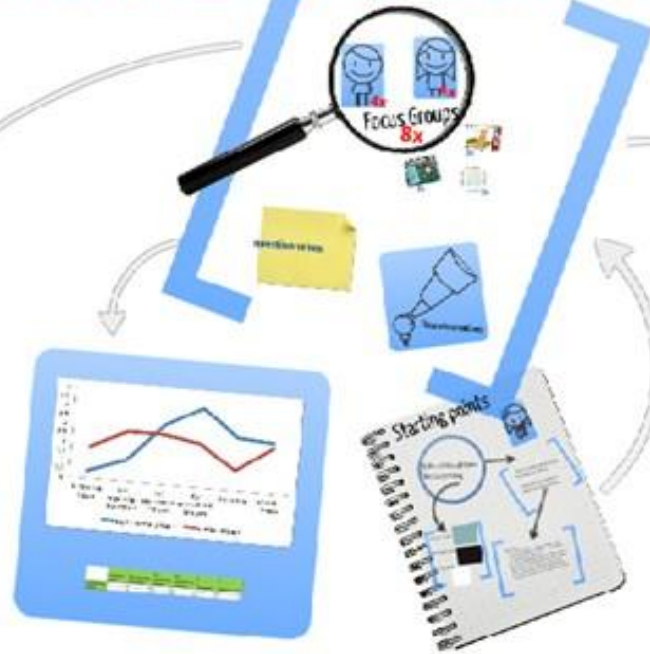


**Educational games and simulations
at school: the high-school students'
experiences and attitudes.
A qualitative study**

Michaela Buchtova
Cyberspace 2011, Brno

Quasi-Experimental Study on Educational Simulations



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Starting points



Edu simulations
for learning

Quasi-experimental study
on learning effects

- longitudinal research
- quantitative methods


Europe 2045

Animal Trainer

Bird breeder

Qualitative study

- to provide the understanding of the learning differences between 'drill and practice' methods vs. educational simulations;
- to identify the elements helping in the process of learning or strengthening the motivation towards learning (and describe the distracting ones)
- to provide the understanding of the students' acceptance of educational simulations at school.



Edu simulations
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Focus Groups
8x



4x

Focus Groups

8x



3x



3x



2x



questionnaires



The importance of a competitive system – motivation towards information behavior (information seeking, retrieving, organizing, uses – in-game virtual learning environment and on-line sources) and learning

- "The most important was the desire to win and to be the best."
- "I'd put there the success order of the teams that we would encourage us even more."
- "I was missing that I could not declare a war to somebody here."
- "I enjoyed playing when my finances were increasing. When they started to decrease, I did not enjoy it anymore."
- "I would not be interested, I do not play Europe and I do not learn anything. But because I wanted to win, I played and did something. Well if I already play, I can learn something. With teacher sometimes I switch off and do not listen"
- "Educational benefits are for sure better because I am interested in the game. When I could not move forward I was so angry... When I play, it means that I decided to, I want to play, to win and moreover to learn something."

The game motivation is in the majority of the cases selective. The students learn and seek for the limited information in order to succeed in the specific game activity

- Honestly I was not motivated to read from the encyclopedia when it was not about my project.
- If I would like to learn deeper details, I don't find it there.
- To play the simulation, you can always cheat and you don't learn.

Newness and change - the students obviously enjoyed the change from the schooling routine

- "It was good because once at school we did not have to learn."
- "Normally at school we do not have many teaching aids, the computers offer pictures and possibility to retrieve additional information."

Simulations help in recognizing the complexity and the inter relations of the systems

- "interesting - mainly the feedback system, visualizations"
- "consequences were for example the feedback, there I learned a lot. What we the consequences when someone wants to push through something."
- "Maybe I can understand the connections. If I do something in the country, what can be the consequences."
- "I was representing Russia. I cut there taxes and social support in the beginning. It brought various states and even homeless people. Now if I hear something else that is the news, I can better imagine the situation."
- "The simulation taught me to think critically, economically, in the lesson you learn the definitions, that's the difference. In the simulation you wonder how it works."
- "It was not a classic content. Usually we don't learn this at all."

Important Details

- Some negative opinions:
 - 1) Computer screens are not comfortable for learning.
 - 2) Students was inconsistent in their personal life - availability and online table
 - 3) X connected to the internet, intending to seek additional information, the students reach site like the procrastination and Facebook checking.

Simulations are accepted as highly efficient tool for the practicing the specific knowledge. The most of the students declared that the most efficient educational method is classic lecture – strong tradition in drill and practice method and the focus on the factual knowledge.

- "We could practice what we have learnt during the classic lectures."
- "It gave us an opportunity to experience the situations we could not experience in our real life or at school."
- "We could train the dog in real. We have tried it and we do not have to learn it again, it's not just theory."
- "The game was good to practice and to verify if we really understand it."
- "I will remember it more than from the classic lecture."

