

COVID-19 IMPACT ON HIGHER EDUCATION – THE TRIGGER FOR DIGITAL TRANSFORMATION: CASE STUDY

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Acknowledgment

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The aim of this article is to find out the emerged problems and difficulties caused by Covid-19 in the context of higher education in Latvia, to describe possible solutions and identify the pros and cons of remote learning based on the semi-structured questionnaire held online in June 2020.

In Latvia Covid - 19 Emergency situation has been declared starting from 12 March, 2020 (MK, 2020).

The first survey has been conducted by Ministry of Education and Science of Latvia in co-operation with EDURIO with the first two weeks of online learning/teaching process in schools only (EDURIO, 2020).

Respondents of the Research

93 respondents from higher education institutions of Latvia have participated in the research.

- **27** (or 29%) **men** and **60** (or 65%) **women**
- age from **18** till **62**, the majority 18-25 – 31%
 - **71** (or 76%) respondent from **Latgalia**
- **67** (or 74%) **students** and **27** (25%) **lecturers**
- **42** (or 45%) Engineering; **41** (or 44%) Social studies and **7** (or 8%) Humane Studies

Structure of the Questionnaire

- focus on four aspects of study process followed by Covid-19:
study environment, organization of study process, competences and IT-Human Dialogue;
- closed ended format Importance questions
- closed ended format Readiness questions
- open ended format Effectiveness question

Methodology

The current study is based on the non-experimental mixed research design involving analyses of quantitative and qualitative data on the impact of Covid-19 in the context of higher education.

The **semi-structured questionnaire "The Impact of Covid-19 in the context of higher education: emerged problems and possible solutions"** was chosen as the main research method.

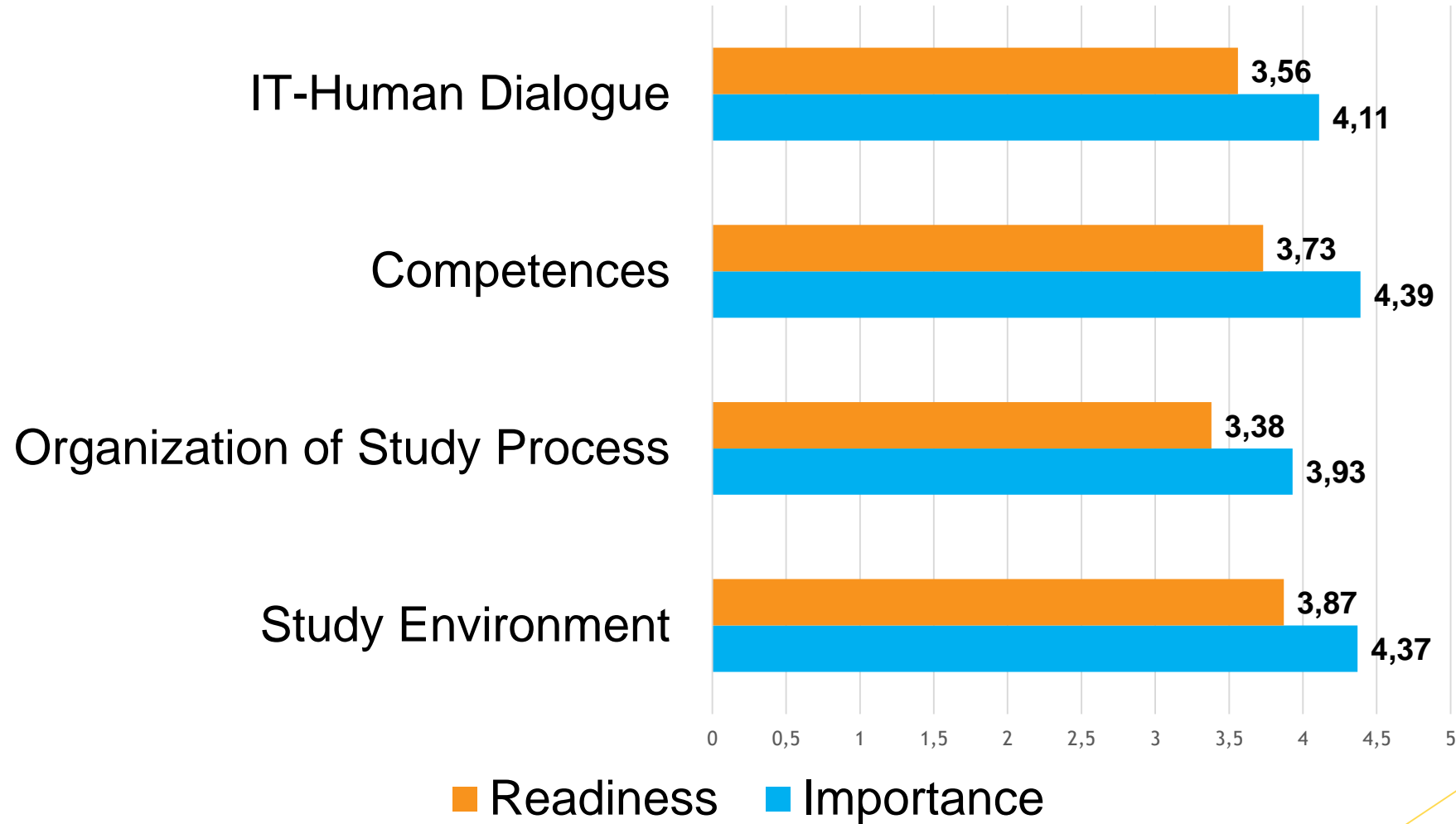
Research Methods

1. SPSS Statistics for data processing;
2. descriptive statistics;
3. reliability analyses test – Cronbach's alpha;
4. Mann – Whitney test for two ranks;
5. Kruskal Wallis test for three and more ranks;
6. Wilcoxon Signed ranks test for comparison;
7. Kendal rank correlation;
8. Visual graphic method for data representing.

