COLLABORATIVE KNOWLEDGE IN E-LEARNING ENVIRONMENT

IVETA DAUGULE

2019

Background

2016: started my doctoral studies in Riga Technical University

E-learning Technologies and Management

Scope of study: online learning efficiency improvement

I got involved in the TELECI project

2017: started to work in University of Latvia

Occupational Health and Safety System manager

Developed online safety courses for University of Latvia employees

About TELECI

"Technology Enhanced Learning E-ecosystem with Stochastic Interdependences - TELECI"

The goal of this project is to develop advanced e-student profile model and to create a support system for multi-screen e-learning scenarios

This research has been supported by a grant from the European Regional Development Fund (ERFD/ERAF) project, Project No.1.1.1.1./16/A/154

OUTLINE

- E-learning – new space for collaborative learning
- E-learning environment with smart peer-review collaborative learning options
- Knowledge transfer landscape for different type of knowledge
- Knowledge transfer data for better understanding of collaborative learning

SCOPE OF STUDY

E-learning in Open edX platform

peer-review collaboration tools

«Basic business» study course

52 students

7 competences

knowledge stickiness assessment

Open edX

- edX is founded by Harvard and Massachusetts Institute of Technology
- open-source platform that powers edX courses
- freely available

Open edX is an online platform for creating, delivering, and analyzing online courses

7 COMPETENCES

- Actuality
- Technology
- Marketing
- Competition
- Finances
- Risks
- Ability to implement business idea

WHY PEER REVIEW?

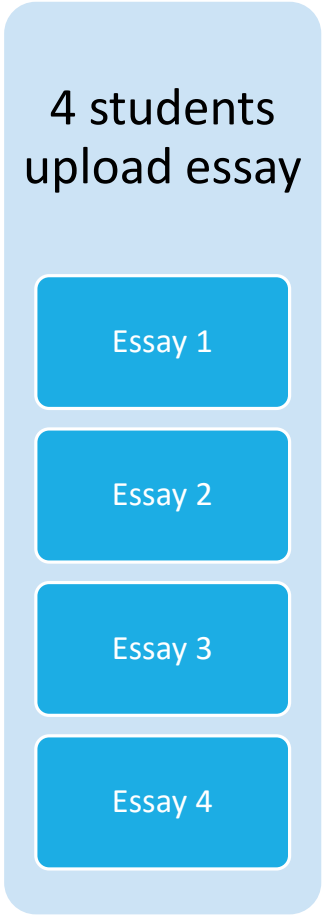
Facilitates active learning in students through justifications of their selected responses

Diffusion of knowledge and exchange of ideas

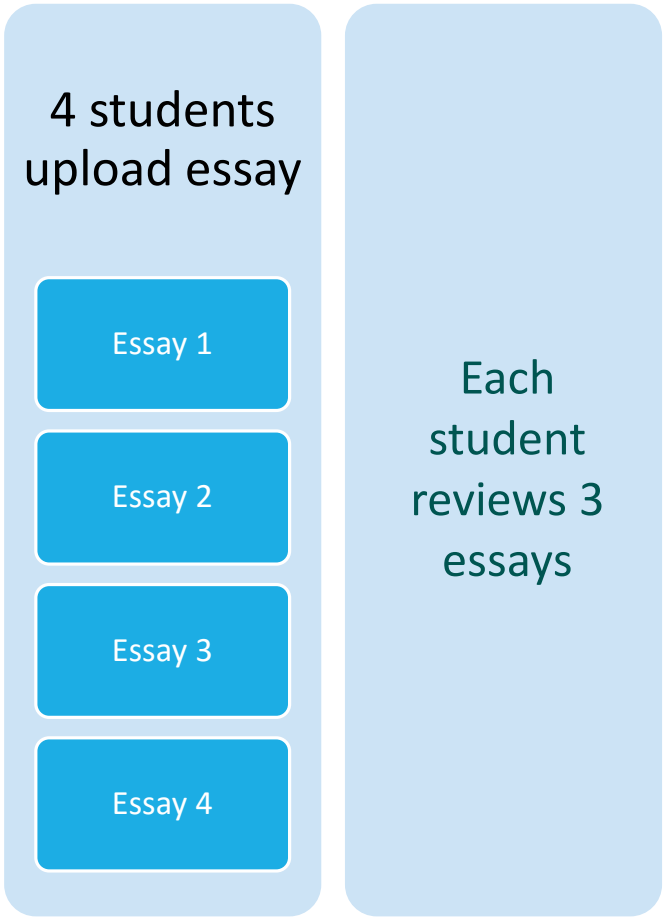
Students are exposed to different perspectives and approaches during the review process.

