

# Evaluation of Web 2.0 Tools in the e-Learning Context: Case Studies Related to Pedagogy and Usability

The logo for Flickr, featuring the word "flickr" in a blue and pink sans-serif font.The logo for Masher, featuring the word "MASHER" in a bold, purple, blocky font.The logo for Diigo, featuring the word "diigo" in a blue sans-serif font with "v4.0 beta" written below it.The logo for Gliffy, featuring a blue diamond shape with a white arrow pointing up and right, followed by the word "gliffy" in a black sans-serif font.The logo for LetterPOP, featuring a blue dotted line forming a path from a blue square to a blue circle, with the text "LetterPOP" below it.The logo for BUBBL, featuring the word "BUBBL" in a blue, bubbly font on a black background, with a small red "R" in a white square above it.The logo for Woices, featuring the word "woices" in a white sans-serif font on a pink background, with "world voices" written below it.The logo for Mindmeister, featuring a pink square with a white dot and a line, followed by the word "mindmeister" in a blue sans-serif font.The logo for ZOHIO, featuring the letters "ZOHIO" in a colorful, blocky font where each letter is a different color.

**Goran Bubaš, Tihomir Orehovački,  
Igor Balaban, Ana Ćorić**

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# Project goals 1/2

- Investigate potential uses of Web 2.0 tools in hybrid university courses
- Emphasis was on usability and potential for improvement of pedagogy (creativity, collaboration, peer-to-peer learning, etc.)
- Use of wiki and blog, as well as other Web 2.0 tools:
  - Mind-mapping & block-diagrams
  - Online notes taking
  - Online presentations / video podcasting, audio podcasting
  - Online comic strip creation
  - Social networking
  - Mashups, mockups / user-interface design
  - Online surveys
  - Social bookmarking

# Project goals 2/2

- More than 35 different Web 2.0 tools were included in several university courses in the 2009/2010 academic year
- For 20 Web 2.0 tools a detailed usability survey was performed after their use by the students
- Integration of artifacts produced by the students in wiki, blog, online community tools, e-portfolio, or Moodle LMS
- Presentation of results on the project wiki, teacher training & workshops, case studies, conference presentations...
- Project team (Ana, Tihomir, Igor...):

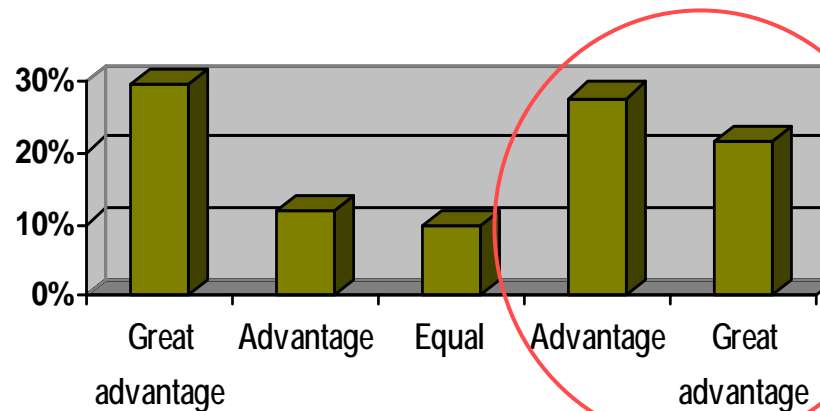


*& Darko,  
Andreja,  
Norbert,  
Tonimir,  
Kreso...*

# E-learning 2.0 & teaching at university

- Newer trends in teaching and learning with the use of Web 2.0 tools (wikies, blogs, etc.; Downes, 2005)
- Pedagogical approaches like student-centeredness, learner autonomy, community of practice, learning community, collaborative learning (Gonzalez & St. Louis, 2008)
- Use of Web 2.0 tools can support higher-order thinking (Burns, 2009)

**Level of higher order or "deep learning"**



E-learning 1.0 course (text, photos, tests, quizzes, self-assessment)

Creation of content for blog, wiki & other Web 2.0 tools (mind-maps, etc.)

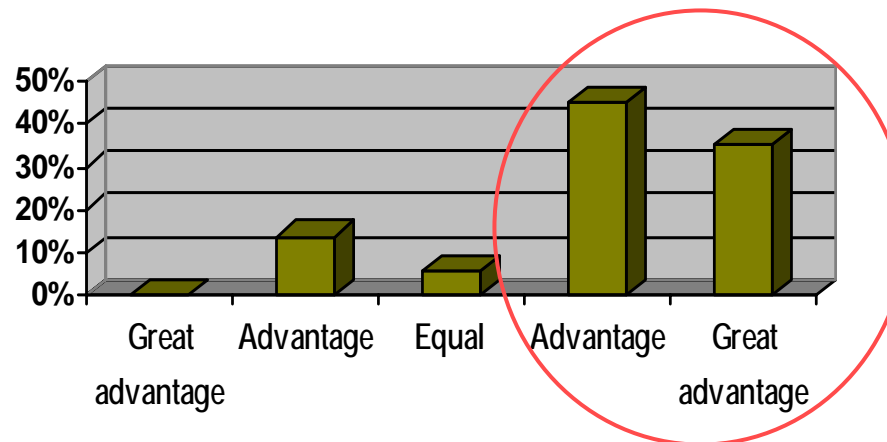
N=51

# E-learning 2.0 & teaching at university

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- Pedagogical approaches like student-centeredness, learner autonomy, community of practice, learning community, collaborative learning (Gonzalez & St. Louis, 2008)
- Use of Web 2.0 tools can support higher-order thinking (Burns, 2009)

**Positive effects on long-term memory**

E-learning 1.0  
course (text,  
photos, tests,  
quizzes, self-  
assessment)



Creation of  
content for blog,  
wiki & other Web  
2.0 tools (mind-  
maps, etc.)

N=51

# Problems with the use of Web 2.0 tools

- Use of Web 2.0 tools can be time-consuming, distractive and confusing to students (Grosseck, 2009)
- Web 2.0 tools could suffer from technology and adoption problems (Torres Kompen et al., 2009).
- The adoption problems are related not only to students, but also to university teachers (Ajjana and Hartshorne, 2008).
- Developers of Web 2.0 tools may be disregarding good design practices regarding usability (Pilgrim, 2008)
- New pedagogical skills are needed by educators; copyright issues; privacy concerns and unwanted advertising/spamming; reliability of user-produced content and preservation of data in case of external service providers (Redecker et al. 2009)
- Our initial experiences indicated that the usability of various Web 2.0 tools for teaching at the university level should be investigated

# Project background 1/2

- Hybrid course “Psychology and the Internet” (2004-2006) used wiki, blog, Delicious, Web CT & e-course



