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Collaborative Hypervideo Authoring in Common Wikis Engines

Niels Seidel

Agenda

Motivation

Features of Video

Related Works

User Interface Concepts

Solutions

ViWiki Use Case

Motivation

Demand for editing the Web

„editing web content is as important as browsing“

(Tim Berners Lee) [1]

⇒ 80% of the internet traffic is video traffic.

⇒ Are videos already accessible for editing?

⇒ Can we use Wikis as appropriate tool for collaborative text **and** video authoring?

Wiki's limitations of video composition and manipulation:

- ▶ characteristically temporal peculiarities of videos are not addressed
- ▶ only spatial position and dimension can be assigned
- ▶ wikis are hypertext systems but do not support hypervideo
- ▶ video authoring is much more complex than text manipulation
- ▶ current video authoring concepts are not suitable for hypervideo authoring

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Features of Video

General Features of Videos

Transport of all symbol systems [4]:

- ▶ moving images in all levels of detail
- ▶ static images
- ▶ spoken and written language
- ▶ sound effects and music

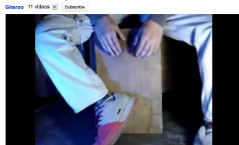
Additional temporal dimension



Video-based Learning

- ▶ realistic situations;
- ▶ vivid visualizations;
- ▶ spatio-temporal processes;
- ▶ 3D relations;
- ▶ motion and interaction sequences.

Como tocar el Cajon Peruano NIVEL 03 de 03



Learn to Dance Bachata



Parallel Parking - How To Parallel Park



How to Swim Butterfly Stroke by JimmyDShea



Rolleid - Ich brauf' mir 'ne Freiluftkaterne (Folge 3)



How to tie fishing knots



More: Clark & Mayer's *Cognitive theory of multimedia learning* [3, p. 121]

Videos on Wikipedia

videos.videoonwikipedia.org/listing/featured/

WIKIPEDIA VIDEOS

[Home](#) [Featured](#) [New Videos](#) [Popular](#) [About Us](#)

Featured Videos



Sequence of PSR B1509-58 Images.OGG
The sequence of images begins with an [[Category:Infrasound|Category:Infrasound]] image, which then zooms into an optical image, which shows a surrounding [[Category:Chandra X-ray Observatory|Category:Chandra X-ray Observatory]] d

Posted 1 year ago
By [Commons recent videos feed](#)



Folgers.ogv
test upload

Posted 1 year ago
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[Contents](#)
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[Recent changes](#)
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[Print/export](#)

Category [Discussion](#)

Category:Featured videos

From Wikipedia, the free encyclopedia

Media in category "Featured videos"

The following 35 files are in this category, out of 35 total.



20090512 James Earl ...
42,730,856 bytes



20091104 Aisa Wele ...
93,516,699 bytes



20091104 Joshua Bell ...
42,100,066 bytes



First Conclusions and Research Questions

- ▶ Moving images within Wikis can communicate ideas in ways that text can not.
- ▶ Videos are sometimes superior to text only
- ▶ Video can improve learning outcome

Questions about Wiki-based collaborative video authoring

- ▶ How can we escape the text dominance in order to fulfil multimedia learning principles?
- ▶ How to enrich the Wiki word processor for adequate (hyper)video editing?
- ▶ How can we interlink text passages and video sequences?

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Related Works

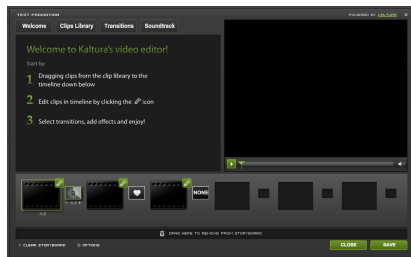
Video Learning Platforms of Today

	YOVISTO	YouTube EDU	iTunesU	Khan Academy
# videos:	?	?	350.000	2100
# user:	?	?	?	+/- 1.000.000
features:	time-related tags, discussions and slides	time-related annotation like hyperlinks, subtitles, ect.	broad distribution of static videos	powerful black board approach

collaborative video editing

- ▶ CMS-independent (WP, Drupal, MediaWiki, elgg, ...)
- ▶ timeline approach
- ▶ HTML5

