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Game lab – a practical learning approach for Game Development

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Contents of the presentation

Background
- Games and Entertainment Technology, bachelor program
- Centre for excellence in education
- Project based course, Game lab
- Problem based learning and Learning through Construction

Research
- Focus
- Method
- Findings

Summarizing

Media Technology
Nord University

Educations (https://vimeo.com/198017351):

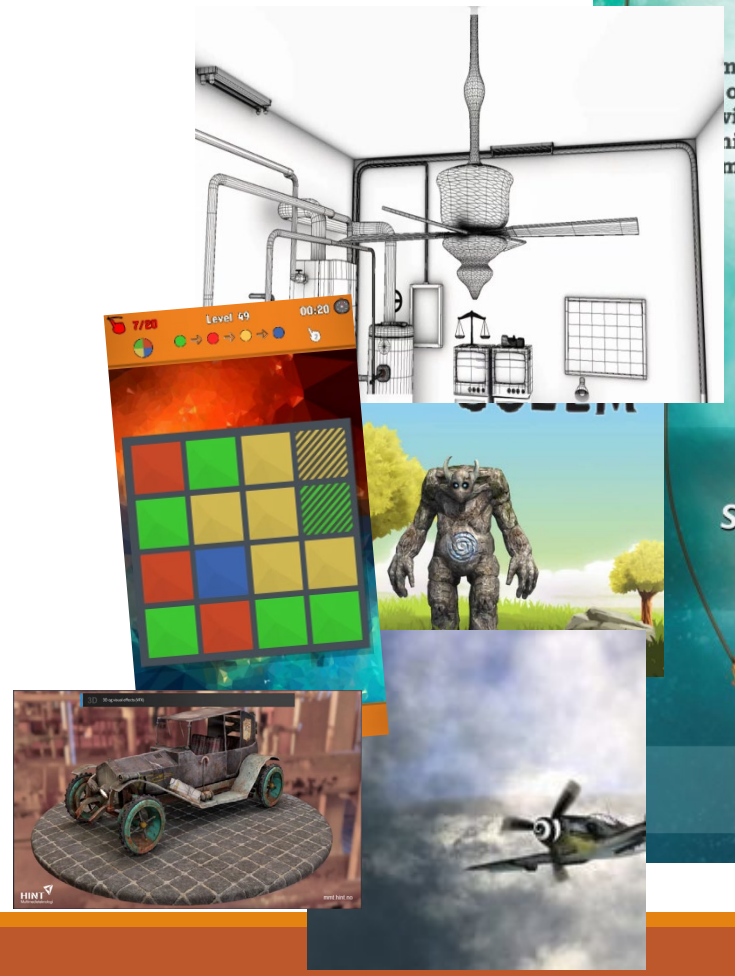
- Games & Entertainment Technology
- Film & TV Production
- 3D art, Animations and VFX

Reseach areas

- ICT, Digital Games and Learning
- Visualization and Virtual Reality

Close connection to the industry

16-20 employees



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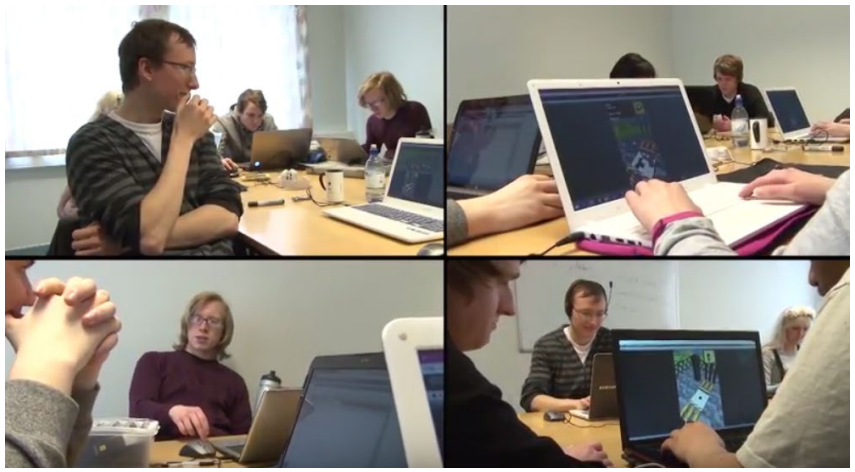

Game lab (course)

One Game lab in each semester

Student groups acting as a **game company**, taking on different roles

- Team lead, lead programmer, lead artist, game and level designer, etc.

