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Reducing the Risk of Disasters Caused by Epidemics

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Abstract

Epidemics are the most common natural phenomena that have occurred throughout the entire history of human society. Depending on the type of disease and the development of the collective immunity that society had acquired by then, the consequences of epidemics were usually very severe. Precisely because of this, the aim of the paper is a scientific description of the way in which the prescribed preventive measures should be applied from the epidemiological, security, economic, legal, and other aspects, so that the society, through the mechanisms of the state, can defend and rehabilitate the consequences of an epidemic of an infectious disease. Eliminating the epidemic's impacts is a very difficult issue. There is an infectious illness epidemic that is spreading uncontrolled throughout society on the one hand. To introduce a quarantine that restricts the epidemic's progress and, if the quarantine lasts long enough, to end the epidemic, contact between members of the social group must be broken. On the other side, the cessation of communication between members of a social group also signifies the cessation of all facets of life in that society, including economic ties, education, growth of culture, scientific research, etc.

Keywords: disasters, emergencies, management, epidemics, reducing.

1. Introduction

Disasters caused by various types of natural and technical-technological hazards do not stop endangering people all over the world (Cruz & Domingo, 2022). In recent years, biospheric disasters caused by epidemics have taken the first place in terms of the prevalence and consequences they have caused at the global level, especially considering COVID-19. In theory, there is no general conceptual definition of an epidemic, but they usually differ to a small extent. An infectious illness only becomes an epidemic when it affects a larger portion of the populace in a certain location, city, region, or nation. Consequently, it is an increase in the incidence of diseases in the population, whether it be human or animal, above the usual rate for the time, place, and population affected, or an unusual increase in the number of patients who experience complications or die as a result of their illness (Gledović, 2006, p. 37). In fact, an epidemic means the occurrence of a disease in a number that exceeds its frequency in a certain population. (Dragičević S., 2006, p. 256) When an infectious disease spreads rapidly through a community—in a city, a region, a nation, etc.—it is called an epidemic. Therefore, it is an increase in disease occurrences in the population, whether it be human or animal, above the usual number for the time, place, and population affected, or an unusual increase in the number of patients who experience complications or die as a result of their illness. (Radovanović, 2003, p. 41). The phrase, which refers to the idea of an epidemic, is derived from the Greek word, which may be translated into English as "spread among the people" or "widespread." The term was created by combining two other words. The first term, epi, means "over," "near," "at," "before," "after". The second word, demos, signifies the people. (Gledović, 2006) When an epidemic spreads to several regions, it is theoretically called a pandemic. A pandemic (from the Greek words παν (all) and δήμος (people) is an epidemic of infectious disease that spreads through the human population of a larger area, continent, or the entire world) (Gledović, 2006, p. 37).

In theory, the division of epidemics is usually based on the type of epidemic, i.e., its way of spreading. More precisely, it depends on many factors, but most often it is the type of epidemic and how its exposure occurs. (Gledović, 2006, p. 37) For instance, exposing a group of individuals to the negative effects of a factor that is shared by the group's members results in an epidemic of a common source. When a common source (food, water, or air) is only exposed once, the epidemic is explosive, which means it happens immediately, the number of ill individuals increases quickly, and the disease only affects those who have been exposed to the common source. Between the lowest and maximum incubation of the disease, a full epidemic occurs. The foodborne illness epidemic is the finest illustration of this. Progressive (propagating) epidemics, on the other hand, are a different category of outbreaks that are brought on by the spread of the infectious agent from one host to another. Contact is the most typical means of achieving this form of transfer. (Gledović, 2006, p. 41) Typical example for progressive epidemics is AIDS.

Urban living in cities emerged as a form of human life in the community as civilization advanced. Towns traded more and more with one another, there were conflicts, and all of this resulted in the mingling of people from various human cultures." The epidemic that destroyed the Greek army during the Trojan War in the 12th century BC was described by Homer in the "Iliad"

poem. Cities emerged as a form of human life in the community as civilization advanced. Today, we can say that more than ever in history we have urbanization of the human population in the world as in percents, but also in absolute numbers as well.

Historically, the trade and conflicts contributed to the mixing of people from different geographical areas and cultures. In this way, the vulnerability of people to transmission of infectious diseases had increased significantly. And the written history has noted that in various sources. For example, the epidemic that destroyed the Greek army during the Trojan War in the 12th century BC was described by Homer in the "Iliad" poem.

In the absence of any other explanation of course in ancient times, epidemics were generally thought to be the work of the gods to punish people. However, there is a whole section in Leviticus in the Old Testament that prescribes how to deal with people suspected of being infected with leprosy, instructing them to isolate themselves and have a priest check them every seven days to see if the disease has taken hold (Štavljanin, 2020). From this it can be inferred that people with their senses on the one hand, as well as logical common sense observation and reasoning on the other hand, possessed the creative intellectual ability to determine appropriate protective measures against disease.

According to historical evidence, smallpox initially arose among the Huns, then it spread to the Germanic tribes, and finally, it reached the Romans. Specifically, to the Roman army that, after returning home, brought them into the empire. Fever, a swelled throat, diarrhea, and, if the patient lived longer, pus-filled ulcers were among the symptoms. The outbreak persisted for 15 years. Cassius Dion Cocceanu, a Roman consul and historian, estimated that up to 2,000 persons perished each day in the city of Rome alone. An estimated five million people perished overall. Emperors Lucius Verus and Marcus Aurelius of the Antonine dynasty, after whom the illness was called, were among the casualties. The same illness that afflicted Justinian's period is now known as the "Black Death," and to Europeans, it looked as though the world was ending around the middle of the 14th century. The bubonic and pneumonic plagues were particularly severe in large cities. (Marković, 24/03/2020)

The so-called Spanish flu in this century is inevitable to mention. The illness, which is also known as the Spanish flu, was one of the worst pandemics in human history. Three waves of its expansion around the planet occurred between January 1917 and December 1920, with the conclusion of the First World War. The influenza A H1N1 virus is the primary cause of the first of two pandemics. According to contemporary estimates, a third of the world's population (or roughly 500 million individuals) were infected, had a clinically evident condition, and around fifty million perished. (Chandra, 2012, p. 859) This disease killed more people than the First World War (Chandra, 2012). The virus then spread throughout Asia, first appearing in Hong Kong before moving on to China, the USA, and eventually England, where 14,000 people perished. The next year, 1.1 million individuals died in the second wave, with 116 000 of those deaths occurring in the United States. The outbreak was halted by a vaccination that was discovered.

In 1968, the Hong Kong flu broke out. The H3N2 virus, which first appeared in China in June 1968 and killed a million people worldwide, including 100,000 in the US.

AIDS, which was first discovered in 1981, weakens the immune system of individuals, ultimately causing death from illnesses that the body is unable to combat. (Longo, 2012, pp. 87-88)

Even the new millennium was not immune to epidemics, as SARS (severe acute respiratory syndrome - SARS) first erupted in 2002 and 2003. This illness initially occurred in China and was characterized by severe lung inflammation. The World Health Organization reports that 8,098 people in 29 nations have contracted this illness. Approximately, 774 of them passed away, or almost 10%. But in 2017, scientists discovered that the virus originated from a bat colony in the Chinese province of Yunnan and that the mammals served only as intermediaries between bats and humans (WHO, 2020).

Middle East Respiratory Syndrome, or MERS, first surfaced in 2012. In 2012, it was discovered for the first time in a Saudi Arabian patient. Like SARS, it causes severe lung inflammation, but it also causes digestive issues and renal failure. 2,494 sick individuals have been recorded in 27 countries, and 858 of them have passed away, primarily in Saudi Arabia. People who reside in or have visited the Arabian Peninsula are involved in each case.

The Ebola virus first emerged in 2013, just one year later. 28,600 people have been infected with the Ebola virus; 11,325 of them have died, predominantly in Guinea, Sierra Leone, and Liberia. Health professionals worry about the illness spreading since this is the first time the outbreak has moved from rural areas to metropolitan areas (Štavljanin, 2020).

2. Factors influencing the emergence and spread of epidemics

Epidemics are the most common natural phenomena that have occurred throughout the entire history of human society. Depending on the type of disease and the development of the collective immunity that society had acquired by then, the consequences of epidemics were usually very severe. Therefore, any scientific research into the problem of eliminating the consequences of epidemics is extremely important, both from a scientific and a social point of view. Eliminating the consequences of an epidemic is an extremely complex problem. Namely, on the one hand, there is an epidemic of infectious diseases that spreads uncontrollably through the social community. Stopping the spread of the epidemic boils down to breaking contact between members of the social community, i.e., introducing a quarantine that controls the spread of the epidemic and, if the quarantine lasts long enough, stopping the epidemic.

However, on the other hand, the interruption of contact between members of a social community also means the interruption of all aspects of life in that community - interruption of economic relations, interruption of education, interruption of cultural advancement, interruption of scientific research, etc. In other words, the interruption of the life of that social community. So, the epidemic can be "killed" by a sufficiently long quarantine, but that medicine will also "kill" the "patient" - the social community. That is why it is extremely important that when eliminating the consequences of the epidemic, adequate measures are chosen that will stop the disease but will not stop life in the social community.

In the past thirty years, as science has advanced, particularly in the field of medicine, a vast number of factors that are essential to the spread of epidemics have been identified. According to the hypothesis, pathogenic microbes (agents), the human race (the host, as a biological and social person), and the environment are required for the emergence and spread of epidemics (biological, physical and social). (Ristanović, 2016) The hypothesis contends that the following additional variables must exist in addition to the ones listed above in order for an epidemic to manifest and spread: patients in incubation, patients throughout the clinical course and atypical course of the disease, carriers (healthy and convalescent), and exposure to infection (exposure); the source of infection (it can only be a live thing, human or animal); ways that illness is propagated and transmitted: by touch (contact): direct and indirect, through contaminated food, water, air, soil, and insects; entry point of the causative agent into the host's organism: respiratory system, digestive system and injured or uninjured skin and visible mucous membrane; sufficient quantity (dose) and virulence of pathogenic germs (microorganisms or their products): bacteria, viruses, rickettsia, protozoa and fungi – their quantity and strength are important; disposition or immunity of the host organism (propensity of the organism to get sick from some infectious disease due to lack of hereditary or acquired immunity) depends on: age, sex, race, climatic and meteorological factors, physical and psychological trauma, diet, housing. (Jović, 1999, pp. 69-70)

Epidemics, ie diseases, and the viruses that cause them do so through a biological process. Namely, this process is in fact one constant chain that has two basic forms, those forms are in fact the dynamics of the spread of the disease, that is, the epidemic: the first form is stormy, explosive, and the second is gradual. The spread of epidemics, i.e. from the origin of the infection to the host, i.e. from its source to the host is called the path of infection. In theory, it is divided into direct and indirect ways of spreading an epidemic, that is, an infectious disease. The direct way of spreading epidemics is: "direct contact, droplets, transplacental route and soil". (Jakovljević, 2011, p. 108) When it comes to indirect ways of spreading infection, they are: "objects and biological materials, water, food, air and vector (which represent a living carrier, for example, insects, such as fleas, lice and mosquitoes, spiders, i.e. ticks) (Jakovljević, 2011).

3. Integrated reduction of the risk of epidemics

Epidemiological protection measures, cleanliness and antiseptic action, immunization and antimicrobial action, or therapy, all work to avoid infectious disease epidemics. However, preventing them from happening in the first place, i.e., preventing diseases, is what matters most. Declaring emergency conditions, that is, the current state of circumstances in a city, region, or nation, is one method for preventing and controlling epidemics. Emergency circumstances, or those that affect a larger population, are those that have immediate and detrimental effects on people's lives. Activities and rules are put into place as part of prevention to lessen the likelihood of an outbreak. In epidemics, prevention is crucial, but it needs to be properly implemented and planned.

The World Health Organization, which is the most significant organization in the world when it comes to human health, frequently emphasizes in its texts that the best way to stop epidemics is via prevention. The significance of immunization against infectious illnesses that might spread quickly and become epidemics is emphasized first. Theoretically, the strategy of preventative action is frequently broken down into the system of epidemiological monitoring realizes the observation of the epidemiological condition. The flow of trustworthy information is vital for the before mentioned system, which is why there is a culture and organization of monitoring the spread of infectious illnesses in nearly every country in the world. Intervention is the consequence of the alignment of the chain of medical and social elements. Health care as a whole and population orientation are the two main intervention strategies; the success of the intervention is measured through assessment. Because a preventive measure that once had full justification can suddenly become inexpedient and ineffective, it must be ongoing. (Dovijanić, 1995, p. 168)

The need for distinct strategic approaches to epidemic prevention is frequently highlighted in theory. The two strategic stances are as follows: "individual," which places an emphasis on identifying people in the population who are at risk of getting sick or

dying and then taking the appropriate precautions. The protection of high-risk groups is a unique kind of preventive work strategy in combination with the individual approach; the population approach places emphasis on treating the whole social community. (Kekić, 2010, p. 189) Therefore, to prevent and suppress epidemics, it is necessary to undertake certain strategies and activities, i.e., measures.

Before a particular infectious disease manifests itself, epidemic prevention measures should be put into place. There are two types of preventative strategies: general strategies, which target all links in the infection chain and apply to all infectious illnesses, and specialized strategies, which focus on the prevention of a specific infectious disease. Vaccine prophylaxis, seroprophylaxis, chemoprophylaxis, disinfection, and deratization, identification of germs and virogens (with degermination or surveillance), health education, and tetanus protection are all examples of general strategies, and they are preventative by nature (Brajušković).

Preventive measures may include the following infectious disease prevention strategies, depending on the disease for which they are used: Regular hand washing, the identification of germ-carrying individuals, their treatment, and removal from food-related workplaces, the identification of germ-carrying animals, the treatment of those animals, and the prohibition of using their products, the provision of hygienically sound drinking water, food, and utensils. (Lučev & Ropac, 2007, p. 24)

Epidemic prevention measures can also be implemented according to groups of infectious diseases. The groups of infectious diseases in connection with which prevention measures are applied are: (Gledović, 2006, p. 118)

- Hand washing, identifying germ-carrying individuals (treating them and removing them from food-related workplaces), identifying germ-carrying animals (treating them and prohibiting the use of their products), providing hygienically sound water, food, and consumption vessels are all ways to prevent intestinal infectious diseases.

