Introduction

SlideWiki aims to exploit the wisdom, creativity and productivity of the crowd for the *creation of rich, deep-semantically structured E-Learning content*. Users can create and collaborate on educational slides, diagrams, assessments and arrange slides in presentations. Presentations can be organized hierarchically, so as to structure them reasonably according to their content.

SlideWiki empowers communities of instructors, teachers, lecturers, academics to create, share and re-use sophisticated educational content in a truly collaborative way. In addition to importing PowerPoint presentations, it supports authoring of interactive online slides using HTML and LaTeX. Slides and their containers (called decks), are versioned, thereby enabling change tracking. Users can create their own themes on top of existing themes or re-use other's themes.

* Video tutorials about the different features of SlideWiki are available here.

SlideWiki is developed and maintained by <u>AKSW research group at</u> <u>University of Leipzig</u>.

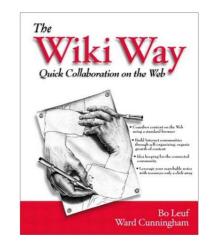


How can we collaboratively write texts?

How can we collaboratively create the largest multilingual encyclopedia?

How can we create a crowd-sourced map of the world?

How can we collaboratively create, share and reuse rich educational content in hundreds of languages???







SlideWiki for Humanity

- Education is one of the main factors for societal progress (in the <u>Human Development Index</u>, for example, education) is weighted one third)
- However, despite huge investments into e-learning the potential of the Internet and crowd-sourcing techniques for e-learning is still not sufficiently explored
- With SlideWiki we aim to dramatically improve the efficiency and effectiveness of the **collaborative creation of rich learning material** for online and offline use
- With its semi-automatic translation and liberal licensing SlideWiki aims to make educational content dramatically more accessible to learners in developed and developing countries

Feature Overview

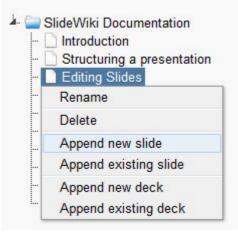
SlideWiki allows to create richly structured presentations comprising slides, self-test questionnaires, illustrations etc. Features include:

- WYSIWYG slide authoring
- Logical slide and deck representation
- LaTeX/MathML integration
- Multilingual decks / semi-automatic translation in 50+ languages
- PowerPoint/HTML import
- Source code highlighting within slides
- Dynamic CSS themability and transitions
- Social networking activities
- Full revisioning and branching of slides and decks
- E-Learning with self-assessment questionnaires
- Source, citation and attribution tracking

All content in SlideWiki is licensed under CC-BY-SA.

Structuring a presentation

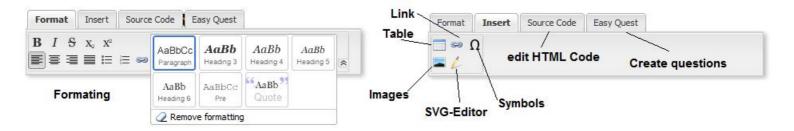
To structure your presentation you can use the context menu which is shown by **right clicking** on your deck.



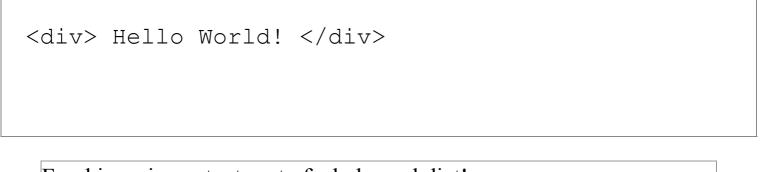
You can use **drag and drop** in order to change the positions of slides within a deck.

R.	Introduction
1	Editing Slides Structuring a presentation
- [LaTeX integration
-	Structuring a presentation
	Revisioning
- [] Import
- [Export
- [Questionnaires
- [Styling
L. [Transitions

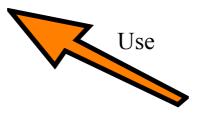
SlideWiki employs <u>Aloha-Editor</u> for editing slide content. It also uses <u>SVG-edit</u> for drawing shapes within an slide.



Using these features you can add code, quotes, shapes and etc. to your slides. Some examples follow:



Food is an important part of a balanced diet!

