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Master Programmes in Digital Landscape

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ABSTRACT
Researches in the field of Masters education focus on digitization which is involved in the conception of sustainability for higher educational institutions. Future development scenarios are needed to design up-to-date curricula taking into account different factors. Current research enables to have a look at the methodology and results of developing process for Master programmes scenarios with the focus on the digitization and presents a survey that can reveal Master students' attitudes towards different forms of e-learning. The survey held at the Ural State University of Economics proves that blended learning format is still preferable but at the same time indicates students' interest to new teaching forms beyond traditional format in an online edition. The analysis of the collected data and existing researches confirms the thesis about unavoidability of digitization in Master education and the need for educational transformations according to global challenges and students' preferences.
Keywords: *Master programmes, digital landscape, e-learning, distant education, scenarios, curriculum*

1. INTRODUCTION

Discussions about sustainable tertiary education in the era of uncertainty are in the boom period. There are different research papers describing how universities could incorporate sustainability into different activities. This concerns institutional framework, campus operations, teaching, research, community engagement, accountability and reporting. [1: p. 2]. Digital landscape is one of the key points which is considered in the frame of learning, teaching methods as well as administration.

Digitization in education, e-learning, open online education are some of the terms within the field of ed-tech (education technologies) which mean combined use of computer technologies and educational methods to foster learning.

Since higher education institutions are responsible for the education of future generations including future leaders and policy makers, they should deliver state-of-the art education providing professional, social, environmental and digital competencies which are necessary in the global world.

The integration of digital sustainability at the curriculum level may be achieved as vertically (creating specific online courses) as horizontally (by integrating virtual landscape into classical courses) [1: p 2].

Materials that need to be developed for digital online courses differ from traditional ones – they are not "easy to adjust". Development phase is more complicating, it requires involvement of external and multiple stakeholders. Hence, communication and coordination is more complex compared to traditional education [2: p. 9].

Teachers' ownership over their teaching practices also changes, M. Schophuizen and M. Kalz state. Participants of their survey indicate that some teachers "might feel reluctant to accept new roles and tasks, and giving up others when developing open online education compared to traditional one" [2: p. 9]. So, teachers become mediators, facilitators in designing and delivering education instead of being a person that delivers content [2: p. 10]. The results of the study mentioned above highlight empirical dimensions in the field of educational innovation projects and emphasize individual actors as enablers for change. They show that bottom-up level projects can impact on the bigger scale as well as top-down actions are needed to support innovative projects and create a sustainable embedding within institution. Both top-down and bottom-up actions need to be synchronized in order to foster experimentation and establish a friendly environment for innovation [2: p. 16].

It is necessary for our research to define the role of innovation in the field of education. Innovations mean changes. They describe "radical metamorphosis of what already exists – that active power that creates the new by destroying the old" [3: p.12]. Change has always been an integral part of life. The person who has a presentiment of change and can quickly respond to new situations adapting to it internally will have an advantage and therefore more chances for a successful future. This ability and readiness to face changes is a sign of the sustainability for organizations as well as states, economies and individuals. As Revans argues, "In any epoch of rapid change, those organizations (as well as nations, economies and individuals) unable to adapt are soon in trouble, and adaptation is achieved only by learning" [4: p. 11].

In times of huge transformation education supports all the social and economic changes. Technologies are developing rapidly, they are implemented in almost every segment of our life and without certain standards of education the gap between an individual and modern technological society can't be covered.

Digital education or e-learning has already become reality for different Master programmes. E-learning is defined as

"the use of information and communications technology (ICT) to enhance and/or support learning" [5: p. 21]. It combines different kinds of media, technology applications and processes "facilitating different learning models, such as learning inside and outside of the classroom, instructor-led synchronous or self-determined asynchronous learning, distance learning and flexible learning" [6: p. 229]. Additionally, e-learning can be used in combination with face-to-face learning and teaching (blended learning).

The statistics shows that the global mobile education market was expected to grow to 37.8 billion UD dollars in 2020, up from 3.4 billion UD dollars in 2011 [7]. The main force which drives this process is the USA. According to Allen and Seaman, the number of students taking online courses has enhanced significantly recently [8]. There is a vision paper for open education 2030, where it is stated that "Technology is seen as one of the main drivers to achieving major transformation both in and beyond the classroom" [9].

Shaping learning environments has become not only the main task but also a duty for universities. The aim of the current research is to give an overview of possible future development for Master education programmes with the focus on digitization.

