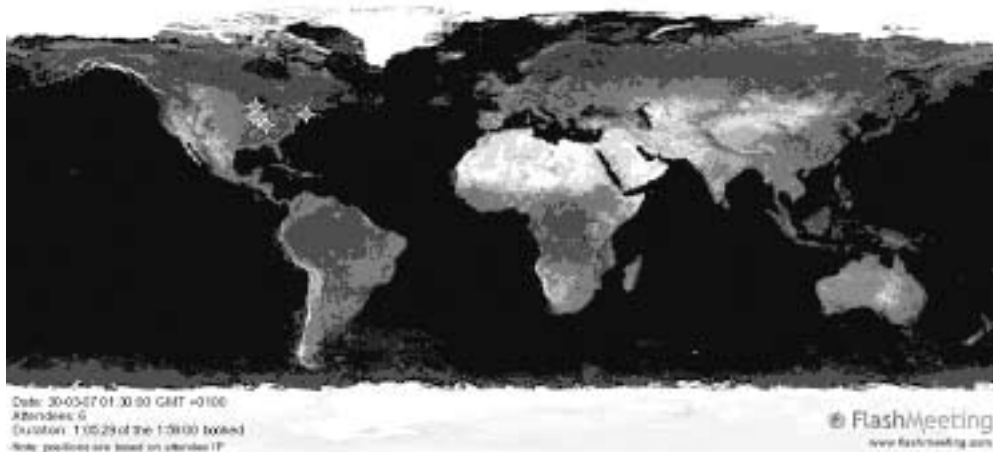

Figure 6. The map representing 6 attendees located in North America

This community is moderated by a teacher who books the meetings. From November 2006 until the present, 11 events have taken place, with 1 to 9 attendees per meeting, and a mean average of 5.
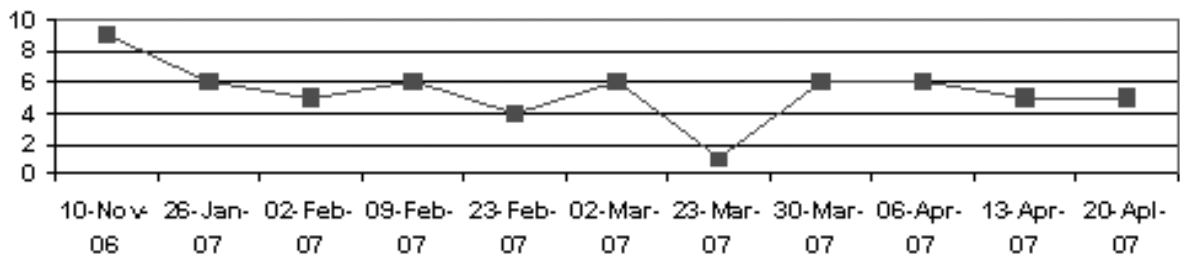

Figure 7. The community activity, showing the number of attendees and the number of events on a timeline (November 2006–April 2007)

Web-cast: recording physical lectures or presentations

During a 2-month period, another group from a Polish University uses FlashMeeting to record physical lectures on Computer Networks. Interestingly, they have the camera pointed at the projected slides they present.

The linear diagram of the meeting shows one attendee broadcasting for 2 consecutive temporal intervals and no other communication channels used. Clearly, the use of the tool is for recording a physical event.
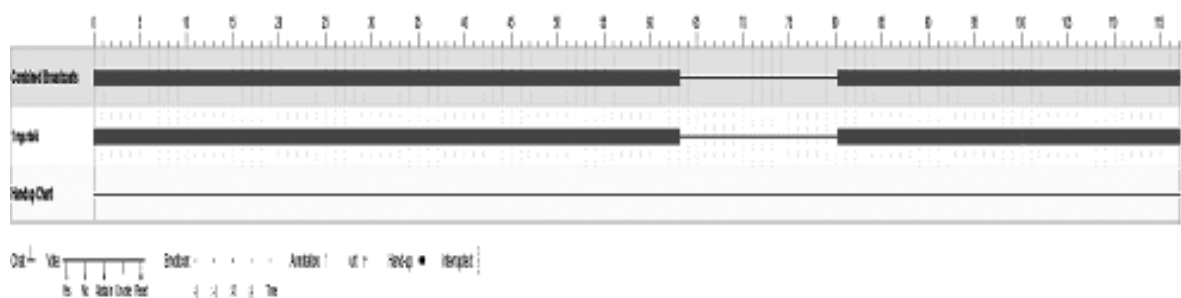

