Virtual Reality, Simulation and Serious Games for Emergency Management Training

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Future Research Challenges
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Has (in Norway):
› the largest teacher training program education
› the largest range of bachelor programs in engineering
› Most modern facilities for simulation-based education within health care (SimArena)
   › Health technologies
   › 40+ simulator rooms

Facts:
› 16,000 students
  › BSc
  › MSc
  › PhD
    › ICT Engineering
    › Responsible Innovation
    › ...
› 1,800 employees
My background

Work:

Sweden
› Ericsson AB
› Chalmers University,
› Uppsala University,
› Skövde University

Norway

Research
› Usability / UxD / Interaction Design
› Technology in Organizations (TA)

Technologies
› Virtual / augmented reality
› Simulation and Serious games

Areas:
› Emergency management
› Health technologies
Developing new technologies for health: Eye tracking
Developing new technologies for health: EBP steps

Korsryggplager
Sist redigert 4/2-2018

Skulderplager
Sist redigert 4/2-2018

Fyll ut relevante PICO elementer

P: Populasjon/pasientgruppe/brukergruppe

I: Intervensjon/eksponering/situasjon
Training prehospital care: from getting the alarm call …

24 nurses

Simulation rich during the timeline
Virtual Reality, Simulation and Serious Games Supporting Training for Emergency Management

› New value creation
› Collective change by large scale adoption
› Interorganizational collaboration
› Potential change to the community (paradigm shift)
What is a virtual training?
How do the ‘virtual’ complete ’other’ training?

Real life

LIVE simulation

Virtual

Classroom
If virtual reality simulation and serious games are allowing to train the impossible: Why they are not used?
Adoption models

- **Davis, 1986**: Technology Acceptance Model (TAM) … introduced ‘perceived usefulness’ and ‘perceived ease of use’

- **Venkatesh and Davis**: Several versions (TAM2, UTAUT)

- **Orlikowsky, 2007**: SG as concept of socio-material practice artifacts in social practices become more significant than the IT artifacts itself in molding the rule based regulation

- **Bijker and Pinch, 1993**: Also according to Social Construction of Technology (SCOT) model: How we construct meanings for IT artifacts

- **Fomin & (2016)**: the “closure” on IT use and meaning, however, leaves space for “interpretive flexibility”
IT-based regulation in organization

(Fomin, V. 2016)
Challenges and future work:
Value creation for using the ‘virtual’ better

› Accuracy … define contextual training
  › Data from international databases -&gt; training in real environment
› Realism of the ‘virtual’ … for creating values
› The role of instructors

› To meet users and developers (co-design)
› New methods for training and integrating virtuaare necessary
› Education has to be open and consider
  Technical and organizational changes
  New rules are to handle needed
Questions?
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1. Technical Characteristics
2. Perceived Attributes of Innovation:
   - relative advantage, compatibility,
   - complexity, trialability, observability,
   - human factors
3. Type of Innovation-Decision: optional, collective, authority
4. Communication Channels
5. Nature of the Social System: norms, degree of network interconnectedness, user community
6. Change Agents’ Promotion Efforts
7. Training Domain

Basis: Rogers’ model