

Proseminar SS11

“Classroom Technologies”

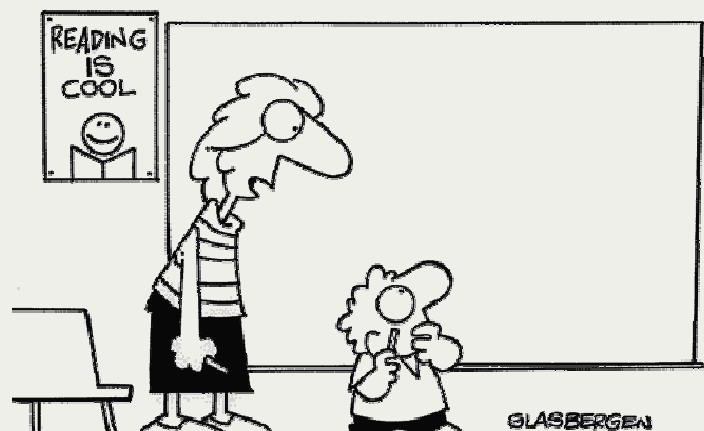
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Overview

Introduction of new
technology for educational
use

Factors influencing the
success of introducing new
technology at school



“There aren't any icons to click. It's a chalk board.”

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Introduction of new technology for educational use

Interactive Whiteboard

- Board, projector, PC
- Operation facilities
 - Touch-sensitive surface
 - Induction
 - Infrared
- Software for the lessons
- Online-Community
- Price: 4427 € without accessories and installation
- Leads to increased student engagement



Quelle: <http://www.youtube.com/watch?v=gQDSFRkz34p>
http://www.promethean.com/media/catalog/product/cache/1/image/5e06319eda06f020e43594a9c230972d/a/c/activboard300pro-4a-adj-slvr-web_8_4.jpg

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Vorstellung aktueller Technologien für den Unterrichtsgebrauch

Interactive Whiteboard

- accessories

„Student Feedback-Systems“



Quelle: <http://www.promethean.com>

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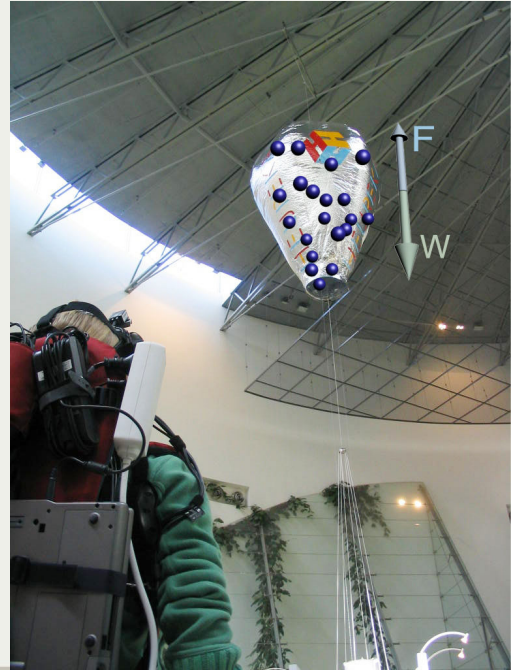
Augmented Reality

Virtual Elements are superimposed upon or composited with the real world

Example: 

CONNECT & EXPLOAR (EU Project)

- System consisting of Laptop, data goggles, tracking module, headset
- Invisible physical phenomena can be made visible to the user



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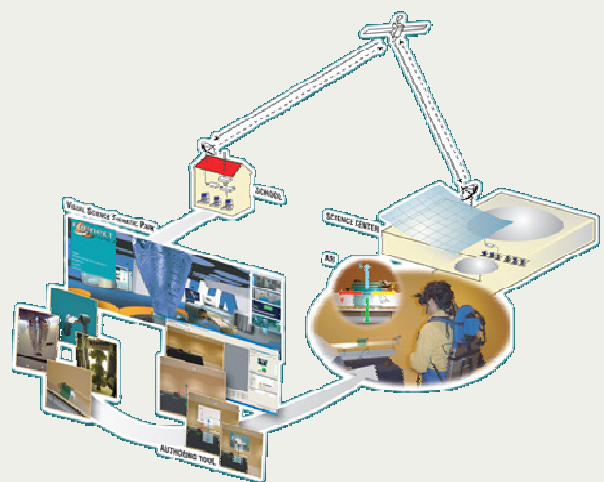
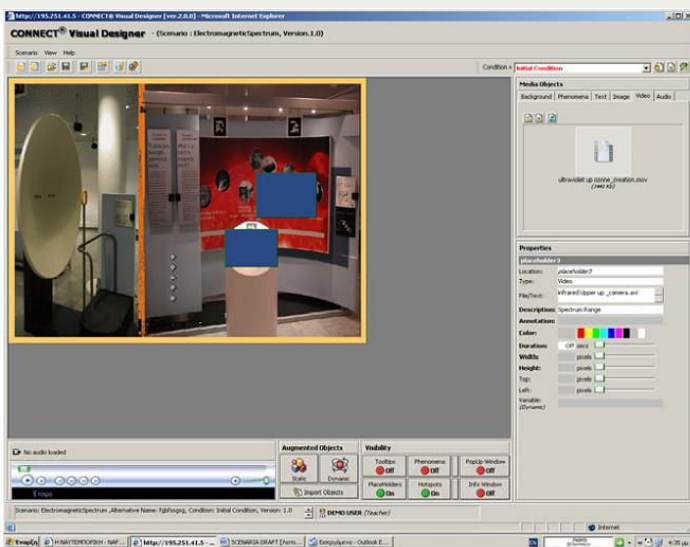
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Quelle: http://www.fit.fraunhofer.de/projects/mixed-reality/exploar/ballon_b.jpg