Classroom lecturing



Online activities



Web resources

E-course

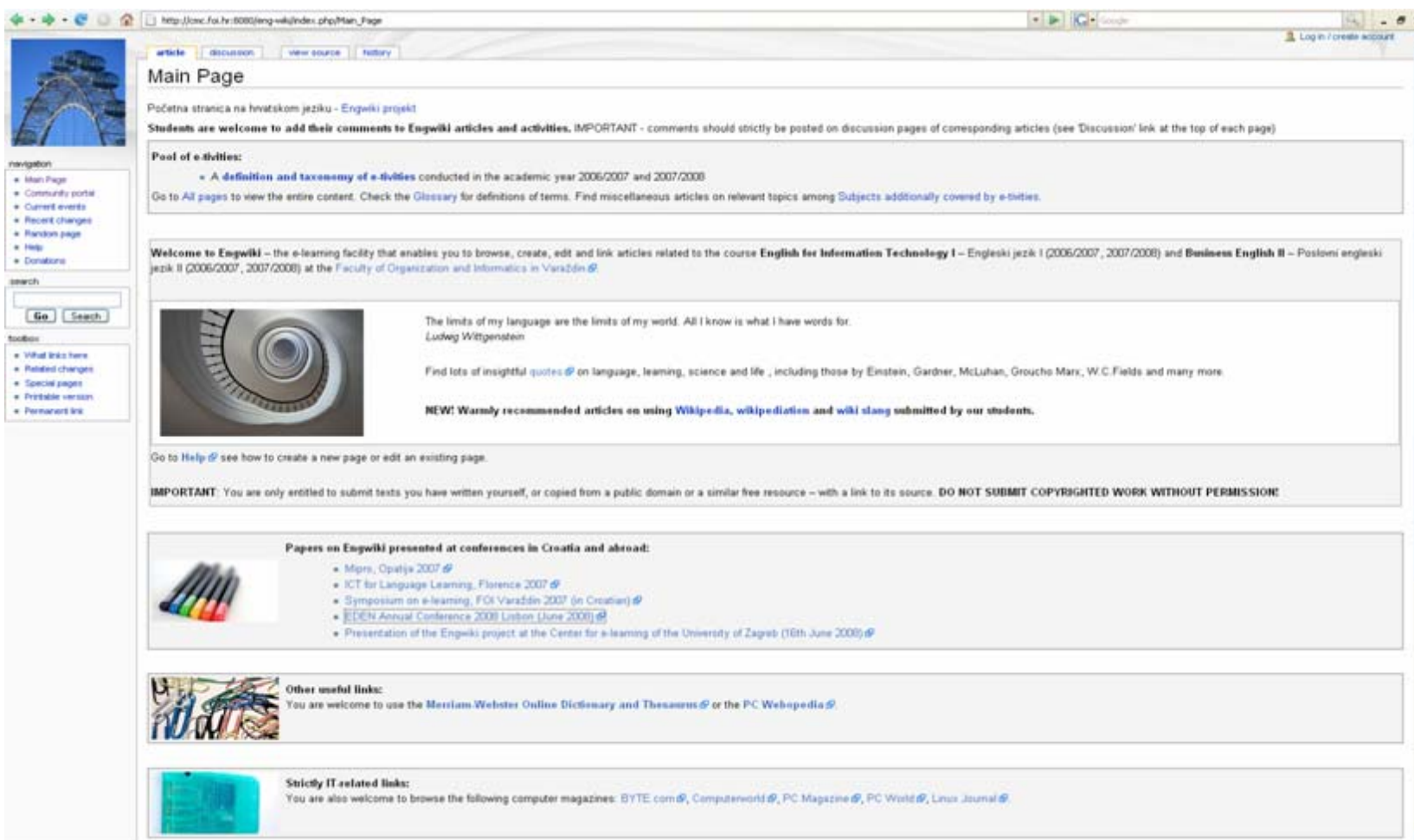
WebCT materials & discussions

Blog & wiki



# Project background 2/2

- The *Engwiki* project (2007-) designed, used in a hybrid EFL course and evaluated more than 25 e-tivities with a wiki



The screenshot shows the 'Main Page' of the Engwiki project. The page is in Croatian and features a navigation menu on the left, a search bar, and several content sections. The main content includes a welcome message, a 'Pool of e-tivities' section, a quote by Ludwig Wittgenstein, and a list of papers presented at conferences. The page is designed to be user-friendly and informative for students and faculty.

**Main Page**

Početna stranica na hrvatskom jeziku - Engwiki projekt

Students are welcome to add their comments to Engwiki articles and activities. IMPORTANT - comments should strictly be posted on discussion pages of corresponding articles (see 'Discussion' link at the top of each page)

**Pool of e-tivities:**

- A definition and taxonomy of e-tivities conducted in the academic year 2006/2007 and 2007/2008

Go to All pages to view the entire content. Check the Glossary for definitions of terms. Find miscellaneous articles on relevant topics among Subjects additionally covered by e-tivities.

Welcome to Engwiki – the e-learning facility that enables you to browse, create, edit and link articles related to the course **English for Information Technology I – Engleski jezik I (2006/2007, 2007/2008)** and **Business English II – Poslovni engleski jezik II (2006/2007, 2007/2008)** at the Faculty of Organization and Informatics in Varaždin

The limits of my language are the limits of my world. All I know is what I have words for.  
Ludwig Wittgenstein

Find lots of insightful quotes on language, learning, science and life, including those by Einstein, Gardner, McLuhan, Groucho Marx, W.C. Fields and many more.

**NEW! Warmly recommended articles on using Wikipedia, wikipediaion and wiki slang submitted by our students.**

Go to Help see how to create a new page or edit an existing page.

**IMPORTANT:** You are only entitled to submit texts you have written yourself, or copied from a public domain or a similar free resource – with a link to its source. **DO NOT SUBMIT COPYRIGHTED WORK WITHOUT PERMISSION!**

**Papers on Engwiki presented at conferences in Croatia and abroad:**

- Mpre, Opatjevo 2007
- ICT for Language Learning, Florence 2007
- Symposium on e-learning, FOI Varaždin 2007 (in Croatian)
- EDEN Annual Conference 2008 Lisbon (June 2008)
- Presentation of the Engwiki project at the Center for e-learning of the University of Zagreb (16th June 2008)

**Other useful links:**

You are welcome to use the Merriam-Webster Online Dictionary and Thesaurus or the PC Webapedia

**Strictly IT-related links:**

You are also welcome to browse the following computer magazines: BYTE.com, Computerworld, PC Magazine, PC World, Linux Journal



# Current example of a hybrid course

- The hybrid course “**Computer-Mediated Communication**” (2008-2010) combines traditional lectures in the classroom with exercises in computer laboratory and the use of e-learning / Web 2.0 tools like *Moodle, wiki, blog, e-portfolio, Delicious, Gliffy, bubbl.us, Slidestory, Veotag, Jotform, Google docs, Helipad, SpringNote, iGoogle, myYahoo, MockFlow, Mockingbird, etc.*

