Adaption of serious games for engineering education for fitting different target groups

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Motivation, challenge and objectives

- Difficult for students and employees to understand the interactions in processes
- Fostering the awareness and analytical capabilities
- More practical experience in a safe environment
- Challenge:
  - Inhomogeneous user groups, and competence level require different setting
- Objective:
  - Understand how different factors (game mechanics and add on information) affect game play and learning outcome
Experimental set-up
Results and lessons learned

• Inhomogeneous groups
  • Improved transfer of knowledge from the participants' different personal previous experiences (in the debriefing part)
  • For employees - more experienced employees get more complex tasks (for staying in flow)
  • Required to have a set of additional tasks to add if needed
  • Motivating factors – Different set of Key performance indicators
  • The more real practical experience, the more time needed for debriefing due to knowledge transfer among participants
  • For students - facilitator is in the role of teacher
  • Employees: facilitator more as a moderator
  • The less theoretical and practical knowledge, the more simplification needed
Outlook

- Digitalization VR/AR, mixed reality
- Queuing theory
- Logistics and material flow
- Information flow and information systems
Thank you for listening

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