- Respiratory infectious diseases: spotting germ carriers and keeping them apart, avoiding crowding people in small spaces, wet cleaning rooms regularly, avoiding kissing an infected person, routine hand washing with soap and water, refraining from using other people's eating and drinking utensils or personal hygiene items, and vaccine prophylaxis (for flu, meningococcal meningitis, and anthrax).

- Avoiding uncooked food, unpasteurized dairy products, food from street sellers, raw salads, and raw seafood, peeling fruit before eating, washing hands with soap and water before each meal, using clean utensils, and immunization are all ways to prevent food- and water-borne diseases.

The levels for preventing epidemics are often classified into three levels in theory, and more recently, four levels. The stages of preventing infectious disease outbreaks are: The first stage is made up of strategies, tactics, and procedures, or anything that must be done before the disease manifests, such as population education. By limiting the risk factors that cause the disease, it aims to lower the disease's prevalence. These actions are conducted among the public and sporadically inside larger social groups (Kekić, 2010, p. 192); measures used to prevent health problems before they become serious are referred to as secondary prevention. Eliminating the elements that harm human health is the aim of these measures. Patients make up the target audience. The public is subjected to secondary preventative measures if they are suspected of having the illness. In the case of infectious illnesses, secondary prevention is used to identify individuals who have outward signs of a potentially contagious disease; tertiary prevention is used in an advanced phase, that is when an infectious disease pandemic is unavoidable. Since there is currently no way to completely prevent the epidemic or find a cure, steps are taken to minimize the harm, provide rehabilitation, and acclimate the patient to the resulting condition (Bošković, 2017, p. 41); Primordial prevention refers to specific techniques and strategies, or tactics, developed with the goal of lowering exposure to risk factors for certain infectious illnesses. This kind of prevention refers to a way of life, where social factors act as a shield against sickness. Prevention, as well as the formation of societal norms for conduct in all spheres of its operations, are the objectives of this preventive (Bošković, 2017).

Many infectious diseases that caused epidemics today in the modern world have been eliminated as a threat, or their occurrence has been reduced to a minimum (Cvetković, Ōcal, & Ivanov, 2019). This was greatly influenced by epidemiological interventions such as immunization, the quality of the water supply, the promotion of a healthy lifestyle, the eradication of certain conditions that can give rise to infectious diseases, personal hygiene, or, more generally, the rise in the standard of living in many parts of the world.

Epidemiological surveillance refers to the ongoing observation and defense of the populace against illnesses that have the potential to become epidemics. The systematic collection of data on infectious diseases, infections connected to health care, antimicrobial resistance, factors that contribute to their occurrence and transmission, effects measures for their prevention and suppression, processing, analysis, and interpretation are all defined by the rulebook on the types and methods of conducting epidemiological surveillance of infectious diseases and special health issues of the Republic of Serbia, which was adopted in 2017. (Article 1). This is also a case for North Macedonia and the region. If we want to see the big picture, we are all part of the Regional European forum for Disaster Risk reduction. This means that especially for infectious diseases the state borders have little, limited or no meaning at all. The COVID 19 pandemic is the best/worst proof for that.

Data from reports of these illnesses, the outcomes of microbiological tests conducted on hospital supplies, the results of laboratory tests conducted on the population thought to be most vulnerable, etc. are used to obtain the most accurate information possible on the occurrence, movement, and spread of diseases that have the potential to start an epidemic. The epidemiological status is determined by analyzing all the collected data, and then, based on that information, steps to avoid or suppress epidemics are suggested. (Duric & Petrovic, 2003, p. 28)

The preventative epidemiological measures put in place depending on the kind or category of illnesses. Do not feed or attempt to tame stray animals in case of zoonoses and stay away from corpses and animal products altogether. In the case of infectious diseases spread by vectors, prevention measures include the identification of pathogen- and parasite-bearing organisms, the identification of infected animals (and the treatment, killing, or prohibition of the use of their products), the destruction of rodents, the control of vectors, the avoidance of natural hotspots, the wearing of appropriate clothing and footwear, limiting the outdoor time during insect activity, and the use of skin repellents. Avoid skin-damaging medical or dental procedures, refrain from using other people's razors, and be vaccinated and get seroprophylaxis for blood-borne infectious illnesses like hepatitis (Gledović, 2006, p. 118).

But here we should note that communication with the public in emergency situations is as important as the situation itself. On the one hand, for COVID-19, we had an unprecedented opportunity in history to access information on a global level, but at the same time, it was misused by various actors. The question is rightly raised today about the justification of vaccines, their possible harmful impact, and the question that objectively no one will bear responsibility, if there is a basis for it. As well as these being safety issues, they are all the more ethical and moral. Namely, in the criminal law there is a saying: better 1000 guilty at liberty, than 1 innocent in prison. If we draw a parallel to the discussions about personal and collective responsibility in relation to vaccination and the issues raised in 2023, it seems that as a global society we are still at the very beginning of development.

In general, we want to highlight the need for adequate communication with the public regarding possible crisis situations, that is, the importance of crisis management skills as one of the variables for risk management.

4. Measures to suppress and prevent the coronavirus in Europe and the world

To suppress and prevent the coronavirus, similar or identical procedures are used throughout Europe and the rest of the globe, however, some nations have chosen to implement specific measures that have not been adopted by most nations. Some of the preventative measures are of an advisory nature, such as washing your hands with soap and warm water for about 20 seconds or using hand sanitizers, coughing, and sneezing into tissues or the sleeve of your clothes, and refraining from touching your eyes, nose, and lips with unwashed hands.

All around Europe and the rest of the world, the measuring of so-called social distance was commonly advised. Theoretically speaking, social distance is a measurement of a person's or group of people's proximity to or distance from a social or ethnic group. The emotional facets of one's ethnic ideas are supposed to have an impact on how prejudice emerges, and this is thought to affect people's social distance. It is more difficult for individuals to communicate with one another and take part in collaborative projects that seek to improve living circumstances generally when there is a greater social gap. (Видановић, 2015) In this sense, differences appear that are the result of cultural characteristics of social groups and societies. Hence, for some groups and societies that practice closer social relations, the application of these measures is, to say the least, a challenge because it is culturally unacceptable.

Because this measurement refers to physical distance, i.e., the physical separation of two or more individuals, it could be argued that the term used is inappropriate. Physical separation of at least 1.5 meters was recommended as a preventative precaution, and in other nations, it was even two meters. Many nations have enacted a ban on public gatherings, which is organizing any gathering of a sizable number of people, as a preventive measure, but this time the measure has the context of an order. It is accurately calculated, often at 5 or 10 persons, taking into consideration the virus' quick spread around the world in many different nations. For instance, the unexpected outbreak of the coronavirus in the USA prompted the announcement by that nation's president, Donald Trump, that he had triggered a unique mechanism, the so-called Defense production act, which enables the government to mandate the manufacturing of essential medical equipment. After chatting with Democratic Leader Chuck Schumer on Thursday night, Trump claimed to have turned the legislation on. By taking this action, the US government can speed up the manufacture of masks, respirators, ventilators, and other crucial medical supplies.

President Trump decision represents the securitization of the issue. This usually happens when political elites need to secure public support in order to implement their often restrictive measures. when a particular issue is securitized, people have a significantly higher degree of tolerance for restrictions on their freedoms and rights.

On the European continent on the other side of the Atlantic only the transportation of goods is permitted across interstate borders, and there were checks between EU nations as well.

Quarantine was also established in many nations worldwide; specifically, it is one of the epidemiological methods that stops the transmission of infectious illnesses by separating sick or infected individuals from healthy individuals. Additionally, individuals who are thought to be infected with an infectious disease or who merely pose a risk of contracting it are separated in a quarantine. Because the isolation typically lasted forty days, the word "quarante" (which means forty in Italian) is where it gets its name. With the use of this anti-epidemic measure, individuals, animals, and objects that are suspected of harboring harmful epidemics and infectious illnesses are monitored for a certain amount of time.

States of emergency were enacted in a large number of nations in Europe and across the world, with associated restrictions on travel and the closure of establishments including cafés, restaurants, and nightclubs. Additionally, there were no displays of sports, culture, or other events.

However, not all nations used these strategies to combat and prevent the coronavirus. For example, Sweden selected a different strategy for controlling and preventing the corona virus. To begin with, there were no restrictions in place other than the requirement of physical separation and the ban on gatherings of 50 or more persons. In this nation, it was not only not required but also not even recommended that people wear protective masks and gloves. The Swedish authorities, i.e., those in charge of addressing the coronavirus issue, chose the strategy of raising public immunity. (Darko, 2016, p. 561) Therefore, it can be said that Sweden employed a strategy or method of combating the coronavirus in which its population would gradually develop an immunity to it through exposure to or contact with the virus.

But here another question is raised about the general social alienation. Namely, it is a well-known fact that the peoples of western and northern Europe practice more distant social relations. Therefore, when it comes to the need to take measures, these factors should also be considered.

The strategy of mass testing of the populace was applied in South Korea, and because the patients were swiftly identified, the spread of the coronavirus was stopped. A similar strategy was used in Thailand and a few other Asian nations. Additionally, the sick was frequently isolated as a practical measure throughout Europe and the rest of the world. The success of nations that were more prepared than others to react was likewise greater. The condition of a nation's health system was crucial to a big extent because systems that were underfunded and underequipped faced serious effects. (Lima, 2020)

5. Conclusion

Because they frequently resulted in significant changes in states and social communities, epidemics and pandemics of different diseases are a part of human history and can be said to have had a significant impact on how humanity has developed. The same is true of the region of the Balkans, but also of the European region. Especially considering the intensity and dynamics of the movement of the population.

Simply said, an epidemic is when a disease spreads widely and is widespread, whether it affects humans, animals, or both. A pandemic is a phenomenon that occurs when a disease spreads across a bigger region, across numerous nations, or over most of the world. In theory, epidemics are usually divided into droplet and airborne epidemics, contact, water elemental and vector epidemics, and they are transmitted in many ways. It may spread from animals to people by direct contact, inhaling droplets, eating contaminated animal flesh, soil, and even physical contact between sick animals and people. Additionally, viruses, or diseases, can spread through water, or through drinking water that has the virus in it. Additionally, some illnesses, like HIV, are sexually transmitted. According to the notion, viruses, germs, bigger human groupings, and environmental factors are how epidemics spread most frequently.

There are certain procedures that are undertaken to suppress them when a specific infection develops in a certain area to the point where an epidemic or pandemic must be declared in almost all countries in the world, as well as at the international level in accordance with various international agreements. In summary, it can be said that the population's top priority should be to heed the advice of the relevant authorities regarding the control and avoidance of the epidemic, which typically includes maintaining a high standard of personal hygiene, keeping a safe distance, donning protective masks, etc. Major epidemics call for the closure of specific areas, which entails quarantining the ill to stop the disease from spreading to other areas and preventing contact between the sick and others. State borders are blocked, and interstate migration is prohibited during extremely severe epidemics, or pandemics, to stop the virus from spreading from one state to another. More specifically, the continuing COVID-19 pandemic, which is caused by the coronavirus, is the most recent and ongoing outbreak.

The coronavirus originally surfaced in China's Hubei region in the city of Wuhan. It then spread fast around the world, reaching a point where the WHO proclaimed a worldwide pandemic that lasted more than three years! To combat this outbreak, China enacted rigorous quarantine measures (for almost two full years) for its suppression and prevention, closing the whole province and placing Wuhan, but also many other provinces later under a harsh curfew.

The Coronavirus was battled in a similar manner by all other nations. In all nations, preventative methods include using protective masks and gloves, improving personal cleanliness, keeping a physical distance, and avoiding crowds of people. However, there are other instances where no special measures were taken, such as in Sweden. The idea is that the population, due to contact with the virus, develops collective immunity over time.

The suppression and prevention of the coronavirus were carried out in the Balkan countries in a similar or same manner to other countries, although a curfew, which forbade everyone from moving during the overnight hours, was in effect for roughly a month. Additionally, because people over 65 are among the most susceptible to this virus, all movement was prohibited for them. The restrictive restrictions were loosened as the number of infected persons in Europe and across the world decreased. This led to an upsurge in activity among the populace and several bigger gatherings, mostly to celebrate birthdays, marriages, and other special occasions. This led to a renewed increase in illness and death from the coronavirus.

The coronavirus has several effects that will last for a very long period. The effects of the Coronavirus, which has fully or partially interrupted a significant number of commercial operations, are already being felt by the European and global economies.

Many people lost their jobs, and many small and medium-sized businesses also suffered job losses, while the largest corporations in the world were not even operating at full capacity. Countries are attempting to revive their economy using a variety of economic measures while losses are substantial.

Along with the economic effects, it is frequently mentioned that the coronavirus pandemic was used in some nations, to suppress certain civil liberties and repress oppositional media outlets under the guise of faking panic. Additionally, it is thought that this virus is employed to strengthen the government's hold over all facets of people's lives and employment. The coronavirus pandemic is now finished. We have many lessons to learn as people, societies and as humanity. Because infectious diseases are a constant in life on planet Earth. Hence, our task is to manage the risks associated with infectious diseases and build resilient societies. The Corona virus has shown that we have a lot to learn and even more to prepare.

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Beyond Hard Skills: A New Perspective on the ESCO Taxonomy with the Integration of Soft Skills

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Abstract

The rapid evolution of the global labor market, driven by technological advancements and shifting economic landscapes, necessitates a robust framework for skill categorization. This paper presents a comprehensive analysis aimed at enriching the European Skills/Competences, Qualifications and Occupations (ESCO) taxonomy by integrating a spectrum of soft skills, never before labeled as such. Drawing upon extensive research of the existing literature, we identified 388 expressions of soft skills and proposed the inclusion of 50 additional expressions not currently represented in the ESCO taxonomy.

Our methodology involved analyzing various global labor market trends, with a focus on the increasing importance of soft skills in diverse professional settings. We examined the discrepancies between existing ESCO categorizations and the practical skill requirements observed in the labor market, which underscores the growing demand for skills such as analytical thinking, creativity, and emotional intelligence in the current job landscape.

The implications of our findings are far-reaching. By expanding the ESCO taxonomy to include a broader range of soft skills, we provide a more nuanced tool for employers, employees, and job seekers. This enhanced taxonomy facilitates better job-person fit, aids in identifying skill gaps for targeted career development, and supports the creation of focused training programs. Furthermore, our work contributes to the academic discourse on labor market dynamics, offering a more holistic view of skill requirements in the digital age. This enriched taxonomy not only reflects the current labor market demands but also anticipates future trends, ensuring its relevance and utility in the evolving professional world.