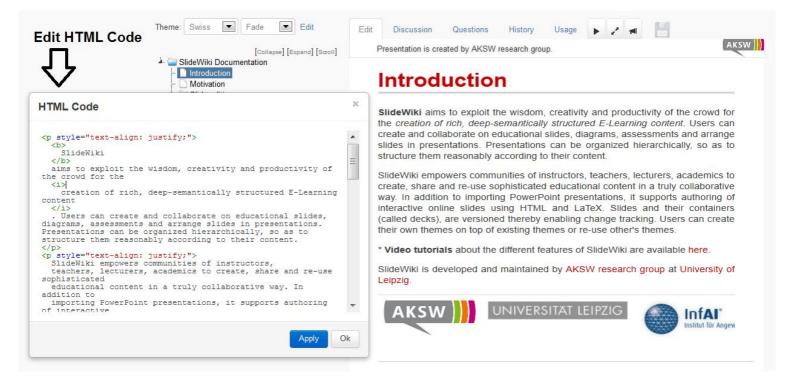


* Note : It is recommended to edit the slides in *fullscreen mode*.

Editing Slide HTML Code

Users familiar with HTML can easily edit slides' source code. SlideWiki uses <u>CodeMirror</u> to highlight the HTML source code.

WYSIWYG and **source code** views are synchronized so that changes in one view will affect the other one instantly.



LaTeX integration

SlideWiki uses MathJax to display mathematical content.

You can use LaTeX expressions within your slides. For example:

```
\[\left( \sum_{k=1}^n a_k b_k \right)^2 \leq \left( \sum_{k=1}^n a_k^2 \right) \left( \sum_{k=1}^n b_k^2 \right) \]
```

which will result in:

$$\left(\sum_{k=1}^n a_k b_k
ight)^2 \leq \left(\sum_{k=1}^n a_k^2
ight) \left(\sum_{k=1}^n b_k^2
ight)$$

You can also write inline LaTeX. For example:

```
\(a^{\mathcal{I}, \mathcal{Z}} =
a^{{\mathcal{I}} \in \Delta_{\mathcal{I}})
```

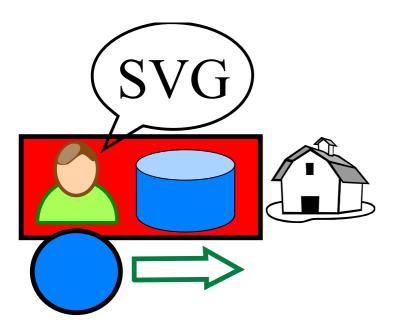
which will result in: $a^{\mathcal{I},\mathcal{Z}} = a^{\mathcal{I}} \in oldsymbol{\Delta}_{\mathcal{I}}$

For more TeX samples click here.

Scalable Vector Graphics (SVG) Integration

SlideWiki allows to integrate Scalable Vector Graphics (SVG)

• use the Pencil tool in the editor Insert tab



Inline Frames

You can embed inline frames into your slides. Using this approach, you can run online Web applications within your slides.

For example (embedding a video):

<iframe width="560" height="315"

* Notice: the slide containg the iframe tag should not be the first slide of your deck

Progressive display of slides

SlideWiki supports the progressive display of slides, just surround the content to be displayed progressively with additional HTML block elements (e.g. DIV) having the attribute class="inslide"

```
Content to display first
<div class="inslide">
Content to display second
<div class="inslide">
Content to display third
</div>
</div>
```

For example:

Content to display first Content to display second Content to display third

Animations and Effects

SlideWiki supports different types of animations and effects within slides. For example:

- Shake (use class "effect-shake")
- **Bounce** (use class "effect-bounce")
- Pulsate (use class "effect-pulsate")
- Highlight (use class "effect-highlight")

Styling

- SlideWiki employs <u>Saas</u> for creating dynamic styles for the presentations.
 - Sass is an extension of CSS3, adding <u>nested rules</u>, <u>variables</u>, <u>mixins</u>, <u>selector inheritance</u>, and <u>more</u>.
- To create a new theme for your presentation, you can use the following predefined CSS classes:

.first-slide

.first-sub-slide

.slide-header

.slide-title

.slide-body

.slide-metadata

.slide-footer

.slide-footer-text

. . .