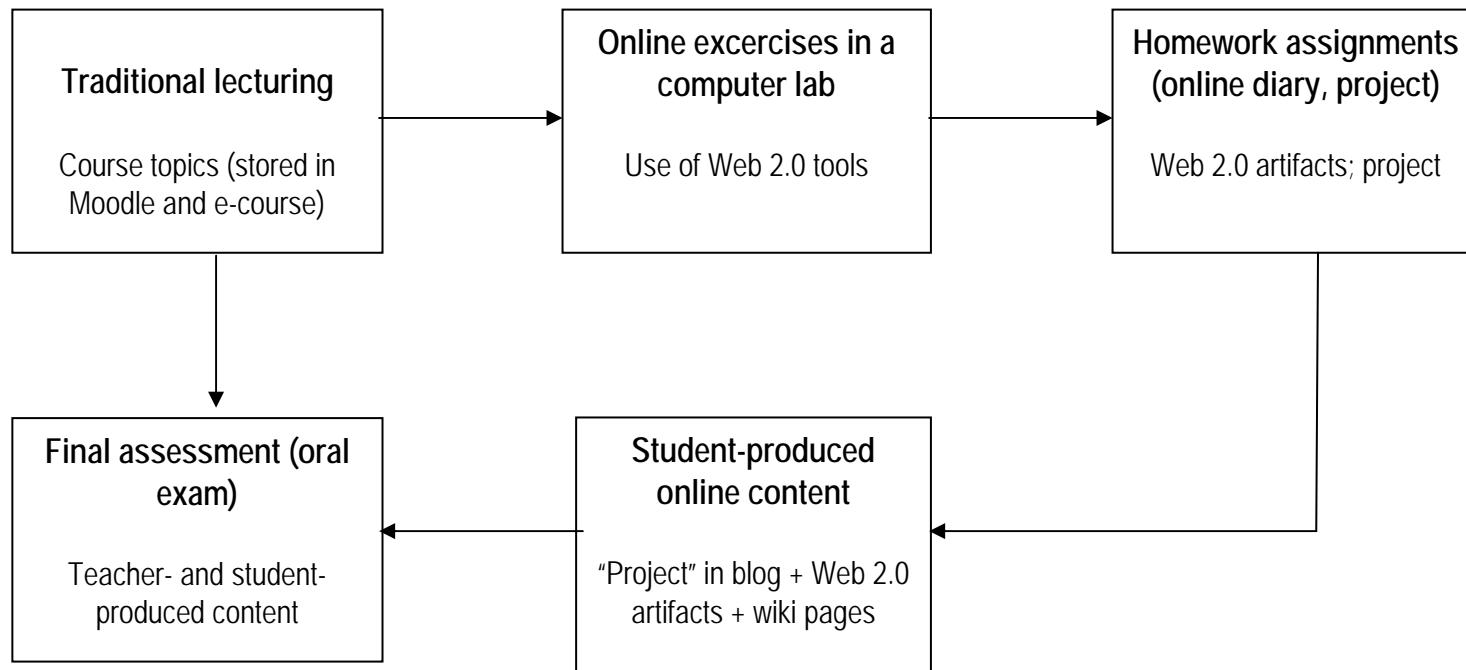
The screenshot shows a Moodle course interface. At the top, the logo 'foi' is visible on the left, and the course title 'Računalom posredovana komunikacija' is centered. On the right, it says 'Prijavljeni ste sustavu kao Goran Bubas (Odjava)'. Below the title, there's a navigation bar with 'ELF' and 'RPK' tabs, and a 'Switch role to...' dropdown menu. A sidebar on the left contains a list of course activities: Korisnici, Sudionici, Aktivnosti, Attendances, Books, Chats, Forumi, Pitanja, Resursi, Surveys, Testovi, Wikis, and Pretraži forume. The main content area is titled 'Uvod' and contains three sections:

- 1 Uvodno predavanja i seminar** (domene RPK; ovisnost o Internetu i online disinhibicija; seminar: izvori na Webu iz RPK; delicious)
  - Aktivnosti za 14.09.2009. (izvori iz RPK na Internetu; delicious)
  - Uvodno predavanje - 14.09.2009.
  - Studentski blog/projekt: Osobni identitet i Internet (u 3 dijela)
  - Studentski blog: Disinhibicija i Internet
  - Studentski blog/projekt: Ovisnost o Internetu (u 3 dijela)
- 2 Predavanje o "paradoksima" Interneta** (domene paradoksa i povezani izvori na webu; seminar: početak rada s blogom kolegija)
  - Aktivnosti za 21.09.2009. (blog kolegija; linkovi na ilustracije "paradoksa")
  - Članak "Paradoksi Interneta kao komunikacijskog medija"
  - Studentski blog/projekt: Virtualno društvo (u 2 dijela)
- 3 Model kompetencije u RPK i vještine online komunikacije** (Spitzbergov model; seminar: buble.us, - mentalne mape, Gliffy - blok dijagrami)
  - Aktivnosti za 27.09.2009. - prvi dio (buble.us, Gliffy)

On the right side, there are sections for 'Najsvježije vijesti' (latest news) and 'Kalendar' (calendar). The calendar shows the month of May 2010 with a grid of days and an 'Events Key' below it.