Keywords: ESCO taxonomy; soft skills; skill categorization

1. Introduction

In recent years, changes in the business environment, new technologies, an increasingly high level of competitiveness, and dynamism have contributed to the need for acquiring new skills. (Dolce et al., 2019). The pandemic that broke out in 2020 has shown us, more than ever, that the job market is deeply influenced by VUCA characteristics (Volatile, Uncertain, Complex, and Ambiguous) (Cedefop, 2022).

In their job advertisements in 2020, employers included mostly aspects related to skills (18.2%), followed by knowledge (16.6%) and attitudes and values (16.4%). However, in 2021, skills became even more important (18.8%), while attitudes and values (18.4%) surpassed knowledge (17.6%) (Cedefop, 2022).

The activities of companies around the world are influenced by innovation, intense competition, globalization, and constant changes in the field of technology (AbuJbara & Worley, 2018; Van den Broeck et al., 2015). The international labor market is continuously changing, having shifted over the past few decades from an industrial economy to one of information and offices (Robles, 2012). New jobs and job descriptions are being created, which in turn bring about the need for individuals to develop new skills and retrain. Therefore, it is becoming more and more obvious that soft skills are slowly but surely gaining importance in predicting an individual's success on the job market.

2. Key transformations of the job market

In 2020, the World Economic Forum declared that the adoption of new technologies was expected to continue at a rapid pace in the following years. The priorities of leaders remained the adoption of cloud computing, big data, and e-commerce, but there was also a significant increase in the focus on encryption, non-humanoid robots, and artificial intelligence (World Economic Forum, 2020a).

There are now software programs that reduce the time spent on research and identification of documents and resources for finding the most relevant arguments by 60%. Surgical robots can operate with a high degree of precision, flexibility, and safety, reducing the risks to patients and shortening their recovery time (INACO - Inițiativa pentru Competitivitate, 2021).

In 2017, the United Kingdom witnessed the first arrest of a person identified by a robot using facial recognition software. That same year in Dubai, the first robot police officer was introduced. Four years later, the taxi-drone became operational in Dubai, and several restaurants became fully automated, without any staff for serving or preparing food. (INACO - Inițiativa pentru Competitivitate, 2021)

Needs and trends of the future labor market

The most robotized industries in the world in 2019 were the automotive industry, followed by the electronics, metallurgical, chemical, and food industries (INACO - Inițiativa pentru Competitivitate, 2021; International Federation of Robotics, 2021). On the other end of the spectrum, industries with the lowest degree of digitalization include production and mining, as well as the health, government, education, hospitality, and construction sectors. There are areas where these employers have begun a process of digitalization, such as in payroll processing. However, they have not digitalized their business processes or customer interactions (McKinsey Global Institute, 2016).

Workplace flexibility will be the new normal on the job market. Therefore, human resource management will need to be approached from a new perspective, focusing on sustainability, contractual and functional flexibility, and the flexibility of time and workspaces, as well as work integration. The degree of flexibility offered by the employer will directly influence employee satisfaction and performance at work. However, employees also need to be highly flexible if they wish to remain competitive in the job market (Davidescu et al., 2020; INACO - Inițiativa pentru Competitivitate, 2021).

According to the European Skills Agenda (2021-2025), "Rapid steps towards a climate-neutral Europe and digital transformation are changing the way we work, learn, participate in society, and live our daily lives. Europe will only be able to take advantage of opportunities and recover economically if its people develop the right skills." (INACO - Inițiativa pentru Competitivitate, 2021).

The eight needs and trends of the future labor market are:

1. Reducing the time spent at work.
2. Making work schedules more flexible.
3. Increasing job satisfaction levels.
4. Reducing costs.
5. Speeding up production.
6. Creating products that are easier to use.
7. Improving the safety and reliability of products and services.
8. Reducing the environmental impact (INACO - Inițiativa pentru Competitivitate, 2021).

According to the U.S. Bureau of Labor Statistics, the following careers will be successful after 2028:

- Specialists in mathematics and computer science (e.g., cybersecurity analysts, analysts, developers, programmers).
- Health sector professionals (e.g., mental health professionals, technicians, diagnosticians, nurses, nursing assistants, home care staff).
- Counselors and therapists (e.g., commercial workers, physical movement therapists, respiratory therapists, foreign language therapists, speech therapists, family counselors, marriage counselors, abuse counselors).
- Marketing specialists (e.g., market research analysts, marketing specialists).
- Construction and real estate development.
- Workers in media and communications (e.g., video editors and operators).
- Careers in the financial domain (e.g., system managers or financial managers) ((Medium, 2021).

According to the World Economic Forum, by 2025 the following jobs will be on the rise: data specialists, artificial intelligence and machine learning specialists, big data specialists, digital and strategic marketing specialists, process automation specialists, business development specialists, digital transformation specialists, information security analysts, software and application developers, and specialists in the Internet of Things (World Economic Forum, 2020b).

On the other hand, the following jobs are in decline: data entry clerks, administrative and executive secretaries, administrative employees, accountants and auditors, assembly workers, service and administration managers, customer service representatives, operational and general managers, machinery repair mechanics, and inventory management clerks (World Economic Forum, 2020a).

After 2030, jobs such as parking meter attendants, telephone operators, personal assistants, meter readers, postal workers, typists and typographers, radio and TV announcers, news reporters and correspondents, film projectionists, pharmacy assistants, respiratory therapy technicians, educators and teachers, bank clerks, or administrative clerks are expected to disappear (INACO - Inițiativa pentru Competitivitate, 2021).

New skills needed fast

According to The Future of Jobs Report 2020 by the World Economic Forum, there continues to be a significant gap between the skills of employees and the needs of employers, while the skills demanded by most employers will continue to change over the next five years. Skill groups that will be increasingly sought after by employers by 2025 include critical and analytical thinking, as well as problem-solving abilities, and "self-management" skills such as active learning, resilience, stress tolerance, and flexibility. On average, companies estimated at the time of the report that 40% of their employees would need a six-month investment to acquire new skills, and 94% of business leaders stated that they expect their employees to learn new skills useful in their work. By comparison, in 2018 only 65% of leaders had such expectations (World Economic Forum, 2020b).

According to the Future of Jobs Survey 2020 conducted by the World Economic Forum, the top 15 skills that will be necessary by 2025 are:

1. Analytical thinking and innovation
2. Active learning and learning strategies
3. Complex problem-solving
4. Critical thinking and analysis
5. Creativity, originality, and initiative
6. Leadership and social influence
7. Technology use, monitoring, and control
8. Technology design and programming
9. Resilience, stress tolerance, and flexibility
10. Reasoning, problem-solving, and ideation
11. Emotional intelligence
12. Troubleshooting and user experience
13. Service orientation
14. Systems analysis and evaluation
15. Persuasion and negotiation (World Economic Forum, 2020b).

The solutions proposed by the McKinsey Global Institute to address the effects of digitalization and robotization of the labor market (Manyika et al., 2017; Noja & Pânzaru, 2021) include:

- Developing an education and learning system for a workplace that is different from the present one.
- Identifying ways in which the private sector can implement training programs.
- Creating an impetus for the private sector to treat investments in human capital as any other investment.
- Exploring partnerships between the public and private sectors to stimulate investments in infrastructure.
- Rethinking the theory of income (for example, establishing a universal basic income).
- Rethinking the support provided to workers in transition between jobs.
- Adopting solutions compatible with technologies that can be used in the labor market to improve access to the labor market and reduce the gap between the demand and supply of skills.
- Focusing attention on job creation.
- Innovating the ways in which people work with machines.
- Controlling the benefits of technological production to generate growth, surplus, and labor demand, leaving room for creative solutions and universal benefits.

ESCO (European Skills / Competences, Qualifications and Occupations)

ESCO (European Skills/Competences, Qualifications and Occupations) is indeed a significant platform that aligns with the Europe 2020 strategy. Developed by the Directorate-General for Employment, Social Affairs and Inclusion of the European Commission, in collaboration with stakeholders and the European Centre for the Development of Vocational Training (Cedefop), ESCO plays a crucial role in the European labor market.

ESCO's taxonomy aims not only to document all types of skills required for various jobs but also to translate them into numerous European Union languages. This feature is particularly beneficial for individuals seeking employment across EU countries, as it allows for the translation of qualifications obtained in one EU country in such a way that an employer in another country can identify the skills certified by that qualification.

Moreover, ESCO facilitates job seekers in creating their CVs directly on the platform. Users can select for each previous job the skills acquired and their level of proficiency. This approach helps both employers and European citizens looking for jobs to overcome linguistic and cultural barriers, using common terms and making it easier for EU citizens to find employment in any EU country they wish to work in.

The ESCO dictionary classifies skills, competences, qualifications, and occupations relevant to the labor market, education, and training in the European Union in 27 languages (all official EU languages, plus Icelandic, Norwegian, and Arabic). As of

November 27, 2022, ESCO provided descriptions for 30,078 occupations and 133,890 skills connected to these occupations, all translated into the 27 aforementioned languages. The dictionary is built on three main pillars: 1. Occupations; 2. Knowledge, skills, and competences; and 3. Qualifications. Each pillar contains concepts and terms that support the standardization and description of the labor market, making it readable by robots using Linked Open Data (LOD).

The model is based on the Simple Knowledge Organization System (SKOS) ontology used for representing knowledge organization systems such as thesauri, taxonomies, and classification schemes. SKOS provides a way to describe and organize concepts through hierarchical relationships, associative relationships, and collections. By defining sets of predicates, concepts can be enriched with metadata, enhancing the utility and accessibility of the ESCO taxonomy.

According to the analysis by Zhang M. et al. (2022), on average, most skills listed in ESCO consist of three words. Most skills formed from one or two words are verbs, while those formed from three words typically contain only nouns. The most frequent sequence of expressions in ESCO is verb-noun (M. Zhang et al., 2022).

The primary purpose of ESCO is to support mobility within the European Union by standardizing occupations and skills used across different countries. This system contributes to ensuring a transparent framework and comparability of skills and occupations among various EU member states. Additionally, ESCO is published as Linked Open Data (LOD), offering unrestricted access to its own API (Application Programming Interface) to facilitate implementation in electronic systems and support companies, organizations, and researchers.

Given the LOD format, access to its own API, the rich taxonomy, and high-level contributors to the project, it's not surprising that ESCO has become the most used skills taxonomy in academic research. For example, Zhang M. et al. (2022) demonstrated that using the ESCO taxonomy of skills, competences, qualifications, and occupations in the process of extracting skills from job advertisements on various platforms offers numerous advantages, such as:

Eliminating the need for labeling identified skills, which improves the laborious process of annotation.

By extracting expressions that describe skills, it is possible to enrich the skills inventory by finding paraphrases of existing skills (M. Zhang et al., 2022).

This approach not only streamlines the process of skills identification and categorization but also enhances the precision and comprehensiveness of skills data analysis, making it a valuable tool for both academic research and practical applications in the labor market.

3. Research stages

For the purpose of this article, in the absence of a commonly agreed definition and list of soft skills, we carried out extended research of the existing literature and gathered examples of soft skills given by fellow researchers in 62 scientific works, state official documents and industry reports (American Society for Training & Development, 2012; Andrews & Higson, 2008; Bailly & Léné, 2013; Beard et al., 2008; Brower, 2021; Brungardt, 2011; CareerBuilder, 2014; Ciappei & Cinque, 2014; Claxton et al., 2016; Cobo, 2013; Constanti & Gibbs, 2005; Crimson Research Institute, 2021; Crosbie, 2005; Cunningham & Villaseñor, 2016; De Lange et al., 2006; Deloitte, 2011; Dolce et al., 2019; Dwyer et al., 2006; Elias & Purcell, 2004; European Commission, 2012; Friedman, 2014; Goleman, 1995, 1998; Goleman & Boyatzis, 2008; Gorman, 2000; Grugulis & Vincent, 2009; Hajkowicz et al., 2016; Hankel, 2021; Heckman & Kautz, 2012; Hirsch, 2017; Horton et al., 2017; INACO - Inițiativa pentru Competitivitate, 2021; Institute for the Future, 2020; Jolly, 2012; Kavanagh & Drennan, 2008; Lehman, 2012; Lim et al., 2016; Loughry et al., 2014; Marques, 2013; Mayo, 2016; McLarty, 1998; Meeks, 2017; Miclea, 2021; Morgan, 1997; Muzio et al., 2007; Nabi, 2003; National Association of Colleges and Employers, 2016; Payton, 2017; Reeson et al., 2016; Remedios, 2012; Robles, 2012; Rose, 2013; Scottish Government, 2019; Siekmann & Fowler, 2017; Siriwardane & Durden, 2014; Ștefănescu et al., 2014; Stevens & Campion, 1999; Succi, 2019; Tucker et al., 2000; Watson Mitchell, 2008; A. Zhang, 2012; M. Zhang et al., 2022).