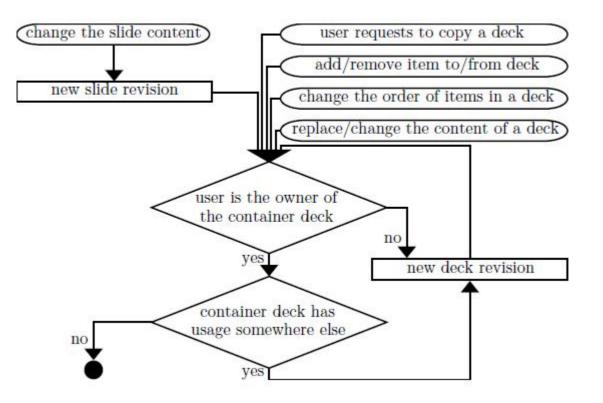
Transitions

Besides the four default transitions, SlideWiki supports creating <u>impress.js</u> transitions.

* To create your customized transitions, click on the Edit button next to the transition drop-down menu and then click on the **Builder4Impress** link on top.

Revisioning

- SlideWiki supports versioning, forking/branching and merging for slides and decks (similar as GitHub and Bitbucket do for software code or ordinary Wikis for text).
- SlideWiki ensures that every author's personal revisions of slides and decks are always **preserved**
- New version of slides/decks are created based on the following criteria:



Persistent URL Scheme

SlideWiki provides a URL Scheme aiming to make content persistently accessible

For example, you can always access:

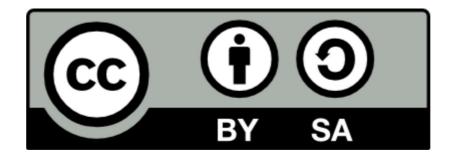
- A particular revision of a slide/deck: http://slidewiki.org/slide/17706 http://slidewiki.org/deck/56
- The latest revision of a slide: http://slidewiki.org/slide/17706/latest http://slidewiki.org/deck/56/latest
- The latest revision of a slide of a particular user: http://slidewiki.org/slide/17706/user/1 http://slidewiki.org/deck/56/user/1

Visibility, Licensing and Attribution

Users can set the visibility status of the deck. Invisible decks will not be listed in the SlideWiki home page.

SlideWiki is committed to open knowledge and giving credit to original authors and contributors. All contributions on SlideWiki (including images, styles etc.) have to be licensed under the <u>Creative Commons Attribution Share Alike license (CC-BY-SA)</u>.

SlideWiki tracks all contributors to a particular slide (respectively deck) and lists these contributors to acknowledge their contributions.



Editor Groups

- users can create editor groups for each deck: **enables multiple users to easily work on a presentation** without creating new revisions for every change
- To manage editors of a deck, go to the *Edit tab* of the respective deck. Then add users to your deck by entering their username or email address.
 - You can assign new editors to all sub-decks owned by you.
 - Current editors other than the owner of the deck can also add editors to the deck.

Username or Email		Add as editor
address:	Assign editor to all sub decks belonging to owner	
Nur	mber of editors: 4 -> Add more	
	🔹 soeren 르 🔲 Delete from all sub decks	
	🔹 vassilisha 🗖 🔲 Delete from all sub decks	
	• earthquake 🧧 🔲 Delete from all sub decks	
	🔹 vassi 🚍 🔲 Delete from all sub decks	

Translation

- Slidewiki allows to automatically translate presentations using <u>Google</u> <u>Translate</u>
- Presentations can be automatically translated into 54 languages and then **edited** and **saved** independently from the original.
- After the original deck was changed, the translation deck start to have notification about that. There is the possibility to **compare** the revisions and to **update** the translation in accordance with changes.