Working with actual customers and a board of executives

Weekly meetings with executives

No classes

Assessed through a portfolio

- Process
- Documented work
- Work-logs
- Reflection notes
- Digital game

Game lab (course)

Problem based learning

- Darus et.al (2016) define a problem-based learning environment consisting of the following central elements:
  - Self-Directed learning,
  - Self-Reflective Students and
  - the Perception of teachers as facilitators more than knowledge disseminators.
  - *(Self-Directed Learning implies independence and freedom of choice on the part of the students to determine their own learning objectives and activities.)*
- Kay et.al. (2000) summarizes their understanding of PBL to be:
  - open-ended, authentic, substantial problems which drive the learning
  - explicit teaching and assessment of generic and metacognitive skills (self-reflection)
  - collaborative learning in groups.

Learning through Construction (LtC)

- Our use of the concept relates to the production of a digital product (game, app and similar) which gives students more hands-on and industry relevant experience
- Defined as **"the process of learning when creating a digital artifact (i.e. digital game, digital app or similar)."**

Game lab differs from PBL in the way that the teacher role alternates between the role of a facilitator and a customer / executive.

Game lab (course)

Student motivation and engagement

- Vibert and Shields (2003) talk about student engagement as a way of involving students in useful and productive activities … , where students must have autonomy, choice, and control in order to be genuinely engaged.
- Hand (2007) talks about motivation through active learning and the relational contexts (towards peer students and teachers).
- Blumenfeld, Kempler & Krajcik (2006)
  - **Value** (Intrinsic, Instrumental and Attainment)
  - **Competence**
  - **Relatedness**
  - **Autonomy**

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Methodology

Two Surveys

- Students of the Games and Entertainment Technology bachelors program at Nord University
- *Teachers and external industry professionals involved in the Game lab courses*

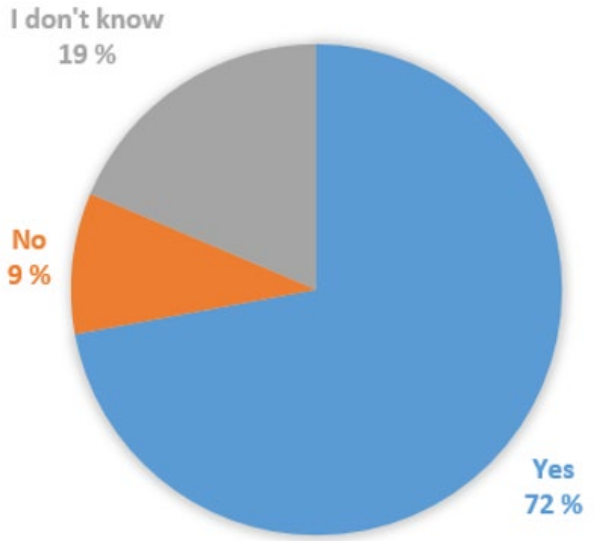
44 out of 80 students responded to the survey targeted at them

Open ended questions towards motivational factors

- Developing a coding scheme

Findings (1)

Do you learn more from the Game lab
than from other courses?



