LMU
LUDWIG-
MAXIMILIANS-
UNIVERSITÄT
MÜNCHEN

FAKULTÄT FÜR MATHEMATIK, INFORMATIK UND STATISTIK
INSTITUT FÜR INFORMATIK
ARBEITSGRUPPEN MEDIENINFORMATIK UND
MENSCH-MASCHINE-INTERAKTION

Proseminar SS11

“Classification approaches and overview over mobile collaborative learning applications”

International Survey results(2007)

Mobile learning at my organisation/institution is…

not-existent.	40.7%	35
limited to some pilot projects in one or two departments.	44.2%	38
limited but already implemented in various departments.	10.5%	9
spread amongst several projects across the entire institution.	2.3%	2
integrated as part of our institution's mainstream activities.	2.3%	2

(Zawacki-Richter, 2009)

International Survey results(2007)

Mobile learning at my organisation/institution is…

not-existent.	40.7%	35
limited to some pilot projects in one or two departments.	44.2%	38
limited but already implemented in various departments.	10.5%	9
spread amongst several projects across the entire institution.	2.3%	2
integrated as part of our institution's mainstream activities.	2.3%	2

(Zawacki-Richter, 2009)

International Survey results(2007)

	Importance ratings				
	1	2	3	4	5
Coursework (accessing and reading learning materials) (Number of responses: 85)	10.6% 9	10.6% 9	22.4% 19	29.4% 25	27.1% 23
Assessment (quizzes, tests, questions-and-answers, etc) (Number of responses: 85)	17.6% 15	16.5% 14	23.5% 20	18.8% 16	23.5% 20
Collaborative learning (interaction with tutor, discussion with other students, group work) (Number of responses: 85)	31.8% 27	22.4% 19	25.9% 22	10.6% 9	9.4% 8
Field work (location-based learning: gathering and sharing on the site information) (Number of responses: 84)	39.3% 33	19% 16	14.3% 12	14.3% 12	13.1% 11
Information retrieval (search in databases and encyclopaedias) (Number of responses: 85)	23.5% 20	21.2% 18	24.7% 21	20% 17	10.6% 9
Totals for rating columns	24.5% 104	17.9% 76	22.2% 94	18.6% 79	16.7% 71

(Zawacki-Richter, 2009)

International Survey results(2007)

	Importance ratings				
	1	2	3	4	5
Coursework (accessing and reading learning materials) (Number of responses: 85)	10.6% 9	10.6% 9	22.4% 19	29.4% 25	27.1% 23
Assessment (quizzes, tests, questions-and-answers, etc) (Number of responses: 85)	17.6% 15	16.5% 14	23.5% 20	18.8% 16	23.5% 20
Collaborative learning (interaction with tutor, discussion with other students, group work) (Number of responses: 85)	31.8% 27	22.4% 19	25.9% 22	10.6% 9	9.4% 8
Field work (location-based learning: gathering and sharing on the site information) (Number of responses: 84)	39.3% 33	19% 16	14.3% 12	14.3% 12	13.1% 11
Information retrieval (search in databases and encyclopaedias) (Number of responses: 85)	23.5% 20	21.2% 18	24.7% 21	20% 17	10.6% 9
Totals for rating columns	24.5% 104	17.9% 76	22.2% 94	18.6% 79	16.7% 71

(Zawacki-Richter, 2009)

Classification Approach A

Table 1 A reference model for mobile social software for learning

Content	*Context*	*Purpose*	*Information flow*	*Pedagogical model*
Annotations	Individuality context	Sharing content and knowledge	One-to-one	Behaviourist
Documents	Time context	Facilitate discussion and brainstorming	One-to-many	Cognitive
Messages	Locations context	Social awareness	Many-to-one	Constructivist
Notifications	Environment or activity context	Guide communication	Many-to-many	Social constructivist
	Relations context	Engagement and immersion		

(DeJong, 2008)

Classification Approach B

- *Performance of shared tasks*
- *Social matching and networking*
- *Active participation*
- *Visibility of learning*

(Canova Calori, 2009)

Collaborative museum visits

- This is a hybrid exhibit (physical objects and digital information)
- Mixed reality and augmented reality
- 3 types of visitors: physical visitor, virtual visitor of 3d representation and a Web visitor (2D maps) (Canova Calori, 2009)
- Users can share spatial location
- communication over voice channel