How to translate your deck

- 1. Make sure that you are logged in SlideWiki
- 2. Select a deck or subdeck in the tree
- 3. Open the list of existing translations in the top-right corner (see screenshot below)
- 4. You can open existing translations of the deck by clicking on one of the languages
- 5. If the desired language is not available in the list or if the translation is outdated, use the translate button at the bottom of the list
- 6. SlideWiki will redirect you to the translated deck. However, the translation will not be ready momentarily, as it takes time to manage the translation process. Please, wait a few minutes and reload the page with the translated deck or return to it later.
- 7. After the translation is completed, you can revise it

					existed trans	slations 🗁	Persian
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[Collapse all] [Expand all] Soc	llabe] C	ollaborativ	e authoring	of presentation	ons click to	o translate	
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• SlideWiki allows to attach multiple-choice questions to each individual slide

 \circ if slides are copied or reused, so are the questions attached to them

- For each presentation the learner can start a **self-assessment test**, which launches a multiple-choice test composed of all or a selection of questions attached to slides of the presentation
- Such questionnaires are **structured** according to the structure of the presentation, which allows to apply **module-based score** systems without additional teacher's work.
- SlideWiki allows to score the results with 5 **different algorithms**, including a novel one.

Easy Question

SlideWiki supports the assisted creation of questions.

The respective tool "Easy Question" can be found in the editor menu.

The process includes these steps:

- 1. Being logged in, click on the slide content to enable the editor menu
- 2. Select the fragment of the text, that includes the material for question and answer alternatives
- 3. In the editor menu switch to the "Easy Quest" tab and click the round yellow button with a question mark:

Easy Question result

After selecting a text fragment and clicking on the Easy Quest button, you are redirected to the question tab, and a new question is created from the selected text fragment.

Check and edit the question and alternatives, select the appropriate difficulty, add explanations, if necessary, and click the Save button to assign the question to the slide.

For example, the text fragment from the previous slide turned into following question:

uestion		Difficulty		
The Web accompanies the transition o an information society and provide or a new quality of information hand acquisition as well as provisioning	es the infrastru	20	Select difficulty	
dit Answers	Correct?	Explanation		Delet
high availability			.::	-
high relevance	:			-
				-
low cost	<u> </u>			

Playing slides

Please use the browser fullscreen mode (by pressing F11) for playing your slides.

You can use arrows (up,down, right, left) as well as 'space', 'enter' buttons for navigation.

The following shortcuts can also be used when playing slides:

- 'S' : enable/disable scaling.
- 'F' : enable/disable full slide size.
- 'M' : go to menu for the list of slides.

• 'G': go to a specific slide by entering its number.

* Please use your browser zooming feature ([*CTRL* +] and [*CTRL* -]) to adjust your presentation if needed.

* SlideWiki also supports zoomable presentations.Try a demo here.

Import & Export

SlideWiki allows to import & export presentations from:

- **Powerpoint** (.pptx format, import only)
 - Currently, only raster images are imported from Powerpoint, but import of vector graphic (converted to **SVG**) is planned.

• deck.js HTML

- allows users to work **locally** and increases content security (backup your presentations)
- **PDF** just klick the "Print Deck" button and print it to PDF from your browser.
- LaTeX (experimental import only)
- SCORM package (export only)
 - allows to move content between different Learning Management Systems

Attribution

Despite its focus on collaboration, SlideWiki strives to be a good steward of preserving and acknowledging the original creator of a certain contribution:

- All content contributed to SlideWiki must be licensed under the <u>Creative</u> <u>Commons Attribution-Share-Alike License</u>
 - You can additionally license your content under even more liberal licensing schemes (e.g. CC-BY or CC0), by simply adding a respective note to the deck description.
- All changes and revisions performed by a certain user are preserved and the respective user is added to the list of contributors for a certain item (i.e. slide, deck, question)
- If content is copied from other sources SlideWiki allows to attribute these sources on a slide ("Add original source" below the speaker notes) and deck basis ("Original source" on the deck edit tab)

Social networking

SlideWiki allows to follow the update stream of slides, decks and users

Currently, you can login to SlideWiki using your Facebook account

Further integration with social networks is planned

Code highlighting

SlideWiki employs <u>CodeMirror</u> to highlight sourcecode within slides.

- To use this feature
 - $\circ\,$ go to editor Insert tab and then choose "Insert Code Snippet" or
 - go to source code and add a < DIV > tag containing the following attributes: class ="code" mode ="your desirable mode"
- The following modes are currently supported : javascript, css, xml, htmlmixed, php, ntriples, sparql
- If you want to put more than one code snippet within a slide, use <**TEXTAREA**> tag instead of <**DIV**>
- For example:

My name is Sören Auer and you can give me a ring via 49-341-97-32367 or visit <a property="url"
href="http://aksw.org/SoerenAuer.html">my homepage.