See: <http://www.kaltura.com/>



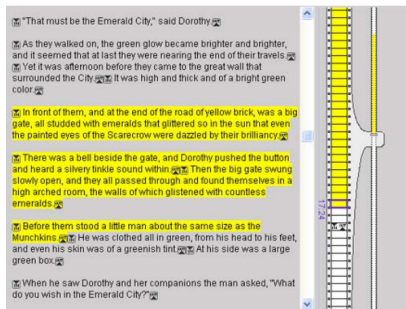
- + easy to use
- + compatible with text editing
- + based on open standards
 - no hyperlink annotation
 - closed editing source

Video-Wiki (Blankinship & Mikhak, 2007)

markup-free video editing

- ▶ audio transcription as closed caption
- ▶ editing by rearrangement of closed captions

See: [2]



- + easy to use
- + open editing source
- + compatible with text editing
- no hyperlink annotation

Popcorn & Butter

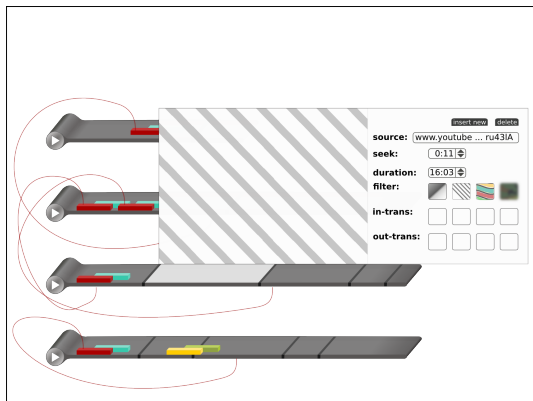


See: <http://popcornjs.org/> and <http://butterapp.com/>

- + easy to use
- + compatible with text editing
- + hyperlinks as plugin
- no open editing source

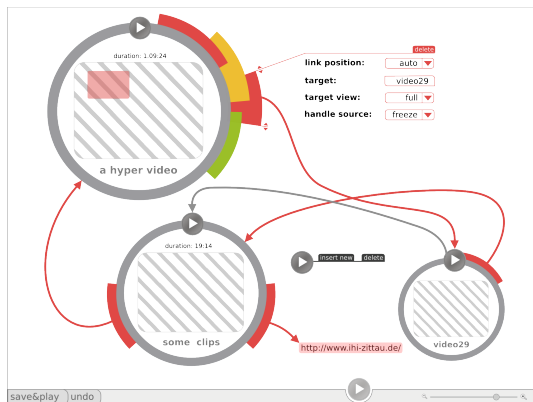
User Interface Concepts

Multi Track Editing



- + well known concept
- complex UI
- high cognitive load
- interfere with text editing
- WYSI [not] WYG

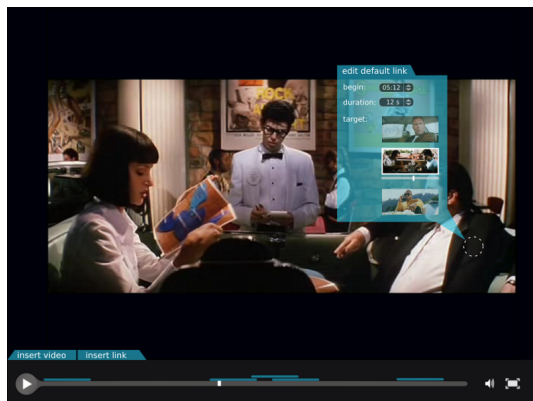
Graph-based circular timelines



See also: [6, 7]

- + new & stylish
- space consuming
- hardly scalable
- interfere with text editing
- WYSI [not] WYG

Direct Manipulation UI



- + WYSIWYG
 - lost in hyper space?
 - interfere with text editing

The Wiki [Markup] Way

```
== A typical headline ==  
# first  
# second  
<hypervideo>  
[[Video:myClip.ogg # 10 | 120 myId]]  
[[Video:myClip.ogg someId]]  
+[[Hyperlink:some wiki page]]  
+[[Hyperlink:other wiki page#anchor-label]]  
+[[Hyperlink:http://www.ihl-zittau.de/]]  
+[[Hyperlink:some wiki page] 100px 200px]  
[[Video:myClip.ogg someId]]  
+[[Hyperlink:some wiki page] #10 | 20]  
</hypervideo>
```