Comments given in relating to this part:

- “In game lab i get to work and learn about things i specifically want to do”
- “The difference in Game lab is that we get to self-educate and research in the appropriate field we wish to specialize in”
- “The relaxed environment, group work and chance to improve yourself, gives more enjoyment for learning new skills”
- “The fact that it acts as a simulation is also nice in terms of preparation for a potential job in the industry”

Findings (2)

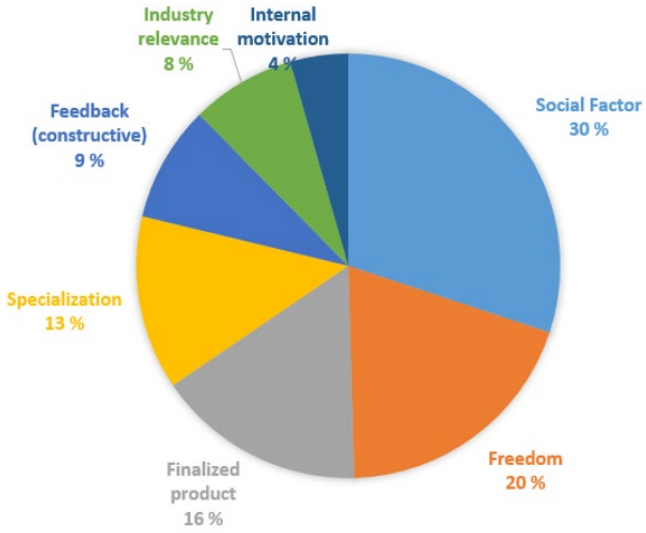
Motivating factors from the
Game lab concept

Social:

- teamwork, weekly meetings, working with friends, working together, teammates, the team, getting to know people, closer collaboration, etc.

Freedom:

- freedom to choose our own game, independence, freedom to experiment, flexibility, being our own bosses; freedom of design, etc.



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Findings (3)

Demotivating factors from
the Game lab concept

Groups:

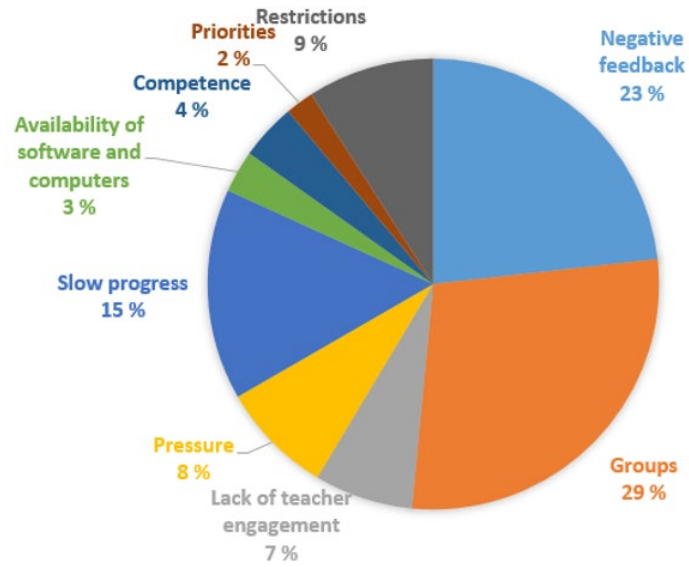
- dysfunctional groups, dealing with unmotivated teammates, bad teammates, bad team moral, demoralized team leads (coming from exec meetings), lack of communication, etc.

Negative feedback from teachers and executives

- inconsistent feedback, negative feedback from executives, some exec meetings, exec changing opinions, etc.

Slow progress:

- standstill in my project, slow progress, sometimes not enough work, not properly testing the product, pre-mature playtesting, showing our game when we know that it is not finished, etc.



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Summarizing (1)

Motivational factors found in this survey support the findings of Blumenfeld, Kempler & Krajcik (2006), emphasizing factors

- Value (Intrinsic, Instrumental and Attainment),
- Competence,
- Relatedness and
- Autonomy

Summarizing (2) – the important stuff! ☺

De-motivational factors mostly stems from negative feedback from teachers and executives, slow progress, restrictions, pressure, lack of teacher engagement and lack of competence in the group

Improvements through

- More consistent and constructive feedback from teachers and executives
- Process guiding from teachers to student teams
- Finding the feeling of flow (Steele and Fullagar, 2009) - balance between the challenge of the task and skills of the student, clear goals on the part of the student, unambiguous feedback and a high degree of individual autonomy and self-determination.
- Mapping student pre-skills
- Increasing student skill-set on inquiry-based learning and their ability to be critical thinkers

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Thank you!

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