ENHANCING LEARNING WITH ICT?

PROF. DR. MARCUS SPECHT

WELTEN INSTITUTE

RESEARCH CENTRE FOR LEARNING, TEACHING AND TECHNOLOGY

OPEN UNIVERSITEIT NEDERLAND

MARCUS.SPECHT@OU.NL

TWITTER, FLICKR, FACEBOOK: MARCUSPECHT
Develop in your profession as teacher

Design and facilitate learning

Seamless Learning Design

Open Education

Multimodal Learning Experiences

Innovation and Teacher Professionalisation

Networked Learning

Serious Gaming

Make Learning Visible

Open Learning Analytics

Technology Enhanced Assessment

Understand Learning

Expertise Development

Motivation and Intention

Biopsychology and Learning
Open Access, Open Content, Open Data, Running National and European Research Projects, Working with National Network of Schools and Innovators
TO CREATE EFFECTIVE RECALL ...

FOLLOW PRINCIPLES OF EPISODIC MEMORY ...

THEORY-DRIVEN DESIGN
De diagram toont een model voor het organiseren, sturen en verantwoorden van het gebruik van ICT bij het leren. Het model bestaat uit twee hoofdonderdelen: 'meer leerrendement' en 'doelmatige organisatie van het leerproces'.

- **Meer leerrendement**: 
  - Verhoogde motivatie
  - Betere leerprestatie
  - Efficiënter leerproces
  - Gemeten opbrengsten

- **Doelmatige organisatie van het leerproces**: 
  - Tijdsbesparing
  - Meer transparantie
  - Hogere professionaliteit
  - Betere sturing
  - Verwachte opbrengsten

De twee hoofdonderdelen zijn verbonden door de kracht van het model, die verder onderverdeeld wordt in 'gebruik van ICT bij het leren' en 'gebruik van ICT bij het organiseren, sturen en verantwoorden'.

- **Gebruik van ICT bij het leren**: 
  - Primair proces

- **Gebruik van ICT bij het organiseren, sturen en verantwoorden**: 
  - Secundair proces

De onderdelen ‘visie’, ‘deskundigheid’, ‘inhoud en toepassingen’ en ‘infrastructuur’ vormen de basis van het model en dragen bij aan de realisatie van de doelstellingen.
#1 ARE WE MINDFUL TECHNOLOGY USERS?
### Figure 3.2. Percentage of persons who become highly anxious or moderately anxious when they cannot check their devices

<table>
<thead>
<tr>
<th>Device</th>
<th>iGeneration</th>
<th>Net Generation</th>
<th>Generation X</th>
<th>Baby Boomers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text messages</td>
<td>51%</td>
<td>51%</td>
<td>29%</td>
<td>15%</td>
</tr>
<tr>
<td>Cell phone calls</td>
<td>34%</td>
<td>50%</td>
<td>31%</td>
<td>18%</td>
</tr>
<tr>
<td>Social networks</td>
<td>28%</td>
<td>29%</td>
<td>10%</td>
<td>6%</td>
</tr>
<tr>
<td>Personal e-mail</td>
<td>10%</td>
<td>21%</td>
<td>20%</td>
<td>15%</td>
</tr>
<tr>
<td>Work e-mail</td>
<td>14%</td>
<td>20%</td>
<td>17%</td>
<td>19%</td>
</tr>
<tr>
<td>Voice mail</td>
<td>11%</td>
<td>18%</td>
<td>14%</td>
<td>15%</td>
</tr>
</tbody>
</table>

### Their devices all the time

<table>
<thead>
<tr>
<th>Technology</th>
<th>iGeneration</th>
<th>Net Generation</th>
<th>Generation X</th>
<th>Baby Boomers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text messages</td>
<td>49%</td>
<td>56%</td>
<td>34%</td>
<td>17%</td>
</tr>
<tr>
<td>Cell phone calls</td>
<td>27%</td>
<td>36%</td>
<td>31%</td>
<td>18%</td>
</tr>
<tr>
<td>Facebook/other social</td>
<td>27%</td>
<td>32%</td>
<td>16%</td>
<td>8%</td>
</tr>
<tr>
<td>networks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal e-mail</td>
<td>14%</td>
<td>25%</td>
<td>20%</td>
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</tr>
<tr>
<td>Work e-mail</td>
<td>10%</td>
<td>20%</td>
<td>20%</td>
<td>12%</td>
</tr>
<tr>
<td>Voice mail</td>
<td>9%</td>
<td>17%</td>
<td>14%</td>
<td>15%</td>
</tr>
</tbody>
</table>
“The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it.”

–MARC WEISER
Young people are spending their time in a space which adults find difficult to supervise or understand ...

Cutting and pasting isn’t cheating if you’ve read and understood it; that’s just getting inspiration.

Boy, aged 10

My dad won’t let me go on MSN because he thinks it’s a chatroom.

Boy, aged 12

If you play them all the time some games are only good for mashing your brain.