2. METHODOLOGY

In order to forecast transformations in tertiary education, help higher educational institutions estimate their chances and risks and direct them towards their aims taking into account future perspectives, researchers use different tools and techniques.

Scenario method was developed by Herman Kahn in 1960s in the USA, and then this approach was shaped during the following years. Kahn's method became the basis for Pierre Wack who introduced scenario approach for Royal Dutch Shell [10]. Scenario analysis gained its popularity and was used in different fields such as health care, government planning, tourism, supply chain management, professional training etc. There are different definitions of scenarios. Godet defines them as "a description of a future situation together with the progression of events leading from the base situation to the future situation" [11: p. 21]. Gausemeier, Fink and Schlake mention that scenarios are "based on a complex network of influencing factors" [10: p. 90]. Hence, scenarios help to be aware of alternative images and perspectives and therefore to deal with uncertainty and prepare for decision-making. Inductive and deductive methods are the main ways to create a scenario as well as abductive and incremental approaches [12].

To create a scenario a researcher needs definite data. One of the technique which enables to collect necessary data and then analyze them in order to create a foundation for the scenario development process is Delphi survey. In 1950-60s this method was used by researchers in the USA to record expert attitudes towards the future of definite fields of study with further examination of trends. According to Turoff and Hiltz, "The Delphi method is a communication structure aimed at producing detailed critical examination and discussion, not at forcing a quick compromise" [13: p. 56-57]. During the procedure experts share their opinions, data is collected in multiple rounds and the feedback is controlled. The statistical analysis and the description conclude the study.

Method of alternative scenarios is common for areas where "quantification is difficult" [14: p. 87]. The data are collected within RT Delphi studies, they are analyzed and "internally consistent plausible and challenging narrative descriptions of possible situations in the future based on a complex network of influencing factors" [15: p. 47] are formulated, in other words, scenarios. So, during real-time (RT) Delphi study the most important factors that influence the future of education are revealed and prioritized. Methodological set can also include portfolio analysis, cross impact analysis, scenario-axis technique.

Cross impact analysis was developed in 1960-s to balance the weakness of Delphi studies [16]. It is often used in combination with other methods and with the Delphi method [17]. Cross impact analysis is useful in the fields where interconnected, interdependent and interrelated developments take place. Such a complex interdisciplinary research topic as education can't be researched without taking these developments into account.

Scenario technique based on the data collected within the Delphi survey is a scientifically based prognosis and at the same time a very useful practical tool for organizations that are concerned with their future development. However, except the Delphi survey there are other kinds of surveys which enable to estimate the actors' attitudes, consider the current situation and give recommendations for future development of educational programmes while taking into consideration different factors.

The questionnaires can be offered to focus groups, target audience or other participants, then carefully analyzed in order to obtain results relevant to the study. In our study the participants were Master programmes students, and the research aimed to find out how they estimate the shift to digital landscape and what form of learning they would prefer. 16 Master students of the first year majoring in Finance and Credit and 9 Master students of the second year majoring in International Business took part in a survey anonymously. It was offered to answer two multiple choice questions by choosing one option. The significant role by the interpretation of the results played the students' more elaborate answers – they were also asked to explain the reasons for their choice. Figure 1 introduces the form.

1. Would you like to study online during the pandemic or you prefer traditional learning in classroom respecting all necessary restrictions and limitations (wearing masks, distancing)? Choose your variant and give your reasons, please.
a) Traditional learning on-campus
b) Distant learning (using Portal of Electronic Resources where you can download and upload materials, chat with classmates and teachers during the lesson in a real-time format, send messages to teachers through separate message service)
c) Distant learning in virtual classrooms (software "Teams", you can also download and upload papers there and use chat service)
d) Blended learning (mixed version: partly online – for example usage of Portal of Electronic Resources for uploading study papers, video lectures; partly on-campus – seminars, exams).
My reason(s):

2. If learning in a digital landscape: would you prefer

a) classical learning as an online edition (the same lectures in video format and seminars in virtual classrooms) or
b) special designed courses with inserted video materials, text- and workbooks allowing completing interactive task online and further evaluating.

Figure 1 Form of the questionnaire

Besides inductive and deductive methods the questionnaire method was used in this research to collect data from a focus group alongside with the content analysis to formulate closed-ended questions. Qualitative content analysis served as a tool for interpreting the open-ended questions (students' reasons) as well as quantitative content analysis to analyze and interpret general results of the survey.