Encourages students to interact and learn from their peers

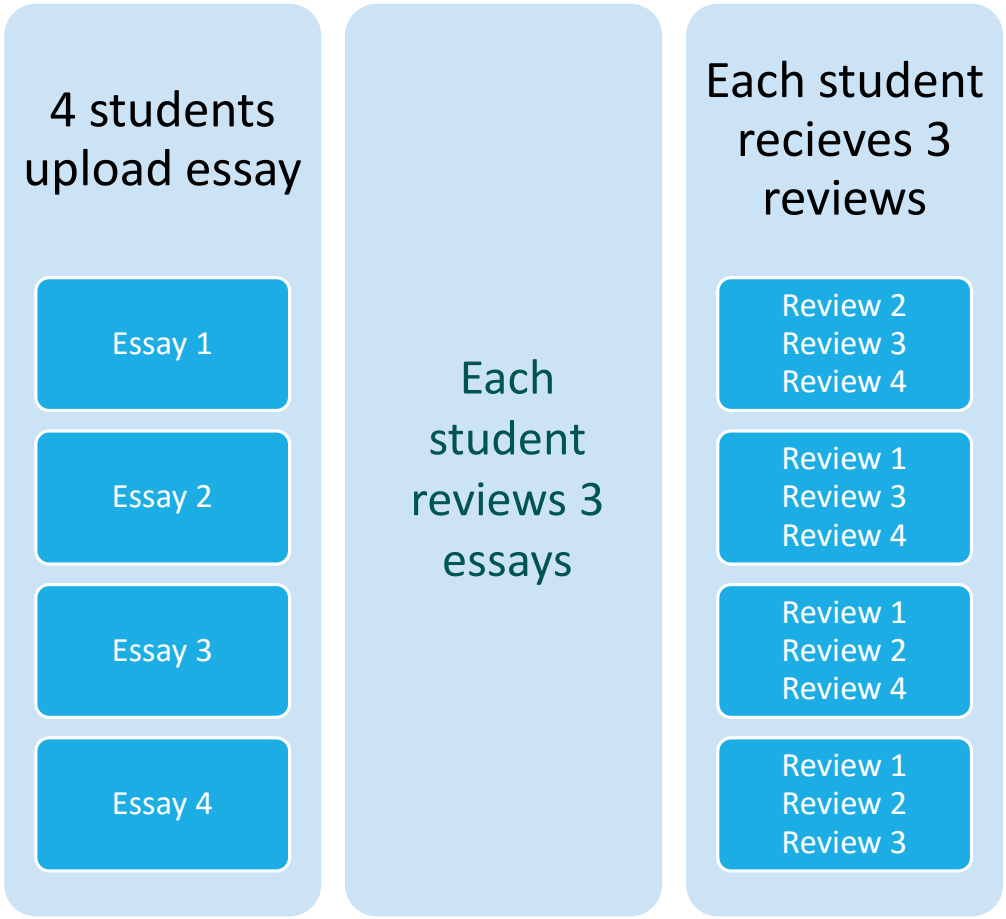
Peer-review process



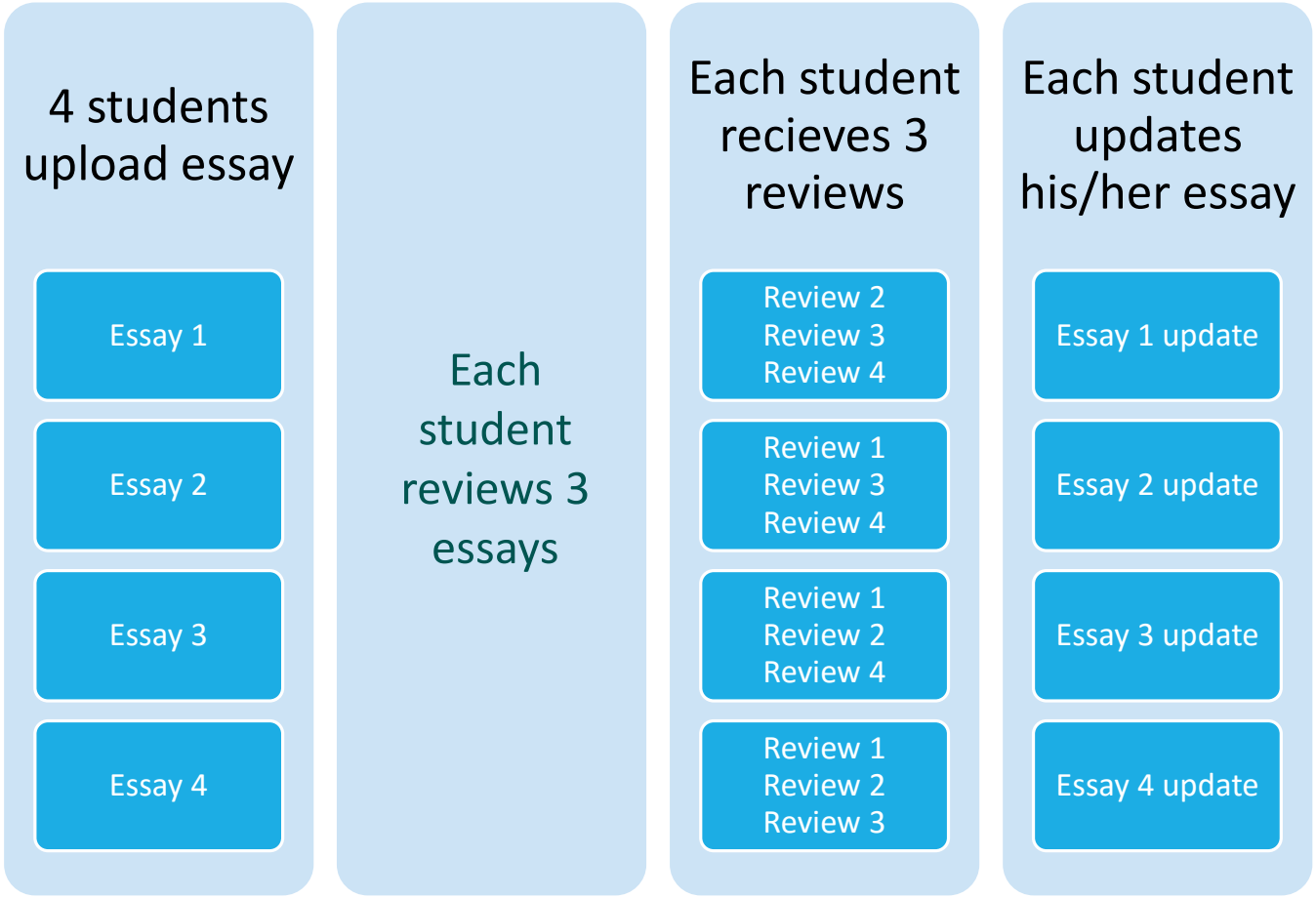
Peer-review process



Peer-review process



Peer-review process



Stickiness

10 point assessment criteria scale

Points	Criteria
1	The answer has not been provided
2	The answer does not meet the given task
3	The answer has been provided carelessly, without further reflection or reply
4	The provided answer is not sufficient
5	The provided answer corresponds to the given task, but is not complete
6	The provided answer expresses a definite thought, but has certain weaknesses
7	The provided answer corresponds to the study level (the bachelor degree)
8	The provided answer exceeds the level of study
9	The provided answer is appropriate for the practical solutions of the respective field
10	The provided answer corresponds to the professional level of the respective field and could serve as a good practical example