Questionnaire Inner Reliability Test – Cronbach's alpha

Cronbach's alpha = .922
(value > .900 – very good inner reliability of questionnaire
questions)

ASPECTS Analyses



Aspects - Findings

1. The highest Importance index is for Competences (4,39), but the lowest Importance index is for Organization of Study Process (3,93).
2. The highest Readiness Index is for Study Environment (3,87), while the lowest Readiness Index is for Organization of Study Process (3,38).
3. The specific distinction between Importance and Readiness is observed for Competences (4,39 to 3,73), the difference to Organization of Study Process (3,93 to 3,38) and IT-Human Dialogue (4,11 to 3,56) and for Study Environment (4,37 to 3,87).

Mann-Whitney Test (Occupation)

	status	N	Mean Rank Importance Index	Mean Rank Readiness Index
Study Environment – Importance	students	66	47,09	47,89
	lecturers	27	46,75	44,44
	Total	93		
Organization of Study Process – Importance	students	66	50,40	48,80
	lecturers	27	37,23	41,83
	Total	93		
Competences - Importance	students	66	43,75	46,33
	lecturers	27	56,35	48,94
	Total	93		
IT-Human Dialogue - Importance	students	66	47,09	47,02
	lecturers	27	46,75	46,94
	Total	93		

The Importance Index is considerably higher for students for Organization of study Environment and for lecturers – for Competences.

Kruskal – Wallis Test

Factor	Occupation		Field		Age	
	Importance	Readiness	Importance	Readiness	Importance	Readiness
I. Study Environment	Students of <u>Doctoral</u> Program	Students of <u>Master</u> program	No significant difference	<u>Human</u> Science	Age group <u>36-45</u>	Age group <u>26 -35</u>
II. Organization	Students of <u>Doctoral</u> Program	Students of <u>Doctoral</u> Program	<u>Human</u> Science	<u>Engineering</u>	Age group <u>26-35</u>	Age group <u>26 -35</u>
III. Competences	Students of <u>Doctoral</u> Program	Students of <u>Master</u> Program; Students of <u>Doctoral</u> Program	<u>Human</u> Science	<u>Human</u> Science	Age group <u>46-55</u>	Age group <u>46-55</u>
IV. IT-Human Dialogue	Students of <u>Doctoral</u> Program	Students of <u>Doctoral</u> Program	<u>Social</u> Science	<u>Engineering</u>	Age group <u>26-35</u>	Age group <u>26 -35</u>

Kendall's Correlation Test

1. The correlation of Importance Index is weak (.280 - .378) for all four aspects: Study Environment, Organization of Study Process, Competences and IT-Human Dialogue;
2. The correlation of Readiness Index is higher, but still weak (.316 - .497) for all four aspects.
3. So the four aspects are not correlated as for Importance as for Readiness.
4. The four aspects are not correlated also by gender, place, occupation and field.
5. The weak correlation (.269) is observed for Importance Index of Competences and Age.

OPEN QUESTION

What would you like to change or improve to make digital /online studies more efficient?
(Your suggestions)

18 respondents (19%) have been satisfied with digital/online studies, no changes needed;

Content unit	Category	Concept
- Digital/online studies require more time as from lecturers (for preparation, test, check, etc.) as from students (more individual work needed).	Online Study process additional time aspect	<p>Additional Time aspect of online study process</p> <p>Development of ICT, self –management and communication competence</p> <p>Unique learning/teaching platform, including online lessons</p> <p>Part-time programs online</p>
- It is important to evaluation the possibility how to combine online learning with traditional learning (theory – online; practice – traditional).	Combination of traditional and online learning	
- It is necessary to improve different competences, especially self-management skills, ICT competence and communication competence.	Self-management, ICT and Communication competence	
- ICT competence needed to be improved all the time (the special course should be added to each program despite the study field, offering such possibility).	Continuous ICT competence improvement	
- To use unique system for organization of learning/teaching process, to create unique platform for online learning (within one institution or even on a state level).	Unique platform/system for online learning/teaching	
- E-materials should include online videos (online lessons, lecturers, to give the possibility to study at any time and place).	Online lessons, lecturers	
- The most important perspective for online learning, it is good solution for part-time programs.	Organization of part –time programs online	

CONCLUSIONS

1. ICT supply, ICT malfunction and internet connection has been indicated as the most important factors for the **Study Environment** aspect.
2. For the **Organization of Study Process** aspect the most important are unlimited study resources, individual study approach and different communication options.
3. All indicated **competences**, such as self-management skills, problem –solving competence, info selection and info critical evaluation skills, ICT and communication competences, have been marked as important ones.
4. **IT-Human Dialogue** aspect, the influence of the technologies to the study process has been indicated as the sufficient one.

CONCLUSIONS

5. The comparison of the Importance and Readiness Index of each aspect has proved **the hypothesis** of the research that neither students nor lecturers were ready for such a rapid transformation of the study process followed by Covid-19.

6. There is still a discussion, which need to be developed, about key competences for effective IT-Human interaction towards a common set and its application and development in the context of higher education.

Thank you for your attention!