Annotations, a key asset for video-based e-learning
Context - video-based e-learning

Credit: Project 366 #59: 280212 Days Gone By... by comedynose / CC BY 2.0
Outline

· A primer on video annotations
· Using annotations in video-based e-learning systems
· Annotation-related challenges
· Experiments to come in the COCo project
Video active reading - a scenario

Credit: Mulholland Drive by billgarrett-newagecrap / CC BY 2.0
Video annotation - definition

MediaFragments
05'43' - 15'22
7'01 - 36'45
38' - 40'42
51'12' - 53'13

Subtitles
You are...

Chapters
Opening
Car chase

Shots
#2

Details

Image references

Internal references

Web references

Viewed segments

http://www....
Video active reading process

- Manually Annotation creation
- Import Extract
- (Re)organization Navigation

Publication Hypervideo, static document...
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Video-based e-learning activities

Different activities based on

• the nature of the video document
• the status of the annotator
• the status of the recipient
# Annotations created by learners

<table>
<thead>
<tr>
<th>Recipient Video nature</th>
<th>Self</th>
<th>Peer</th>
<th>Teacher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learner performance</td>
<td>Reflexivity</td>
<td>Feedback</td>
<td>Auto-evaluation</td>
</tr>
<tr>
<td>Course</td>
<td></td>
<td></td>
<td>Feedback</td>
</tr>
<tr>
<td>Other</td>
<td>Assimilation</td>
<td>Collaborative assimilation</td>
<td>Course preparation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Application of an analysis grid Analysis</td>
</tr>
</tbody>
</table>
# Annotations created by teachers

<table>
<thead>
<tr>
<th>Video nature</th>
<th>Self</th>
<th>Peer</th>
<th>Learner</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Learner performance</strong></td>
<td>Notes (for evaluation)</td>
<td>Professional training</td>
<td>Feedback / evaluation</td>
</tr>
<tr>
<td><strong>Own course</strong></td>
<td>Reflexivity</td>
<td>Counter-examples</td>
<td>Enrichments (additional material)</td>
</tr>
<tr>
<td><strong>Other courses</strong></td>
<td>- Concept assimilation</td>
<td>- Feedback</td>
<td>Comments / enrichments</td>
</tr>
<tr>
<td></td>
<td>- Professional training</td>
<td>- Comments / enrichments</td>
<td></td>
</tr>
<tr>
<td><strong>Other content</strong></td>
<td>Assimilation</td>
<td>Comments / enrichments</td>
<td></td>
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</tbody>
</table>
## Annotations created by learners

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<tr>
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<th>Teacher</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Learner performance</strong></td>
<td><img src="image1.png" alt="Image" /></td>
<td>Feedback</td>
<td>Auto-evaluation</td>
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<tr>
<td>Reflexivity</td>
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<tr>
<td><strong>Course</strong></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td>Feedback</td>
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<tr>
<td>Assimilation</td>
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<td>Collaborative assimilation</td>
<td></td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td><img src="image4.png" alt="Image" /></td>
<td><img src="image5.png" alt="Image" /></td>
<td>Analysis</td>
</tr>
</tbody>
</table>
Collaborative assimilation example
Feedback - example
App. of an analysis grid - example

Matterhorn Engage player
Analysis - example

Projecting American Empire on Film

01 Bullet Memo-Birth of a Nation
by User Name_382, User Name_619

In a focused paragraph of about 100 (but not more than 125) words, illustrated by at least one (but not more than two) clip(s), totaling no more than four minutes, respond to the following question:

How can Barthes’s Mythologies help us analyze Griffith’s Birth of a Nation?

To fulfill this assignment:
1. Watch Birth of a Nation and make clips for your analysis (you may make more selections (clips) than you will use in this bullet memo).
2. From the Home page, scroll down to the assignment title “01 Bullet Memo-Birth of a Nation” and click the green “Respond to Assignment” button; or alternatively, return to the assignment window and click the “Respond” button, and write out your answer, incorporating your already-made selections (clips) using the “Add selection to composition” arrow icon in the top right corner of the selection.
3. Make sure you save your response on the “Published to Whole Class” level to submit it.

Silent Stereotypes and Barthesian Myths
by User Name_2972

In Birth of a Nation, a great deal of the film’s spin and message derives from the characters’ mythological body language. However, the film seeks to create myths of black men and women in order to create contrasts and further its ultimate message. In the first extended portrait of blacks in the film, their actions and appearances are exaggerated: most of them walk with a hunchback or limp, and clap hyperbolically. This is a method meant to make physical and visual the myth of Black inferiority, a logic repeatedly employed throughout Birth. Women are also presented as exaggerated figures — here Lydia Brown Stoneman’s housekeeper reacts to Stoneman’s edict of equality in a sexual manner, suggesting a Barthesian myth of black female promiscuity and manipulation.
Reflexivity/Feedback - example
Course enrichment - example
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Annotation model challenge

• **Goals**
  - Ensure interoperability
  - Ensure durability

• **Support**
  - Anchoring now normalized (MediaFragment)
  - From unstructured free-text annotations to semantic annotations
Semi-automatic annotation challenge

• Many efforts to do automatic generation (Translectures, linkedTV) but not perfect yet
• Provide tools that combine automatic algorithms and correction interfaces
Interfaces for manual annotation challenge

- Complex activity upon dynamic documents
  - exacerbated by collaboration features
- Device issues (mobile)
- Balance between genericity and specificity
Hypervideo production challenge

• Authoring environments
• Guided hypervideo production
• Ergonomic (design and interactivity) guidelines
Annotation-based analytics challenge

• Fine-grained analytics
  - Using explicit data from annotations

• For course re-engineering, reflexivity
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COCo project - goals

Creating open multimodal, video-centered contents for knowledge diffusion

Experimenting with new techniques for e-learning
COCo project - ongoing work

- Live annotation
- Iterative course conception
- Collaborative annotation of pedagogical capsules
Iterative course conception

1. watch/participate
2. produce
3. conceive
4. produce

lecture V1

users

annotations

pedagogical support members/teacher

scenarization

lecture V2
Collaborative course enrichment

- abstract
- TOC
- ...

1. watch/participate
2. produce/use
3. produce/use
4. produce

 Teachers

 improve

 analyze

 annotations

 Users

 Pedagogical support

 lecture/seminar

- abstract
Conclusion

• Many tools and experience on video annotation
• Great potential for promoting learner engagement in e-learning systems through a variety of innovative pedagogical setups