Table 1. A selection of references used for classifying soft skills mentioned in the literature

Source	Year	Total no. of references from that year
M. Zhang et al.	2022	1
Brower	2021	5
Crimson Research Institute	2021	5
Hankel	2021	5
INACO - Inițiativa pentru Competitivitate	2021	5
Miclea	2021	5
Institute for the Future	2020	1
Dolce et al.	2019	3

Scottish Government	2019	3
Succi	2019	3
Hirsch	2017	5
Horton et al.	2017	5
Meeks	2017	5
Payton	2017	5
Siekmann & Fowler	2017	5
Beard et al.	2016	8
Claxton et al.	2016	8
Cunningham & Villaseñor	2016	8
Hajkowicz et al.	2016	8
Lim et al.	2016	8
Mayo	2016	8
National Association of Colleges and Employers	2016	8
Reeson et al.	2016	8
CareerBuilder	2014	6
Ciappei & Cinque	2014	6
Friedman	2014	6
Loughry et al.	2014	6
Siriwardane & Durden	2014	6
Ștefănescu et al.	2014	6
Bailly & Léné	2013	4
Cobo	2013	4
Marques	2013	4
Rose	2013	4
American Society for Training & Development	2012	8
European Commission	2012	8
Heckman & Kautz	2012	8
Jolly	2012	8
Lehman	2012	8
Remedios	2012	8
Robles	2012	8
A. Zhang	2012	8
Brungardt	2011	2
Deloitte	2011	2
Grugulis & Vincent	2009	1
Andrews & Higson	2008	4
Goleman & Boyatzis	2008	4
Kavanagh & Drennan	2008	4
Watson Mitchell	2008	4
Muzio et al.	2007	1
de Lange et al.	2006	2
Dwyer et al.	2006	2

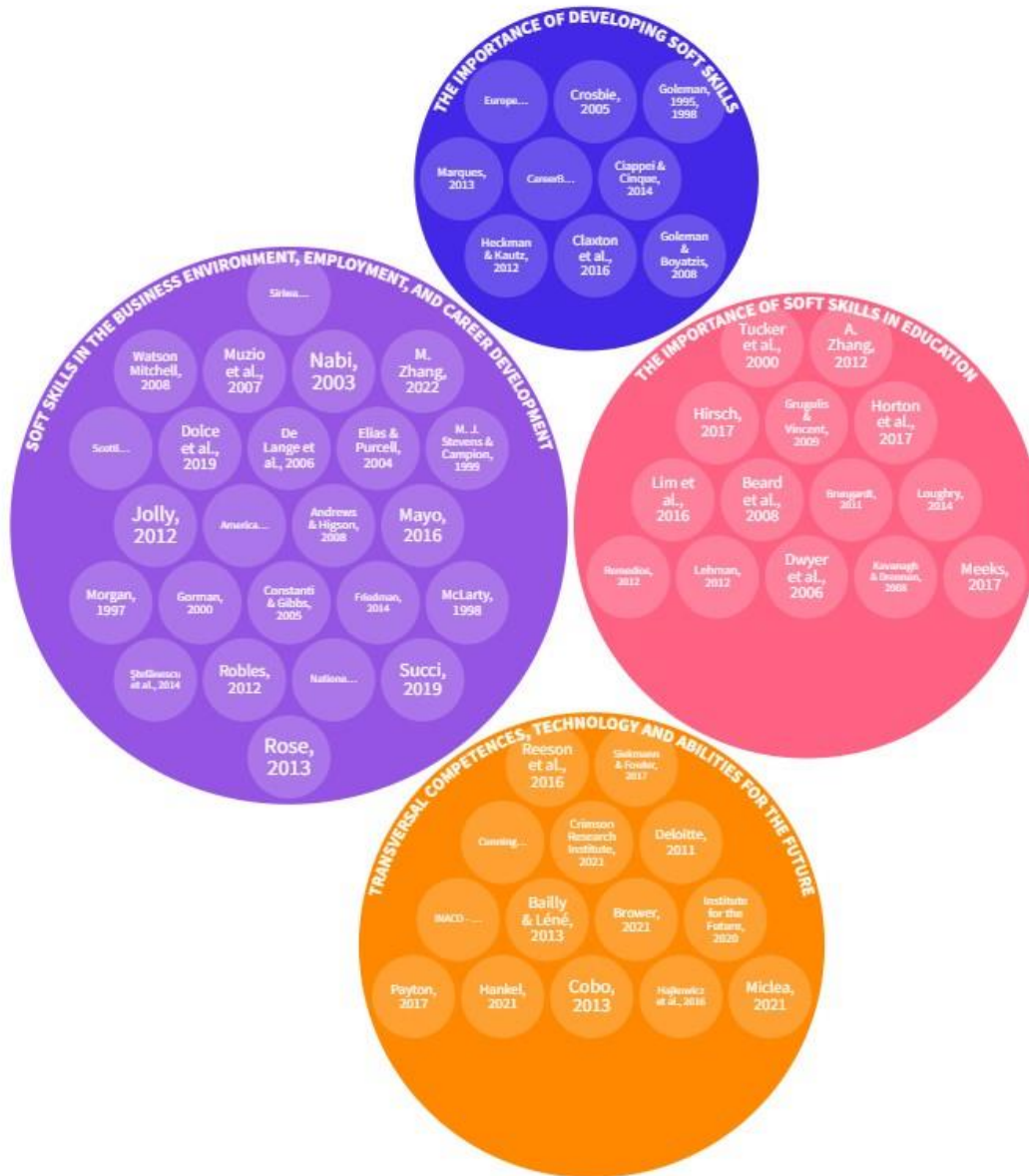
Constanti & Gibbs	2005	2
Crosbie	2005	2
Elias & Purcell	2004	1
Nabi	2003	1
Gorman	2000	2
Tucker et al.	2000	2
Stevens & Campion	1999	1
Goleman	1998	2
McLarty	1998	2
Morgan	1997	1
Goleman	1995	1

Note: An interactive version of the above table was published on the official Website of the Research Group in Social & Economic Complexity (SCOPE) and can be studied at the following link: <https://scope.uvt.ro/skills-analysis/>.

Also, we grouped the sources mentioned above according to their common directions of action, resulting in the following main categories of action directions:

1. *The importance of developing soft skills* (CareerBuilder, 2014; Ciappei & Cinque, 2014; Claxton et al., 2016; Crosbie, 2005; European Commission, 2012; Goleman, 1995, 1998; Goleman & Boyatzis, 2008; Heckman & Kautz, 2012; Marques, 2013)
2. *Soft skills in the business environment, employment, and career development* (American Society for Training & Development, 2012; Andrews & Higson, 2008; Constanti & Gibbs, 2005b; De Lange et al., 2006; Dolce et al., 2019; Elias & Purcell, 2004; Friedman, 2014; Gorman, 2000; Jolly, 2012; Mayo, 2016; McLarty, 1998; Morgan, 1997; Muzio et al., 2007; Nabi, 2003; National Association of Colleges and Employers, 2016; Robles, 2012; Rose, 2013; Scottish Government, 2019; Siriwardane & Durden, 2014; M. J. Stevens & Campion, 1999; Succi, 2019; Ștefănescu et al., 2014; Watson Mitchell, 2008; M. Zhang, 2022)
3. *The importance of soft skills in education* (Beard et al., 2008; Brungardt, 2011; Dwyer et al., 2006; Grugulis & Vincent, 2009; Hirsch, 2017; Horton et al., 2017; Kavanagh & Drennan, 2008; Lehman, 2012; Lim et al., 2016; Loughry, 2014; Meeks, 2017; Remedios, 2012; Tucker et al., 2000; A. Zhang, 2012)
4. *Transversal competences, technology and abilities for the future* (Bailly & Léné, 2013; Brower, 2021; Cobo, 2013; Crimson Research Institute, 2021; Cunningham & Villaseñor, 2016; Deloitte, 2011; Hajkowicz et al., 2016; Hankel, 2021; INACO - Inițiativa pentru Competitivitate, 2021; Institute for the Future, 2020; Miclea, 2021; Payton, 2017; Reeson et al., 2016; Siekmann & Fowler, 2017)

Grouping authors based on common directions of action



Source: Anamaria Grama, research project within SCOPE

Figure 1. Grouping authors based on common directions of action

Note: For an interactive version of the above chart follow the link: <https://public.flourish.studio/visualisation/15981257/>

We categorized them and compared them to the ESCO taxonomy, counting the number of times each of the skills was mentioned. Furthermore, we charted them from the soft skills most frequently mentioned by the literature to the ones most rarely mentioned.

As a result, we identified 4 level 1 skills categories and 5 level 1 transversal skills and competences, as follows:

- S1 – communication, collaboration and creativity
- S2 – information skills
- S3 – assisting and caring
- S4 – management skills
- T1 – core skills and competences

Note: An interactive version of the above chart was published on the official Website of the Research Group in Social & Economic Complexity (SCOPE) and can be studied at the following link: <https://scope.uvt.ro/skills-analysis/>.

The most often mentioned soft skill in the scientific literature (34 references) is S1.8 - working with others, part of the S1 - communication, collaboration and creativity ESCO category. Variations of this soft skills include: interacting with others; teamwork; working with others; interpersonal skills; people skills; social skills; the ability to adjust to others' feelings; the ability to recognize others; the ability to influence others without annoying them; cultural adaptability; teamwork in a diverse environment; interpersonal relations; ability to communicate and interact with others, either in a team or through a relational circle; social intelligence; trans-cultural ability; personal branding; team collaboration; sociability.

The second most mentioned soft skill (31 references) is T4.1 - communicating. Variations of this skill include: communication skills; ability to work under pressure; communication skills; social interactions; social skills; a sense of humor; the ability to communicate; ability to calm down angry customers; public speaking; written and verbal communication skills; manage other people's feelings.

The third most mentioned soft skill (27 references) is S.1.0 - communication, collaboration and creativity. Variations of this skill include: effective communications; communication (the ability to clearly articulate an idea orally or in writing); oral and written communication skills; communication skills; the ability to communicate; personal branding.

The fourth one (25 references) is T3.3 - maintaining a positive attitude, with the following variations: self-regulation; ability to work under pressure; positive attitude; patience; self-control; self-confidence; stress tolerance; emotional stability; maintain a positive attitude; cope with uncertainty; coping skills.

The fifth one (24 references) is T3.4 - demonstrating willingness to learn, with the following variations: lifelong learning; flexibility; adaptability; openness; flexibility of thought; ability to reflect upon performance; self-knowledge; willingness to learn; adaptability; curiosity; adaptive thinking; mental flexibility.

Similar to the findings of other researchers who preceded us, such as Khaouja et al., Sayfullina et al., or Wings et al., we too encountered difficulties in aligning the soft skills identified in the literature with the ESCO taxonomy, due to both imperfect translations from English to Romanian and the richness of terminologies that can be used to express the same skill (e.g., "teamwork" and "ability to collaborate") and, therefore, errors in interpreting some words. Thus, we identified a series of expressions used in the literature referring to soft skills that we did not find with a complete meaning in the ESCO taxonomy, but rather adapted their meaning, narrowing or broadening it as appropriate, to associate them with ESCO expressions (Khaouja et al., 2019; Sayfullina et al., 2018; Wings et al., 2021).

Therefore, in line with the conclusions reached by Zhang M et al., we believe that through the interpretations we have made in the process of extracting expressions that describe soft skills, we can contribute to enriching the inventory of skills within the ESCO taxonomy (M. Zhang et al., 2022).

Specifically, we have identified the following 50 expressions referring to soft skills whose meanings did not perfectly overlap with the ESCO taxonomy: the ability to articulate an idea clearly orally or in writing; personal branding; helping others develop skills and abilities; developing others; interacting with customers; interpersonal skills; human skills; the ability to adapt to others' feelings; the ability to recognize others; the ability to influence others without annoying them; intercultural competencies; cultural adaptability; the ability to communicate and interact with others, whether in a team or in a relational circle; social intelligence; trans-cultural ability; sociability; applying new ideas to solve problems; creative problem-solving; technical communication; virtual literacy; digital fluency; technical literacy; computational thinking; mathematical thinking; the ability to understand complex phenomena; SMAC (social, mobile, analytics, and cloud) knowledge; STEM (science, technology, engineering, mathematics) knowledge; professionalism; openness to development; concern for others; managing other people's feelings; the ability to be likable; managing the communication chain; self-motivation / internal motivation; the ability to act intelligently; mental organization skills; metacognition; operating with concepts; mental flexibility; imagination; self-imposed discipline; a sense of service / a sense of involvement; emotional stability; lifelong learning; openness to development; the ability to reflect on performance; self-awareness; warmth; modesty; living a balanced life.

We propose adding the identified expressions to the current ESCO taxonomy, with the aim of improving it.

4. Conclusions

The key outcome of the aforementioned research is the creation of an official, scientifically validated list of soft skills, now integrated into the official ESCO taxonomy. This achievement has led to the development of a soft skills taxonomy encompassing 62 level 2 ESCO skill and competency categories. In our research, we cataloged 388 soft skill expressions into their respective ESCO categories. Notably, we pinpointed 50 expressions that are not fully represented in the current ESCO taxonomy and suggested their inclusion for a more comprehensive taxonomy.

The societal implications of this finding are significant:

1. Both employers and job seekers can utilize this taxonomy to ensure optimal job-person fit. For instance, a job seeker can reference the taxonomy to identify key skills for a specific role and focus on developing them.

2. It serves as a tool for managers and employees to pinpoint competency gaps and devise career development strategies targeting essential skills that need enhancement.
3. The taxonomy can guide the creation of targeted employee training and development programs, fostering specific competencies to boost productivity and overall organizational effectiveness.
4. The inclusion of soft skill expressions from the literature in 4 out of 7 primary ESCO skill categories (one-digit level) and in 5 out of 6 primary transversal skill and competency categories underscores the significant role of soft skills relative to hard skills. This highlights the importance of accurately identifying and measuring soft skills, as they constitute a larger portion of an employee's skill set in the job market.
5. Our work contributes to the ongoing evolution of the current ESCO taxonomy by recommending the addition of 50 new soft skill expressions, which are currently not identifiable within it.

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Challenges of Organizational Behavior in Industry 4.0: Exploring the Attitudes of Generation Z as Future Employees

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Abstract

The development of digital technologies has transformed the daily activities of individuals, concurrently prompting the digital transformation of businesses. Digital transformation involves a kind of organizational evolution, based on the alteration of people, processes, and technology with the intention of fundamentally changing and modernizing business practices, redesigning existing business processes, and ensuring the best user experience. In the digital era of business, human resource management poses one of the most complex challenges for managers, considering that the labor market is composed of representatives from diametrically opposed generations - Baby Boomers, Generation X, Millennials, and the first Generation Z. The paper emphasizes the need to identify, predict, and control the similarities and differences among these demographic groups regarding work attitudes and behaviors, as well as to integrate them to create organizational efficiency and employee satisfaction. This research focuses on exploring the attitudes of Generation Z towards multidimensional (individual, group, organizational) factors influencing employee behavior, which constitutes the most important resource for any organization, regardless of its size and industry. Empirical research was conducted using an online survey method on a sample of 242 undergraduate and master's students at the University of Belgrade in the Republic of Serbia. The analysis of collected data determined the expected behavior and engagement of Generation Z representatives as future employees.

