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**Role of the University in Sustaining the Relevance
of Knowledge amid the Future Shock**

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Abstract

Inequality gap expressed as lack of access to basic rights, like health, education, water, energy, food, and decent work is a major challenge at institutional and individual level worldwide. Global health crisis initiated by the COVID-19 opened an additional feature of this inequality gap, caused by the lack of technology support for education not only in developing countries, but as well as in the most advanced countries. Using United Nations Sustainable Development Goals 2030 as the only available consensus for partnerships in closing the inequality gap as a starting point, the aim of this paper is to contribute to the recent discussion on the role of the University in this process. Three research questions are identified: how does the university cope with the future shock; what is the role of the university in closing the poverty gap; and how does the university collaborate in Triple / Quadruple / Quintuple Helix with other actors. Implemented desk research of the recent academic and non-academic discussion on the capabilities and capacities of the university to make changes using 'creative destruction' principle, to build and disseminate relevant knowledge and to collaborate with different actors in the society provided a needed platform which was used to position Croatian universities against such questions.

Keywords: university, relevant knowledge, sustainable development goals, Triple Helix, inequality.

JEL Classification: I24; I23

1. Introduction

Wars, hunger, poverty, lack of access to health and education for many migrants, discrimination on gender, colour, age, sexual orientation, religion, or political views are around us for years. Those causes of inequalities do not disappear in one's lifetime, they are connecting generations and they are part of their memories. The longevity of inequalities across the history opens the question: what the humanity is doing wrong, to allow to be caught by an 'inequality trap' again and again. In looking for answers, everything should be questioned. The list is long, but not final: the

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definition of the problem (inequality), goals to be achieved in a generational time span (with shorter time slots in order to measure the progress and have the time for intervene based on the feedbacks), pool of trajectories available for solving the problems, actors involved in these processes, relationships among actors, consistency and timing of each actor's interventions, indicators and measurement approaches.

The global health crisis triggered by the COVID-19 is putting additional challenge to everyone to contribute to answering to those questions, because the whole world is in transition to the Future Shock mode, without having a choice between cultural and future shock.

The University has been for centuries a place of concentration of knowledgeable people who develop knowledge (research) and spread knowledge (education). Such social position of the University requests the highest institutional responsibility in dealing with any of key issues of humanity and the planet. This piece of thought is focused on the educational role of the university in dealing with inequalities on the edge / amid of the Future Shock.

2. Problem Statement

The only available conceptual approach of connecting dots in dealing with inequalities in different aspects of the life of any individual is offered and agreed upon on global level by the United Nations Sustainable Development Goals 2030. Such consistent discussion on activities needed to erase huge differences in the quality of life (with visioning goals, measurable goals, monitoring) is available only from 2000².

The structure of UN SDGs 2030 is very much in line with contemporary academic discussion on inequality, by emphasising the need to fight poverty as a cause of inequality in order to avoid to be caught by the 'inequality trap' (Watson, 2015). Inequality trap results from the focus on the top end of the income distribution, rather than on those at the bottom who need help most.

Poverty comes in different forms, as lack of access to food, clean water and energy, lack of access to health services, to education, and information, lack of access to decent work. Despite all those forms of poverty are interconnected, here the focus will be on educational equality, university role and entrepreneurial competence. As Piketty (2020:546) states, 'educational equality played a more important role in economic development than the sacralisation of inequality, property, and stability' analysing what was happening in Western Europe and the United States in last 200 years. Lowering investments in education slowed down productivity growth, and opposite holds as well.

Being more specific, lack of access to digital technology in education was known as a poverty issue in many countries for decades, but the COVID-19 spotlighted it as an unprecedented generational danger even in high income countries. Even before COVID-19 there were very grim scenarios related to education. In 2016, UNESCO

² Based on the Millenium Declaration, adopted by the UN General Assembly on 18 September 2000.

estimated that the achievement of the projected 2030 Sustainable Development Goals in the education will be significantly delayed: universal upper secondary education only in 2084 (in 2100 in low income countries and 2048 in high income countries) (UNESCO Global Education Monitoring Report, 2016:153).

Those scenarios developed at national level, confirm that both education and time matter for economic development, and how the process of closing this inequality gap is slow. On tertiary level there are also huge differences among countries depending on development status: in 2010, 30% of people in South Korea completed tertiary education³, followed by Ireland (26.8%) and the US (26.76%). At the same time, in many of the world's poorest countries less than 1% have completed tertiary education (Roser and Ortiz-Ospina, 2013).

