tablet technologie in het onderwijs

prof. dr. marcus specht
Centre for Learning Sciences and Technologies
Open Universiteit Nederland
marcus.specht@ou.nl
twitter, flickr, facebook: marcuspecht
Prof. Dr. Marcus Specht, marcus.specht@ou.nl
Mobile Media for Learning, Reflection, and Personal Development
Research Lines and topics

#1 Mobile and ubiquitous learning content
*Ubiquitous access to learning support and distributed multi-format learning content.*

- Mobile Video and Audio Content (Youtube EDU, iTunes U), Cloud-based learning content, Mobile data collection and aggregation, eBooks and tablet content.

#2 Orchestration of seamless learning support
*Instructional design of nomadic and seamless learning support.*

- Ubiquitous LMS access, Mixed Reality Games, Excursions and Field Trip systems, Mobile Augmented Reality, Mobile Learning Games, Object and location-based service access.

#3 Situated learning experiences
*Connect the Learning and the real World, context-aware learning systems, sensor-based learning support.*

- Experience sampling apps, Sensor-based learning apps, Situated and ambient displays, Context-aware social media, Tangible and smart-objects for learning
Mobile Learning Applications Domains

- **eHealth and healthcare**
  EMURGENCY: performance support and notification system, Handover procedures, Reference apps for daily practice

- **Law and Management education**
  OpenScout, OUNL iPad pilots, UNHCR mobile simulated games

- **Architecture and creative industries**
  MACE location-based content and social media, Cloud-based cooperation methods in design and architecture

- **Cultural Heritage**
  Mixed reality field trips with Cultural Sciences

- **Logistics**
  SALOMO: Situation Awareness and Mobile data collection

- **Language learning**
  ELENA, PhD projects

- **Teacher education and networking**
  mobile social networking apps
Service and research portfolio

- **How to innovate?**
  *Innovation workshops* for mobile media and learning in the OUNL *Learning Innovation Laboratory*, Desirability and technology acceptance studies of innovative solutions, Open innovation policy, open source frameworks

- **How to learn best?**
  Educational and instructional design for blended and ubiquitous learning
  Evaluation of increased awareness, efficiency, effectiveness.

- **How to implement your mobile learning support?**
  Prototyping mobiles cross-platform and with embedded technologies.
  Mashup and visualisation technologies for integrated solutions.
  Customized mobile solutions integrating legacy software.

- **What is my return on investment?**
  Piloting and evaluation of new solutions, following standardized methods.
  Usability and acceptance studies (mobile eye-tracking).

- **How to optimize your existing processes for mobile?**
  Content engineering and automation for mobile and multi-platform delivery.
  Multi-platform access to legacy systems integrated with daily practices.
New media for learning and professional development
Selection of the Conference Topics

- Mobile learning across formal and informal settings
- Ubiquitous and ambient learning and technology
- Theories, models and ethics for mobile and contextual learning
- Open and distance education with mobile devices
- Interoperability and standards for mobile learning
- Challenges for mobile learning in developing countries
- Mobile learning strategies in schools, higher institutions, industry, and organizations
- Adaptive, virtual or collaborative environments for mobile learning
- Augmented reality for learning
- Innovative approaches to learning of current and emerging mobile technologies
- Mobile learning across cultures
tablets kunnen van alles...

<table>
<thead>
<tr>
<th>Features</th>
<th>Smart-phone</th>
<th>eReader</th>
<th>Tablet</th>
<th>Laptop/Notebook</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery life</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to display Pictures</td>
<td></td>
<td>✔️</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to display Videos</td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Display size</td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Readability</td>
<td></td>
<td>✔️</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colors</td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Variety of formats</td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Weight</td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Mobile connectivity</td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Disk space</td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Additional contents</td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Suitable for consumer books</td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>Suitable for professional books</td>
<td></td>
<td>✔️</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fig. 2 Comparison of the suitability of different reading devices for eBooks.
er is geen muis...
... en andere interactie
MACE | EVERYVILLE
interactive installation at the Venice Biennale ‘08

anders leren: The MACE experience
The end of the book as we know it...
The end of the book as we know it...
The end of the book as we know it...

