Supporting an Effective Review of Telecollaboration for Second Language Learning by

VISUALISING THE **PARTICIPATION** AND **ENGAGEMENT**

@ DUBLIN CITY UNIVERSITY

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Insight

SFI RESEARCH CENTRE FOR DATA ANALYTICS

Hyowon Lee — Insight Centre for Data Analytics, School of Computing
Michael Scriney — Insight Centre for Data Analytics, School of Computing
Aparajita Dey-Plissonneau — School of Applied Language & Intercultural Studies
Alan F. Smeaton — Insight Centre for Data Analytics, School of Computing

HOST INSTITUTIONS

DCU · NUI Galway OÉ Gaillimh · UCC University College Cork, Ireland Coláiste na hOllscoile Corcaigh · UCD Dublin

PARTNER INSTITUTIONS

Maynooth University National University of Ireland Maynooth · Tyndall National Institute · Trinity College Dublin The University of Dublin · University of Limerick Ollscoil Luimnigh

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- Human-Computer Interaction
- Interaction design
- Usability engineering
- Information visualization

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- Data warehousing
- Data mining & analytics
- Machine learning
- Distributed systems

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VISUALISING THE PARTICIPATION AND ENGAGEMENT

- Computer-Assisted Language Learning
- Videoconferencing for language learning
- Online learning and teaching

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- Multimedia analysis, indexing & retrieval
- Information retrieval from very large collections (image, video, lifelog data, etc.)

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THE COURSE

- French Language Skills (Higher Intermediate level) in DCU
- 3rd year in Humanities, Translation and Business
- To develop interactional language skills and the awareness of contemporary French-speaking culture
- Based on telecollaboration, facilitating conversational situations with native French speakers

Photo from: https://uwm.edu/news/zoom-troubles-communication-students-study-online-group-conflicts/

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Photo from: https://lifestyle.livemint.com/health/wellness/stanford-study-tells-you-exactly-why-zoom-meetings-are-fatiguing-111614401793181.html

How good was the session?...