- + compatible with text editing
- + machine readable
- WYSIWYG
- preferred by expert users

Concluding Requirements for seamless Hypervideo Integration

- ▶ incoming and outgoing time-related links
- ▶ source view / machine-readability
- ▶ WYSIWYG support
- ▶ scalable GUI
- ▶ compatibility with text editing

Solutions


UI Solution

Wiki Markup + Direct Manipulation UI

insert video

select video:

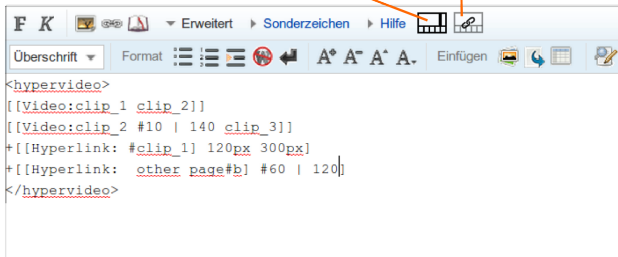
name:

sequence: 

insert hyperlink

target page:

link anchor: 



```
<hypervideo>
[[Video:clip_1 clip_2]]
[[Video:clip_2 #10 | 140 clip_3]]
+[[Hyperlink: #clip_1] 120px 300px]
+[[Hyperlink: other_page#b] #60 | 120]
</hypervideo>
```

UI Solution

Markup Extension in Detail

Type	Syntax
Video	...
Naming	<code>[[Video:myClip.ogg myId]]</code>
Sequence	<code>[[Video:myClip.ogg myId]]</code> <code>[[Video:nextClip.ogg someOtherId]]</code> <code>[[Video:myClip.ogg anotherId]]</code>
Clip	<code>[[Video:myClip.ogg # 10 120 myId]]</code>
Hyperlink	...
annotation	<code>[[Video:myClip.ogg someId]]</code> <code>+[[Hyperlink:some wiki page]]</code> <code>+[[Hyperlink:other wiki page#anchor-label]]</code> <code>+[[Hyperlink:http://www.ihl-zittau.de/]]</code>
position	<code>[[Video:myClip.ogg someId]]</code> <code>+[[Hyperlink:some wiki page] 100px 200px]</code>
time	<code>[[Video:myClip.ogg someId]]</code> <code>+[[Hyperlink:some wiki page] #10 20]</code>

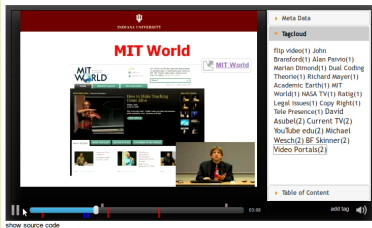
UI Solution

Frontend

Player

Curt Bonk: Using Existing Online Video Ressources

Curt Bonk's Webcasts about E-Learning consist of 28 short clips. In this showcase three of them have been interconnected through time-related hyperlinks. Further more each clip has been enriched by links on external web resources. To enhance knowledge management a table of content and a tagcloud with temporal keywords is provided.



Link Design

Standard

Link-Cycle

Multi directinal

External



Making it real: ViWiki

A wiki-independend plug-in

Implementation

HTML5



vi2 hypervideo library

Supported Wiki Engines

- ▶ MediaWiki \implies Extension
- ▶ Drupal Wiki \implies Module

ViWiki Use Case

ViWiki Use Case

Documentation of a Concentration Camp in Lower Silesia



Project: 04/2011 - 12/2011

Book Source: „Die KZ-Außenlager Görlitz und Rennersdorf“ [5]

Wiki Engine: MediaWiki

Conversion: 220 book pages \implies 49 Wiki articles

Wiki Gardeners: 2 historians + 2 teachers

Hypervideos: 20



Thank You!

nseidel@ihi-zittau.de

<http://elearning.ihi-zittau.de/beta/vi2/>



www.nise81.com



Literature I



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HarperCollins, New York, 1999.



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About the Author



Niels Seidel (nseidel@ihi-zittau.de) works as a research associate at the information technology department at the **International Graduate School (IHI) Zittau** / Germany. He holds a degree in computer science and multimedia of the University of Ulm. Currently, he is researching in collaborative E-Learning, Hypervideos and related Design Patterns. His private interest in Shoah history research resulted in several publication in print and digital media.