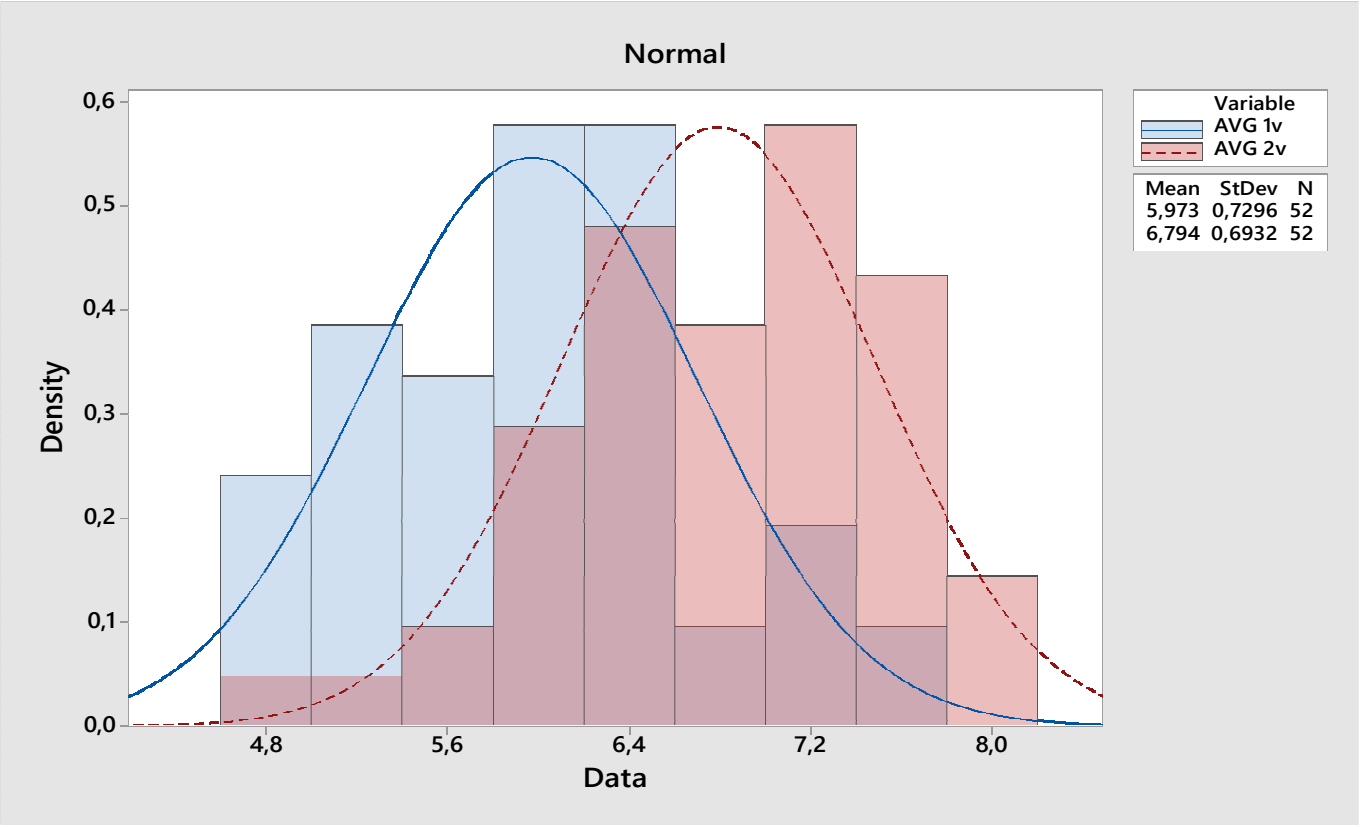
The analysis of stickiness

Assessment before and after students business idea improvement

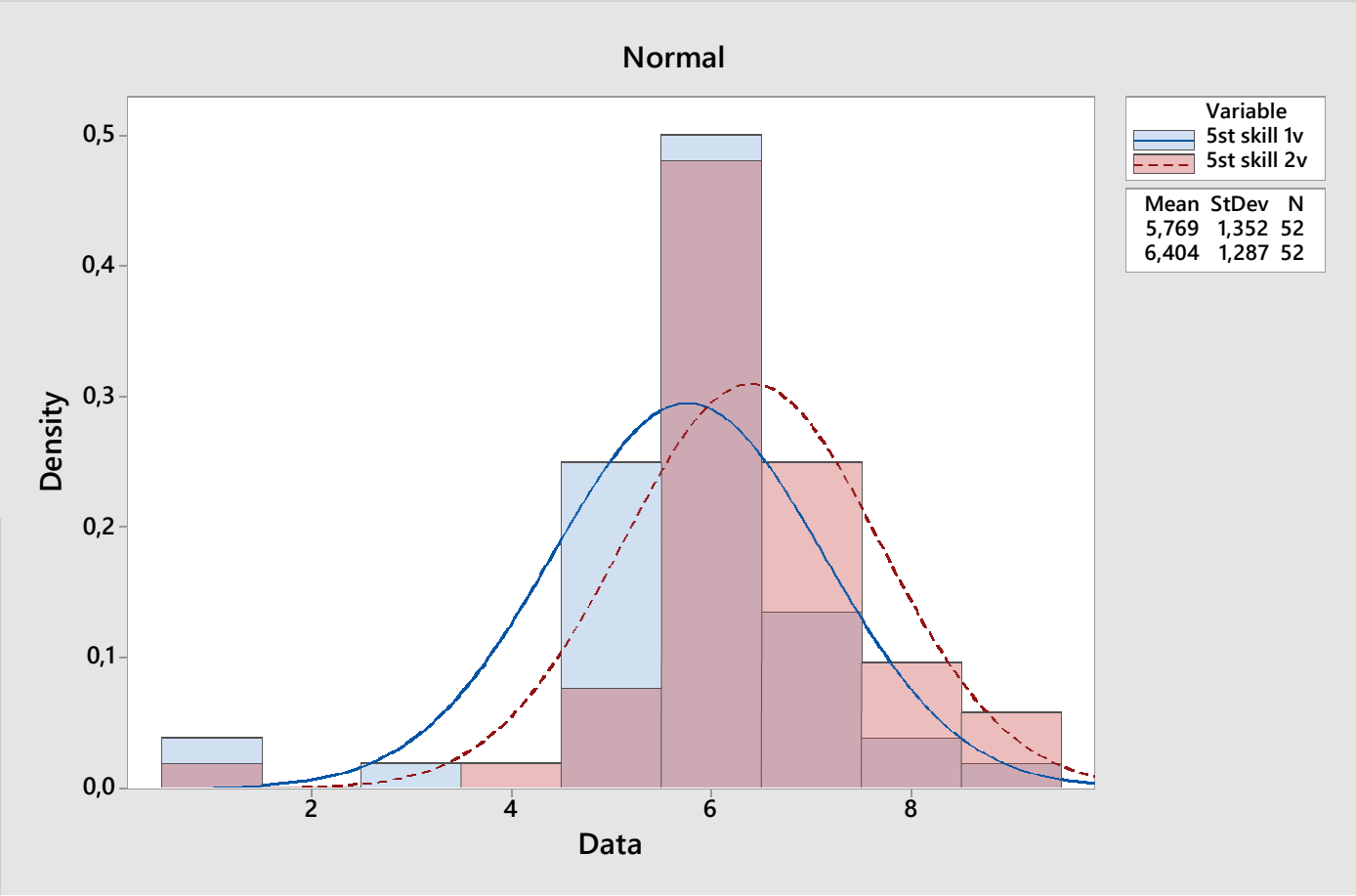
Analysis of performance descriptors

- standard deviations
- mean values

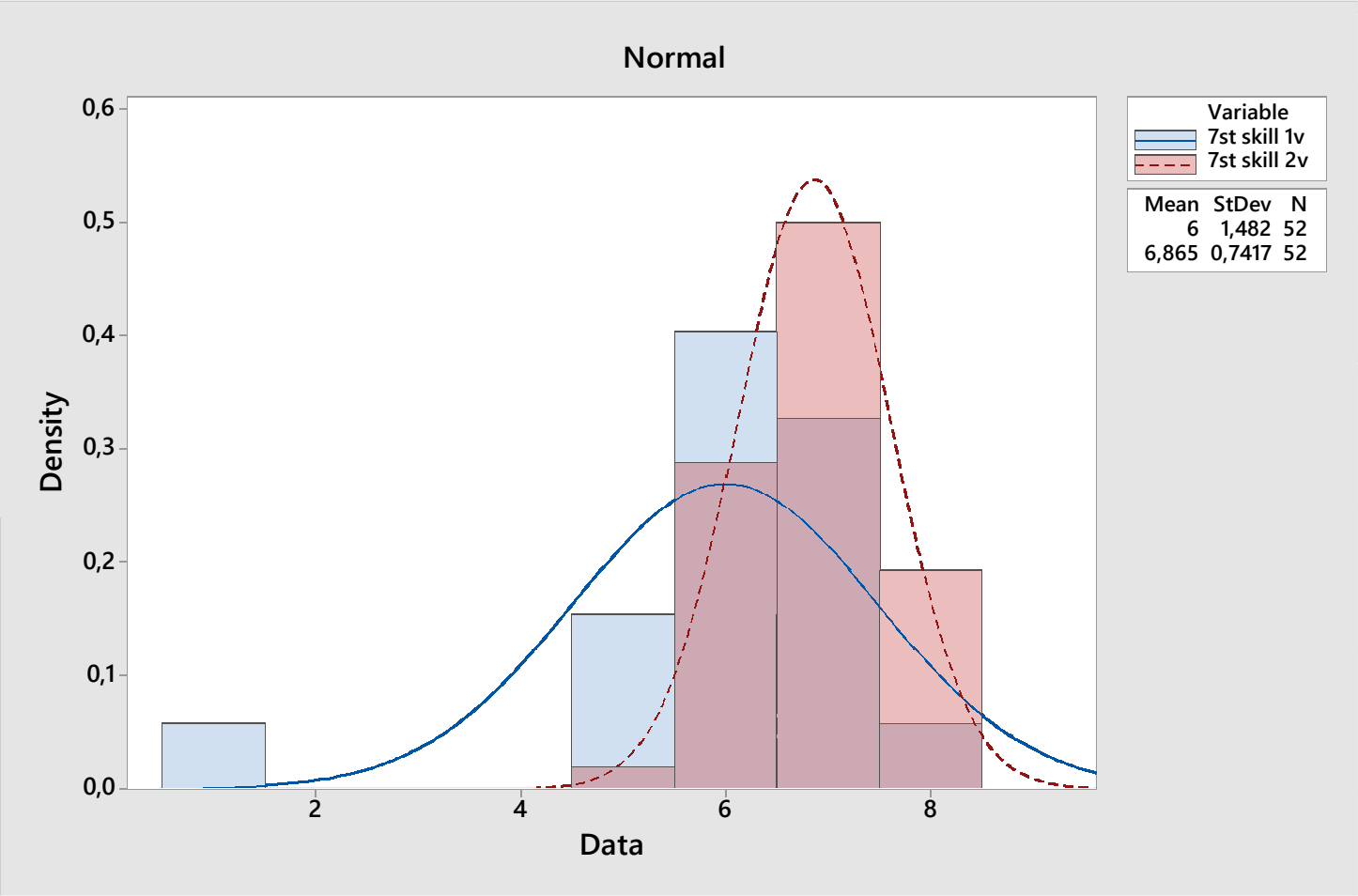
Knowledge developement in collaborative learning network: students' gained progress



The differences in knowledge stickiness - FINANCES



The differences in knowledge stickiness - RISKS



Knowledge development in collaborative learning network: impact of peer-review analysis

Peer-review analysis

(assessment in 3 point scale)

Students' progress vs Review Quality

Pearson's correlation coefficient was calculated

The direct impact of peer-review: Correlation of the progress in skills and the quality of proposals