1. What is a “good” session?

2. What visible/tangible/factual conclusions can be drawn?

3. What things are captured during the session?

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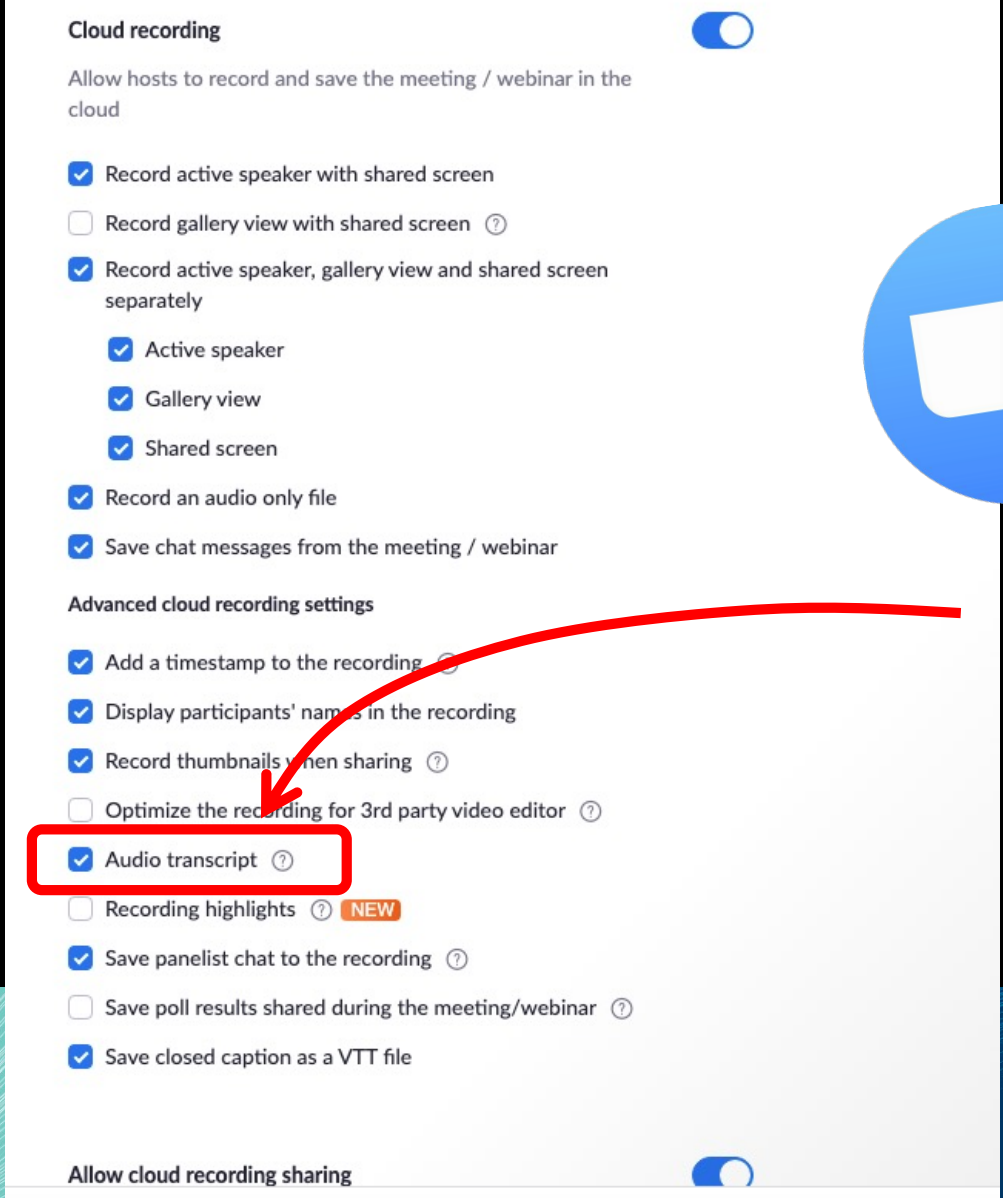

By turning “Audio transcript” on…

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By turning “Audio transcript” on…

… an audio transcript file (.vtt) becomes available after each session

Can this file alone be used to gain anything useful about how th session wer

YES!

```
00:05:49.770 --> 00:05:50.850
Hyowon Lee: Okay, so.

38
00:05:54.450 --> 00:06:10.650
Hyowon Lee: At least the getting the utterances so as soon as it
gets wrong, one for each word so at least whatever I say we
transcribe but it just a dete                    or does he
sometimes actually omit as w

39
00:06:10.800 --> 00:06:14.07
Aparajita Dey-Plissonneau: O

40
00:06:14.820 --> 00:06:16.2
Hyowon Lee: We will know so

41
00:06:18.630 --> 00:06:23.9
Hyowon Lee: Was there any
party something wasn't the

42
00:06:25.740 --> 00:06:26.
Aparajita Dey-Plissonneau:

43
00:06:28.140 --> 00:06:32
Aparajita Dey-Plissonneau
had clicked that as well.

44
00:06:33.270 --> 00:06:4
Hyowon Lee: In one of th
want to zoom, but if you

45
00:06:43.770 --> 00:06:4
Hyowon Lee: was terrible

46
```

- When each student spoke
- How long each student spoke
  - for each utterance
  - during the entire session
- Who spoke after whom

- Level of participation
- Dynamics among the students
- Level of spontaneity/ volatioity

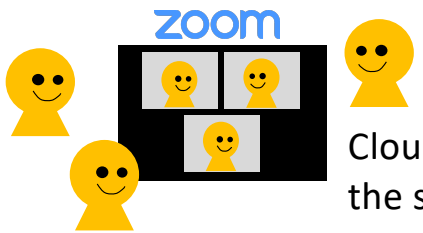
HOW IT WORKS

I. REGISTRATION

Register a planned session with emails of participants

Receive an invitation with session code

II. ZOOM SESSION



Cloud-recording of the session

Provide zoom recording URL + VTT transcript

L2 system

Analysis of conversation

- Counting of utterances & durations
- Turn-taking
- Volatility
- Participation rate
- :