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Augmented Reality CONNECT & EXPLOAR (Fraunhofer FIT)



Quelle: http://www.ea.gr/ep/connect/main.asp?Cat_ID=423

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Augmented Reality

Augmented Chemistry

- Tangible User Interface
- Composing and exploring molecules
- API: OpenGL



Quelle: http://www.ea.gr/ep/connect/main.asp?Cat_ID=423

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Factors influencing the success of introducing new technology at school

- Demand for modernization of education at German schools
- Current statistics:

| Total (Basis: n=305); Angaben in Prozent | |
|---|------|
| Ausstattung | |
| Computer* | |
| steht jedem Schüler im Klassenzimmer zur Verfügung | 7,5 |
| mehrere Schüler teilen sich ein Gerät im Klassenzimmer | 12,5 |
| die gesamte Klasse teilt sich ein Gerät im Klassenzimmer | 5,6 |
| steht jedem Schüler zeitl. beschränkt zentral zur Verfügung (z. B. Bibliothek) | 46,9 |
| steht einem Teil der Schüler zeitl. beschränkt zentral zur Verfügung (z. B. Bibliothek) | 17,1 |
| wird an unserer Schule nicht eingesetzt | 10,5 |

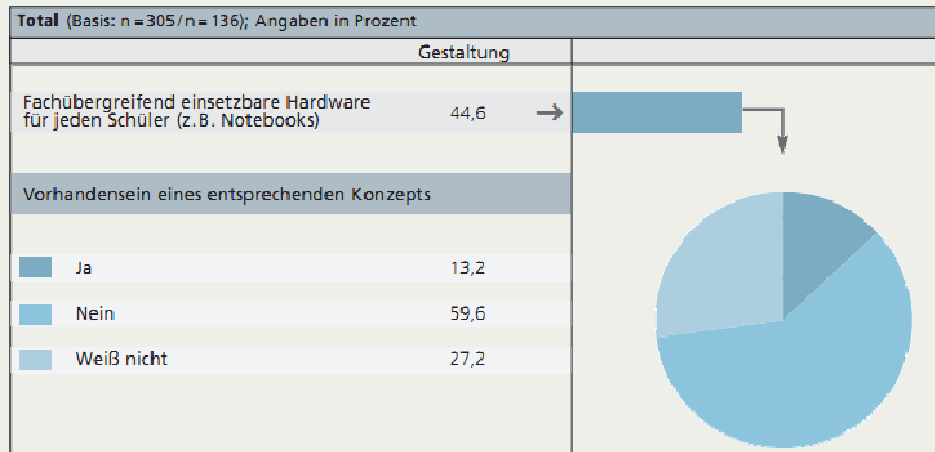
Quelle: http://www.initiated21.de/wp-content/uploads/2011/05/NOA_Bildungsstudie_140211.pdf

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Factors influencing the success of introducing new technology at school

- But: no overall concept how to introduce successfully
- Schools don't develop their own concept either



Quelle: http://www.initiated21.de/wp-content/uploads/2011/05/NOA_Bildungsstudie_140211.pdf

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Factors influencing the success of introducing new technology at school

- IF an investment is made, investors want to see results. Fast.

Successful technology integration is not defined by the amount, but by the nature of its use.

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Factors influencing the success of introducing new technology at school

Policy

Unclear goals for
policy-makers,
administrators,
teachers

School Environment

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Factors influencing the success of introducing new technology at school

School environment

- Technical infrastructure
- Physical arrangement
- Technical support
- Time for exploring and mentoring

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Factors influencing the success of introducing new technology at school

Policy

Unclear goals for
policy-makers,
administrators,
teachers

School Environment

Human support and
infrastructure

Technology
ressources

Physical setup

The Teacher

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Factors influencing the success of introducing new technology at school

The Teacher

- Has biggest impact on how technology affects education
- Often: lack of knowledge
- General attitude towards technology
- Fear of role change
- Shift from teacher-centered classroom to student-centered classroom

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Factors influencing the success of introducing new technology at school

Policy

Unclear goals for policy-makers, administrators, teachers

School Environment

Human support and infrastructure

Technology resources

Physical setup

The Teacher

Technology skills

Attitudes and beliefs

Shift from teacher to student centered classroom

The Student

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Factors influencing the success of introducing new technology at school

The Students

- Enjoyment of technology use
- Motivation to use it for educational purposes
- Importance of learning how to use them
- Anxiety of using them (wrong)
- Danger of
 - Misuse
 - Inattention



Quelle: http://lehrerblog.jugend-und-bildung.de/uploads/2009/07/interaktive_whiteboards.jpg

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Synopsis

The positive effect of technology used in education is indisputable and a great range of products is available nowadays.

On the one hand there's a concept missing, that helps teachers and schools introduce these technologies reasonable into the curriculum and the insufficient training possibilities.

On the other hand it's the lack of willingness and openness of educators towards new technologies that prevent Germany to close up the gap to other countries.