Javascript gameplay
Bloom’s Taxonomy for iPads

Creating
- Audiboo
- iMovie
- ComicBook!
- ReelDirector
- SonicPics
- Animoto
- Puppet Pals
- Toontastic
- DoInk

Evaluating
- HootSuite
- Skype
- Mobile RSS
- Science 360
- Zite
- FlipBoard
- Instapaper
- Goodreads
- Wunderlist

Analyzing
- iThoughts HD
- Lino
- Popplet
- Today’s Documents
- Diigo
- Explain Everything
- 3D Cell Simulation
- GoSky Watch
- GoDocs

Applying
- ShowMe
- Poetry Creator
- Keynote
- Visualize
- Posterous
- ZigZag Board
- Presentation Link
- Xperia
- GearHD

Understanding
- ScreenChomp
- Motion Math
- 123 Charts
- Idea Sketch
- Corkulous
- Blogsy
- Good Reader
- Touch Draw
- Pages

Remembering
- iBook
- Noteshell
- Stack the Countries
- Evernote Peek
- NxtApp 4Kids
- Ansel & Clair’s Adventure
- Word Seek HD
- eClicker
- Globe

Silvia Rosenthal Tolisano - GloballyConnectedLearning.com - adapted from Kathy Schrock’s Blooming iPad
Amazon: consumers buying more Kindle eBooks than print books
Market study

Market study

Media-comparison

- Woody, Daniel & Baker (2010): Preference for traditional books, no effects on learning results
- Rockinson-Szapkiw, Holder, & Dunn (2011): Higher motivation to study instructional material for eBook-group
Reading/Literacy studies

• Korat (2010) shows significant effects of eBooks for word reading and story comprehension (kindergarten level)

• Jones & Brown (2011) show no significant effects of eBooks for comprehension tests with 3rd graders

• Nie et al. (2011) study: 28 students of masters’s programme occupational psychology & education, flexibility, new strategies, better use of time, cost saving
Research at CELSTEC/OUNL
**RAFT**

**Task Widget** allows to see all tasks and contents of a currently running field trip.

**Navigation Widget** allows to view a map of a field trip and to navigate tasks.

**Messaging Widget** gives all participants of a field trip an instant messaging tool.

**Sensing Widget** allows to capture sensor data (GPS, other sensors, etc.) and connect it to contents.

**Conference Widget** allows to video conference from field and classroom.

**Content Widget** allows to view the contents of the LMS and the collect images and data from field trip devices.

**Metadata Widget** allows to edit and add context data to the field trip data.

**External Tools Widget**
# integrated learning eco-systems of tabs - pads - boards

http://www.designbynotion.com/metamirror-next-generation-tv/
so a smartphone/tablet is a sensor pack the user carries around ... It is mobile and ubiquitous tec.
functie: games en sensors voor immersie

http://motionmathgames.com/
Chapter 2

Ebooks in education

What do we know from research about interactive ebooks, what can we achieve with iBooks Author and what about the future of ebooks in education?
Reflective eBooks > advanced eBook functionalities for personalised learning
Acceptance model iPad pilot
Changing learning practices

• Additional learning contexts due to weightless learning material
• Use of small time-slots
• Pervasive access to learning material
• Combination of learning resources
• Effects on study strategies (annotations, marking, exchanging)
• Effects on in-class-lectures
hoe doen wij de transitie?
a grapher
Hierin is G het gewicht van het ongeboren kind in gram en t het aantal weken van de zwangerschap.

Volgens de formule wordt het geboortegewicht van 3480 gram veel later bereikt dan de 280 dagen (= 40 weken) die we in de figuur aflezen.

