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Professions of the Future

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Abstract: The new trends of today's digitization are permanently influencing the shaping of future jobs, ensuring compatibility between the workforce with the skills that will ensure professionalism and success in the era of automation and artificial intelligence. As the new digital world embraces sensors and automations with the ability to talk, connect and reason, this new wave of technology threatens the jobs currently performed by skilled staff, but it also creates opportunities for new ones to emerge. For example, the advent of the cinema changed the story of related professions: novelists continued to exist, and other new professions such as screenwriters and film directors appeared. Some jobs, for example the telephone operator have already been replaced by technical solutions.

Keywords: digitization; future jobs; workforce; skills

1. Professions of the Future

It is well-known that societies need to adapt to development and technology, and especially the need for companies to adapt their requirements to technical development, natural resources, environmental problems and demographic trends in the developed Western world, the educational system, the ability to transfer knowledge in economics, safety, culture and religion from certain geographic regions, population aging, energy and environmental issues. They are the most important topics that companies need to include in their strategic plans.

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In the developed economy, the pressure on companies to offer increasingly sophisticated products and services will increase, so that products and services meet consumer expectations such as: safety, comfort, quality time, use of energy-saving devices, access to telecommunications and environmental protection, etc.

Three major trends shape and characterize the modern economy according to the authors Stanic and Urbancic (2009, p. 6): automation (through the introduction of high-tech production lines that reduce the demand for highly educated labor force; moving old production lines to regions with lower costs on workforce); globalization (through multinational companies producing, distributing and offering products in all countries, the world has truly become one through logistics and communication channels); computerization (through the widespread use of information and communication technology that allows permanent access to almost any part of the developed world).

The accessibility of information and communication technology is of the utmost importance and therefore it will be necessary that workers in all professions can use it. The education system must teach people “how to learn”, how to generate, search, use and transfer knowledge.

The most promising jobs will be in the following sectors: home safety and comfort, healthy lifestyle, elderly care, leisure, IT and telecommunications, transport and logistics and lifelong learning. Thus, studies show that (Stanic Lang & Urbancic, 2009) the most attractive jobs in the future will be in the fields of: technology, health and medical care, the entertainment and leisure industry. In the developed Western world, 7 out of 10 new jobs will be in the health and care sector, which cannot be replaced by technology or automation, but can be largely supported by information and communication technologies. For 8 out of 10 new hires, a higher education level will be required. The following jobs were ranked very well (according to Prognos Institute research published in Focus, 2004, www.focus.de/finanzen): industrial engineer, hospital manager, air traffic control, IT project manager, reinsurance specialist, auditor, legal advisor, logistics expert, programmer, software developer, system administrator, aircraft engineer, mechanical engineer. But the list of potential jobs also includes professions such as: truck driver, medical assistant, sustainable development consultant, holography experts, database managers, dental assistants, physiotherapists, personal trainers, home assistants, catering, and eco-layers.

Some analyzes try to predict the development of entirely new professions based on new technologies, environmental demands, and demographic trends: quarantine

specialist, specialist in the management of sunken cities and coastal areas, mechanic for home robots, animal caretaker, tour guide space, manager of hydrogen plants.

2. The Professions Adapted to Future

In the past, physicians and health care practitioners relied primarily on their experience for diagnosis, prediction, and prescription. Although the amount of information available is overwhelming, visualization tools can provide a representation of health-related parameters.

Monitoring the health and well-being of individuals through wearable devices and personal trackers (sleep quality, blood pressure, heart rate, body weight measurement, air quality and noise level at work/home) enable new job opportunities towards standardization of health data format and exchange of data, for recording and communicating health data. The evolution in biology, robotics and augmented reality, virtual reality, mixed reality, has enabled personalized medicine and will facilitate operations performed by robots or doctors located miles away (Patrikakis & Murugesan, 2020, p. 44).

Certain professions of the future, such as the medical robot designer, require specific professional skills in robotics and engineering (systems thinking, inter-industrial communication, project management, project and team work skills) for the formation of the interdisciplinary skills required by society (Soboleva, Karavaev, Shalaginova & Perevozchikova, 2018, p. 855) and business.

The development of new technologies and new approaches to health promotion and the medical sector in general will lead to the need to launch new training programs (Koikov, 2020) for the needs of new professions (IT specialist in medicine, bioethics, telemedicine doctor, molecular nutritionist, clinical bioinformatics, consultant for healthy aging, personalized medicine expert, organ and tissue engineer, lifestyle strategist, medical robot operator, occupational therapist, physiotherapist, biopharmacologist, medical journalist, medical equipment architect, prosthetic and cybernetic implant developer) and new skills (in the fields of personalized and preventive medicine, robotic medicine, IT technology, logistics of health services, biotechnology, nanomedicine, online counseling).