Besides those inequalities in accessing education that are known for years, COVID-19 spotlighted the issue of poverty (lack of access to quality education) on subnational levels, even in the most developed countries. This poverty issue was partially hidden by the mode of delivering educational curricula, in schools. Young people came to a classroom, equalized to some extent at least for few hours each school day – now with online teaching / learning because of inequality in access, this temporary equality faded out.

The asymmetry between the needs to achieve Sustainable Development Goals and available energy to do it (knowledge, commitment, capacity for partnership, to network and collaborate) open a very simple question about the ethical dimension of not doing enough. It is a question of the moral society as phrased in *I & WE* paradigm (Etzioni, 1968; Etzioni, 1988). Or, to put it differently - how anyone can explain to migrants that they have to stay in their homelands (low income countries) if their children are 50 years late comparing to the children in high income countries with equalized access to upper secondary education.

Those thoughts frame the problem of building the capacity at individual and institutional level across the world in order to close this asymmetry. Otherwise, the persistency of such asymmetry is increasing the entropy in the society, which can lead only to more poverty accompanied by social and political destructions. If the university claims to be a place of the highest concentration of knowledge, then the university has the highest responsibility in collaborating or even leading the process of closing the asymmetry between needs and energy needed in solving them.

3. Research Questions/Aims of the research

The described research problem of how to close poverty gap opens several research questions:

- how does the university cope with the future shock?
- what is the role of the university in closing the poverty gap?
- how does the university collaborate in Triple / Quadruple / Quintuple Helix model with other actors?

³ Percentage of population age 15+ with completed tertiary schooling.

The purpose of answering those research questions is to contribute to the reason why universities should re-imagine themselves before being washed away by the Future Shock.

4. Research Methods

The described research problem and the aims of the research are approached by using desk research and analysis of publicly available information from universities in Croatia.

Relevant information from academic literature and studies focused on the future of jobs were collected through the desk research. In the academic literature the surveyed topics were: entrepreneurial / innovative universities, educational ecosystem, entrepreneurial competences as an outcome of teaching/learning on the tertiary level, educational role of the university, Triple / Quadruple / Quintuple Helix concept of collaboration among different actors in social, economic and political life.

In searching studies/reports focused on the future of jobs⁴, the criteria was the publishing period 2010-2020, with a forecasting view to 2030 or further.

Getting insights on how universities are responding to UN Sustainable Development Goals and the future of jobs, the analysis of strategic documents of all ten Croatian universities, publicly available on their websites, were analysed in September 2020.

5. Findings

The survey carried out in terms of academic and non-academic literature provides a platform used to get preliminary insights on gaps regarding the knowledge of how to contribute to making life better for everyone, as expressed by the UN Sustainable Development Goals. Based on the confirmed fact of the importance of education for economic development, and of the university as a major institution for educating educators and other professionals, the findings will be presented from the university perspective.

5.1. University and the Future Shock (capability for change or constructive destruction)

There is no more dilemma about cultural vs. future shock as Toffler (1970) warned the world – future shock is with us, now. Global health crisis caused by the COVID-19 only emphasized Toffler’s major message – that in the future shock mode there is no way to go back to someone’s comfort zone, because it disappeared. “New normal” syntagm sends such message as well.

And, that’s exactly what happened to the university as well. Early warning signals were around for some time, especially in last twenty years. The most important early

⁴ This search was done in 2020 by Sara Cats, student at the Erasmus University, Rotterdam, International Bachelor Communication and Media program.

signals are connected to jobs, skills, places to learn and attitudes toward educational certificates. Data on disappearing jobs started to arrive, accompanied by sighting new jobs (Autor, D.H., Levy, F. and Murnane, R.J., 2003; Manyika, J. et al., 2017). Many consulting firms / career advisors took a lead in looking in the future of jobs – e.g. McKinsey, Crimson, Resumeble, Nitro. Those studies usually are using a time horizon up to 2030, some of them up to 2025-2050⁵. Manyika et al. (2017) foresight that the most jobs will be lost in the group of predictable physical activities and collecting & processing the data, which will be automated. The biggest number of new jobs will be created in applying expertise, followed by interacting with stakeholders and managing people. Crimson Education suggests future students to pay attention to skills that will be essential in the coming period 2025-2050: Mental Elasticity and Complex Problem Solving; Critical Thinking; Creativity; People Skills; STEM; SMAC (social, mobile, analytics and cloud) and Interdisciplinary Knowledge. Such changes in the structure of jobs will be reflected in rising the need for higher level of education (tertiary) everywhere - in advanced and developing economies.