III. REVIEW

Visualising how the session went to help the students reflect and do better

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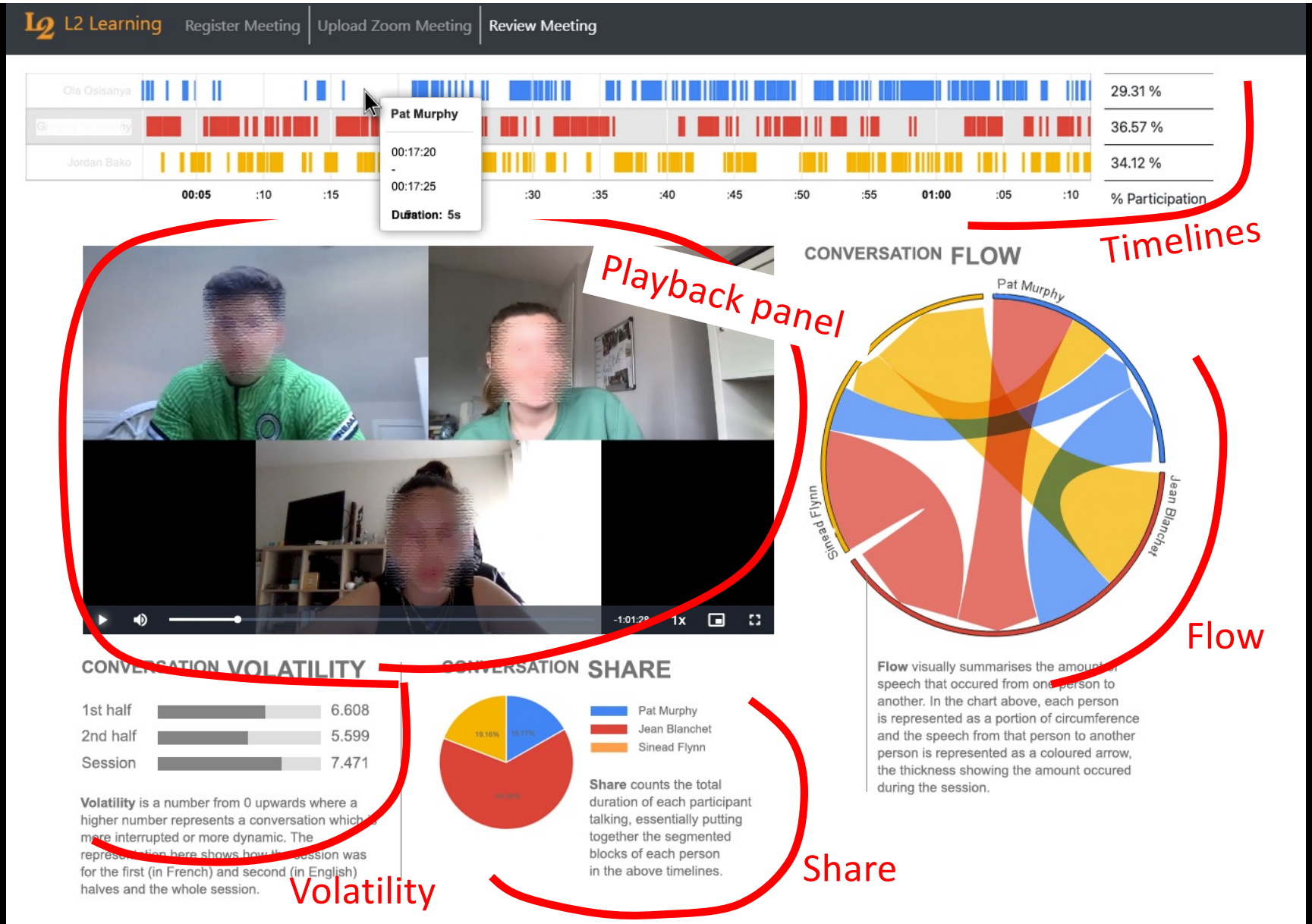
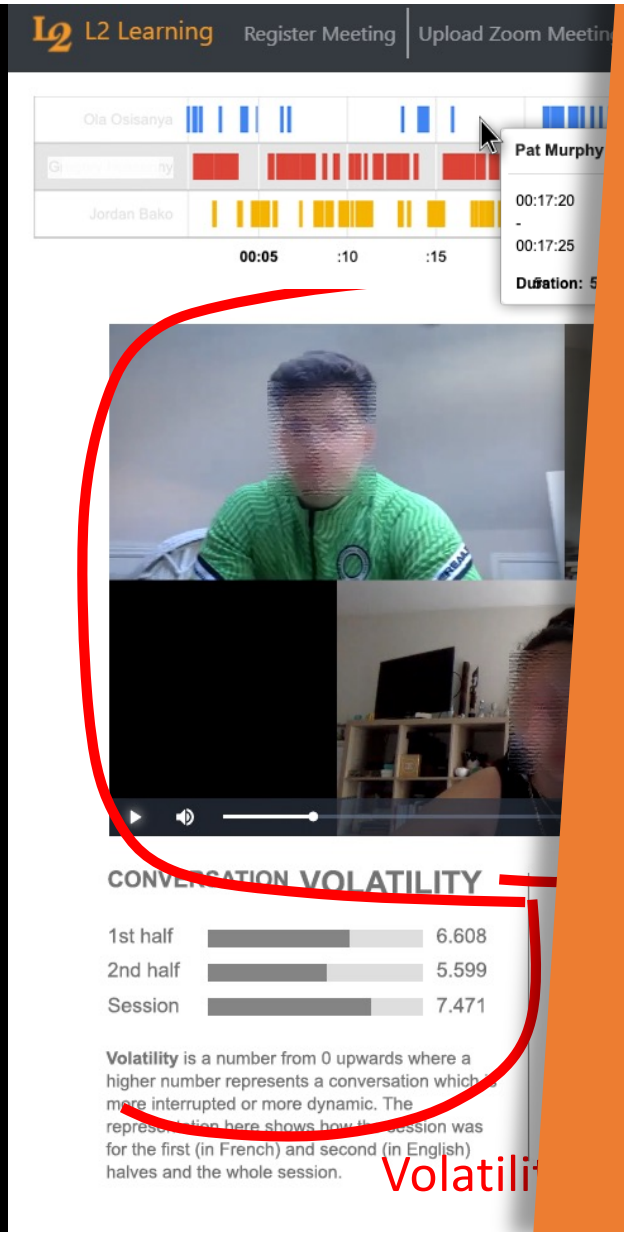