The profile of legal professionals now requires an update to understand the technology, with its limitations and potential: decision-making as a judge, respect for human life, property, and privacy, evolving legislation and regulations for the

challenges artificial intelligence introduces, what happens when machine intelligence fails. Dual degree programs in IT and Law are already offered in universities in Australia and several other countries.

The entertainment industry is already an integral part of the technological innovation ecosystem X-reality technologies (virtual, augmented, and mixed reality) and has created an inseparable link with games and cinema. In this field, there is a need for professionals able to operate with different environments: XR technologies, sensors, and artificial intelligence. Game designers will need skills to incorporate more realistic interactivity into games, to be able to sense and translate meaningful data and information of personalized personal experience.

Farming has been around since the Stone Age and will continue to do so especially now in the new phase of digital technologies, robots, and drones. Technology can help farmers to improve productivity, ensure product quality and manage climate change issues.

In the current context, there is much discussion and confusion regarding the knowledge, skills and attitudes needed to prepare young people for the problems associated with labor market uncertainties and their consequences. What is clear is that students need strong knowledge, skills, and attitudes to continue learning in a stable and lasting way in a rapidly changing world (Kirschner & Stoyanov, 2020).

The results of certain research (Kirschner & Stoyanov, 2020) clearly show the dilemmas facing education. Changes considered necessary by certain groups of experts are not always easy to achieve, while changes that are less “important” in the eyes of researchers are judged to be relatively easy to achieve. Current developments in the labor market have a major impact on how young people will work in the future. It is no longer realistic to consider that what we initially acquired through knowledge from initial education will be valid for the rest of our lives.

The formation of ecological competences is an important process for future professions (green jobs) in which the competences for preserving and improving the environment will be vital. Thus, from an ecological point of view, the following qualities are important: humanity, empathy, thrift, one's own state of health, responsibility for results, the use of learning techniques that favor the acquisition of a set of knowledge about the natural environment, the norms of human interaction with the environment and the skills to solve environmental challenges creatively (Dlimbetova, Aliyeva & Ayazbayeva, 2015).

3. Conclusions

As research has shown (Stanic Lang & Urbancic, 2009), companies need radical changes and innovative management style, including ethics and actions to accept and follow the principles of sustainable development.

Sustainable development should be studied, researched, and taught in universities and research institutions. Universities and researchers can contribute by publishing findings, influencing new generations of managers to understand the importance of these principles and to be accepted worldwide and incorporated into global values. Therefore, it is of utmost importance that experts in all professions are educated to develop, use, and disseminate knowledge in society.

In addition to the new skills the existing professionals will need to meet the challenges of future jobs, as new professions will emerge (virtual police officer and gambling advisor) and cause significant disruption to the existing professions (Patrikakis & Murugesan, 2020). As all jobs need to become greener, it is necessary to develop a wide range of skills suitable for “green jobs” (Dlimbetova, Aliyeva & Ayazbayeva, 2015), especially in future sectors such as: renewable energy, transport, energy saving technologies, agriculture, water, management, energy, construction, waste management, rational resource management, conservation of water systems, carbon reduction, waste and pollution reduction, etc.

The direct transfer of knowledge in a classical setting plays an important role and this form of education must not disappear. Without a solid foundation, further education, retraining, lifelong learning is impossible. Continuing education and retraining will be something to consider many times in anyone’s career when knowledge and skills become inadequate or even obsolete to perform a specific position (Kirschner & Stoyanov, 2020, p. 499).

References

- Dlimbetova, G., Aliyeva, A. & Ayazbayeva, A. (2015). Development of Ecological Competence for Future Professions. *Biosciences Biotechnology Research Asia*, 12(1), pp. 311-319.
- Kirschner, P. A. & Stoyanov, S. (2020). Educating Youth for Nonexistent/Not Yet Existing Professions. *Educational Policy*, 3(34), pp. 477–517.
- Koikov, V. (2020). Determining future professions and competencies of health workers. *European Journal of Public Health*, 30(5).
- Patrikakis, C. Z. & Murugesan, S. (2020). The New Needs of Professions. *Envisioning Our Future Digital World*, pp. 43-46.

Soboleva, E. V.; Karavaev, N. L.; Shalaginova, N. V. & Perevozchikova, M. S. (2018). Improvement of the Robotics Cross-Cutting Course for Training of Specialists in Professions of the Future. *European Journal of Contemporary Education*, 7(4), pp. 845-857.

Stanic Lang, A. & Urbancic, T. (2009). Trends that will Shape the Professions of the Future Information Society. *Organizacija/ Organization*, 42, pp. 5-9.