(Brown, 2010)

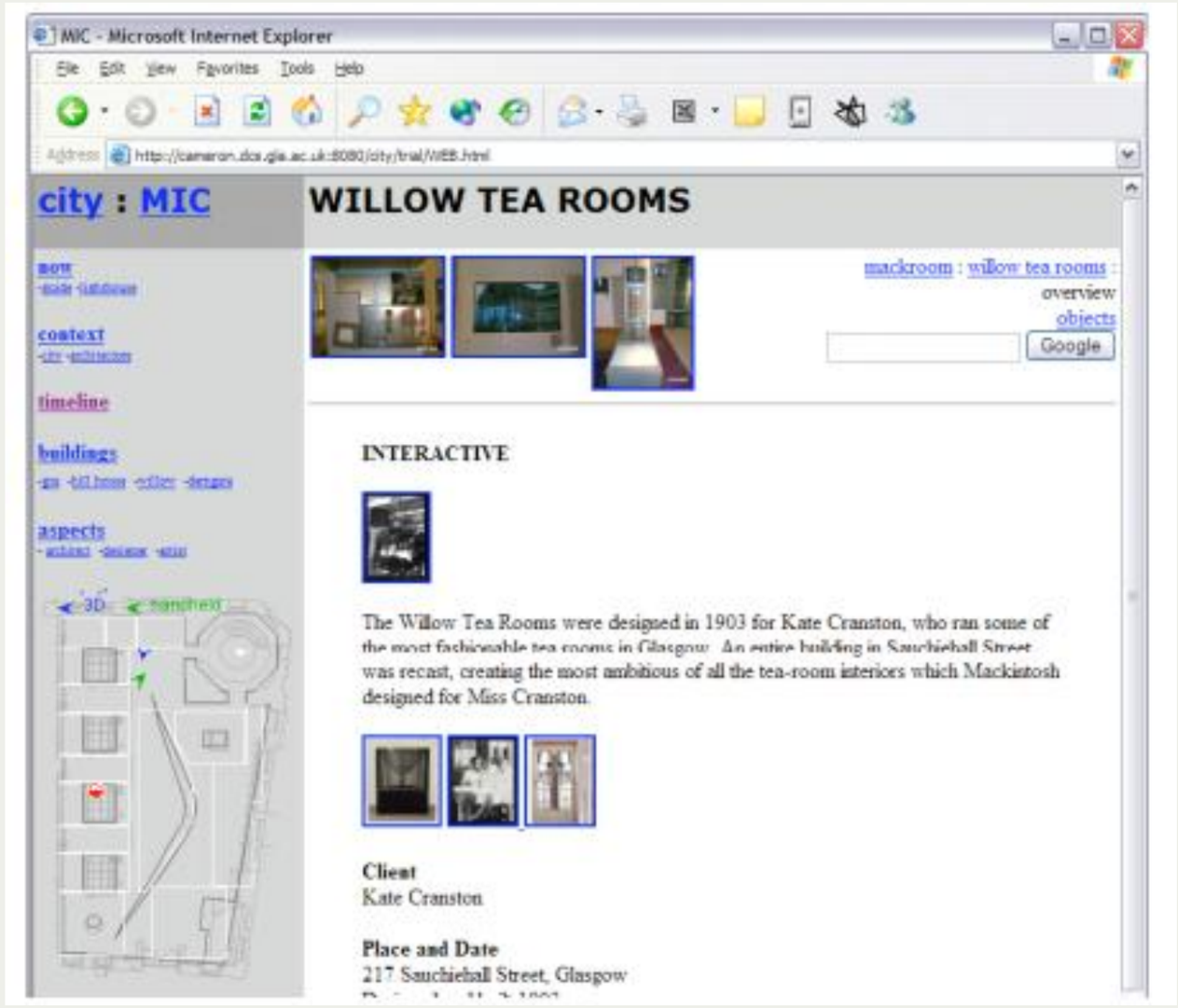
Collaborative museum visits

(Brown, 2010)

Collaborative museum visits

(Brown, 2010)