Boy, aged 8
LOCATION, LEARN, FILTER

CHOOSE 3 PLACES IN WHICH YOU LEARN WITH THIS MOBILE APP
#2 IS TECHNOLOGY DIFFERENT TO THE ONE I USE SINCE YEARS?
ABOUT MOBILE

Toronto, 1919: Mobile media in use (public domain) -
http://www.uni-weimar.de/de/medien/professuren/mobile-media/
INTIMATE TECHNOLOGY

- Technology integration into our daily live
- on personal, environmental and infrastructural level

#3 WHAT ARE THE NEW CHALLENGES?
RESEARCH AND DESIGN CHALLENGE:
HOW TO DESIGN SEAMLESS LEARNING SUPPORT IN TEL SPACES?

- Formal and informal learning;
- Personalized and social learning;
- Across time; locations, social contexts
- Combined use of multiple device types;
- Physical and digital worlds
- Multiple learning tasks knowledge synthesis
Welcome to the Minderjie Game.

The game is played using the ARLearn app developed by Stelian Temei working at CELTISEC. Within the app you will mainly use the Menu and the Rock button of your phone to navigate around. From time to time you will also make use of the built-in camera and microphone as well as a web browser.

All game messages will appear in the list you will see when clearing this message by using the Rock button. Some messages open automatically (like this one) while others open when you click on them. Once you open a message, it will stay out in the list, but stay there until the end of the game.

Some messages will ask you to provide either an answer to a question, record an audio, take a picture, or even capture a short video. When using media, simply add or record it and then press the corresponding Rock button.

Fig. 1. Player using the Hemiriam application at the manakin and player scanning the QR code at the defibrillator.
Scaling Processes

MOOC: Coursera, edX, OpenLearn, Futurlearn, yOUUlearn

Section I Social Interaction in Learning Networks
Section II Navigation Services
Section III Assessment and Placement Services
Section IV Contextualized Learning Network Services
Section V Learning Networks Integration
ENHANCING LEARNING?

You are not going to be productive.

Take a 5 minutes break ;)

#4
# Expertise Development

How to get Information from the Internet? Information processing, evaluation model, validation of information sources, visual search and information integration
Welten-instituut
Onderzoekscentrum voor leren, doceren en technologie

Definiëren onderzoeksvragen
Zoeken naar bronnen
Selecteren van bronnen
Verwerken van informatie
Presenteren van informatie

Open Universiteit
welten-instituut.ou.nl
HUMANS DO NOT ALWAYS LIKE TO DO ...

#REFLECTION
context indicators
reflection amplifiers

Figure 4.1. The reflection trigger (type 1) confronts personal tracked data to a yardstick (image taken from the treatment "All RTs")

17 actions. Previous group in the course performed in average 73 actions (for an average final test score of 13/20)
• Most indicators correlated positively and significantly with the grades and can be used as predictors
• Responsiveness is the best grade predictor
• Widgets scores from the first half are better grade predictors than those from the second half

<table>
<thead>
<tr>
<th>#</th>
<th>Indicator</th>
<th>Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Initiative</td>
<td>Number of posts (discussion, blog, files, pages)</td>
</tr>
<tr>
<td>2</td>
<td>Responsiveness</td>
<td>Number of comments to posts (discussion, blog, files, pages)</td>
</tr>
<tr>
<td>3</td>
<td>Connectedness</td>
<td>Number of contacts created</td>
</tr>
<tr>
<td>4</td>
<td>Presence</td>
<td>Online Presence measured through page views</td>
</tr>
<tr>
<td>5</td>
<td>Productivity</td>
<td>Sum of initiative + responsiveness divided by presence</td>
</tr>
</tbody>
</table>
WHAT MAKES IT PERSONAL IS...

#FEEDBACK IN ACTION...

Humans can sometimes act better in... #Augmented Spaces..
Methodology

What is Wearable Experience?

The Wearable Experience training methodology aims to provide an innovative learning method that is based on the idea of capturing the experience of an expert and enabling trainees to wear it while re-enacting, thus giving the trainee access to the tacit knowledge of the expert and enabling master-apprentice knowledge sharing.

Capture  ➔  Re-enact  ➔  Evaluate
WEARABLE EXPERIENCE FOR KNOWLEDGE-INTENSIVE TRAINING

Hardware design

- Myndplay Brainwave/EEG
- Hololens Augmented Reality Display
- Heart Rate Variability (Wristband type)
- Heart Rate Variability (Earlobe type)
- Myo Arm Movement sensor
- Alex Posture Sensor
THINK UPSIDE DOWN TO GET...

AGILE LEARNING...
LET STUDENTS TAKE RESPONSIBILITY FOR THEIR GOALS ...

TO CREATE OWNERSHIP ...

MAL VAN HOUT MAKEN VOOR HET BORD SELF.

MAL SELF OVERGEBRUKKEN.
• Enhance expertise development with structured information research processes

• Personalised reflection prompts and Learning Analytics enhance SRL with new indicators

• Video and sensor-based feedback enhances understanding and learning of complex 21st century skills

• Agile learning can enhance ownership and engagement towards learning outcomes as also offer new opportunities for formative assessment
THANK YOU!

M.M. SPECHT