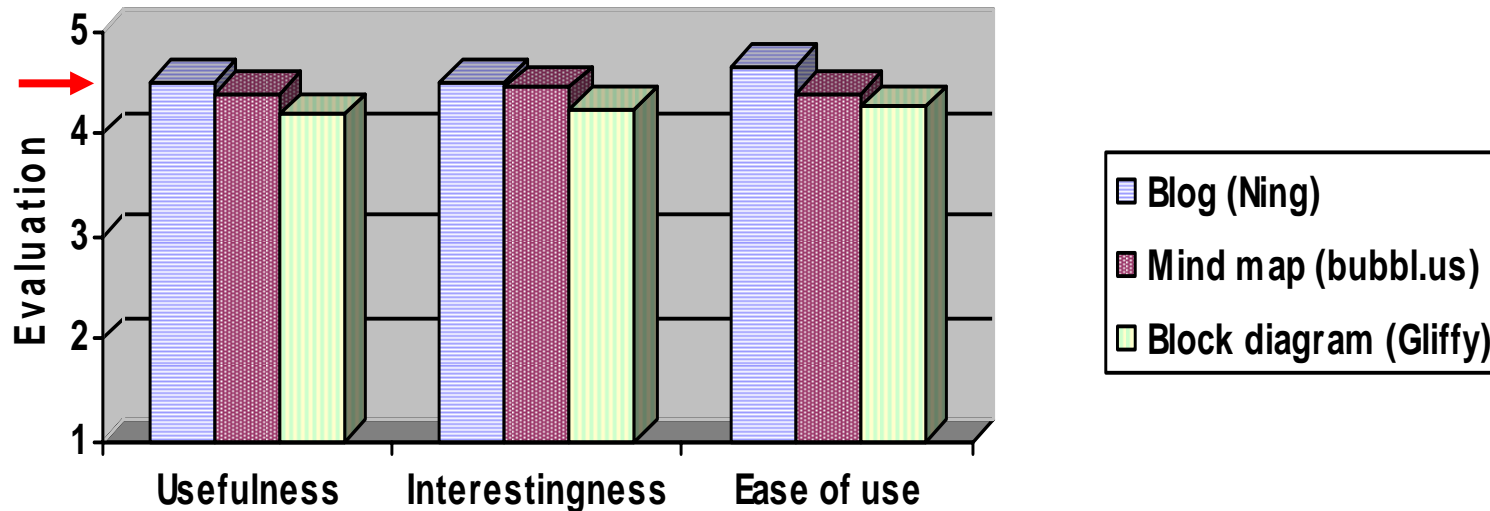
# Current example of a hybrid course

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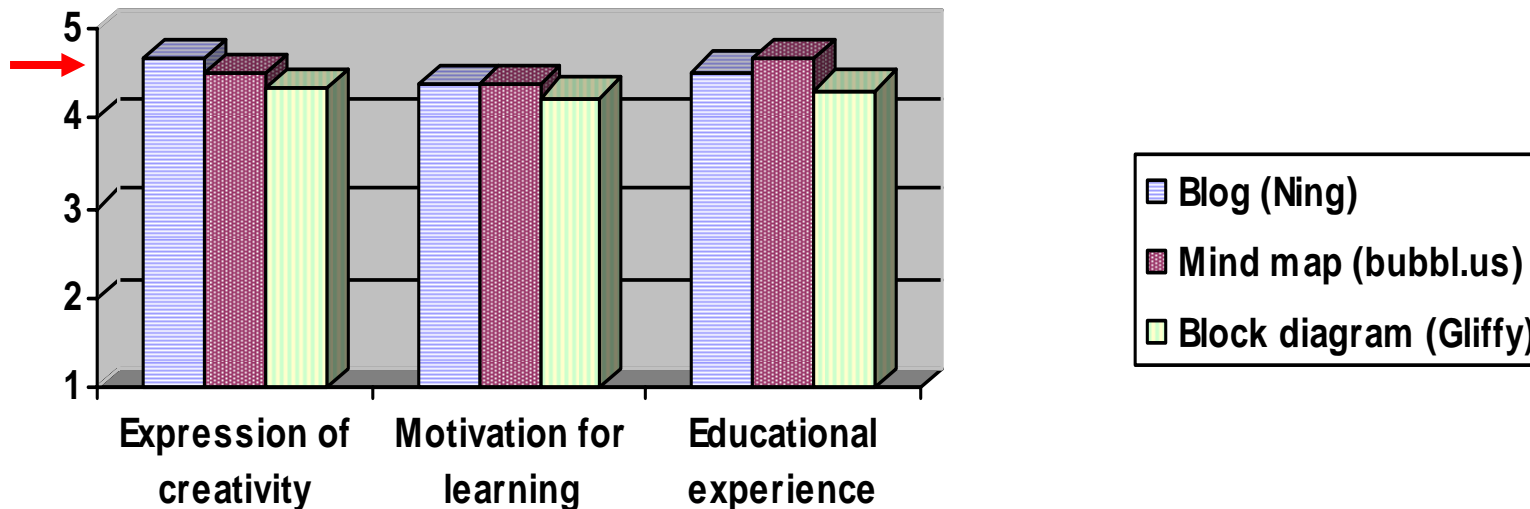
# Positive effects of the use of Web 2.0 tools 1/2

- Very high average student evaluation of a **blog tool** (a component of Ning), **mindmap** (bubbl.us), and **block diagram tool** (Gliffy) regarding usefulness, interestingness, and ease of use (*scale: 1 = very poor, 5 = very good; N=38; part-time students*)



## Positive effects of the use of Web 2.0 tools 2/2

- Very high average student evaluation of a **blog tool** (a component of Ning), **mindmap** (bubbl.us), and **block diagram tool** (Gliffy) regarding their potential to express personal creativity, positive influence on motivation for learning, and enrichment of educational experience (*scale: 1 = very poor, 5 = very good; N=38; part-time students*)



# Usability study of Web 2.0 tools 1/2

- Academic course “Data Structures” in the winter semester of the academic year 2009/2010
- Students were given assignments which involved using diverse Web 2.0 tools to illustrate the content of the course and provide other students with instructions on how to better understand the course content
- A detailed breakdown of the course content was presented to students in a wiki system and students placed their Web 2.0 artifacts on wiki pages
- A comprehensive usability survey was developed for student evaluation of 20 Web 2.0 tools (usability attributes: *Navigability, Ease of Use, Mental/Physical effort, Understandability, Learnability, Usefulness, Efficiency, System quality, Customizability, Controllability, Availability, Accessibility, Reliability/Stability, Recoverability, etc.*)

# Usability study of Web 2.0 tools 2/2

- The Web 2.0 tools that were evaluated by the students:
  - Online presentations / video podcasting (*Masher, Slidesix, Stupeflix, Yodio*)
  - Mind mapping (*Mind 42, Mindomo, Mindmeister, Wise Mapping*)
  - Block diagrams (*Draw Anywhere, Gliffy, Lucid Chart, Project Draw*)
  - Online notes taking (*iNetWord, Helipad, Google Docs, Zoho Notebook*)
  - Collaborative programming / SNS (*Posteet, Github, Bytemycode, Pastebin*)
- In groups of students Web 2.0 tools were used from each category to complete a specific assignment (solve a problem or explain a specific algorithm related to data structures)

# Results of usability study 1/4

- The percentages refer to the number of students whose evaluation indicated a potential problem with a specific tools; N=158-171

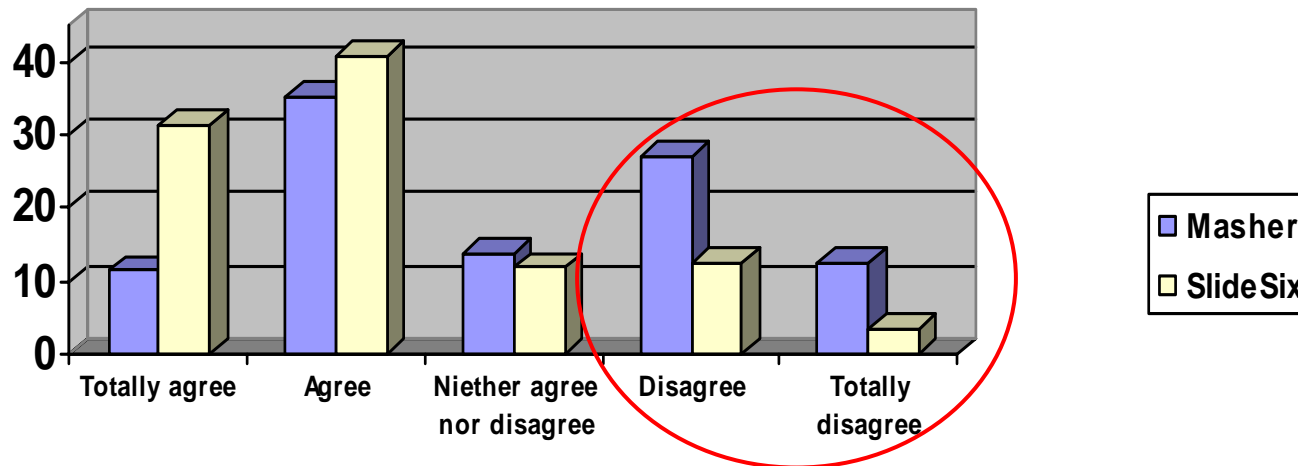
Usability attribute	Categories of Web 2.0 tools				
	Online notes taking	Block diagrams	Mind mapping	Video podcasting	Collaborative programming
<b>Navigability</b> - User can quickly and easily locate all that is needed for performing a desired activity on a web tool.	20%	13%	7%	26%	19%
<b>Ease of use</b> – Only minimal effort is needed for performing of various activities with the web tool and control of the results.	19%	17%	8%	30%	15%
<b>Understandability</b> – User can immediately notice the operations (options) that are provided by the web tool.	17%	12%	5%	20%	17%
<b>Reliability</b> – There are no errors in the performance of the web tool (or they appear very rarely) and there are no interruptions while working with the web tool.	19%	15%	10%	28%	11%