Collaborative museum visits

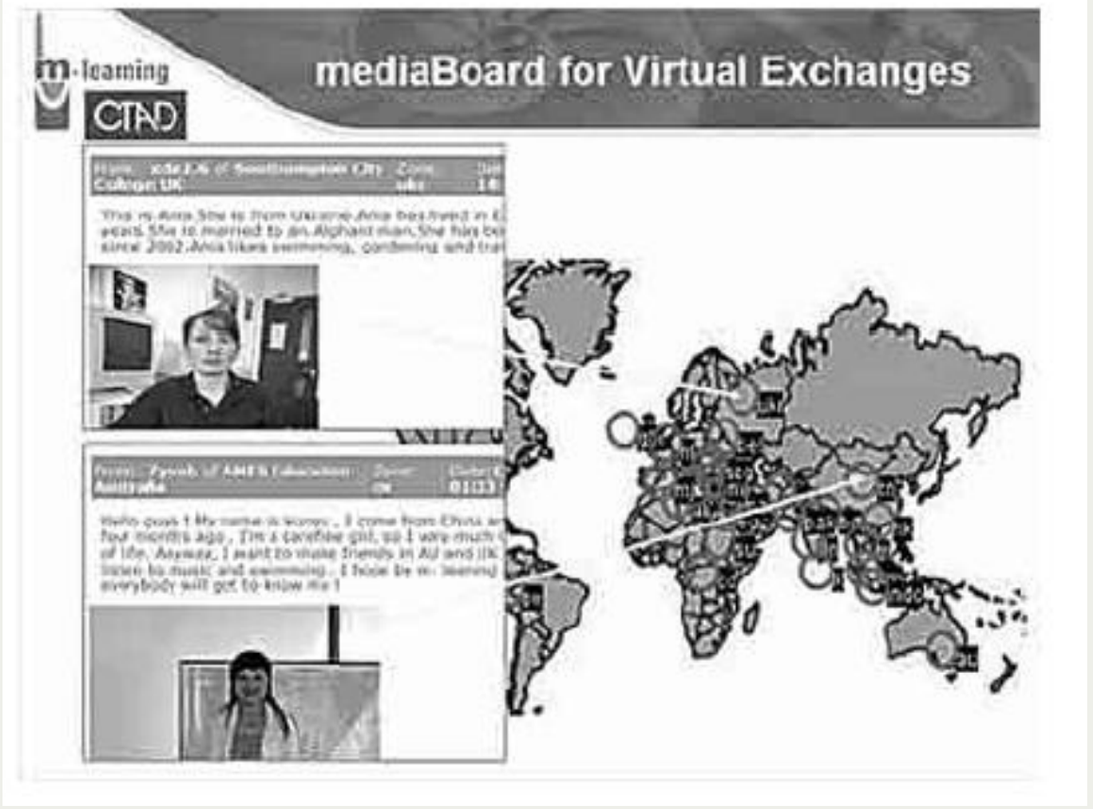


(Brown, 2010)

MediaBoard

- Students can solve particular assignments in collaborative way.
- They can exchange images and messages with each other.
- All information will be represented on the website.

Figure 1
Sample mediaBoard



(Colley, 2004)

Savannah

- The application is purposed to teach children how lions acts in savannah.
- Virtual objects are located within the real world. (augmented reality)
- Children are exploring augmented world by taking a role of a lion

(Canova Calori, 2009)

(Benford, 2005)

ImageMap

- An Image will be distributed on a hand held device
- Everybody answers a question according to the image.
- all information will be gathered presented on a shared display
- Everybody can see the results which will be discussed

(Roschelle, 2002)

Personal Training Assistant

- coach sellers/learners at the workplace
- each seller have a handheld computer which is connected to the infrastructure of the shop
- main purpose: saving costs (personal teaching is expensive)

(Derycke, 2007)

Environmental Detectives

- Indoor game using spatial location
- simulation of an epidemic on campus
- Somebody is causing the epidemic
- a rescue-team has an assignmen to stop the spread of the illness

education.mit.edu/projects/mitar-games

Discussion

- Questions?
- Do you use/used mobile collaborative learning apps?
- Do you think CL-apps will be ubiquitous in the future?

Bibliography

- Adams, D., & Hamm, M. (1996). *cooperative learning: critical thinking and collaboration across the curriculum. (second edition).* (Second Edi.). Charles C.Thomas. Retrieved May 29, 2011, from http://eric.ed.gov/ERICWebPortal/search/detailmini.jsp?_nfpb=true&_&ERICExtSearch_SearchValue_0=ED395717&ERICExtSearch_SearchType_0=no&accno=ED395717.