Keywords: organizational behavior, employee, diverse workplace, management, human resource management, Generation Z

1. Introduction

Individual identification is often conducted based on the combination of various demographic characteristics. Through this process, affiliation to a specific group is established, characterized by similarities and differences compared to other groups in terms of shared values, beliefs, and behaviors. Currently, the workplace consists of representatives from four demographic groups: Baby Boomers, Generation X, Generation Y, as well as the first representatives of Generation Z. The primary challenge for operational management, as well as human resources professionals, is overcoming the diversity among these demographic groups concerning work values and expectations. In today's business environment, employees tend to feel and emphasize their affiliation to the social group of their generation. Each generation must have different levels of engagement, one of which is based on work ethic, work environment, and the experience they have is different (QoesAtieq, 2019). Previous studies have characterized representatives of various demographic groups in the following manner:

- Baby Boomers – optimists; Baby Boomers are exceptionally loyal to their employer and oriented towards teamwork. They are willing to work overtime. They exhibit resistance to innovations, modern information, and communication technologies. They prefer direct communication, face-to-face interaction with colleagues. This generation is approaching retirement, while Generation Z has already entered the work environment, which will create significant changes in organizational climate and culture in the near future.
- Generation X – the specialized; technologically literate, informed, adaptable; they seek a balance between private and professional life.
- Generation Y – persistent; they pay great attention to career development, showing a propensity for continuous acquisition of new knowledge and skill enhancement. They are always on the lookout for better business opportunities, thus, like Generation X, they are not loyal to the organization.
- Generation Z – technologically savvy, as the first digital generation, unfamiliar with a world without smartphones, the Internet, and social platforms. Digital technology is the identity of this generation, shaping their personality traits and lifestyle. They also have a pronounced tendency to differentiate themselves from other generations. They place special importance on personal freedom, independence, flexibility, and transparency. Anything contrary to these values causes dissatisfaction, negatively impacting business performance. They want their leader to have integrity. They exhibit multitasking, as they have been engaged in multiple activities from early childhood, such as listening to music, following

social media events, chatting, or sharing simultaneously. Gen Z, often referred to as adaptive workers, possesses a remarkable capacity to acclimate to new work environments (Rampen, Pangemanan, Mandagi, 2023).

In an organization, where individuals hold various roles in different departments and units, the organization can serve as a source of social identity, offering an alternative understanding of business behaviors and work-related outcomes (Che, Alang, Nguyen, 2023). Empirical research indicates that employees are likely to achieve higher performance when they possess a greater degree of identification with the organization. Maximum engagement from employees is expected to contribute to more successful outcomes at individual, team, and organizational levels.

2. Literature review

Job engagement is reflected in the physical, cognitive, and emotional energy attachment to the essence of employee work (QoesAtieq, 2019). Individuals who do not perceive the workplace as meaningful and purposeful will not work up to their professional capacity (Prasetyaningtyas, Natalia, Utami, 2022). Acknowledging the work preferences among generational cohorts, particularly generation Z, can enhance organizational performance by recognizing the importance of social identity for operational effectiveness (Che, Alang, Nguyen, 2023). Generation Z tends to prefer leaders with transformational leadership characteristics, instead of transactional leadership characteristics (Erika, Djoenarko, Laurensia, Sun, Laiman, 2023). The presence of this unique generation promises to instigate organizational transformations within the realm of work, as it represents a departure from preceding generations (Rampen, Pangemanan, Mandagi, 2023). Employees play a crucial and strategic role in every organization, considering they are a key resource in achieving organizational goals. Consequently, one of the most complex challenges in human resource management pertains to employee retention. Employees' intention to stay with the company is crucial for companies' prosperity because of the expenses caused by disruptions of smooth business operation when employees leave which can include lower productivity, and the expenses of finding, interviewing, hiring and training new employees (Achmad, Noermijati, Rofiaty, Irawanto, 2023). Members of all generations exhibit a tendency towards turnover. Without employee loyalty, the organization will spend more of the cost and time it takes to achieve its goals (Vincent, Tamba, 2022). Employee loyalty is achieved with great difficulty. If in the past, employees in the world of work had seen the workplace and central anchor in their lives, Generation Z views the workplace solely as a temporary station, as a place to develop personally and professionally and no less importantly as a social place that must provide it with daily pleasures (Tidhar, 2023). As this particular generation tends to put significant stock in change, it is advisable to employ individualized and flexible strategies in managing employees. (Karasek, 2022). To foster employee engagement and reduce turnover, organizations must prioritize the establishment of a robust career development framework (Mansor, Mat Jusoh, Hashim, Muhammad & Omar, 2023).

Employees' interpretation of events, prediction of possible outcomes and adequacy of actions is influenced by organizational climate (Battistelli, Odoardi, Cangialosi, 2022). "In order to be considered qualified for the position at hand, new employees in an organization are typically expected to integrate the organizational culture. From a different angle, while organizational culture is something that develops and becomes stronger through time, a lack of effective leadership abilities can cause the culture to become weaker and finally disappear". (Modise, 2023). "It is imperative that organizations adopt effective implementation strategies that prioritize the needs of workers and promote a collaborative work environment. Only then can we fully harness the potential of AI to enhance work processes and ultimately improve the lives of workers now and in the future" (Bankins, Ocampo, Marrone, Restubog & Woo, 2023).

3. Study Results

The data forming the basis for empirical research were collected in October and November 2023. Data from 242 participants were gathered using a random sampling method among the population of students at the University of Belgrade. The analysis of collected data was conducted using the statistical package SPSS (*the Statistical Package for the Social Sciences*). Descriptive statistics, Factor analysis, and one-way analysis of variance (ANOVA) were implemented as statistical methods for data analysis. A section of the questionnaire pertains to participant characteristics. Data on the structure of the observed characteristics in the sample are presented in Table 1 (diagrams or graphs are at the end of the text). The second part of the questionnaire involves assessing the participants' attitudes using the Likert scale. The scale consists of 47 questions (statements) where participants expressed the degree of importance for each individual statement on a five-point scale: 1. Not important, 2. Slightly important, 3. Moderately important, 4. Important, and 5. Very important.

3.1 Descriptive statistics

Table 1. Sample structure (n=242)

	Number of respondents	Percentage (%)
1. Gender		
Male	107	44,21
Female	135	55,79
Total	242	100
2. Age		
Up to 21	139	57,44
21 to 23	79	32,64
Over 23	24	9,92
Total	242	100
3. Level of study		
Undergraduate studies	211	87,19
Master studies	31	12,81
Total	242	100
4. Year of study		
First (Undergraduate studies)	89	36,78
First (Master studies)	25	10,33
Second (Undergraduate studies)	68	28,10
Second (Master studies)	6	2,48
Third (Undergraduate studies)	41	16,94
Fourth (Undergraduate studies)	13	5,37
Total	242	100
5. Field of study		
Legal Sciences	49	20,25
Business and Administration	102	42,15
Engineering disciplines	60	24,79
Psychology	31	12,81
Total	242	100

Note: Author's calculation

The largest portion of participants is enrolled in Business and Administration studies (42.15%), followed by Engineering disciplines (24.79%), Legal Sciences (20.25%), and Psychology (12.81%). Regarding the academic level, the majority of respondents are from undergraduate studies (87.19%). For the purpose of determining the homogeneity/heterogeneity of participants' attitudes, a descriptive statistical analysis was applied to the entire sample. The results of the descriptive statistical analysis are presented in Table 2.

Table 2. Descriptive Statistics

	N	Mean	Std. Deviation
q40	242	4.60	.718
q17	242	4.47	.831
q7	242	4.46	.815
q23	242	4.45	.711
q5	242	4.43	.833
q24	242	4.40	.805
q42	242	4.40	.830
q2	242	4.38	.813
q6	242	4.38	.786
q41	242	4.36	.928
q1	242	4.35	.827
q31	242	4.33	.809
q14	242	4.31	.911
q15	242	4.31	.800
q26	242	4.31	.788
q35	242	4.31	.833
q39	242	4.29	.868
q33	242	4.29	.803
q20	242	4.29	.818
q27	242	4.28	.851
q28	242	4.26	.794
q3	242	4.24	.874
q4	242	4.24	.888
q13	242	4.22	.988
q18	242	4.21	.831
q47	242	4.21	.989
q38	242	4.16	.837
q30	242	4.15	.983
q34	242	4.14	.877
q37	242	4.14	.823
q8	242	4.14	.858
q32	242	4.11	.938
q19	242	4.11	.895
q16	242	4.09	1.095
q22	242	3.99	.996
q11	242	3.97	.957
q25	242	3.96	.928

q10	242	3.93	.908
q36	242	3.88	.921
q46	242	3.85	1.029
q43	242	3.74	.998
q9	242	3.74	1.016
q21	242	3.71	1.062
q29	242	3.70	1.084
q12	242	3.63	1.314
q45	242	3.46	1.156
q44	242	3.31	1.381
Valid N (list wise)	242		

Note: Author’s calculation based on SPSS

Respondents attribute the highest importance to future rewards – salary and bonuses (4.6), followed by the possibility of achieving a balance between personal and professional life (4.47). Additionally, respondents place significant importance on opportunities for personal development, accomplishments, and progress, as well as having a job that is enjoyable and clearly designed for a clear understanding of the purpose and meaning of their work, a supportive atmosphere, and long-term job security (attitudes expressed with an average rating above 4.3).

For the respondents, important aspects include changes and innovations supported by the organization, flexibility regarding working hours, ongoing training and development programs, continuous learning, and the opportunity to expand skills through self-development (attitudes expressed with an average rating from 4 to 4.3). The next attitude with the highest level of importance (rated at a level slightly above 4) relates to receiving feedback on their work performance, minimizing conflict situations, embracing broader social interests that value diversity and inclusivity, as well as the opportunity for job positions that provide a chance for leadership. Additionally, the importance of a leader setting an exemplary value through personal example and respecting different opinions/ideas is emphasized. Statements related to the integration of business activities with digital technologies, the use of IT technologies for skill development, and the possibility of using platforms and tools for learning, open communication, and collaboration through digital platforms are also rated at this level of importance.

Moderately important attitudes for the respondents include the possibility of working overtime without compensation, assisting colleagues without instructions from superiors, and the option of working from home. The lowest standard deviation values (0.711 and 0.718) were obtained for the question regarding the importance of career advancement and material rewards – salary, bonuses, etc., indicating the highest uniformity of responses on that matter. The highest heterogeneity of attitudes among respondents, reflecting the greatest degree of disagreement, was observed in the questions related to the importance of working overtime without compensation (1.314) and the possibility of working from home (1.314).

3.2 Factor analysis

In the case of the observed sample, the Kaiser-Meyer-Olkin (KMO) measure has a value of 0.919, exceeding the recommended threshold of 0.6. Additionally, the Bartlett’s test is significant ($p=0.000$), indicating a statistically significant correlation between variables. Therefore, the correlation matrix is deemed suitable for factor analysis (justification for factor analysis) [1,2]. Upon reviewing the correlation matrix (not shown here due to space limitations), numerous correlation coefficients with values equal to or greater than 0.3 were identified. This further supports the justification for conducting factor analysis on the observed sample.

According to Kaiser’s criterion, we are only interested in components with an eigenvalue of 1 or more. From the Total Variance Explained table, we observe 9 components that meet this criterion (15.969, 2.948, 2.542, 1.828, 1.589, 1.391, 1.350, 1.075, and 1.039). These 9 components explain a total of 63.257% of the variance. Since the number of components meeting Kaiser’s criterion is too large, a clear break point after the third component was identified by examining the Scree Plot diagram. Based on Cattell’s [3] criterion, it was decided to retain three components for further investigation.

This decision was supported by the results of the parallel analysis, which indicated the presence of only three components with eigenvalues exceeding the corresponding threshold values obtained using an equally sized matrix of random numbers (47 variables x 242 respondents). The three-component solution (three-factor solution) explained a total of 45.656% of the variance, with the contribution of the first component being 33.976%, the second component 6.272%, and the third component 5.408%. In the Component Matrix table, the unrotated factor weights for each question for the three components (factors) are presented. Most items have substantial factor weights (above 0.4) for all three components, indicating that the solution with three factors is appropriate.

To facilitate the interpretation of these three components, an oblique rotation was conducted. The rotated solution (Pattern Matrix table) displays three rotated factors (factor weights greater than 0.3): component 1 has fifteen factor weights above 0.3, component 2 has seventeen, and component 3 has fifteen, supporting our decision to retain three categories (factors): 1. Individual processes and behavior; 2. Group dynamics and behavior; 3. Organizational processes of behavior.

Items related to improving knowledge and skills through self-development (q20), continuous learning (q18), job satisfaction (q44, q23, q24, q6), using IT technology for learning and knowledge acquisition (q21), items related to respecting diversity, equality, and inclusivity (q47), as well as all others related to skill enhancement and professional expertise improvement (q19, q22), have substantial factor loadings on Factor 1 (Individual processes and behavior). Items related to an adequate communication system (q27, q28, q46), an exemplary leader (q37, q38, q39, q35, q33, q32), the importance of teamwork and informal groups (q29, q43, q45), have significant factor loadings on Factor 2 (Group dynamics and behavior). Items related to adequate material and non-material rewards for employees (q40, q41, q42, q14), job design (q1, q3, q4, q5, q7, q12, q13), the importance of introducing organizational change and innovations (q8, q11), teamwork, and informal groups (q29, q43, q45), have substantial factor loadings on Factor 3 (Organizational processes and behavior).

There is a weak positive correlation (0.312) between the first and second factors, while the correlation between the first and third factors is also positive and stronger (0.395). The correlation between the second and third factors is positive but weak (0.167).

Table 3. Defined Factors

Factor 1 - Individual processes and behavior		Factor 2 - Group dynamics and behavior	Factor Loadings	Factor 3 - Organizational processes and behavior	Factor Loadings
q20	.781	q27	.741	q12	.741
q18	.716	q37	.668	q7	.722
q44	.700	q39	.667	q13	.715
q23	.689	q43	.647	q1	.654
q22	.676	q38	.635	q5	.651
q19	.668	q28	.613	q2	.604
q3	.631	q45	.593	q40	.602
q26	.631	q35	.590	q11	.566
q21	.575	q30	.590	q14	.565
q16	.564	q34	.578	q9	.558
q6	.508	q29	.568	q8	.541
q17	.481	q46	.563	q10	.540
q24	.478	q36	.536	q4	.466
q47	.405	q33	.530	q41	.454
q25	.321	q31	.524	q42	.418
		q15	.458		
		q32	.414		

Note: Author’s calculation based on SPSS

3.3 One-way Analysis of Variance (ANOVA)

A one-way analysis of variance was conducted to explore the influence of participants’ “Field of study” on the degree of importance given to the specified statements (questions). Participants were divided into four groups based on their field of study (Group 1: Legal Sciences; Group 2: Business and Administration; Group 3: Engineering disciplines; Group 4: Psychology). Levene’s test of homogeneity of variance, used to examine the equality of variances in the results across the four groups, indicates that the assumption of variance homogeneity is met (Sig. of L-test greater than 0.05) for most questions. In cases where a violation of this assumption was identified, data from the Robust Tests of Equality of Means table (Welsh and Brown-Forsythe test) were utilized.