# Results of usability study 1/7

- Results of student evaluation of video podcasting tools *Masher* (N=167) and *SlideSix* (N=169) regarding **navigability** as a usability attribute. As many as 40% of the students who used **Masher** responded with “Disagree” or “Totally disagree” to the survey item “*Navigability*”, in comparison to only 16% of students who used **SlideSix**

Percentage of responses to the survey item "Navigability - User can quickly and easily locate on a web tool all that is needed for performing a desired activity."

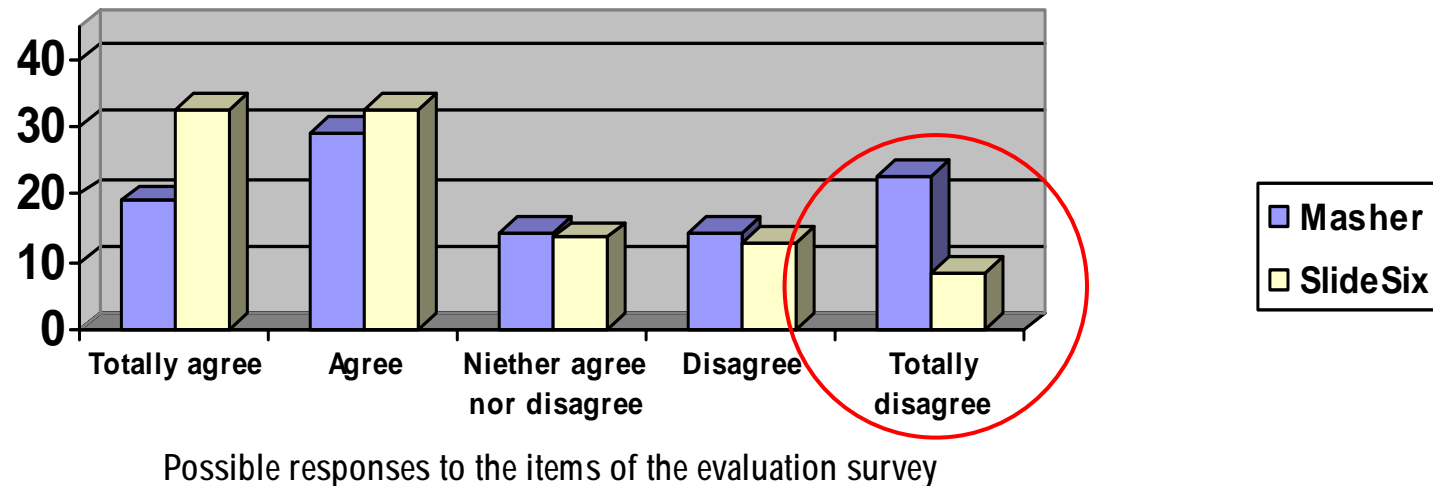


Possible responses to the items of the evaluation survey

## Results of usability study 2/7

- Results of student evaluation of video podcasting tools *Masher* (N=167) and *SlideSix* (N=169) regarding **reliability** as a usability attribute. As many as 37% of the students who used **Masher** responded with “Disagree” or “Totally disagree” to the survey item “Reliability”, in comparison to only 21% of students who used **SlideSix**

Percentage of responses to the survey item "Reliability – There are no errors in the performance of the web tool (or they appear very rarely) and there are no interruptions while working with the web tool."



# Results of usability study 3/7

- **SlideSix** is a Web 2.0 tool for creating online interactive presentations that can be recommended to university teachers, even though it manifests noticeable usability problems (better than *Masher*, *Stupeflix*, *Yodio*)



URL: <http://slidesix.com>

# Results of usability study 4/7

- **Mindomo** is a Web 2.0 tool for making creative mental maps that can be recommended to university teachers (acceptable usability; also *Mindmeister*; both are better than *Mind 42* and *Wise Mapping*)

**MINDOMO** Sign in to Mindomo |

Home Browse Help Forum Desktop [Sign Up](#)

## The Visual Way To Get Your Things Done!

See your actions in context, and prioritize the things that really matter

- Organize Your Ideas, and Work**  
So much to do, not enough time?  
You've found your tool to get organized!
- Solve Everyday Problems**  
Gain insights into the relationships between various parts of the problem and formulate an ideal solution
- Plan and Track Projects**  
The fast and easy way to design and refine projects from inception to completion
- Manage Tasks and Priorities**  
Sub-divide tasks into manageable pieces, prioritize them quickly and easily
- Define Goals and Objectives**  
Stay focused on your objectives and keep your eye on where you want to go
- Teach and Learn Visually**  
Absorb knowledge better and see the essence of things

[Sign Up and Pricing](#)  
Get started for free in just 60 seconds.

[Start the Demo](#)

URL: <http://www.mindomo.com>

# Results of usability study 5/7

- **Mindomo** – an example of a mental map of a computer program (student work)



# Results of usability study 6/7

- **Gliffy** is a Web 2.0 tool for making diagrams of any kind that can be recommended to university teachers (acceptable usability; better than *Draw Anywhere*, *Lucid Chart* and *Project Draw*)