- Balacheff, N., Ludvigsen, S., Jong, T., Lazonder, A., Barnes, S., Sharples, M., et al. (2009). *Technology-Enhanced Learning*. (N. Balacheff, S. Ludvigsen, T. Jong, A. Lazonder, & S. Barnes, Eds.) (pp. 233-249-249). Dordrecht: Springer Netherlands. doi: 10.1007/978-1-4020-9827-7.

- Benford, S., Rowland, D., Flintham, M., Drozd, A., Hull, R., Reid, J., et al. (2005). Life on the edge: supporting collaboration in location-based experiences. *Interface*, 721-730. ACM. doi: 10.1145/1054972.1055072.

- Brown, B., MacColl, I., Chalmers, M., Galani, A., Randell, C., & Steed, A. (2010). Lessons from the lighthouse: collaboration in a shared mixed reality system (pp. 577-584). ACM Press. Retrieved from http://doi.acm.org/10.1145/642611.642711.

- Canova Calori, I., & Divitini, M. (2009). Reflections on the role of technology in city-wide collaborative learning. *International Journal of Interactive Mobile Technologies iJIM*, *3*(2), pp–33. doi: 10.3991/ijxx.vxix.xxx.

- Colley, J., Stead, G., Attewell, J., & Savill-Smith, C. (2004). Mobile learning = collaboration. Learning and Skills Development Agency.

Bibliography

- De Jong, T., Specht, M., & Koper, R. (2008). A reference model for mobile social software for learning. *International Journal of Continuing Engineering Education and Lifelong Learning*, *18*(1), 118-138. Inderscience. doi: 10.1504/IJCEELL.2008.016079.

- Derycke, A., Chevrin, V., & Vantroys, T. (2007). P-learning in E-retail : a case study and flexible software architecture. *Pervasive Learning 2007 workshop of the Pervasive 2007 conference* (p. 8 pages).

- Jeng, Y.-L., Wu, T.-T., Huang, Y.-M., Tan, Q., & Yang, S. J. H. (2010). The Add-on Impact of Mobile Applications in Learning Strategies : A Review Study. *Learning*, *13*(3), 3-11. Retrieved from http://web.ebscohost.com.ez.sun.ac.za/ehost/pdfviewer/pdfviewer?sid=3688dc75-f084-4ae9-8e48-01e9bb8aa929@sessionmgr104&vid=1&hid=106.

- Kukulska-Hulme, A. (2009). Will mobile learning change language learning? *ReCALL*, *21*(02), 157. Cambridge Univ Press. Retrieved from http://oro.open.ac.uk/16987/.

- Kukulska-Hulme, A., Sharples, M., Milrad, M., Arnedillo-Sánchez, I., & Vavoula, G. (2009). Innovation in Mobile Learning: A European Perspective. *International Journal of Mobile and Blended Learning*, *1*(1), 13-35. IGI Global. Retrieved from http://www.igi-global.com/Bookstore/Article.aspx?TitleId=2755.

Bibliography

- Roschelle, J., & Pea, R. (2002). A walk on the WILD side: how wireless handhelds may change CSCL. *CSCL 02 Proceedings of the Conference on Computer Support for Collaborative Learning Foundations for a CSCL Community*. Retrieved from http://portal.acm.org/citation.cfm?id=1658616.1658624.

- Sharples, M., Taylor, J., & Vavoula, G. (2005). Towards a Theory of Mobile Learning. *Proceedings of mLearn 2005*, *1*(1), 1-9. University of Birmingham. Retrieved from http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:Towards+a+Theory+of+Mobile+Learning#0.

- Sharples, M., Taylor, J., & Vavoula, G. N. (2009). A theory of learning for the mobile age. *Medienbildung in neuen Kulturräumen* (Vol. 2010, pp. 1-26). Sage. Retrieved from http://www.uk.sagepub.com/refbooksProdDesc.nav?prodId=Book228475.

- Trifonova, A., & Ronchetti, M. (2003). Where is Mobile Learning Going ? Defining M-Learning. *Technology*, 1794-1801. Citeseer. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.106.3070&rep=rep1&type=pdf.

- Zawacki-Richter, O., Brown, T., & Delport, R. (2009). Mobile Learning: From single project status into the mainstream? *ELearning*, 1-14.

- MITAR Games | MIT STEP. (n.d.). . Retrieved May 31, 2011, from http://education.mit.edu/projects/mitar-games.