

MUPEMURE

The MUPEMURE (Multiple Perspectives on Multiple Representations; see

<http://sites.google.com/site/mupemure>)

Theme Team, focus on how learning with multiple external representations (MERs) can be promoted by technology and collaboration. We aim to provide educational practitioners with guidelines for how to support learners in constructing, sharing, and collaboratively reviewing MERs with the purpose of promoting learning in science and mathematics concepts. Specifically, the MUPEMURE focus is to develop and investigate technology-enhanced instructional approaches – in particular, productive failure, scripting, and group awareness approaches – to facilitate learning with MERs in technology-enhanced learning environments.



MUPEMURE
Multiple Perspectives on
Multiple Representations

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MUPEMURE
Multiple Perspectives on
Multiple Representations



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Design and Technologies for
Supporting Collaborative
Learning with Multiple
Representations

Teacher Workshop at the CSCL
Conference 2011 in Hong Kong

Invitation for
Free Online Participation



Partners involved

- DR. DANIEL BODEMER, UNIVERSITY OF TÜBINGEN, GERMANY
- DR. MANU KAPUR, NATIONAL INSTITUTE OF EDUCATION SINGAPORE
- DR. GAËLLE MOLINARI, DISTANCE LEARNING UNIVERSITY SWITZERLAND
- PROF. DR. NIKOL RUMMEL, RUHR-UNIVERSITY BOCHUM, GERMANY
- PROF. DR. ARMIN WEINBERGER, SAARLAND UNIVERSITY, GERMANY

New Scenarios of Learning

COLLABORATIVE LEARNING WITH MULTIPLE REPRESENTATIONS

Students are increasingly confronted with multiple external representations (MERs) online that involve and combine texts, pictures, graphs, videos, etc. Additionally, more and more educational practitioners are challenging students to not only receive, but also create, link, and share MERs of knowledge with multimedia through text, picture, or video blogs and Wikis, by collecting photos and videos online (e.g., in sites such as Flickr and YouTube), or by contributing to discussion boards and social networking sites (e.g., in sites such as Facebook or MySpace). Hence, learners are supposed to become producers and reviewers of MERs.

Especially in science and mathematics education, the rapid and continuous emergence of new information technologies provides students with a much greater array of representational opportunities (dynamic and interactive visualizations, microworlds, simulations, modeling, etc.) that can be used in constructing, manipulating and sharing representations to others. The challenge for teachers and other educational practitioners is therefore to leverage these multiple representational affordances to designing effective learning experiences for students.



Schedule

Hong Kong, Thursday, 7th of July,
14.30-16.00 hrs local time
= 08.30 hrs Central European Time

Program

Time	Focus
T1 (5 min)	<ul style="list-style-type: none"> • Presentation of the MUPEMURE theme team • Brief description of the MUPEMURE issues
T2 (10 min)	<ul style="list-style-type: none"> • Case 1: A productive failure design for collaborative problem-solving with MERs (Manu Kapur)
T3 (10 min)	<ul style="list-style-type: none"> • Case 2: How can children use tablet PCs for their drawings? (Katharina Westermann)
T4 (10 min)	<ul style="list-style-type: none"> • Case 3: How can scripts and awareness tools orchestrate individual and collaborative drawing of elementary students for learning sciences? (Armin Weinberger)
T5 (10 min)	<ul style="list-style-type: none"> • Case 4: How can group awareness tools facilitate collaborative learning with MERs in university contexts? (Daniel Bodemer)
T6 (45 mn)	<ul style="list-style-type: none"> • Discussion with the audience on the MUPEMURE toolbox: How can it be used by teachers and integrated into classroom practices? How can it be developed further? • Conclusions: Audience's participation in the MUPEMURE website and also in a larger practitioner-researcher network on CSCL with MERs

FREE ONLINE PARTICIPATION

For online participation visit <http://connect.cite.hku.hk/mupemure> at the time of the workshop and sign in as guest.

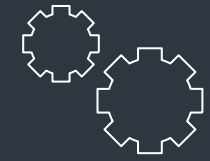


One MUPEMURE focus is to develop and investigate technology-enhanced instructional approaches that may facilitate students to actively generate, modify, manipulate and share multiple representations in CSCL environments.

We advance three contrasting designs for facilitating students:

- productive failure
- scripting
- group awareness

Teachers, practitioners as well as researchers from different countries interested in such issues are free to join and interact for contributing to the development of instructional approaches developed by the MUPEMURE theme team. Contacts with participants of the showcase will be maintained and a larger practice-oriented dissemination will be made through the MUPEMURE interactive website (<http://sites.google.com/site/mupemure>).



PRODUCTIVE FAILURE

students collaboratively generate representations and solution strategies to novel, complex problems without any facilitation initially, an effort that invariably leads to failure. However, this seeming failure can be productive when the support or facilitation is provided after students have worked on the task on their own. Therefore, this design delays the instructional or collaborative facilitation until after students have generated their own representations.



SCRIPTING

orchestrates learners' activities and guides them to engage in specific sequences of roles and activities. Scripts typically include role rotation to foster equal opportunities for engaging in the relevant learning activities and help learners to consider multiple perspectives. Moreover, scripts can guide learners through different learning arrangements orchestrating individual, collaborative, and classroom learning arrangements.



GROUP AWARENESS

learners are made aware of group states and processes to foster self-regulation in groups. Technology-supported analysis of learners' knowledge or behavior is fed back to a group of learners. Knowledge awareness support learners in accessing and using this information in a way that fosters meaningful learning and communication processes.