If we analyze the significance (*p-value*) in the ANOVA table (which displays the sums of squares of deviations of results from their mean values for the *between-groups* and *within-groups* analysis), we observe that this probability is less than or equal to 0.05 for the questions (dependent variables) q1, q2, q3, q4, q5, q6, q7, q8, q9, q11, q14, q15, q20, q21, q22, q23, q24, q27, q28, q31, q32, q33, q34, q35, q37, q38, q39, q40, q41, q46. Thus, there is a statistically significant difference between the mean values of the mentioned dependent variables in the observed four groups.

In the Multiple Comparisons (Tukey HSD) table of subsequent tests, the statistical significance of differences between each pair of groups is provided. It is observed that the mean value of participants' attitudes regarding the importance of clearly defined goals and tasks for employees, as well as their responsibilities (q1) in Group 1 ($\bar{\mu} = 4.47$; $\bar{\sigma} = 0.68$), Group 2 ($\bar{\mu} = 4.46$; $\bar{\sigma} = 0.817$), and Group 4 ($\bar{\mu} = 4.68$; $\bar{\sigma} = 0.599$) significantly differs from the mean value of Group 3 ($\bar{\mu} = 3.88$; $\bar{\sigma} = 0.885$). Additionally, the mean value of participants' attitudes related to the use of IT technology for skill development (q21) in Group 1 ($\bar{\mu} = 3.94$; $\bar{\sigma} = 0.966$) and Group 2 ($\bar{\mu} = 3.83$; $\bar{\sigma} = 0.996$) significantly differs from the mean value of Group 3 ($\bar{\mu} = 3.38$; $\bar{\sigma} = 0.993$). Furthermore, there is a significant difference in the attitudes of participants in Group 3 compared to the other groups regarding items related to leadership (q33, q37, q38, q39).

Using the eta squared coefficient, one of the most commonly used indicators of effect size, and Cohen's criterion [4], the impact size of the field of study on participants' attitudes for the variable q1 has been explained.

$\eta^2 = \frac{\text{Sum of squares of deviations (Between groups)}}{\text{Total sum of squares (Total)}} = \frac{18,338}{164,843} = 0,111$ which, according to Cohen's criterion, indicates that the influence of the difference is large.

Table 4. One-way ANOVA for different groups

Variable	Difference among groups	Eta squared
q1	group 1 ($\mu = 4,47$; $\sigma = 0,68$), group 2 ($\mu = 4,46$; $\sigma = 0,817$) and group 4 ($\mu = 4,68$; $\sigma = 0,599$) significantly differs from the group 3 ($\mu = 3,88$; $\sigma = 0,885$)	0,11 (large effect)
q2	group 1 ($\mu = 4,53$; $\sigma = 0,71$), group 2 ($\mu = 4,53$; $\sigma = 0,827$) and group 4 ($\mu = 4,58$; $\sigma = 0,672$) significantly differs from the group 3 ($\mu = 3,92$; $\sigma = 0,926$)	0,11 (large effect)
q3	group 1 ($\mu = 4,33$; $\sigma = 0,718$), group 2 ($\mu = 4,40$; $\sigma = 0,812$) and group 4 ($\mu = 4,52$; $\sigma = 0,769$) significantly differs from the group 3 ($\mu = 3,75$; $\sigma = 0,968$)	0,11 (large effect)
q4	group 2 ($\mu = 4,42$; $\sigma = 0,801$) significantly differs from the group 3 ($\mu = 3,95$; $\sigma = 0,964$)	0,04 (medium effect)
q5	group 2 ($\mu = 4,61$; $\sigma = 0,692$) significantly differs from the group 3 ($\mu = 4,22$; $\sigma = 0,922$) group 1 ($\mu = 4,22$; $\sigma = 0,848$) significantly differs from the group 2 ($\mu = 4,61$; $\sigma = 0,692$)	0,05 (medium effect)
q6	group 1 ($\mu = 4,43$; $\sigma = 0,707$), group 2 ($\mu = 4,53$; $\sigma = 0,671$) and group 4 ($\mu = 4,52$; $\sigma = 0,890$) significantly differs from the group 3 ($\mu = 4,00$; $\sigma = 0,864$)	0,08 (large effect)
q7	group 1 ($\mu = 4,59$; $\sigma = 0,61$), group 2 ($\mu = 4,6$; $\sigma = 0,748$) and group 4 ($\mu = 4,58$; $\sigma = 0,848$) significantly differs from the group 3 ($\mu = 4,05$; $\sigma = 0,928$)	0,08 (large effect)
q8	group 1 ($\mu = 4,31$; $\sigma = 0,796$), group 2 ($\mu = 4,21$; $\sigma = 0,825$) and group 4 ($\mu = 4,52$; $\sigma = 0,769$) significantly differs from the group 3 ($\mu = 3,7$; $\sigma = 0,85$)	0,10 (large effect)
q9	group 2 ($\mu = 3,93$; $\sigma = 0,825$) significantly differs from the group 3 ($\mu = 3,57$; $\sigma = 0,85$)	0,05 (medium effect)
q11	group 4 ($\mu = 4,23$; $\sigma = 1,023$) significantly differs from the group 3 ($\mu = 3,97$; $\sigma = 0,957$)	0,03 (small effect)
q14	group 2 ($\mu = 4,42$; $\sigma = 0,927$) significantly differs from the group 3 ($\mu = 4,03$; $\sigma = 0,938$)	0,03 (small effect)
q15	group 1 ($\mu = 4,37$; $\sigma = 0,698$), group 2 ($\mu = 4,5$; $\sigma = 0,728$) and group 4 ($\mu = 4,55$; $\sigma = 0,675$) significantly differs from the group 3 ($\mu = 3,83$; $\sigma = 0,675$)	0,12 (large effect)

q20	group 1 ($\mu = 4,51; \sigma = 0,649$), group 2 ($\mu = 4,42; \sigma = 0,737$) and group 4 ($\mu = 4,55; \sigma = 0,85$) significantly differs from the group 3 ($\mu = 3,73; \sigma = 0,821$)	0,15 (large effect)
q21	group 1 ($\mu = 3,94; \sigma = 0,966$) and group 2 ($\mu = 3,83; \sigma = 0,996$) significantly differs from the group 3 ($\mu = 3,38; \sigma = 0,993$)	0,04 (medium effect)
q22	group 1 ($\mu = 4,14; \sigma = 1,0$) and group 2 ($\mu = 4,09; \sigma = 0,594$) significantly differs from the group 3 ($\mu = 3,65; \sigma = 0,709$)	0,04 (medium effect)
q23	group 2 ($\mu = 4,37; \sigma = 0,859$) and group 4 ($\mu = 4,64; \sigma = 0,801$) significantly differs from the group 3 ($\mu = 4,15; \sigma = 0,801$)	0,08 (large effect)
q24	group 1 ($\mu = 4,45; \sigma = 0,7656$) and group 2 ($\mu = 4,63; \sigma = 0,744$) significantly differs from the group 3 ($\mu = 4,05; \sigma = 0,746$)	0,08 (large effect)
q27	group 1 ($\mu = 4,49; \sigma = 0,649$), group 2 ($\mu = 4,39; \sigma = 0,785$) and group 4 ($\mu = 4,42; \sigma = 0,958$) significantly differs from the group 3 ($\mu = 3,83; \sigma = 0,905$)	0,09 (large effect)
q28	group 1 ($\mu = 4,39; \sigma = 0,64$), group 2 ($\mu = 4,35; \sigma = 0,792$) and group 4 ($\mu = 4,48; \sigma = 0,769$) significantly differs from the group 3 ($\mu = 3,87; \sigma = 0,812$)	0,08 (large effect)
q31	group 1 ($\mu = 4,41; \sigma = 0,734$), group 2 ($\mu = 4,52; \sigma = 0,754$) and group 4 ($\mu = 4,45; \sigma = 0,85$) significantly differs from the group 3 ($\mu = 3,9; \sigma = 0,796$)	0,10 (large effect)
q33	group 2 ($\mu = 4,29; \sigma = 0,764$) and group 4 ($\mu = 4,42; \sigma = 0,763$) significantly differs from the group 3 ($\mu = 3,95; \sigma = 0,811$)	0,06 (medium effect)
q34	group 2 ($\mu = 4,26; \sigma = 0,855$) significantly differs from the group 3 ($\mu = 3,85; \sigma = 0,820$)	0,04 (medium effect)
q35	group 2 ($\mu = 4,60; \sigma = 0,707$) significantly differs from the group 3 ($\mu = 3,87; \sigma = 0,769$) group 1 ($\mu = 4,16; \sigma = 0,874$) significantly differs from the group 2 ($\mu = 4,6; \sigma = 0,707$) group 4 ($\mu = 4,42; \sigma = 0,886$) significantly differs from the group 3 ($\mu = 3,87; \sigma = 0,769$)	0,13 (large effect)
q37	group 1 ($\mu = 4,27; \sigma = 0,836$) and group 2 ($\mu = 4,26; \sigma = 0,77$) significantly differs from the group 3 ($\mu = 3,83; \sigma = 0,763$)	0,05 (medium effect)
q38	group 1 ($\mu = 4,22; \sigma = 0,771$), group 2 ($\mu = 4,34; \sigma = 0,802$) and group 4 ($\mu = 4,32; \sigma = 0,945$) significantly differs from the group 3 ($\mu = 3,72; \sigma = 0,739$)	0,10 (large effect)
q39	group 2 ($\mu = 4,53; \sigma = 0,792$) significantly differs from the group 3 ($\mu = 3,88; \sigma = 0,804$)	0,09 (large effect)
q40	group 2 ($\mu = 4,71; \sigma = 0,698$) significantly differs from the group 3 ($\mu = 4,35; \sigma = 0,732$)	0,04 (medium effect)
q41	group 2 ($\mu = 4,56; \sigma = 0,815$) significantly differs from the group 3 ($\mu = 4,1; \sigma = 0,838$)	0,05 (medium effect)
q46	group 1 ($\mu = 4,1; \sigma = 0,848$) significantly differs from the group 3 ($\mu = 3,52; \sigma = 0,77$)	0,04 (medium effect)

Note: Author's calculation based on SPSS

4. Conclusions

Unlike previous generations, Generation Z is unfamiliar with a world without the Internet, smartphones, and devices. This is the first digital generation, making them the most digitally competent generation. They have grown up in a digital environment, which has made them the most interconnected generation with a pronounced inclination towards multitasking. They are capable of simultaneously engaging in various activities in this environment, which has further influenced their strong visual orientation. They prefer written communication over face-to-face interaction. Generation Z is constantly seeking new challenges and changes. They are highly ambitious and place great importance on career progression, continuous training and development programs, as well as acquiring new knowledge and skills through self-development. They attach significant importance to receiving feedback on their performance and value leaders who respect their opinions and ideas. Additionally, they expect leaders to embody exemplary values in the workplace through their behavior. They are not willing to engage in activities beyond working hours unless there are

corresponding benefits. Considering their respect for diversity and inclusivity, representatives of Generation Z are expected to adapt easily in a workplace where members of other generations are present. Intergenerational leadership will develop by getting to know the generation of employees, their motivational factors, establishing open discourse and building mutual trust, strengthening intergenerational relationships between employees, creating reciprocal learning, and accepting diversity (Tidhar, 2023).

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Internal control as a tool for fraud risk management in pharmaceutical companies

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Abstract

Effective internal control is a key instrument in the fight against fraud in pharmaceutical companies. Internal controls can improve the quality of financial reporting and address management issues. Pharmaceutical organizations should develop comprehensive strategies to establish internal systems that will effectively counter these threats, that is, apply a holistic approach to managing the risk of fraudulent actions. The purpose of this paper is to point out the role and importance of internal control in the effective management of the risk of fraudulent activities in pharmaceutical companies.

Keywords: pharmaceutical companies, internal control, risk fraud, management

1. Introduction

Every individual has the right to access health care, and the government's responsibility is to provide its citizens with authentic medicines and an effective healthcare system as a key part of human life. Currently, many governments around the world are developing various social protection programs to provide quality health services as a basic priority (Rajora, 2023). When we talk about health, it is necessary to talk about medicaments, because it is known that a patient who comes for medical help receives, among other things, his prescription. In this context, the importance of the pharmaceutical industry as a vital segment of the health sector is emphasized, bearing in mind that it continuously innovates and develops new medicines to improve people's lives.

The main purpose of pharmaceutical companies is to research and market safe medicines that improve the health of patients and contribute to saving lives. At the same time, profit generation aims to reward shareholders and enable reinvestment in further medical research. The pharmaceutical industry faces challenges due to intense globalization, a lack of new products, the need for development in new therapeutic areas, an ageing world population and the growth of the generic drug market (Valverde, 2013).

Internal control systems originate as internal processes aimed at assisting a corporation in achieving its predetermined objectives. Management plays a pivotal role in overseeing these activities by establishing entity objectives and bearing overall responsibility for the internal control system. Internal controls form an integral component of an organization's financial and business policies and procedures (Cunningham, 2004). They encompass all measures taken by the organization to safeguard its resources against waste, fraud, and inefficiency; ensure the accuracy and reliability of accounting and operational data, uphold compliance with organizational policies, and assess the performance levels across all organizational units.

Internal audit can be described as personalized management support that enables a precise overview of the actual state of business as a whole, or as a predefined set of processes. Internal audit is considered a vital function in a pharmaceutical company, and its characteristics have been shaped by the impact of the globalization process, as well as the associated challenges related to competition and harmonization of practices (Nedelcheva, 2017). Internal audit is often seen as a means of achieving competitiveness through the application of good practices in the pharmaceutical industry (Tsvetanova, 2014). Internal audit, among other things, can be described as personalized support to the management of a pharmaceutical company, which enables a precise overview of the actual state of business as a whole, or as a predefined set of processes (Florina et al., 2013). The role of the internal audit function has changed over time (Vlašić & Laganis, 2023) to adapt to changes in the environment.

The article is logically structured from several chapters. After the introductory part, the second chapter indicates the operation of pharmaceutical companies, on the one hand, and the importance of internal control for efficient operations, on the other hand. The third chapter examines the possibilities of prevention and detection of fraud and corruption in pharmaceutical companies. The importance of forensic accountants in managing the risk of fraudulent and corrupt actions is the topic of the fourth chapter, followed by concluding considerations.