Globally Recognized Avatars

SlideWiki supports <u>Gravatar</u> for using *Globally Recognized Avatars*.

Your Gravatar is an image (based on the email you have registered with in SlideWiki) that appears next to your name when you contributed slides/decks, comments, etc. Avatars help identify your contributions on SlideWiki.

* In order to set your avatar, you need to register your corresponding email address (which is used by SlideWiki) at the <u>Gravatar</u> website.

Messaging

Users can send messages to each other.

To send message to other users, go to the intended user profile and click on the "*Write message*" link

Remote control for presentations

- SlideWiki allows to sync the display of a presentation on several devices, for example, a presenter PC/notebook and tablets/smartphones of people in the audience
- If the presenter switches slides, so will all the devices, which follow the presentation
- Once you play a presentation, a QR code together with a short link will be displayed and can be shared with other users
- Users who open the link will see the presentation as you are playing it so any change in slide is immediately reflected in other users browsers
- This feature can also be used as a remote control for your presentation, when you play the presentation on your smartphone and open the respective link on the presenter PC

SlideWiki on Mobile Devices

SlideWiki can be used on smartphones, tablets and other mobile devices

Editing functionality on these devices might, however, be limited

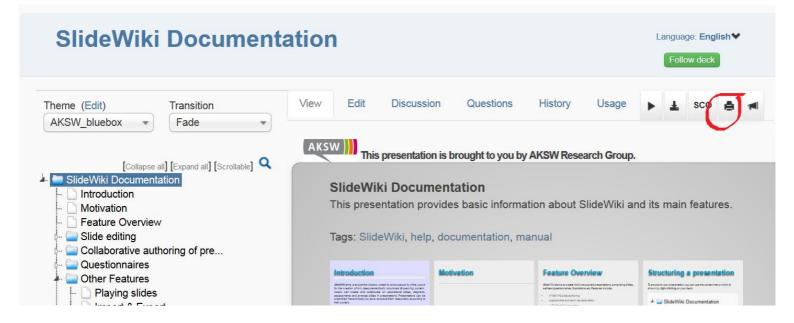
• Users can search within a deck content by clicking on the search icon on top of the presentation tree and entering their desirable search keywords.

	SVG	յլ
ia.	SlideWiki Documentation Slide editing Slide slides Scalable Vector Graphic Other Features Signatures Marcological Scalable Vector Graphic	Searcl
	 Implementation 	
	🛄 🗋 Used tools and APIs	
	- 🗋 Questions & Contact	

• Users (when logged in) can select "Find and Replace" feature from the context menu by right clicking on nodes in the tree.

Printing slides

To print a deck, click the following button and choose the Print option from your browser menu:



How to create great educational content

- structure your lecture reasonably, a deck should have between 3-10 slides
 do not overstructure
- a good lecture covers introduction, prerequisites, learning goals, references (books, standards, websites, conferences, workshops) as well as tasks and mini projects
- choose neutral examples in your slides (e.g. books or history) these should be very well known topics, so also people in other cultures can relate to them
- add at least one question to every slide, so learners can check whether they grasped the idea
- avoid lengthy full sentences, package content in easily digestible doses, use bullet points
- use speaking titles for your slides
- illustrate your material with good examples and visualizations
- beef up your decks with some nice images Google Image search allows to <u>search for CC-BY-SA licensed images</u>

Don't reinvent the wheel

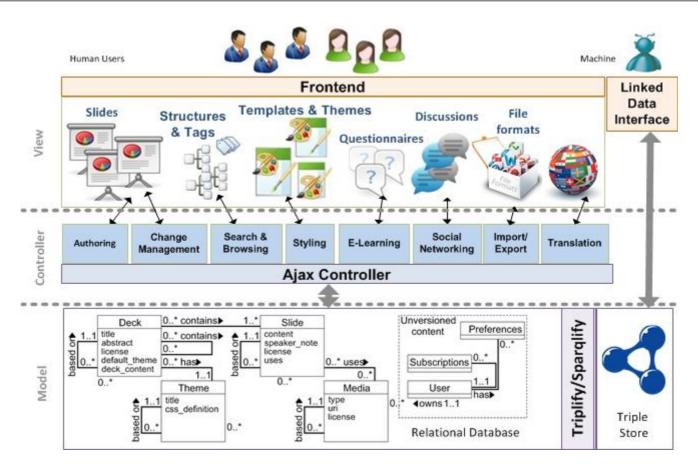
Look for existing lecture material you can reuse