3. RESULTS

Forecasting future development of educational scenarios requires massive research. We mentioned RT Delphi survey and designing scenarios based on the information collected from selected experts. Dr. St. Kisgen conducted such a research for Master programmes in the field of Leadership. Experts from different countries represented different educational institutions and business environment. They were consolidated in several categories: providers (business schools), purchasers (companies), politics and participants (students). RT Delphi survey helped to reveal important factors which could serve as a foundation for developing future scenarios for the year 2030. In this paper we pay special attention to digitization of Master education. This aspect will be considered further in the research mentioned above, and the same aspect is also the main point of our own research. Its results will be considered afterwards and compared to the results of Dr. Kisgen's study in the part Discussion and Conclusion.

The research conducted by Dr. Kisgen confirmed that regardless of having some differences in experts' opinions, "future trend that advanced digitization will transform business leadership education is highly desirable and would have a high impact on business leadership education" [6: p. 234]. Strengths and weak points were mentioned by experts. As advantages can be considered saving time while choosing distance learning, flexibility, more interesting teaching, financial advantages for educational institutions, better managing large number of students. Anyway, blended learning is seen as the best combination of interpersonal communication and digitization, as more balanced way for successful teaching. Other factors were also mentioned by experts, such as the importance of face-to-face interaction, practical gaining of knowledge and essential skills which advanced digitization can't provide effectively. The importance of teacher's personality shouldn't be underestimated as humans need idols and learn social communicative competencies interacting offline. The experts also warn that educators should be always aware of a practical applicability of any educational product or service and consequences which occur in the real world.

St. Kisgen suggests that there are two most important drivers with a high impact: focusing on personality and competencies rather than knowledge and advanced digitalization which has transformed business education. She offers four possible scenarios for Master graduates in the year 2030 where e-learning plays an important part.

1) Integration of traditional management programs in the digital learning landscape with virtual classrooms and new teaching methods is one of the possibilities. Technologies not only support classical programs which have proven their value for half a century, they give them new life, new setting. Still in-company experience remains a mandatory requirement.

2) Another scenario assumes that the curricula should change a lot – classical knowledge and focusing on competences and personalities have to be combined and implemented in interactive online educational programmes. Everything should be conducted in virtual environment including virtual exams in virtual exams halls. However, real- world project-based learning has to remain as practical part of the programme.

3) The next scenario suggests that web and apps are only tools but not a magic ward. Communication and interaction between people can not be replaced, and face-to-face lectures on-campus, in-company experience are a compulsory part to balance virtual and real-world experience. Digital infrastructure is needed for administrative purposes, e. g. to upload and download study papers and materials.

4) The last scenario also suggests human interaction not only in virtual environment, anyway digital platforms are available for gaining new skills and knowledge. As this scenario focuses on social competencies in a real-working environment and creating innovative future, main value is still balanced social development within face-to-face

interaction in working environment and academic education on-campus [6: pp. 319-330].

So, all four scenarios assume e-learning, but inclusion and intensity of digital technologies are different.

In our research we focused on perspectives of digital education for Master students at the Ural State University of Economics (USUE). The objective was to reveal the format which could be appropriate and profitable for them.

At the USUE students in the situation of the quarantine have been experiencing different forms of e-learning since the spring 2020 including distant learning in virtual classroom, usage of different tools of the Portal of Electronic Resources etc. Master students nowadays in the autumn 2020 have the opportunity to study on-campus in a real classroom and talk to their professors face-to face. Of course, they use resources in electronic library, e-mail to stay in touch with their tutors, additionally they have already experienced distant learning in the spring 2020.

The questionnaire method enabled us to conduct a survey and define Master students' attitudes toward digital education perspectives. The most students (60%) answered the first question about their preferences of study format during the pandemic by choosing the option d) "Blended learning" (15 from 25). The option a) "Traditional learning on-campus" was chosen only by 2 students (8%). Option b) "Distant learning based on the usage of Portal of Electronic Resources" was chosen also by 2 participants (8%), c) "Distant learning in virtual classrooms" by 6 students (24%). So, we can state that the most Master students prefer blended format. Their explanations prove that this format is the most familiar one for the majority of students. Besides virtual communication with their teachers it ensures face-to-face consulting and solving problems if necessary. Also safety during the pandemic was important for the participants. They mention that travelling to the university has potential risks, and online format enables to study at home and reduce the risk without loss of education quality. At the same time the most participants who have chosen options d), c) or b) argue that the most important thing for them is convenience or comfort of distant learning. Firstly, this saves time, and secondly eliminates risks during the pandemic. So, the most typical answers for the option d) blended format were: "I spend less time travelling during the pandemic but still have the opportunity to communicate with teachers in person", or "Online classes are convenient, but seminars should be held in classrooms for better understanding" and "Lectures can be held online, it's the most comfortable way to listen to them".

