Supporting creativity in group sessions

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Introduction

- The need for creativity
    - Creativity is important for economical prosperity
    - Most companys have creative departments
- Supporting creativity
    - Creativity has many different aspects
    - Creativity can be supported by computers
- Creativity in groups
    - Groups are usually used for creative tasks
    - Group session important part of group work

→ Creativity tools supporting group session

Overview

- 1. Creativity
  - Definition
  - Operationalizing
- 2. Group creativity
  - Definition
  - Model
- 3. Creativity Support Tools (CST)
  - Methods
- 4. Tools supporting creativity
  - Requirements
  - Classification
- 5. Tools supporting creativity in group sessions
  - Examples

Creativity: Definition

≡ What is creativity?

 ≡ Divergent thinking: the ability to produce different ideas

 ≡ Originality: the ability to produce unusual ideas

 ≡ Elaboration: the ability to create different aspects upon an idea

≡ Extend

 ≡ Innovation: creativity is the origin of innovation; innovation result of creativity

 ≡ Idea: not all ideas are creative, creative ideas are less reproducible

≡ Evaluation

 ≡ Individual: Creative for oneself

 ≡ External: Creative by external judgement

Creativity: The 4 Aspects

- Person:
    - relating to the creative person
    - Depends on: personality, intellect, behaviour, attitudes
- Pressure:
    - Stimuli that affect the creative person
    - Depends on: age, family background, social behaviour
- Process:
    - Development, life cycle of the creation
    - Depends on: motivation, learning, thinking, communication
- Product:
    - Outcome of the creative process
    - Depends on: novelty, value, quantitiy

Creativity: Operationalizing

≡ The creative product:

  ≡ Originality: uniqueness of the idea, strength of the creativity

  ≡ Propagation: Publication of idea

  ≡ Social evaluation: Comprehension and further development

  ≡ Social acceptance: Adoption and stimuli for new ideas

≡ Process of creativity:

  ≡ Preperation: problem identification

  ≡ Incubation: subconscious working on the problem

  ≡ Acquisition: answer in rough space

  ≡ Examination: testing, realising and propagation

Group creativity: Definition

≡ Range:

    ≡ Individual creativity: One person, depends on situation

    ≡ Social creativity: depends on communication and interaction

    ≡ Group creativity: part of social creativity, depends furthermore on synchronisation

≡ Group process:

    ≡ Serial: creation is successive

    ≡ Parallel: creation is side by side

    ≡ Simultaneous: creation is concurrent

≡ Evaluation of group creativity:

    ≡ Advances: Knowledge sharing, new and more different ideas, learning from others

    ≡ Disadvances: Adaption, laziness, blocking

Group creativity: Model

Domain-relevant skills	Creativity-relevant processes	Task motivation
Includes: - knowledge about the domain - requisite techanical skills - special domain-relevant 'talent' or expertise **Depends on:** - the participants - the moderator	**Includes:** - appropriate cognivive style - implicit or explicit knowledge of heuritics for generating new ideas - conductive work style **Depends on:** - group composition - work procedures - the moderator	**Includes:** - attitudes towards the task - preceptins of one´s own motivation for undertaking the task **Depends on:** - intrinsic motivation toward the task - abilities to control extrinsic motivation factors - the creative climate

Creativity support: Methods

≡ General support methods

≡ Management and monitoring: organizing deadlines, presenting information

≡ Evaluation and relation: interpretation and intregration

≡ Collection and information system: supply necessary information

≡ Idea-generation and creation: computers try to find solutions

≡ Sharing: propagate solution

≡ Support of group session

≡ Create relationsships

≡ Making all voices heard

≡ Enable back talk

≡ Create open systems

Requirements on CST

- Keep multiple ideas visible simultaneously

- Personal, sub-group and group spaces

- Levels of sharing, private and public workspaces

- Rich history keeping

- Rapid access to personal and shared designs

- Minimize inhibitors: production stopping, free riding

Overview CST

- General classification:
    - Communication oriented: eMail, online forums, conference tools …
    - Repository oriented: Wikis, web portals, search engines, repositories …
    - Problemsolving oriented: decision support systems, evaluation systems …
    - Artifical intelligence: neuronal networks, generical algorithms …
- Task oriented classification:
    - Animation: Flash
    - Musicediting: CuBase
    - Videoediting: Premiere
    - Wikis: MediaWiki
    - Media Sharing: YouTube

CST group session overview

- Attributes
  - Co-located
  - Simultaneous
  - Two up to ten participants
- Tools supporting creativity in group sessions
  - Caretta
  - TEAM STORM
  - Public Space Public Design
  - EDC
  - DYNAMO
  - UbiTable
  - …

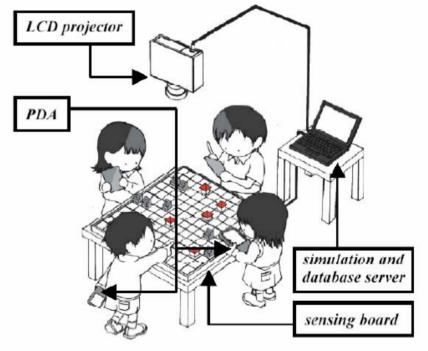# Caretta

- Developed 2004, Tokyo
- Support shared idea creation
- For different stakeholders
- Consists of:
  - Central sensing board, group space
    - physical and virtual objects
    - Idea sharing and evaluation
  - Several PDAs, personal space
    - Idea generation
  - Database Server and LCD projector
- Advantage:
  - Enables use of physical objects
- Disadvantages:
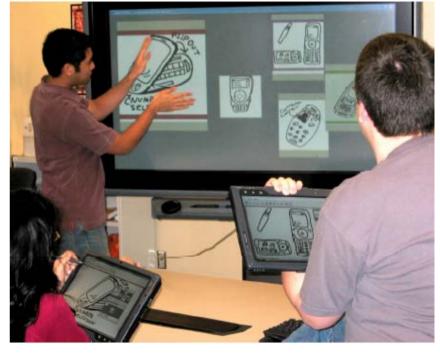 - No sub groups
  - Data cannot be transfered from PDA to board

Quelle: ONeill

TEAM STORM

- Developed 2007, Illinois

- Sketching tool for multiple ideas

- For designers

- Consists of:
  - Large central display, group space
    - Idea sharing and evaluation
    - Shows multiple ideas at once
  - Several Tablet PCs, personal space
    - Idea sketching
    - Idea organisation

- Advances:
  - History keeping
  - Personal and public space

- Disadvances
  - No sup groups
  - Only for early prototype design sketching

Quelle: Hailpern

Public Space Public Design

≡ Developed 2007, University of Bath

≡ Supports idea generation in creative groups

≡ Consists of:

   ≡ A central tabletop, group space

      ≡ Idea sharing

      ≡ Idea evaluation

   ≡ Several Tablet PCs, sub group space

      ≡ Idea creation and sharing in sub group

   ≡ Several PDAs, personal space

      ≡ Idea generation

≡ Advances:

   ≡ Personal and public sharing

   ≡ Group leader support

   ≡ History keeping

≡ Disadvances:

   ≡ Seperation of workspaces

Quelle:ONeill

Conclusion

≡ Creativity in groups can be supported in many ways

≡ Much work for tools supporting creativity in group sessions is needed

≡ There is an use of and need for creativity tools

≡ Future tasks:

  ≡ Accelerate research and invest more money and time

  ≡ Promote more multidimensional evaluation techniques

  ≡ Rebuild user interfaces for creativity support systems