L2 Learning
Register Meeting
Upload Zoom Meeting
Review Meeting
Ola Osisanya
Jordan Bako
Pat Murphy
00:17:20
-
00:17:25
Duration: 5s
00:05
:10
:15
:30
:35
:40
:45
:50
:55
01:00
:05
:10
29.31 %
36.57 %
34.12 %
% Participation
Timelines
Playback panel
CONVERSATION FLOW
Pat Murphy
Sinead Flynn
Jean Blanchet
Flow
Flow visually summarises the amount of speech that occured from one person to another. In the chart above, each person is represented as a portion of circumference and the speech from that person to another person is represented as a coloured arrow, the thickness showing the amount occured during the session.
CONVERSATION VOLATILITY
1st half 6.608
2nd half 5.599
Session 7.471
Volatility is a number from 0 upwards where a higher number represents a conversation which is more interrupted or more dynamic. The representation here shows how the session was for the first (in French) and second (in English) halves and the whole session.
Volatility
CONVERSATION SHARE
Pat Murphy
Jean Blanchet
Sinead Flynn
Share counts the total duration of each participant talking, essentially putting together the segmented blocks of each person in the above timelines.
Share

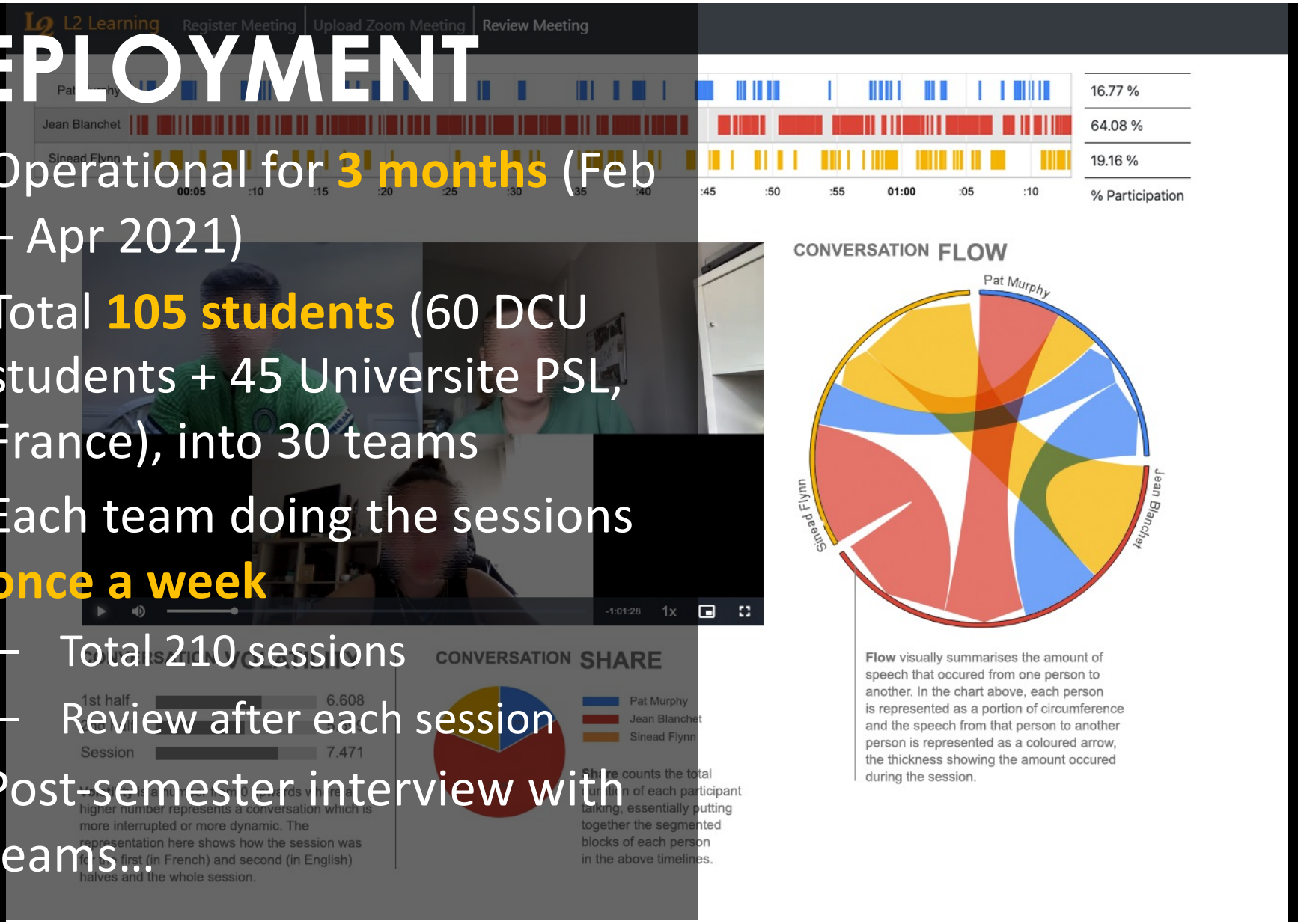


CONVERSATION VOLATILITY

- Degree of variation over time (SD of logarithmic changes of duration of each utterance)
- Applying it to speaker turn-taking, captures how **irregular, dynamic, unpredictable** and **spontaneous** the conversation was during a given period
- Reveals one aspect of a conversation… useful factor to know along with % speech (Share)