2. The operation of pharmaceutical companies in a turbulent environment and the importance of internal control

The impacts of globalization have prompted businesses and economies to take various steps to maintain the efficiency of their operations and be competitive in a turbulent and dynamic environment (Hadiwijaya et al. 2020). In order to stay in the race, managers are expected to be skilled in implementing various transformations in their business activities to become as effective and efficient as possible, that is, to ensure sustainable business continuity. It is a big problem to fight various risks that are specific to a certain area of business to stay in business.

Access to information presents a significant challenge for individuals involved in the healthcare industry. Understanding both the scientific and business aspects of the field is crucial for the long-term sustainability of healthcare organizations. This challenge is particularly pronounced in pharmaceutical and biotechnology industries, where the convergence of science and complex business models is obvious.

Pharmaceutical companies struggle to achieve the highest possible level of revenue, as well as to achieve satisfactory indicators of EBITDA and EBIT margin, which elements are exactly revenues. Below is a list of the top 10 pharmaceutical companies in the world for 2022.

Table 1. The Top 10 Pharma Companies by Revenue, 2022

No.	Pharmaceutical Companies	Revenue (in billion U.S. dollars)
1.	<i>Pfizer, New York City</i>	\$100.33
2.	<i>Johnson & Johnson, New Brunswick, New Jersey</i>	\$94.94
3.	<i>Roche, Basel, Switzerland</i>	\$66.26
4.	<i>Merck & Co., Kenilworth, New Jersey</i>	\$59.28
5.	<i>AbbVie, North Chicago, Illinois</i>	\$58.05
6.	<i>Novartis, Basel, Switzerland</i>	\$58.05
7.	<i>Bristol Myers Squibb, New York City</i>	\$46.16
8.	<i>Sanofi, Paris</i>	\$45.22
9.	<i>AstraZeneca, Cambridge, U.K.</i>	\$44.35
10.	<i>GSK, Cambridge, U.K.</i>	\$36.15

Source: <https://bonitet.com/top-10-farmaceutskih-kompanija-u-svetu-po-prihodima>.

Various financial and non-financial risks are present in pharmaceutical companies (Shekarkhah et al., 2021). The global economic crisis has illuminated many difficult economic areas, i.e. highlighted numerous challenging economic spheres that require revision and analysis to see their impact (Bota-Avram et al., 2011). Nosachenko & Kovalenko (2023) point out that, in today's circumstances, health institutions face many challenges that need to be solved to ensure a high standard of services and improve scientific potential. Pharmaceutical companies often use marketing strategies to build the loyalty of doctors and patients who recommend their drugs (Valverde, 2013). They point out that, in today's circumstances, health institutions face many challenges that need to be solved to ensure a high standard of services and improve scientific potential. These intense marketing activities sometimes cross the line of legality, raising concerns about possible fraud and corruption. Therefore, it is important to implement control mechanisms, among other things, in pharmaceutical companies, to prevent waste and abuse of organizational resources. Internal control is an important management tool and one of the mechanisms of corporate control (Donelson et al., 2017).

Internal control is a process that organizational leaders and management implement to guarantee the achievement of set goals and is important for various types of organizations. The purpose of internal controls is to proactively prevent errors and irregularities, promptly identify issues, and ensure the implementation of corrective measures. In other words, internal controls encompass procedures and documentation designed to safeguard the accuracy and integrity of financial and accounting information while also serving to deter and prevent fraud.

A proficient internal control system should enhance managerial accountability for devised plans and reasonably ensure the attainment of set goals. The effectiveness of such systems extends beyond digital platforms to encompass mechanisms capable of preventing and detecting fraudulent activities (Rashid, 2022). According to the conclusion of Ashbaugh-Skaife et al. (2008), errors drive the link between poor accrual quality and weak controls. Dain & Rahmat (2017) state the first evidence of the mechanism by which weak controls lead to increased fraud risk. Mitrović et al. (2022) stress that the internal control system has been raised to a higher level in the computer environment, but the higher level of development opens new questions, and new opportunities and problems arise.

3. Prevention and detection of fraud and corruption in pharmaceutical companies

Financial fraud refers to the intentional distortion and manipulation of financial information by a company, often difficult to detect due to information asymmetry. In recent years, frequent frauds in the capital market, especially the high frequency of frauds in financial statements of publicly listed pharmaceutical companies, have significantly undermined the stability of the market (Li, 2023). In recent times, increasing attention has been directed towards the ethical conduct of pharmaceutical companies. Allegations have surfaced against these companies, involving a range of unethical behaviours such as off-label marketing, providing kickbacks to doctors, and falsifying data (Greenman et al., 2023).

In today's complex financial environment, accurately identifying financial errors and fraudulent activities has become a critical concern for investors, regulators, and market participants (Can, 2023). Pharmaceutical fraud has been a persistent concern within the healthcare sector. Among the most egregious violations of pharmaceutical ethics are deceptive advertising practices (Lober, 1993), the promotion of fear associated with diseases (Navar, 2019), and the continuous rise in costs (Kirzinger et al., 2019). Corporate internal controls evolve into processes aimed at preventing specific undesirable events, thereby generating higher expectations for their effectiveness (Cunningham, 2004).

Corruption has significant economic implications. Corruption in the pharmaceutical industry has a wide-ranging impact, manifesting itself through price gouging of prescription drugs, unapproved therapies, and the distribution of unsafe drugs. In addition, corruption undermines public trust in the healthcare system, undermines the integrity of healthcare workers, and puts patient safety at risk. From the point of view of the efficiency of cost management, it is pointed out that corruption increases the prices of pharmaceutical products since the cost of bribes is usually incorporated into the prices by corrupt organizations (Peltier-Rivest, 2017).

Research findings of Peltier-Rivest (2017) identify the following common pharmaceutical corruption schemes: Fictitious marketing agreements with offshore entities, sham contracts with doctors, bribes paid through charitable donations, bribes paid through falsified expense reports, bribes paid through slush funds, and bribes concealed through false journal entries.

The Association of Certified Fraud Examiners (ACFE) stands as the largest global organization dedicated to combating fraud, boasting a membership exceeding 90,000 individuals worldwide. Collaborating with various industries, the Association offers specialized training to prevent and discourage fraudulent activities and unethical conduct (Greenman et al., 2023). In an article featured in the ACFE Fraud Magazine, Sebaugh (2023) delved into the Department of Justice's (DOJ) indictment of 345 healthcare professionals accused of submitting fraudulent claims totalling \$6 billion to federal programs. Sebaugh also scrutinized the enduring issue of fraudulent activities within the global pharmaceutical industry.

4. The role of forensic accountants in managing the risk of fraud and corruption

Today's financial world is very complex compared to that of a generation ago. The extreme importance of financial literacy for organizations requires the integration of education and training on financial management into the financial management control system within the organization itself (Milošević et al., 2023). One such piece of training is for effective fraud risk management.

A forensic accounting expert witness is an individual with specialized knowledge and training in accounting. Their role involves investigating and analyzing financial records to offer evidence in matters related to financial disputes, fraud, or other instances of financial misconduct.

The deficiency in conducting thorough forensic analysis of financial reports and records, attributed to the shortage of forensic accounting experts and a comprehensive implementation framework, poses a genuine challenge in the battle against financial crime. Forensic accounting emerges as a valuable tool in addressing financial crime, enabling the identification and tracking of such cases. Within criminal proceedings, accounting forensics assumes diverse roles, encompassing financial forensics, expertise provision, witness testimony, and professional advisory services (Janković et al., 2023). The engagement of accounting forensic experts is most necessary in the pre-investigation procedure (Janković et al., 2022).

To identify illegal payments in the records of pharmaceutical companies, internal audits, forensic accountants or independent managers should analyze certain indicators that indicate potential irregularities. In addition, it is important to point out the connection between possible bankruptcy and fraudulent financial reporting. Every company, regardless of its size, can face the risk of bankruptcy. Anticipating potential bankruptcy years in advance has a significant impact on a company's financial viability (Knežević et al., 2021). Financial problems become a key indicator that is closely monitored when assessing the possibility of

financial fraud in reporting. When a company operates in bad conditions, the motivation to potentially engage in fraudulent financial reporting increases.

4. Conclusions

Internal audits can play a key role in monitoring and reporting on risk management. Effective risk management is an inseparable issue from the implementation of internal audits in pharmaceutical companies. Different types of risk require different types of controls. Internal audits assess a company's internal controls, examining aspects such as corporate governance and accounting processes. Pharmaceutical companies must implement effective internal controls aimed at preventing and identifying fraud. These controls should encompass practices such as segregation of duties, routine audits, and the provision of anonymous reporting channels.

Moreover, the nature of internal control weaknesses holds significance when considering fraud prediction. Pharmaceutical companies should prioritize educating their employees on fraud prevention. Pharmaceutical companies need to give precedence to educating their workforce about preventing fraud. This training should be ongoing and consistent, addressing crucial aspects like maintaining transparency in crisis communications. This training needs to be consistent and continuous, covering topics such as transparency in crisis communications.

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Albanian Children Literature, as part of the cultural and literature heritage

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Abstract

This study addresses the importance of use and promotion of literature for children and youth as an important part of the literary and cultural heritage. Books are very important in children's life providing information and knowledge about the world, to acquire a system of educative, moral, universal and national values, and moreover, are sources of knowledge for generation education. Artistic works have always conveyed detailed information about reality, human life, feelings and their thoughts. Thanks to this "information amount" artwork has always served as *means of communication* among people, presenting a code with a particular system of feelings transmitted through a special language. In order to understand the work, you have to get the information transmitted, read it and break it. During the reading process, the reader is taken into the narration, immersed into the world of the world. The reader walks into places, never seen and heard before and without knowing he learns new things, receives unknown information. This knowledge is acquired gradually, without tiredness, stress, unlike the traditional hours of geography, history etc. Reading books helps to construct the mind of the youth, expanding the horizon and their primary identity. This study brings some works of Albanian authors in order to enhance and help the readers to develop a cultural and identity feeling and to acquire knowledge of other cultures in the world. Children literature raises awareness in children to value cultural heritage, involving them in an exchanging process of experience, sending them to countries and other places, with interesting history helping them to appreciate their national heritage.

Keywords: literature heritage, children literature, knowledge, national values.

Introduction

Each nation has its identity, history and language using them to made itself known and to continue throughout the history. Children literature will always survive as such a literature has a guaranteed future. The greatest writers or artists of the worlds are not born by chance. Almost all of them write in their memories about childhood heroes, who sent them in a faraway world, trying to imitate those heroes. We have all had our own heroes from ancient fairy tales to the recent national and world literature (Rama, 2021). Pupils may differentiate words with emphasized national values every time they read about history, geography, toponymy of the country; among the great collection of the legends we can notice the ones that represent nature and Albanian characteristics; within the enormous collection of fairy tales there are expressions and words about Albanian tradition; among the verses of narrations of the Albanian history, the pen of the writers wrote whole romans, essays, and stories a from a folk expression, or habit thus enriching Albanian language with new words. The studies of language history are concentrated on the early letters of Albanian writings documented, continuing with the most recent ones, proving the ancient culture of Albanian nation, an irreplaceable proof of the cultural and national identity.

It has been suggested that readers are able to get more information from a story book than a school book, (Roehl, 2018), that is why this study aims to explore various categories of story books and how they can be used to create better access for young readers. The generations will not forget not even for one minute that the cornerstones of our children literature stand based on the contribution of the powerful pen of our renaissance writers. Their mission was honorable fulfilled, as they understood the historic necessity of writing to keep Albanian language alive, to write it clear and simple, to be understood from all especially the children, as they were the future of the nation (Dedja, 2002). Papa Kristo Negovani was one of the renaissance patriots who fought all his life to spread Albanian language and expand the reading fund for the Albanian children. He mainly wrote the prose, being the first to write the novel in children literature. The novel titled "*I vogli Donat Argjendi [The Little Dhonat Argjendi]*" was published in 1904 in Kostance. It is an Italian work, presented in Albanian from Greek language (Albanian Science Academy, 1983), as a story written for elementary pupils. The plot of the story is simple. The son of an Albanian leader was abducted by thieves and after lots of efforts from good people he returns to his parents. The whole novel shows the good, the human feeling fights the bad and always wins. Donat is a child who wants to see the world. His wish is to know all about what surrounds him. An example so beautifully narrated from Bedri Dedja is the moment when the boy gets out of the cave, lively facing the unexpected and the unknown:

He was taken aback when saw a baby lamb. The lamb bleated, gazing the boy, while he was scared by its bleat. The boy started to walk back to the cave, trembling, but again stopped:

-What is this?? – he yelled again.

-Beeee!

-It has a voice....

He came closer, petted the lamb and was so pleased to touch the soft wool. The lamb raised his head from the grass and licked the boy's cheek. Donat spoke in his language, but the lamb only knew one word: "Bee". (pg.16)

It is said that the stylistic requirements of children literature more often act on the writings addressed to younger ages of the readers. In our case, the story retelling is done according to the needs of children literature, we think that this novel is adapted from Dhimiter Fullani for lower ages of elementary education classes (I-III). The attention to the children literature requires a serious commitment, deep understanding of children psychology, lively, rich and beautiful use of the language and characters, in order to be part of their world and life. An important function of the narrations is to show children the cultural heritage, transmit a series of suggestions and common experiences that express the values and central attitudes of the society (Stephens, 1998; McCallum, 1998). Despite the fact that in different cultural times and contexts, we think that such original works, promote critical thinking in the reader, better knowledge of time, language and cultural values. Myths, fables and fairy tales originally narrated through oral tradition allowed adults to communicate with young people in a process uninterrupted to the present day. Fairy tales are told everywhere and at any time to educate, entertain and raise awareness of individuals about moral principles and customs, thus representing an important part of traditional heritage as well as a way to reinforce tolerance and mutual knowledge among different populations (Pulimeno, Piscitelli, Colazzo, 2020).