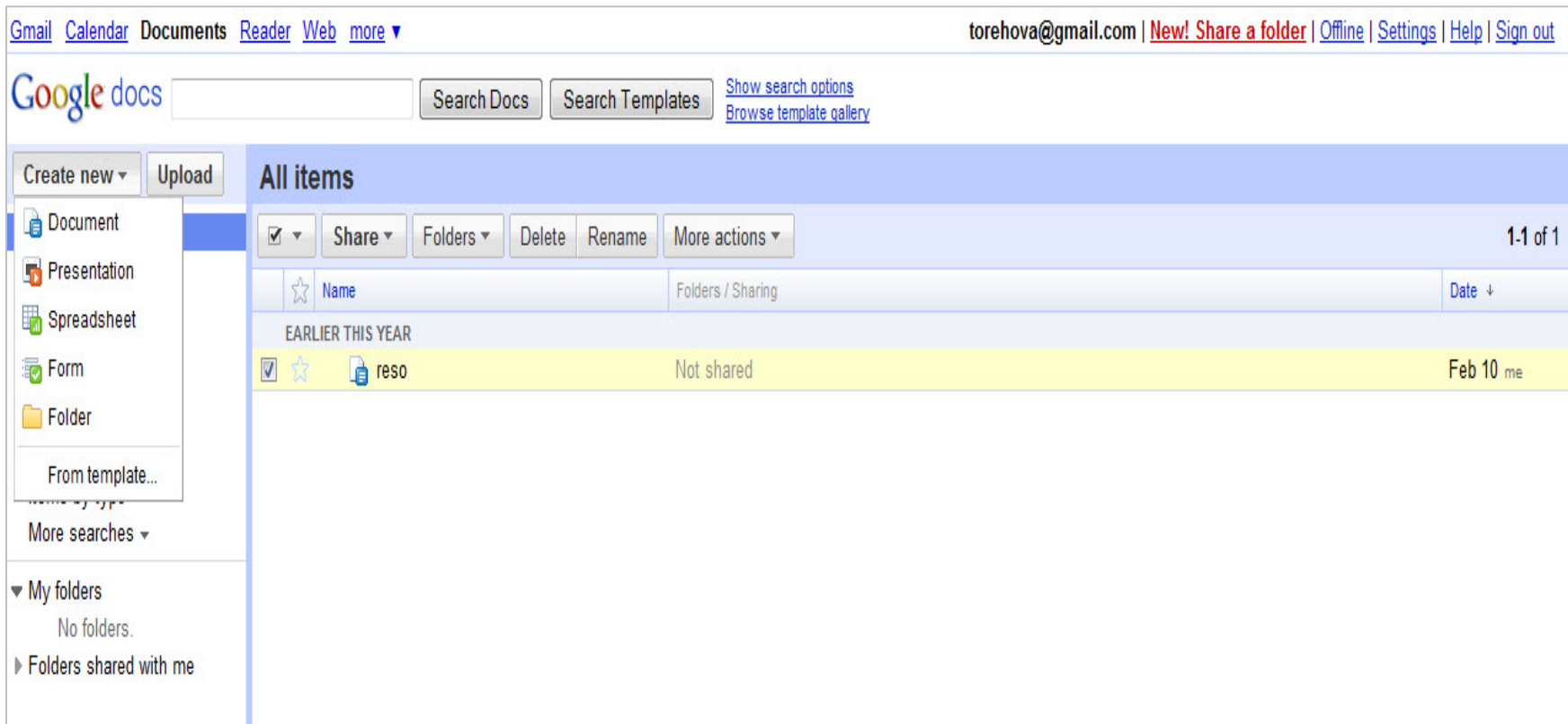
The screenshot displays the Gliffy website's user interface. At the top left is the Gliffy logo. To the right is a login section with fields for 'email' and 'password', a 'forget your password?' link, and 'basic login' and 'secure login' buttons. Below the login section is a navigation menu with links for 'Products', 'Apps', 'API', 'Examples', 'Support', 'About', and 'Blog'. The main content area features a large blue banner with a white play button icon and the text 'Get Started Now'. Below this, the text reads 'Diagram Software for the rest of us!'. A paragraph follows: 'With Gliffy online diagram software, you can easily create professional-quality flowcharts, diagrams, floor plans, technical drawings, and more.' Another paragraph states: 'Our online diagram editor makes it easier than ever to create great looking drawings.' Below the text are two links: 'Examples' and 'Start Drawing'. At the bottom of the banner is another white play button icon and the text 'Try it now free'. The background of the banner shows a preview of the Gliffy software interface with a flowchart and a network diagram.

URL: <http://www.gliffy.com>



# Results of usability study 7/7

- **Google Docs** is a Web 2.0 tool for content sharing and collaboration that replaces desktop applications (word processor, spreadsheets, presentations, forms) and can be recommended to university teachers (acceptable usability; better than *iNetWord*, *Helipad* and *Zoho Notebook*)



The screenshot displays the Google Docs web interface. At the top, there are navigation links for Gmail, Calendar, Documents, Reader, Web, and more. The user's email address, 'torehova@gmail.com', is visible, along with links for 'New! Share a folder', 'Offline', 'Settings', 'Help', and 'Sign out'. The main header includes the 'Google docs' logo, a search bar, and buttons for 'Search Docs' and 'Search Templates'. A left sidebar offers options to 'Create new' (Document, Presentation, Spreadsheet, Form, Folder) and 'Upload', along with 'From template...' and 'More searches'. The main content area, titled 'All items', shows a table of documents. The table has columns for 'Name', 'Folders / Sharing', and 'Date'. A single document is listed: 'reso', which is 'Not shared' and was created on 'Feb 10' by 'me'. The document is highlighted in yellow.