The second question concerns the format of digital education. The most participants (76%) chose the option "classical learning as an online edition" (19 from 25). The main argument again was the familiar format which they have already experienced recently. 6 participants (24%) chose "special designed courses with inserted video materials, text- and workbooks allowing completing interactive task online and further evaluating", because they were interested in something new or supposed that this format could enable individual approach. One student mentioned the flexibility of such courses and therefore their convenience for students.

The results show that conservative approach to study still dominates though blended learning is already part of Master students' educational reality. However, some students are expecting innovations. They strive for new teaching methods and individual approach.

4. DISCUSSION AND CONCLUSION

Digitization will remain the point for discussions for a long period of time. New form of digital interaction, digital teaching methods have been developing, and they will find their place in global digital landscape. As Dr. St. Kisgen assumes, digitization will completely transform business leadership education in tertiary education in the year 2030 [6: p. 234]. Anyway, transformations will concern all Master programmes.

Nowadays due to pandemic a lot of Russian higher educational institutions were forced to experience distant learning. Firstly, administrative needs have been shifted to digital landscape such as uploading study papers, tests and materials, also control of students' tests and tasks. Different software enabled setting virtual classrooms which have ensured online collaboration. The lectures have been held in such classrooms as well as seminars, discussions and scientific conferences. Even exams have been arranged in virtual exam halls. Recorded lectures and videos have gained popularity especially in situation when the information had to be shared with a big number of participants such as students or staff. Online platform were developed by higher educational institution in order to be always in touch with their students. Chats, forums and many other different tools can be found there. Digital landscape has become part of the educational reality and will be transforming it further. Many universities worldwide have gained a lot of experience and are ready to share it continuing researches in this field.

Rapid development of digital technologies provoked debates not only about e-learning but also about custom-tailored Master programmes based on individual needs against standardized curriculum. Today custom-tailored programs are gaining popularity and that not only due to technologies. Devine states, "Co-evolution of digital technologies, devices, infrastructure and resources that will occur in the coming decade suggests that a changed trajectory for formal education is inevitable". He adds, "Each student will have an individually negotiated curriculum" [18]. However, the standardized programs make costs less expensive for students. Additionally, they ensure quality and effectiveness. That is why the estimated probability that such business leadership programmes will be custom-tailored in 2030 is not very high – 54.9% [6: p. 235]. They are in general less desirable and their impact wouldn't be significant [6: p. 239]. So, researchers are more interested in forecasting future development for standardized Master programmes.

It goes without saying that prognosis of possible future for curricula and forms of Master education should take into consideration digital landscape. Our own research proves that even in the situation of on-campus learning Master students already consider the opportunity to study online. The pandemic played its role: nowadays it is safer to avoid travelling and stay home. But not only this reason counted. The world has changed, and students feel the need for transformations in education. However, the well-known blended learning format leads. It combines familiar learning practices and digital technologies. Completely new forms of online teaching and learning methods attract fewer participants. The students are cautious about things they don't know yet. Still the interest to experimentation exists, and we can assume that after experiencing new forms students may start trusting them more.

Our research confirms the view which Dr. St. Kisgen shares in her scenarios – e-learning is inevitable part of the future curricula and even can form the basis for Master education. Taking into accounts students' opinions educational institutions should be able to offer different format of Master education, dependable on institutions' facilities, students' demands and opportunities. It is probable that one Master programme will exist in different forms – as a digital edition of a traditional programme in a blended-learning or online format, as a more expensive custom-tailored programme for students with higher demands or as an affordable online course which is actually not easy to create but is simpler to distribute on a massive scale. These options can provide necessary alternatives to Master students who are seeking for the qualitative but at the same time convenient study.

Future research could comprise more data collected from different stakeholders groups: not only larger number of students could participate but also administrative staff, managers and teachers personnel of the USUE. The research may be also conducted at other higher educational institutions in order to get more statistical data, identify new factors and develop more generalized view on actors' opinions. It could facilitate developing future scenarios for Master students' education programmes in Russia where the more intrinsic and true-to-life representation would take place.

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