Digitalization and institutional diversification open a door for new places of learning outside of existing educational formal institutional structure (universities, schools). At the same time, according to the Pearson's Global Learner Survey (2020) 67% of surveyed persons think that education institutions are less effective in using technology than other industries (such as healthcare or banking).

Certificates of educational accomplishment from the traditional educational institutions are not any more the only strengths for getting a job. McKinsey survey (2017)⁶ revealed that 82 percent of executives think that the potential skills gap emerging from automation/digitalization will be closed through retraining and reskilling in companies. Pearson Global Learner Survey (2020) reported a change in students' attitudes to obtaining a traditional four-year degree – 40 percent think 'you can do okay in life today without a university degree' vs. 32 percent who think 'a university or post-secondary degree is essential to achieving a successful and prosperous career'.

Those signals of a growing gap between skills needed and skills provided by the formal education, the emergence of new educational providers and the changed attitudes in relation to traditional certificates are around for decades, but not accompanied with the stream of radical changes in the university education.

At the same time, there is a stream of messages about the need to change educational institutions coming from researchers and educators for decades, even centuries, almost with the same content. Recently this flow of messages is getting on the strengths. Senge (2012) and his *fifth discipline* team forged the term *Schools That*

⁵ For example, Resumeble, a career advising firm, identify highly demanded jobs in 2025-2050: space pilot, data detective, ethical source manager, extinct species revivalist, companion for the aged, IT service broker, AI specialist, User experience designer, 3D printing engineer, digital rehabilitation counselor. <https://www.resumeble.com/career-advice/jobs-of-the-future-2025-2050>, retrieved on Sept. 10, 2020.

⁶ McKinsey panel survey, November 2017 (n=1549 executives of private sector companies with > USD 100 annual revenue).

Learn based on a stock of good examples of transforming school institutions into learning organizations, by using their ‘own unique combination of theories, tools, and methods for learning’.

Gibb (2003) argues that without creative destruction in the field of higher education fundamental progress will not be made: ‘there is a need to apply the Schumpeterian notion (1934) of creative destruction to the higher education sector itself, in order to find innovation (new ways of doing things) and new combinations of knowledge’.⁷

Field research test:

In analyzing strategic documents of Croatian universities, announcements of new curricula, usually related to environmental dimension in the fields of energy, agriculture, construction can be found, but nothing about closing some curricula or about radical changes in the content or delivery form.

5.2. University and closing the poverty gap (capability of producing and offering relevant knowledge)

Research academic and non-academic literature (studies) on future of jobs indicate that the university is maybe already a part of a problem, not of a solution. A study published by the Foundation for Young Australians (2017) found that nearly 60 percent of Australian students (70% in vocational education) are currently studying or training for occupations where at least two thirds of jobs will either look very different or completely lost in the next 10 to 15 years due to automation.

Again, the Future Shock is already around us – but the university is not responding. Students who are best prepared for the future are the most important change agents (OECD, 2018:4) and therefore the questions asked by the OECD (2018:2) are very appropriate and alarming:

- What knowledge, skills, attitudes and values will today's students need in order to thrive and shape their world?
- How can instructional systems develop these knowledge, skills, attitudes and values effectively?

Those questions are challenging a capability of the university to build and spread the relevant knowledge the relevancy of which is checked from two perspectives: through skills mismatch (supply/demand ratio) and through the progress of achieving UN sustainable development goals. Relevant knowledge assumes a departure from disciplinary structured curricula toward the cross-disciplinary design of educational process (Singer, 2020), which upgrade the relevancy of knowledge in dealing with defining and solving problems. Relevant knowledge emerges from dynamic

⁷ Gibb (2003) emphasised how such discussion have a long history – e.g. two philosophers warned universities to change the attitudes toward its educational function: John Henry Newman said in 1852 how universities should stop with pushing students into ‘acquisition of sterile facts’; or Alfred North Whitehead said in 1928 ‘that the proper function of the university is the imaginative acquisition of knowledge’.

processes of connecting pieces of knowledge from disciplinary channels depending on the needs of decision-making processes.

The case of including teaching / learning entrepreneurial competences in the university is an excellent example of why the move from mono disciplinary curricula toward cross-disciplinary, integrated, relevant knowledge (entrepreneurial competence) is not easy. Many questions are still emerging – where it should be placed, who should teach it, which pedagogies are the most suitable for getting expected outcomes (entrepreneurial competence, the broadest definition).

A possible cause of difficulty in implementing such integrated, cross-disciplinary definition which is the basis for building relevant knowledge, Gibb (2007:67) the fact that the ‘contract’ between the university and the student is ‘not formally focused upon personal development but on the acquisition and testing of knowledge’ which leads to the certification.