DEPLOYMENT

- Operational for **3 months** (Feb – Apr 2021)
- Total **105 students** (60 DCU students + 45 Universite PSL, France), into 30 teams
- Each team doing the sessions **once a week**
  - Total 210 sessions
  - Review after each session
- Post-semester interview with teams…



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  teams…

OBSERVATION & FEEDBACK

- Initial Zoom setting… OK once done
- Timelines can be clicked… need better affordance
- Timelines are very useful to jump back and forth
- "Useful to see the amount I spoke… so I put more efforts to increase my speech portions"
- "Want to see my progress over time"

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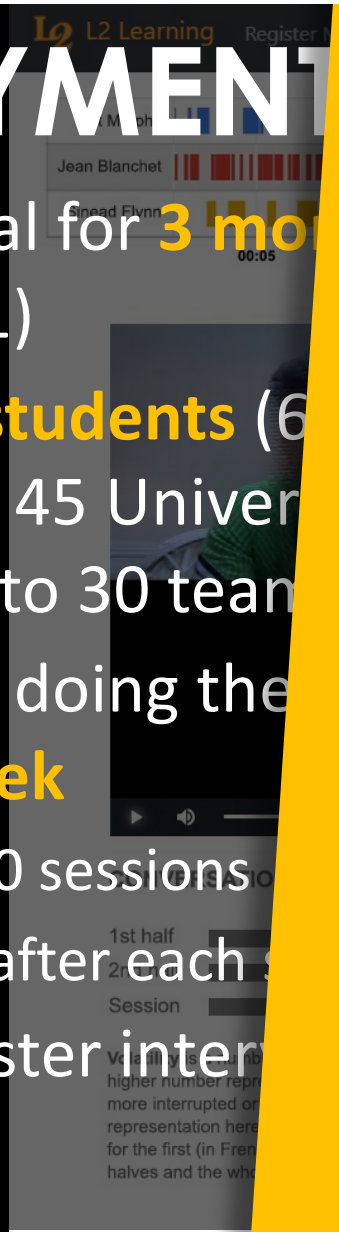

OBSERVATION & FEEDBACK

- "Increased my confidence"
- Helpful in reflection and learning
- Self-monitoring to regulate attrition rate & lack of motivation
- "…as I'm currently rewatching our sessions, I can easily identify the parts where I spoke the most/least and identify the reason why."

⋮

SUMMARY

- Use of existing infrastructure
  - Audio transcript in Zoom
  - Google Charts widgets
- Fully automatic
- Reflection enabled/afforded by technical possibilities

Cost-effective way of visualizing a conversation after it happened

SUMMARY

- Concrete visuaisation of participation: helped increase confidence & motivated to do better
- Supported quantitative & qualitative self-assessment of learning (e.g. reflect on the reasons for low/high participation, long pauses, poor backchanneling, etc.)
- Reduced the lecturer's feedback burden

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SUMMARY

Visual feedback

Check engagement & improve

Be motivated to improve oral participation

Gain confidence, regulate interaction, include other

se

do better

ualitative

(e.g.

ow/high

poor

edback

Dey-Plissonneau A, Scriney M, Pradier V, Lee H, Smeaton A and Riaz H. How visualising their participation rates with native speakers via video conferencing can help intermediate L2 learners reflect on their language learning? EuroCALL 2021.

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FUTURE WORK

- **v2 just completed!**
  - Scale-proof, UI bugs fixed
  - Cross-session comparison UI
- **Deploying next week** with TU Dublin, total **250 students**
- Pedagogically aligning the information, focusing on encouraging more engagement

THANK YOU!

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