Figure 8. The linear representation of a web-cast, showing the broadcast by 1 participant in two distinct intervals

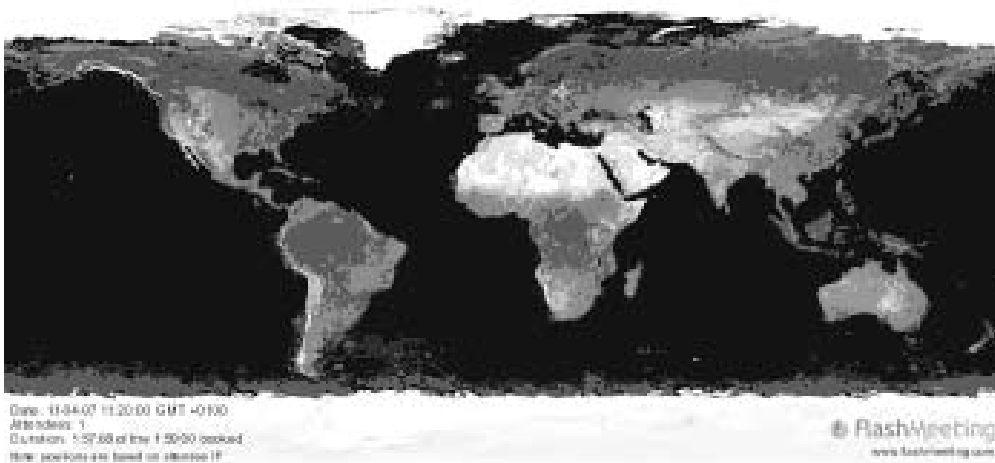The world map again shows one attendant:

Figure 9. The map representing 1 attendee located in Europe

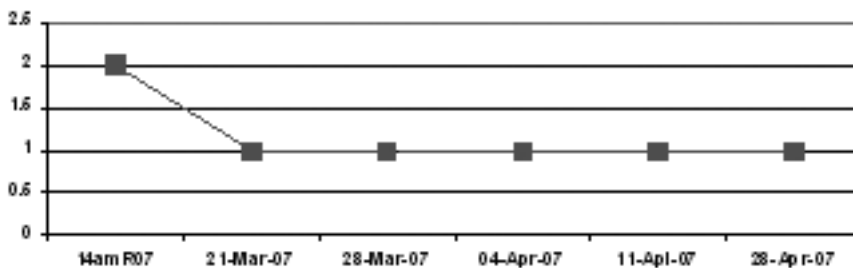The attendance visualisation shows a series of 6 events, with 2 in the beginning and then 1 attendee:

Figure 10. The activity visualisation shows 6 events and 1 attendee per meeting

Peer-to-peer meeting

This series of project meetings called 'Let's talk Architecture' are held by a community of academics in different parts of Europe.

The following example shows 2 participants using the audiovisual channel (in green and brown) and the same or other 18 participants exchanging chat messages (the thin red lines).
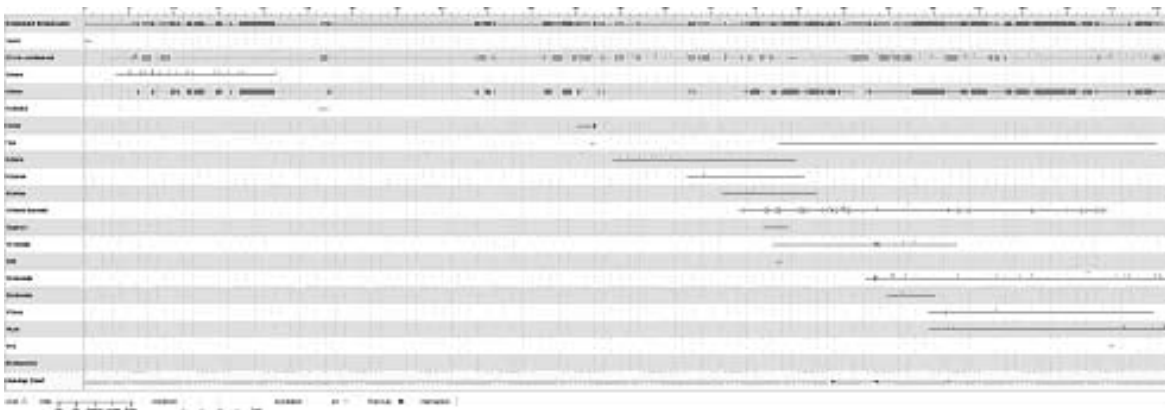