Field research test:

While analyzing strategic documents from Croatian universities, we discovered nothing about developing institutional capability to produce and disseminate relevant knowledge. There is no intention to depart from mono-disciplinary curricula structure and adopt an integrated, cross-disciplinary approach.

5.3. University in Triple / Quadruple Helix / Quintuple model (capacity for collaboration)

Asymmetry between problems and capacity to deal with them can be found everywhere, in institutional or individual context, on different levels. The university as a place where knowledge has been produced (research) and spread around (formal education), has a very prominent role in developing the capacity of individuals and institutions to deal with problems, but it cannot be done without collaboration with other actors.

The university mostly collaborates with others in performing its research function, much less in educational activities and only recently more in serving the community. Research function is organized around three modes: Mode 1 in which own research agenda is focused on inventions; Mode 2 where the research agenda is impacted by the needs to solve specific problems (applicative research) and Mode 3 in which research activities are dominantly triggered by the problems of the community (“GloCal” - local meaning but global reach).

Changing modes of collaboration are challenging the university to be more engaged with different actors. Triple Helix model (Etzkowitz and Leydensdorf, 1995; Etzkowitz, 2008) identifies collaboration among the academia, business sector and government. Carayannis and Campbell (2012) broadened this model with the civil society and designed the Quadruple Helix with even more collaborative expectations. In the Quintuple Helix model, environmental considerations additionally put pressure on collaborations.

The university’s organizational culture, cultivated for centuries on the concept of autonomy is not contributing to the collaborative capacity of the university, without

adding a concept of accountability. Collaboration requires trust and mutual understanding, which is difficult to ensure because actors in the Quintuple Helix model speak different ‘languages’ in terms of interests / indicators. Achieving joint goals (UN SDGs) depends on the capacity for collaboration which can be measured only through the effectiveness of relationships among actors in the Quintuple Helix model.

The concepts based on the Triple Helix model are accompanied by the discussion on an engaged university (Watson et al., 2011). There is an evident increase of the universities changing their mission statements by emphasizing its engaged roles and joining networks like the Association of University Leaders for a Sustainable Future (ULSF), based on the Talloires Declaration from 1990, which had been signed by over 500 college and university presidents and chancellors worldwide. ULSF promotes sustainability as a critical focus of teaching, research, operations and outreach in higher education through publications, research, and assessment.

Field research test:

While analyzing strategic documents of Croatian public universities (except in the case of the University of Rijeka) we found nothing related to strengthening the collaborative capacity in the context of Triple / Quadruple / Quintuple Helix models, or emphasizing their engaged (social) role.

6. Conclusions

Findings related to all three research questions are complementing each other. The University is already in the Future Shock – pandemic COVID-19 only underlined this ‘new normal’ from which there is no return. Literature review indicated many signals that are still not read or understood by the university. Many presented surveys revealed new expectations of the young people and business sector, but the university’s business model stayed mainly unchanged. It confirms very low capability of the university to change its vision, mission, organisational structure and culture. The concept of autonomy is still dominant, the accountability is not operationalised, which is seen in the rankings industry. Hazelkorn (in Marope, Wells and Hezelkorn, 2013) emphasises what rankings do not measure:

- Teaching and learning, including ‘added value’, the impact of research on teaching
- Technology/knowledge transfer or impact and benefit of research
- Regional or civic engagement
- Student experience

The ‘multilingual’ feature of the Quintuple Helix model is preventing better collaboration among its actors. It could be overcome, if there was a meta language which enables understanding among actors. Lack of indicators measuring the synergetic effects of collaboration kills system’s characteristic of the Quintuple Helix – therefore the answer could lie in developing a set of indicators that will

go beyond measuring outputs of individual actors, but focus on the results of interconnectedness.

From the field research, by analyzing strategic documents of Croatian universities, it is not visible if questions like *What does this trend mean for the future of my education system? And what can I do?* are used for thinking about the future. Those documents do not provide a visionary invitation for creative destruction in order to make the university a partner in closing the inequality gap. It would be informationally valuable to check why the process of adding the accountability concept to the autonomy is so slow, by applying case method approach while analyzing two Croatian universities (being different in the size, years of functioning, educational focus).

Moral responsibility of the university expressed as its contribution to the better life for everyone requires radical changes: (a) to change the contract between the student and the university – personal development is a key; (b) to change criteria for promotion of educators – contribution to personal development of students and serving to the needs of the community should be major criteria; (c) to change criteria for institutional rankings – to include contribution of educators to personal development of students and to solve issues of the immediate community to which the university belongs.

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