The importance of a competitive system – motivation towards information behavior (information seeking, retrieving, organizing, uses – in-game virtual learning environment and on-line sources) and learning

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The game motivation
learn and seek
me activity

Interested
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in and

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Simulations help in recognizing the complexity and the inner relations of the systems /processes - mainly the feedback system, visualizations

- "Interesting were for example the conflicts, there I learned a lot. What are the consequences when someone wants to push through something."
- "Maybe I more understand the connections. If I do something in the country, what can be the cosequences."
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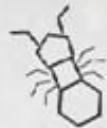
Some negative opinions:



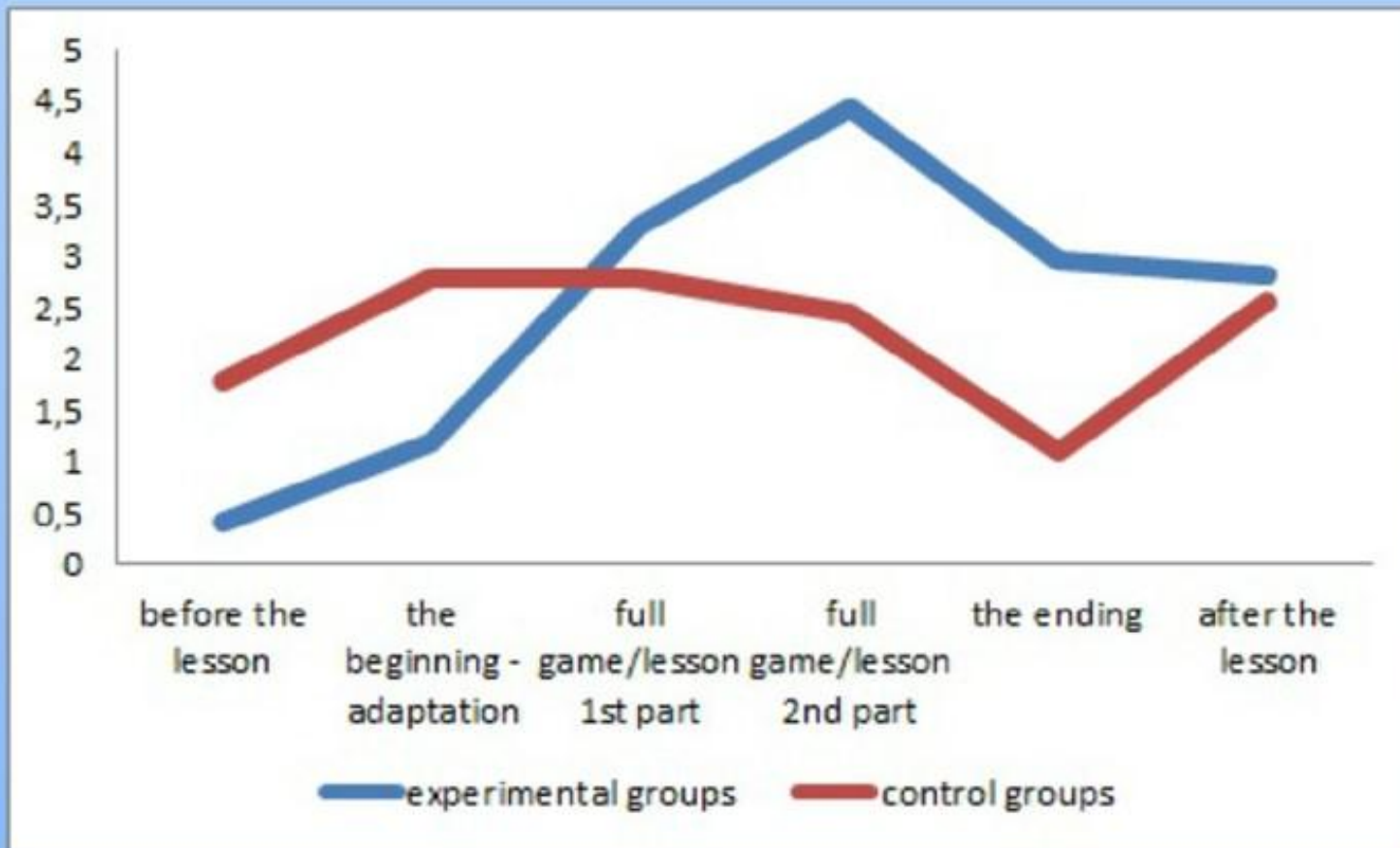
1) computer screens are not comfortable for learning



2) students use computers in their personal life - unhealthy and uncomfortable



3) PC connected to the Internet:
intending to seek additional information
the students mostly sink into
the procrastination and Facebook chatting...



	before the lesson	the beginning - adaptation	full game/lesson 1st part	full game/lesson 2nd part	the ending	after the lesson
experimental	0	0,5	2,1	1,1	-1,4	-0,1
control	0	1	-0,2	-0,3	-1,3	1,4

experimental groups

control groups

	before the lesson	the beginning - adaptation	full game/lesson 1st part	full game/lesson 2nd part	the ending	after the lesson
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Results



Simulation as
a tool for
constructing the
mental models

The importance of
a competitive aspect
Effects on information
behavior

Attention
effects

Simulation as
a tool for
strengthening
the knowledge

Selective
learning

The effect of
newness and
the change in
the school
routine

Value
of classic
lecture

some
negative
attitudes -
PC at school

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