Look for existing material in SlideWiki in other languages, which you can translate

Ask the original authors for permission to reuse and re-license (under CC-BY-SA) their content and acknowledge them as original authors

Good, recent text books are also usually a good basis for a lecture - inquire with the authors whether they would support a lecture on SlideWiki e.g. by providing you with the content in a machine-readable format

Birds Eye's View



Linked Data Interface

- we configured the RDB2RDF **Triplify** tool to work with SlideWiki
- we mapped SlideWiki content to RDF by Triplify
- we **published** the results on Web of Data
- the SlideWiki Linked Data interface is available via <u>slidewiki.org/triplify</u>
- SlideWiki is currently mapped to FOAF, SIOC, CC, Dublin Core vocabularies
- Support for W3C PROV and SPARQL endpoint via <u>SparqlMap</u> is planned

Used tools and APIs

- <u>PHP</u> as server-side scripting language
- <u>MySQL</u> as database backend
- <u>Node.js</u> to control presentations remotely
- <u>JQuery</u> and various JQuery plugins
- <u>CodeMirror</u> for source code highlighting
- <u>deck.js</u> for modern HTML presentation
- <u>SVG-edit</u> for drawing SVG images
- <u>ALOHA-editor</u> for WYSIWYG slide authoring
- <u>Twitter Bootstrap</u> as base CSS framework

Benefits for Educators, Lecturers and Teachers

- significantly increase the **user base** by making the content accessible to a world-wide audience
- get your high-quality e-learning content **translated** into many different languages
- engage students in contributing to and discussing the slides
- easily create (self-)assessment tests for students
- involve **peer-educators** in improving and maintaining the quality and attractiveness of your e-learning content
- increase the **reputation** in the community, by sharing qualitative e-learning content

Benefits for Students

- view rich-learning content right in a browser
- **discuss** particular content (e.g. a slide or question) with other students and instructors
- contribute additional content, improvements and feedback
- assess learning progress using the **questionnaires** attached to presentations

Benefits for Schools and Universities

- make the e-learning content **easily accessible** (each presentation and slide has its own URL)
- leverage the wisdom of **educator crowd**, which can collaborate efficiently in creating rich educational content
- make the e-learning content produced in the organization really **re-usable and re-mixable**
- increase the **reputation** of the school by sharing the quality e-learning content

SlideWiki for Companies

Presentations are a crucial element of the corporate knowledge exchange. SlideWiki can help to:

- make the knowledge available in your company easily accessible to everyone (in your company)
- engage employees in sharing and reusing knowledge available in presentations
- in addition to the public SlideWiki portal companies can install and run a SlideWiki instance inside their corporate Intranet with access control

Help creating great educational resources

Many people in the world lack access to educational material

Help us to create great educational material covering as many domains and as many languages as possible:

- Look for decks at SlideWiki, whose domain you know
- Review the content of decks and help improving them
- Add self-assessment questions to the slides
- Translate decks covering topics you know well into your mother tongue
- Look for existing presentations and e-learning material, which could be imported into SlideWiki

Lecture Wishlist

The following online courses are waiting to be imported and translated in SlideWIki:

- Systems Engineering for (LSCITS)
- Introduction to Information Retrieval
- Artificial Intelligence a Modern Approach
- Database Management Systems
- ...

Spread the Word

We are convinced that SlideWiki can have a positive impact on many different aspects.

Help us spreading the word about SlideWiki:

- organize new SlideWiki lectures in your domain of expertise by devising a curriculum and mobilizing other people to contribute content to this curriculum
- tell your friends, colleagues, peers about SlideWiki in your language by email, on Twitter in Social networks, ...
- keep in touch with SlideWiki by subscribing to our <u>news</u> and/or <u>mailinglist</u>
- become a SlideWiki ambassador or domain curator

Become a SlideWiki Ambassador

We aim to establish a network of local, regional and national SlideWiki ambassadors, which:

- represent the SlideWiki community in their region, present SlideWiki at relevant conventions and events
- translate the SlideWiki user interface and documentation to your language
- support the curation of localized courseware
- help building a local, regional or national SlideWiki OpenCourseWare community

If you are interested to become a SlideWiki Ambassador please contact us.

