Student Facing Thin and Light Video Editing in Opencast Matterhorn

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Lecture Capture – What and Why

Record higher education lectures for asynchronous playback later

- Hardware in the classroom
  - Lecturers set it, and forget about it
- Distance Ed
- Not typically real time
- Some interaction components
  - Annotations/Comments
My System – The Goals

Give students another way to augment their learning

• Usage is highly variable
  – Strong hate/love dichotomy
• A major complaint is the length of the original
• How can we make things shorter?
  – Faster playback speed
  – Removal of non-useful sections
My System – The Clipshow

Based on Opencast Matterhorn

- Modifies existing playback components
- Thin and light, no re-encoding
- User-specified clipping points
- User-organized series objects
- Annotations and voting
- Privacy components
My System – The Goals

Why do we care?

• We wish to improve the tools
• We wish to validate that this is a useful addition
• We wish to encourage student engagement

The ideal

• Student asks a question by creating a clipshow
• Instructor replies with a clipshow containing new content as well as clips from one or more captures
My System – How

Modifications to Matterhorn's playback system
  • Flash and Javascript based
  • Progressive and streaming based content delivery

Changes
  • Clipshow tools
    - Creation
    - Playback
    - Search
    - Organization
    - Voting
  • Annotation updates
My System – Clipshow Creation
My System – Clipshow Playback and Search
My System – Clipshow Series
My System – Annotation Changes
The Study

Question: Do students find clipshows useful?

Five class sections

• Three introductory Computer Science classes
  • All three sections share a common set of videos
• Two upper year Economics sections
• Approximately 350 students
• Minimal to no changes in pedagogical style
  • Some faculty were new to the system
The Study – Data Gathering

Two separate approaches to data gathering

- Active
  - Surveys, both paper and online
  - Class assignment(s)
    - Learning outcomes
- Passive
  - Matterhorn's data collection
The Study - Analysis

Basic Stats

• Approximately 301 hours of video consumed
  • 190 viewers, 129 > 10 m, 60 > 1 h, 40 > 2 h
• Approximately 4.5 hours of clipshows consumed
  • 28 viewers, 6 > 10 m, 3 > 20 m
• 51 clipshows
• 38 clipshow series
• 3 votes
• 17 annotations
The Study - Surveys

• Surveys for additional information
  • Econ class, on paper
    • 21 and 13 responded
    • 12 and 8 users, 9 and 5 non-users
    • 50 and 26 students
  • CS classes
    • 16, 7, and 22 responded
    • 6, 0, and 13 users, 6, 4, 6 non-users
    • 113, 61, and 115 students
Analysis

Comments

• Generally seen as useful, but hard to use
• Confusion on the point of the tool
• Confusion on what the tool is / features
• Instruction format
Analysis

A few theoretical groups

- Confused about what a clipshow is
  - 28 said they used the tools, but did not
    - 11 never even loaded the player

- Unhappy users
  - A few
    - One of our largest users?
Analysis

A few theoretical groups – con't

• Happy non-users
  • Did not translate to video/clipshows
  • Did not know what they were
  • Useful to skip class, but I didn't
  • Not interested
  • Technical issues
• Happy users
Analysis – Happy Users

• Four hypotheses
  • Students who consume clipshows will be more engaged
    • 74 for users vs 69 non users
      – 71 vs 70, and 75 vs 68 for ECON
      – 84 vs 71 for CMPT (outlier, single student)
Analysis – Happy Users

• Four hypotheses
  • Students who consume clipshows will be more engaged
  • Learners who consume more clipshows per unit time will be more engaged
Analysis – Happy Users

• Four hypotheses
  • Learners who create clipshows will be more engaged
  • Learners who create 'useful' (frequently revisited by others in the class) clipshows will be most engaged
  • Insufficient data
Confounding Factors, and the Future

A number of confounding factors

- Bugs
  - Or lack of features?
- Streaming issues
- Late tutorial

The future

- Further studies?
  - Teaching style
  - Viewing/Creating purpose
  - Instructional support in creating clipshowns
Thanks for coming!


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