Functie: $G = \frac{3200}{(1 + 63 \cdot 0,69^{t-20})} + 300$

Een tenniswedstrijd


* P(sterkste speler wint 10 keer) = 0,94 tot de 10e macht

* Het antwoord: (ongeveer) 0,54

Drill & practice

Reference books
### Other Apps

<table>
<thead>
<tr>
<th>App Name</th>
<th>Description</th>
<th>Developer</th>
<th>Release Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>fxPad</td>
<td>by Chirsoft</td>
<td>Released: over 2 years ago</td>
<td></td>
</tr>
<tr>
<td>Graphing Calculator 3D</td>
<td>by Alterme Inc</td>
<td>Released: over 2 years ago</td>
<td></td>
</tr>
<tr>
<td>Elevated Math</td>
<td>by Elevated Lab Press</td>
<td>Released: 9 months ago</td>
<td></td>
</tr>
<tr>
<td>My Grapher HD - Multipur...</td>
<td>by Base 12 Innovations</td>
<td>Released: 9 months ago</td>
<td></td>
</tr>
<tr>
<td>Math Graph for iPad</td>
<td>by The Bear Flag Republic</td>
<td>Released: 9 months ago</td>
<td></td>
</tr>
<tr>
<td>MyCalculator Pro - Plot gra...</td>
<td>by Pomegranate Software</td>
<td>Released: almost 3 years ago</td>
<td></td>
</tr>
<tr>
<td>Free Graphing Symbolic Ca...</td>
<td>by Daniel Alm &amp; Thomas Osthege</td>
<td>Released: over 2 years ago</td>
<td></td>
</tr>
<tr>
<td>Graphbook</td>
<td>by Pomegranate Software</td>
<td>Released: about 2 years ago</td>
<td></td>
</tr>
<tr>
<td>Graphing Calc</td>
<td>by HWADO</td>
<td>Released: 12 months ago</td>
<td></td>
</tr>
<tr>
<td>Math Graph Pro for iPad</td>
<td>by The Bear Flag Republic</td>
<td>Released: 9 months ago</td>
<td></td>
</tr>
</tbody>
</table>

---

**Centre for Learning Sciences and Technologies**

[http://appadvice.com/appguides/show/graphing-apps-for-ipad](http://appadvice.com/appguides/show/graphing-apps-for-ipad)
serious game console

http://global.com2us.com/game/Sliceit
maar er is een probleem ...
Getting away with texting

bullfrog987  +  Subscribe  15 videos

How to text in class without getting caught
by SheetsTeam
7,394 views

hidden head phones in jacket!!!
comadyman54  +  Subscribe  29 videos

Home » Categories » Youth » School Stuff » Class Distractions

How to Listen to Your iPod in Class
Your Teacher Knowing when Wearing
Sleeved T Shirt (for Girls)
Edited by SilverSparkz and 4 others

We all find class boring and need a bit of music to lighten up the day. But we all know it's detention if we get caught. Read on to get the know how on how to listen to music.
dus wat doen?
NO
CELL PHONES
ALLOWED IN
CLASSROOMS
goede inzet van tablet technologie ...
functies relevant voor onderwijs context

• planners, notificaties, news, gids
• personelijke informatiebakje
• relevante informatie voor je context (locatie, tijd, omgeving, social netwerk)
• toegang naar sociale netwerk, sociale media
• en mobiele game console
Bloom’s Taxonomy for iPads

Creating
- Audioboo
- iMovie
- ComicBook!
- ReelDirector
- SonicPics
- Animoto
- Puppet Pals
- Toontastic
- Doink

Evaluating
- HootSuite
- Skype
- Mobile RSS
- Science 360
- Zite
- FlipBoard
- Instapaper
- Goodreads
- Wunderlist

Analyzing
- iThoughts HD
- Lino
- Popplet
- Today’s Documents
- Diigo
- Explain Everything
- 3D Cell Simulation
- GoSkyWatch
- GoDocs

Applying
- ShowMe
- Poetry Creator
- Keynote
- Visualize
- Posterous
- ZigZag Board
- Presentation Link
- Xperica
- GearHD

Understanding
- ScreenChomp
- Motion Math
- 123 Charts
- Idea Sketch
- Corkulous
- Blogsy
- GoodReader
- Touch Draw
- Pages

Remembering
- iBook
- Noteshelf
- Stack the Countries
- Evernote Peek
- NxtApp 4Kids
- Ansel & Clair’s Adventure
- Word Seek HD
- eClicker
- Globe
Checklist

• Student Services, selecteer de belangrijkste functie
  – Zijn jullie roosters digital beschikbaar?
  – Probeer taken, thuiswerk, interactie ook mobiel te maken! b.v. ook mobiel facebook
  – Maak de activiteit zichtbaar op school!

• The Extended Calculator ...
  – Gebruik je mobiele technologie?
  – Heb je een lijst van apps voor jouw vakgebied?
  – Zoek een collectie en gebruik het voor taken!
Checklist

• Classroom Systems, Clickers
  – Gebruik je multi-media in jouw onderwijs?
  – Gebruik je clickers (CRS)?
  – Gaa een step verder en probeer een verzameltakje, of een IM groep!

• Mobiel multi-media, games
  – Gebruik het mobieltje om multi-media voor taken de verzamelen!
  – Gebruik sociale media om reflectie te stimuleren!
meer weten?