Skill	Correlation with the quality of advice	
	Given advice	Received advice
Actuality	0.13	0.33
Technology	0.06	0.23
Marketing	0.26	0.38
Competition	0.04	-0.02
Finances	0.09	0.22
Ability to implement a business idea	0.24	0.11
Risks	-0.09	-0.09
Progress in the whole task	0.17	0.22

Knowledge development in collaborative learning network: the motivation

Taking into account the time (5 groups) when students finished their task

The students' learning results vs. time when the task was finished

- Gained progess
- Given review quality
- Recieved review quality

Impact of the motivation: Students' Progress by the Final Version Upload Time and the Quality Assessment Outcomes of the Proposals

Students' groups (by the final version upload time)	Progress (average)	Given proposals (average)	Received proposals (average)
1-10	1.09	2.43	2.13
11-20	0.73	2.43	2.3
21-30	0.49	2.27	1.97
31-40	0.89	2.53	2.4
41-52	0.90	2.33	1.89
All	0.82	2.4	2.13

Summary

There is considerable progress in the students' achievements after the peer review mechanism in an e-learning environment

There are significant differences in the knowledge transfer of different skills (business competences)

Our interpretation: Knowledge transfer differences are caused by knowledge stickiness differences

Individual motivation to complete the exercise in time has explicit influence on learning results

We didn't found considerable correlation between the progress made and the quality of the given and the received advice

Better understanding of knowledge stickiness is additional source for high quality e-content development

Thank you!