Become a SlideWiki Domain Curator

If you are an expert in a certain domain (e.g. history, mathematics, engineering etc.) you can support SlideWiki by help curating content in your domain of expertise:

- help us acquiring additional OpenCourseWare in your domain
- assess the quality of existing OpenCourseWare in your domain
- represent SlideWiki in your community

Cite SlideWiki

SlideWiki can be cited as follows:

SlideWiki: Elicitation and Sharing of Corporate Knowledge using Presentations

Ali Khalili, Sören Auer, Darya Tarasowa, and Ivan Ermilov. Proceedings of 18th International Conference on Knowledge Engineering and Knowledge Management (EKAW2012), Springer LNCS 7603, 2012.

Different citation formats can be found at Bibsonomy.

```
@inproceedings{khalilii-2012-ekaw,
  author = {Khalili, Ali and Auer, S{\setminus 0} ren and
Tarasowa, Darya and Ermilov, Ivan},
  booktitle = {Proceedings of 18th International
Conference on Knowledge Engineering and
Knowledge Management (EKAW 2012) },
  note = {16% acceptance rate, nominated for the
best-paper award},
  publisher = {Springer},
  series = {Lecture Notes in Computer Science
(LNCS) 7603},
  title = {SlideWiki: Elicitation and Sharing of
Corporate Knowledge using Presentations },
  url = {http://svn.aksw.org/papers
/2012/EKAW SlideWiki/camera-ready/public.pdf},
  year = 2012
}
```

How is SlideWiki different?

There are a number of online tools for presentations, such as Google Docs Presentations, Prezi, SlideShare. SlideWiki differs quite a lot from these due to its focus on:

- E-learning you can add questions to slides and thus compose comprehensive self-assessment tests for learners
- **Collaboration** SlideWiki aims at empowering whole communities to create presentations collaboratively
- **Translation** with SlideWiki content can be easily translated in more than 50 languages

No other tool provides this twist and thus SlideWiki offers a unique feature set.

Other than most OpenCourseWare projects SlideWiki promotes truly **OPEN** CourseWare

- the vast majority of OpenCourseWare initiatives publishes their content only under restrictive CC-BY-NC (no commercial reuse allowed) or CC-NC-ND (no commercial reuse and no derivations)
- CC-BY-NC and CC-NC-ND are **no** open licenses according to the <u>open</u> <u>definition</u>

Status and Future Plans

SlideWiki is *currently in a productive beta test mode* - creating comprehensive, e-learning content works, but there might be occasional problems with certain features on certain platforms

Please use one of the following ways to report problems:

- the Feedback button on the left
- our <u>Issue tracker</u>
- our <u>Google group</u>

We have implemented a sophisticated backup strategy, but still recommend you to export and download your content from time to time

In the medium to long future we plan to:

- *support more interactive learning content*, such as games, learning apps, synchronization with video
- *substantially increase the content base* particularly for school and undergraduate learners as well as the availability of this content in smaller languages and developing countries

Questions & Contact





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Darya Tarasowa (<u>darya.tarasowa@gmail.com</u>)



<u>Sören Auer (auer@informatik.uni-leipzig.de)</u>

Supporting organizations

Research group Agile Knowledge Engineering & Semantic Web

Institut für Angewandte Informatik e.

V. an der Universität Leipzig



<u>Universität Leipzig</u> UNIVERSITÄT LEIPZIG



Open Knowledge Foundation



Escience Sachsen



Enterprise Information Systems, Uni Bonn



Rheinische Friedrich-Wilhelms-Universität Bonn

International Society of Engineering Education





STI2 - Semantic Technologies Institute International

Other Open Science Initiatives

- <u>Open Knowledge Foundation</u> with its working groups on <u>Open Science</u> and <u>Open Access</u>
- <u>Semantic Web Journal</u> with its open access and open review process
- <u>OnlineJournals.ORG</u> an open-access publisher
- <u>BibSonomy</u> is a system for sharing bookmarks and lists of literature.
- International Society of Engineering Education