Figure 11. The linear representation of a peer-to-peer event, showing 2 participants the audiovisual channels and many chat messages exchanged

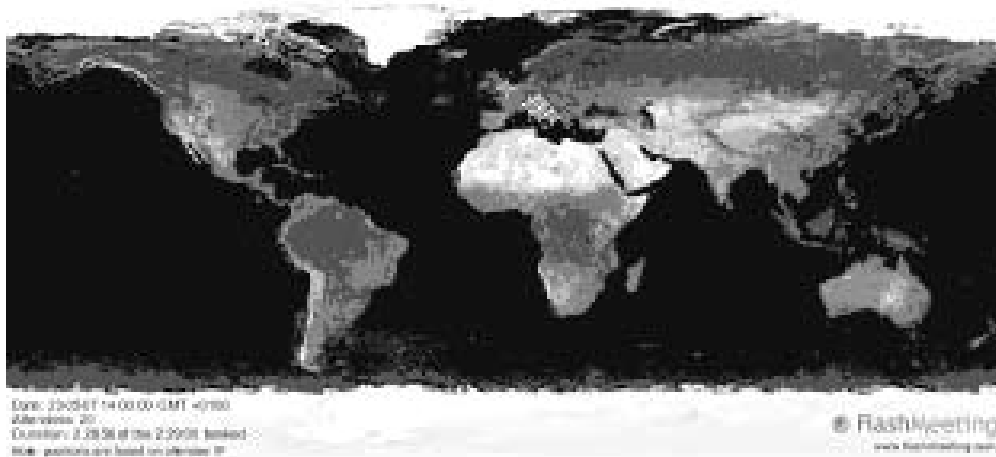The world map shows activity in different parts of Europe:

Figure 12. The map representing 20 attendees located in different parts of Europe

The community activity diagram shows 9 events from February 2007 to present, with a mean average of 6 attendees per meeting (2 – 20 attendees). There is a clear upward trend in the number of attendees, and a stability in terms of number of events.
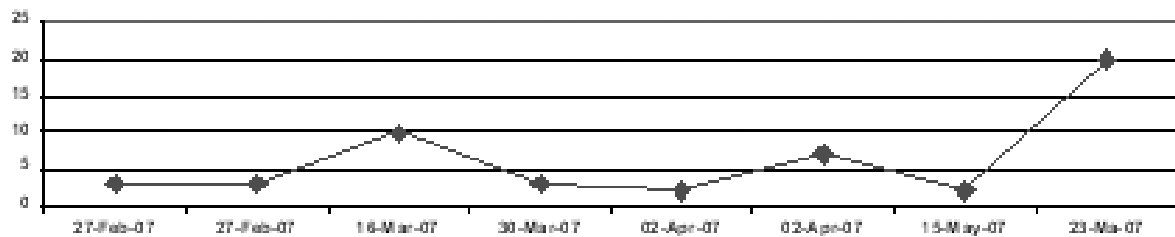

Figure 13. The community activity diagram shows 9 events from 2–20 attendees

Conclusions

These visualisations show on the one hand the type of event created with FlashMeeting, such as web-cast, virtual lecture and peer-to-peer meetings, and in combination with attendance data over a time period can indicate the activity of a virtual community using FlashMeeting in open learning contexts, such as communities hosted in LabSpace. There is an upward trend in the number of meeting attendees

References

Scott, P.J, Tomadaki, E. and Quick, K.A. The Shape of Live Online Meetings. 3rd International Conference on Technology, Knowledge and Society (Cambridge, 2007).

Tomadaki, E., Scott, P.J and Quick, K.A.: Attendance Metadata Visualizations: Plotting Attendance and Reuse, ACM and IEEE Conf. on Digital Libraries, CAMA Workshop (Vancouver, 2007).