Name	Folders / Sharing	Date
reso	Not shared	Feb 10 me

URL: <http://docs.google.com>



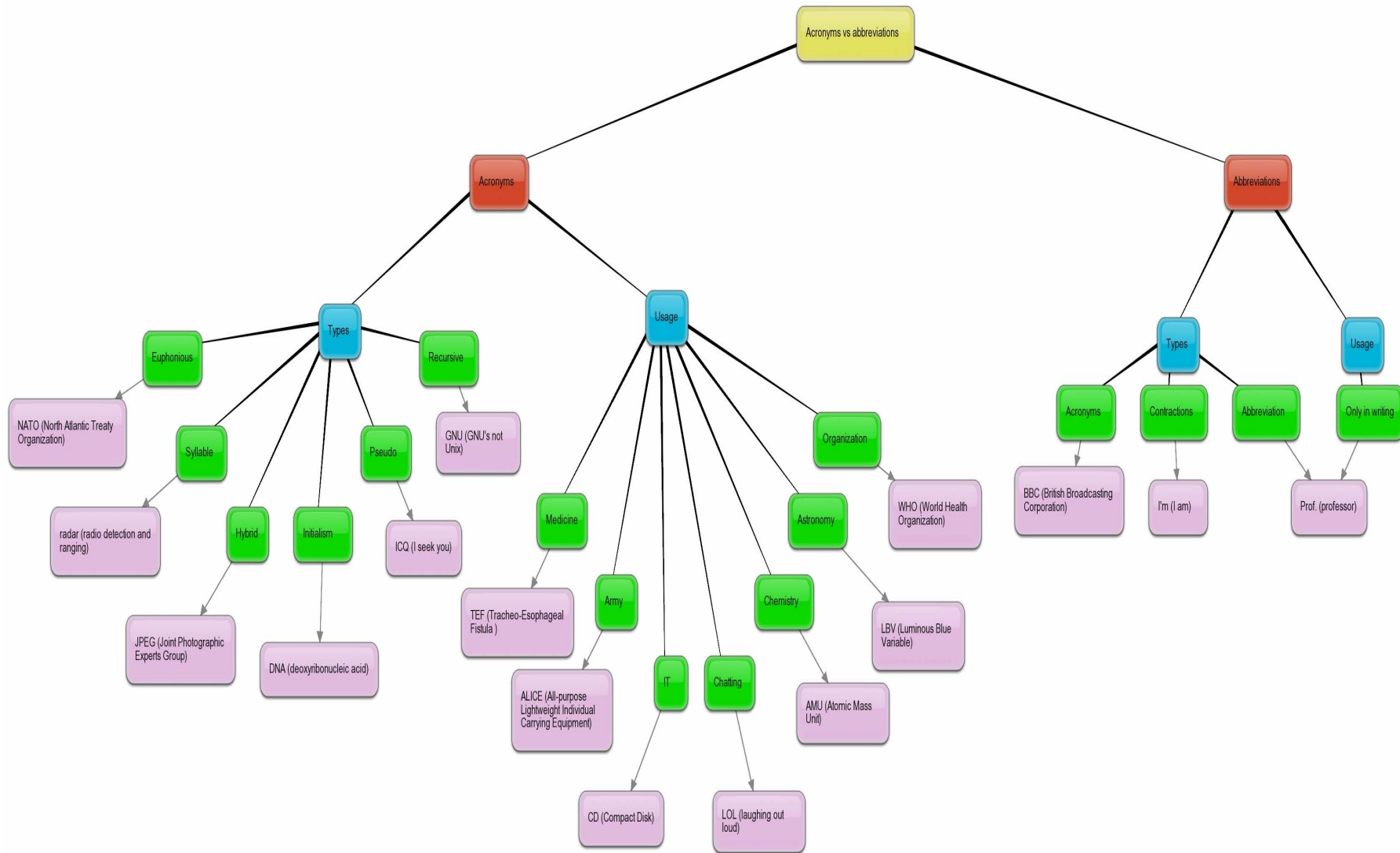
# Conclusion of usability study

- A comprehensive **usability survey** was developed for student evaluation of 20 Web 2.0 tools (*Navigability, Ease of Use, Mental/Physical effort, Understandability, Learnability, Usefulness, Efficiency, System quality, Customizability, Controllability, Availability, Accessibility, Reliability/Stability, Recoverability, etc.*)
- After use in a hybrid course the following Web 2.0 tools were evaluated by the students and can be recommended to teachers:
  - Online presentations / video podcasting (*Masher, **SlideSix**, Stupeflix, Yodio*)
  - Mind mapping (*Mind 42, **Mindomo**, Mindmeister, Wise Mapping*)
  - Block diagrams (*Draw Anywhere, **Gliffy**, Lucid Chart, Project Draw*)
  - Online notes taking (*iNetWord, Helipad, **Google Docs**, Zoho Notebook*)
- **Usability study or detailed evaluation of a Web 2.0 tool should be performed before its extensive use in hybrid university courses.**
- Students should be provided with at least brief training in the use of chosen Web 2.0 tool(s)

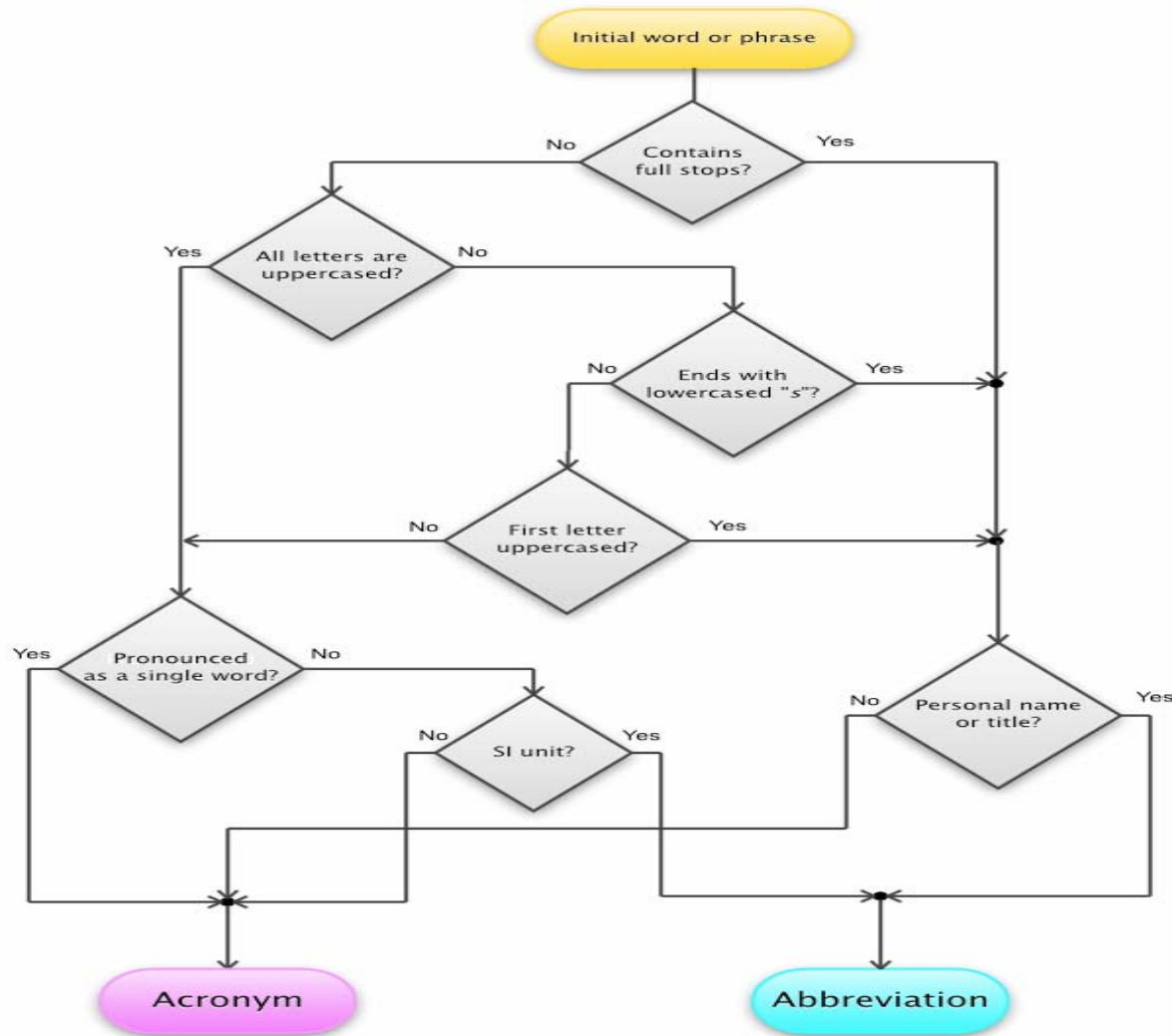
## Visualization of grammar & collaborative learning

- An addition to the Engwiki project in the winter semester of the 2009/2010 academic year
- A concept of collaborative language learning with online activities related to the visualization of the English grammar with the use of various Web 2.0 tools
- For mind-mapping we used Mindmeister and bubbl.us; for block-diagrams Gliffy was used; for video podcasting and video tagging the SlideSix and Veotag tools were chosen; while Bubblr was used for online comic strip creation from Flickr photos
- Students used mind mapping and block diagram tools to visualize grammar rules, SlideSix to provide explanation and Veotag and Bubbls (online comic strips) for creating examples/illustrations
- One case is briefly presented of *acronyms vs. abbreviations* topic (a mind map and block diagram)

# Example of a mind map of grammar visualization



# Example of a block diagram of a grammar related decision



## Integration of students' assignments in wiki, blog, online social community tool Ning, e-portfolio, and Moodle LMS

- **How to place the results of students' work with Web 2.0 tools in one virtual space for peer-to-peer and collaborative learning?**
- The easiest way for students and the teacher is to use a **wiki** system (*MediaWiki*).
- The most attractive, integrating and motivating way is to use a **blog** tool (*WordPress*).
- Possibly, a good choice for small groups of part-time students who would like to socialize, cooperate and support each other would be a **social community tool** (*Ning* or *SocialGO*) with personal pages, members page, chat, forum, blog, upload of photos and video, events management, etc.
- When an **e-portfolio** system is present (perhaps integrated with LMS) the artifacts can be placed in the e-portfolio "View" (*Mahara*).
- A **wiki tool in Moodle** (with WYSIWYG editor) is an acceptable choice.

# Best integration results: blog (WordPress)

## Marija

Blog iz kolegija Računalom posredovana komunikacija

Dnevnik\_16.11.2009.

Kalendar  
December 2009

```
graph TD; KUPINA --- ELEMENTI; KUPINA --- OPREMA; KUPINA --- NAZNAKE; ELEMENTI --- E1[...]; ELEMENTI --- E2[...]; ELEMENTI --- E3[...]; OPREMA --- O1[...]; OPREMA --- O2[...]; OPREMA --- O3[...]; NAZNAKE --- N1[...]; NAZNAKE --- N2[...]; NAZNAKE --- N3[...]; NAZNAKE --- N4[...]; NAZNAKE --- N5[...]; NAZNAKE --- N6[...];
```

Također tu istu vještinu obradila sam u programskom alatu **Gliffy**. Pomoću njega prikazala sam na koje načine ljudi mogu biti pozorni, ne mogu biti i kada pokazuju manje odnosno veće naznake nepozornosti. To je prikazano na sljedećem dijagramu:

```
graph BT; A(pozornost) --> B(manje); A --> C(više); B --> D(manje); B --> E(više); C --> F(manje); C --> G(više); D --> H(nepozornost); E --> I(nepozornost); F --> J(nepozornost); G --> K(nepozornost);
```

[Link](#)

28

# Best integration results: e-portfolio view (Mahara)

Što je bitno za menadžersku komunikaciju - moje viđenje



## Što je bitno za menadžersku komunikaciju - moje viđenje

### Kolegij - "Komuniciranje u organizaciji"

- Profil za poslodavce i kolege
- Što je bitno za menadžersku komunikaciju - moje viđenje

### Manager.hr - Novosti

#### Manager.hr - Novosti

Sve za menadžere

1. STUDENTI! Novo u M.E.P.-u
2. RAD ZA SREĆU DRUGIH ILI - SVEČENIČKI MARKETING
3. PREPOZNAJMO IZVORE ZNANJA
4. Seminari u ožujku 2010.
5. ZDRAVI ŽIVOT U POSLOVNOM SVIJETU
6. MIRNO TEKU RJEKE
7. Goran Tudor - urednik
8. BIRANJEM ŽIVOTNIH CILJEVA - BIRAJTE SREĆUI!
9. STAROGRČKI TALES OD MILATA, UTEMELJITELJ FILOZOFIJE
10. TRIKOVI PRAVILNE UREDSKE PREHRANE

Last updated on 28 May 2010, 6:32 AM

### Što je bitno za menadžersku komunikaciju - moje viđenje

Za menadžersku komunikaciju po meni je veoma važno održavanje komunikacije u organizaciji, ali i izvan nje. Svi znamo da je menadžer centralna figura svake mreže formalne komunikacije. On šalje radne naloge i upute, daje obrazloženja, povratnu informaciju o kvaliteti obavljenog posla, te strateške ciljeve organizacije. Kvalitetna komunikacija je presudna za uspjeh organizacije kao i pojedinca. Menadžer mora biti svima razumljiv, i ostale sudionike u procesu komunikacije mora neprestano ohrabrivati da potvrđuju razumijevanje.

### Manager



### How to Conduct an Effective Meeting





# Conclusion 1/2

- In the academic year 2009/2010 we have used the following types of Web 2.0 tools in several hybrid university courses (+ wiki, blog & e-portfolio).
  - Online notes taking ([\*iNetWord\*](#), [\*Helipad\*](#), [\*Google Docs\*](#), [\*Springnote\*](#), [\*Zoho Notebook\*](#))
  - Mind-mapping ([\*bubbl.us\*](#), [\*Mind 42\*](#), [\*Mindomo\*](#), [\*Minmeister\*](#), [\*Wise Mapping\*](#))
  - Block-diagrams ([\*Draw Anywhere\*](#), [\*Gliffy\*](#), [\*Lucid Chart\*](#), [\*Project Draw\*](#))
  - Online presentations / video podcasting ([\*Masher\*](#), [\*Slidesix\*](#), [\*Slidestory\*](#), [\*Stupeflix\*](#), [\*Veotag\*](#), [\*Yodio\*](#))
  - Audio podcasting ([\*Podomatic\*](#), [\*Woices\*](#))
  - Collaborative programming / SNS ([\*Posteet\*](#), [\*Github\*](#), [\*Bytemycode\*](#), [\*Pastebin\*](#))
  - Online comic strip creation ([\*Bubblr\*](#))
  - Mashups ([\*iGoogle\*](#), [\*My Yahoo!\*](#), [\*Pageflakes\*](#))
  - Mockups / user-interface design ([\*MockFlow\*](#), [\*Mockingbird\*](#))
  - Social bookmarking ([\*Delicious\*](#))
  - Online surveys ([\*JotForm\*](#))
  - Social networking ([\*Ning\*](#), [\*SocialGO\*](#))

# Conclusion 2/2

## ○ Pedagogical aspects

- Utilization of diverse Web 2.0 tools for different collaborative and peer-to-peer learning scenarios, facilitation of creativity, investigation of effects.
- Novel approaches to teaching university courses “Computer-Mediated Communication”, “Data Structures” (programming), and “English Language” (as a foreign/second language)

## ○ Technological aspects

- Usability evaluation of Web 2.0 tools (detailed for 20 tools + comprehensive evaluation survey)
- Integration of students’ Web 2.0 artifacts is possible with wiki, blog, e-portfolio, and online community tools (Ning)

## ○ Potential use

- Best performing Web 2.0 tools regarding usefulness and usability will be identified
- Scenarios and case studies for effective use of Web 2.0 tools will be presented on the project wiki
- Workshops, lectures and conference presentations (3W, 3L, 3P so far).

Link URL: <http://e.foi.hr/iProjekt>

**Thank you for your attention!**

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