One of the well-known children writers was Arif Gjyli, who left his impressions in the children's literature. The configuration of this trace has and bears within the model of a creator that possessed some characteristics such as idealism, commitment and nature, coming from our renaissance writers for him. He followed the enlightened way and helped the Albanian children literature and more (pedagogy, psychology, teaching), in a new historical contest unfolding day after day the new phenomena in cultural and social life. This is the reason that the well-known researcher of children and youth literature Prof. as. Dr. Astrit Bishqemi, in his work puts as primary help the literature help of Arif Gjyli, added to the chapter "*Adaption and recreation*", positioning the writer on a high stand, connecting his name to both genres (especially with the first) aiming to "... *make it understandable and pleasant to the reader, a great creation of the folklore, or amazing work of literature for adults*". Thanks to Arif Gjyli in his work "*Jutbina Heroes*" the tradition of sublime tales written for our folk valiants started. Rightfully, some of writers of that time stated that this work is one of the best of Arif Gjyli, wakening interest and discussion during the time it was published. According to the researcher and bibliographer Faire Tabaku, this work presents some relations and different value aspects. As a summary this author would write:

- The book "*Jutbina Heroes*" by Arif Gjyli was published around the third trimester of 1960. The theme is folk Epos, Northern Rhapsodies, beautiful songs of the Valiants which our people have brought from generations to generations using oral narrations among the centuries.
- Children love fantastic works and adventures that is why the book "*Jutbina Heroes*" became so loved by kids.
- The success of the book stands in its subject. A. Gjyli knew how to choose some of the most beautiful ones, adapted more to the characteristics of the children psychology.
- In order to write "*Jutbina Heroes*" Gjyli based his writings in two publishing works "*Valiants of the Nation*" in 1937 and "*Legendary folk songs*" in 1955.
- These writings keep inside the desire for independence (Jutbina becomes the symbol of bravery, freedom, values and virtues of Albanians, - states Xhahid Bushati).
- The stories clearly and lively present all the Albanian characteristics such as: The Faith of Fairies of the Valiants, their bravery and manhood, beliefs of our country, habits, friends, family honor etc.
- The author himself states that he published this book from the will to let our children know some of the Rhapsodies of our Northern beauties, prepare them so they may enjoy themselves.

The researcher Jorgo Bulo addressed this problem this way: Mitrush Kuteli in his work "*Ancient Albanian Stories*" started the prose, narrating a fine artistic feeling, the dramatic subjects of the heroic and legendary cyclic songs with their detached motives create the base of the subject of many prosaic works especially for children, but also for adults (according to Xh. Bushati, 2019). The importance of these creations and studies stands on the folk tradition popularity, stating its possibilities to enrich the new prose with subjects and ideas that preserve the reality even nowadays, serving the education of new generations with moral virtues inherited from our ancestors even through folklore.

This literature asset has created is foundation and has served as inspiration for the writer Luan Rama too, who values the importance of children needing to know our historical characters. He emphasizes that *History of a nation is created and constructed through characters, historical contributions which often are painful, but committed to the nation and history* (Pajaziti,

2017). He is a very experienced writer, plotting cartoons, adapting old fairy tales, children stories and science fiction. This experience has helped the writer to transmit specifically the historical characters and some other figures selected as a biography. M. Gorki once wrote to the famous French writer Romen Rolan: *I beg you to write the biography of Beethoven in a children language... I would like to create with the help of the best writers of the times a series of books for the children, containing the biographies of the most famous people on earth* (Bishqemi, 2004).

We can mention the series of “*My name is Skënderbeg*”, *My name is Dora d’Istria*”, “*My name is Ismail Qemali*”, *Aleksander Moisiu*, *Queen Teuta*, *Tefta Tashko*, *Ibrahim Kodra*, etc. where the author aims to show the children the history with a simple and understanding language, fluent individual style, transmitting in his works knowing and educative values, which surely enriches and completes the mosaic of magic and miracles, as it is the children literature. A historic or science character in a story or roman becomes more understandable and likeable for children compared to boring school books. The author has found the magic key and opens the doors, presenting profiles and panoramas, meanwhile expanding the mental horizon of the kids through the original and illustrative pictures, involves the kids into unknown situation in the Illyrian times, Skenderbeg area, the times of Albanian state formation, the days of the independence etc.

The ones who know the children psychology and the ones who follow the best didactic strategies in children education, notice that the magic of a written book for children flows from the magic of words and narration, the magic of life. That is why a good writer should know the world of children, their formation so that their creations may not be only entertainment for those who read it, but also education and knowledge source. Reading books enables children to learn new unexplored things, to go to other places and enrich their vocabulary with new words. As an example this is noticed in the work of Vilhelme Vranari in his historical science fiction children roman “*The Amant of Arberi*” (Vranari, 2003), a historical, patriotic, real and fantastic work. This roman is an imaginary journey of a child, Amanti, named after the ancient city of Amantia. The little boy is an heir to King Lir, who was killed by the invaders. The child has the idea to unite all Albanians who are separated and divided in the world. So, he starts a long and unknown journey, following his grandmother’s advice. During the journey of Amant, the beauties of our country are brought to life, the history and the efforts of Albanians for freedom, Illyrian well-known names who led Albanians in wars. The reader will be amazed at the descriptions and information portrayed by the author right at the start: *The entrance of the cave opened on a mountain slope, on the left lied a mountain valley with crystal waters from a waterfall. Both sides of the valley were full of evergreen bushes. They bloomed amongst the whiteness of the mountains and the blue of the waters. An amazing view of the painter and sculptor nature* (pg. 61) etc, etc.

The writer Vilhelme Vranari describes with a special style and great love the beauties of our country. She combines different historical events with information on different phenomena. And she does it quite easily and sweetly. In the novel the main character Amanti goes through many challenges, he was an orphan, without his parent’s care, knowing suffering, pain, stinginess and hunger. He was raised and educated by the wise words of his sweet grandmother. After her death, she was there to help and advise him: - *A man without his land is dead. Land is his spirit. Plant olive trees everywhere Amant, because there is no better wealth, my son* (pg. 18).

The simplicity and beauty of the story adds to the comparison that the author makes of the beauty of the Albanian girl. She compares them to goddess Diona. Here is the description of the Molosean Princess ... *She was beautiful as a mountain fairy. With blue eyes like the waves of the sea, her white skin as the snow of our shadowy mountains, and with the face red like the sunrise and sunsets. Only the deities can be compared to this rare beauty. That girl raised with the mountain wind and the water of springs...* (pg. 33). Or the comparison with the Deity of Butrint, Dea. *Special grace given by her blue eyes, like the deep Ionian Sea. Her garment was blue as the cloudless sky of this country while the surroundings were green, like the shadowy mountains of that bloody land* (pg. 49). The roman offers lots of advice and expressions that impact children education and their recognition with this lexical richness and phrases of Albanian people.

A special help in preserving and educating the new generation with inherited values has provided the original author Ferit Lamaj, vary successful among Albanian fabulists. His fables are full of unexpected events, written naturally. They are concise, smart and far from banal and open morals seen randomly even among the most known fable authors. *Among them one cannot stay without noticing the folk and national spirit of Albanian tales through the animal characters. And not only this. Among the fables of Ferit Lamaj is explicitly felt the culture, obtained since the time of Aesop of La Fontaine, Krillov and Trilusa up to the contemporary authors* (Lamaj, 1996). Of course, returning to the history of the Albanian fable, the early influence on it by the most famous fabulists of the time has naturally been noticed. The fable that was written or adapted by Naim, Çajup, Ndre Mjeda, etc., the fable in whose tradition wrote Nonda Bulka, Spiro Çomorra and others. And the fable, that short epic-lyrical, allegorical or satirical poem already seems somewhat rare compared to the work of poetry in general. We see this influence in Ferit Lamaj, who has devoted himself entirely to the fable, with the seriousness of a writer, who has claims to himself and to the creator.

Based on the above, Odhise Grillo rightly values that “*Ferit Lamaj is the Aesop of today’s Albanian fables...*” A careful work can be noticed both in quantity and quality in his fables. Thus, in 1995, he collected the fables in a separate volume, titled *201 fables*. A year later, the number of these fables almost tripled, up to 555, in the volume “*The Trojan Fox*”, while in 1999 the number doubles again and is published under the title *1111 fables*. In 2007, the number of fables from this author doubles again,

reaching 2500. The artistic characteristics in the first volumes now are matured, presenting the full form of the author's creations, which makes the distinguishable feature of this author. He brings his success bringing quality fables, that send out real philosophical messages and distinguish for sarcasm smartness, clarity and breathtaking art.

He published more than 120 books, 7000 fables, a product of experience of 40 years of writing. Lots of fables are translated in six foreign languages, English, French, Greek and Rumanian. He won several national and international awards. Most of these wonderful creations reaching the last verse make you smile and reflect. Similar to this line, is the American writer Trish Kaspar, who states: "*I like the literary style, smartness and fable narrations of Ferit Lamajt* (Albanian Aesop, 2018). The fabulist Ferit Lamaj loves children. He shows this with his fables for them, representing very well his role as father, friend, scientist, solution finder, helping the reader with lots of information, remarkable endings that startle you and make you smile, think and finally entertain yourself.

According to Richard-Amato (Richard-Amato PA. Making it Happen. New York: Longman; 1988), readers find themselves in the characters or stories, and learn to behave properly by facing similar situations to the future real life, developing their imagination and creativity, discovering new ideas, increasing personal motivation and fulfilling their goals. Albert Einstein stated: "*When I examine myself and my methods of thought, I come to the conclusion that the gift of fantasy has meant more to me than any talent for abstract, positive thinking.*" (Margulis E. 1958).

I. THIS STUDY SELECTED SOME OF THE BEST CHILDREN LITERATURE, IN ORDER TO KNOW THE LITERATURE FOR CHILDREN AND YOUTH, AND ALSO TO PRESENT THE EFFORTS OF THE AUTHORS ON THE GENRE OF NOVELS (*THE FIRST ALBANIAN NOVEL FOR CHILDREN*); ADAPTION (*THE FIRST ADAPTOR OF VALIANT EPOS*); *SERIES OF STORIES* ABOUT THE HISTORICAL FIGURES AND CULTURAL CONTRIBUTIONS IN THE BIOGRAPHIC FORMS; IN THE GENRE OF THE *SCIENCE FICTION ROMAN AND ALBANIAN FABLE*. THESE CREATIONS, WITH THEIR OPENING, BODY, EFFORTS TO PRESERVE THE LANGUAGE AND CULTURE, HAVE HAD A HUGE IMPACT ON THE EDUCATION OF GENERATIONS, PRESERVING THE LANGUAGE, THE BEAUTY OF THE FOLK, AMAZING FANTASY, FOLK PHRASEOLOGY AND TRADITION, WHICH BESIDES THE CHALLENGES OF TIMES HAVE PRESERVED THE LITERATURE AND CULTURAL TRADITION, WHICH CONTINUES WITH FURTHER STUDIES.

Conclusion

Children literature is unique in the way it is constructed, how it makes you love and understand the world, the kids, to be a careful teacher, attentive psychologist, committed teacher in order to walk safely inside the gate of knowledge, fantasy, imagination and science. We are aware that we need to be careful in educating and teaching the new generations in relation to the technology, digital learning, importance and challenges of global development. That is why we recommend:

For the writers: Addressing the actual problematic issues of Albanian reality, promoting new and old books, in order to know the characters, events, tradition and culture; children should be reading early, obligated and oriented towards literature works adapted to their age of Albanian books, during their summer and winter school holidays.

For the teachers: To better know the authors for kids, as it helps teachers and children. During a classroom hour may rise different situations where we can knock on doors of literature. Even though the literature is left behind nowadays because of the global digital technology, it is important to enrich the soul of kids through the spiritual, artistic and esthetic reflection, *in assessing pedagogical dimensions, didactic and psychologic/ therapeutic interventions of children literature*, aiming to enhance its role in promotion, development and cultural formation of generations. From the pedagogical point of view, fairy tales bring helpful fundamental values in the life of children. On a didactic view, books with stories properly selected, present a valuable source for activities of schools, improving linguistic skills of children, and creating a learning environment and respectable. Children stories are also used from the health care professionals to perform bibliotherapy to prevent the habits and unhealthy dependencies or to treat psychosomatic disorders. Finally, story books and stories based on web/digital may be an effective means for health contents to encourage adaption of healthy life styles among school children (Pulimeno, M. 2020; Piscitelli, P. 2020; Colazzo, S. 2020).

For parents: Attention, commitment, responsibility for children, this, not only caring and providing biological food, but the spiritual, cultural and scientific one; to be more cooperative with teachers for the journey of shaping the child's personality in preparation for a safe future.

We must be aware to understand that as teachers we convey messages to young people, that they should study, grow, be formed, research for a greater purpose in life and leave the university as better human beings (Thomas, 2020).

Children's literature, bringing this pleasure, transmitting the literary heritage, promoting the understanding and appreciation of the cultural heritage, as well as involving them in a process of exchange of experience, traveling them to other countries and societies, countries and different histories; makes them aware of the values of their national culture.

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Constructivist pedagogy versus movement education

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Abstract:

The problem:

Constructivism is the dominant teaching theory today, and many cases it influences positively educational design. Cognitive and affective learning can easily incorporate the above principles, but motor learning, the mastering of sporting movements, is a much more complex process. Psychomotoric dominant knowledge is the result of regular practice.

Methods:

We compared biomechanically two identical sport, a team sport ice hockey, and one individual sport artistic gymnastic and those teaching possibilities.

Results:

In such sports, the constructive learning strategy cannot be implemented or is only partially applicable. Building on previous knowledge or evaluating experience occurs not independently. In competitions involving complex technical combinations, child is unable to construct new forms and elements from already existing knowledge, and cannot form a correct picture of movement without practical experience.

Conclusion:

Motor action learning is a constantly monitored, interdependent activity, controlled by the trainer/coach, in which constructivist pedagogy block rather than helps progress and is therefore not recommended. An exception to this is the teaching of sporting tactics, where a constructive approach has a positive impact on performance, both for the athlete and the coach.

Keywords: sport, movement learning, constructivism, technical sport

Introduction

Regular physical activity, both quantitative and qualitative, is key to children's physical, mental and spiritual health. Families, on the one hand, and the public education system (nursery schools and schools), on the other, have a key role to play in ensuring this. Schools play a key role in the upbringing and education of the next generation, as virtually all children come into daily contact with them in one form or another. In addition to physical education at school, children participate in sports clubs and various sports activities, where they can immerse themselves in a sporting movement and compete. The activity of coaches in elite sports is not only a sport-specific training but also a pedagogical one. In this light, the coach-athlete relationship is in many cases the same as the teacher-student relationship. Several studies point out (Jowett 2003; Gombocz 2005; Côté 2002) that the athlete identifies the coach with the role and activity of the teacher. Whether coach or PE teacher, the two jobs are the same, developing children's movement skills in different sports. The teaching method will depend on the qualitative characteristics of the sport movements, hence the didactic principles will be different in the teaching of each movement.

Learning principles

Based on the work of Hans Aebli (1951), the paradigms of *knowledge transfer*, *demonstration* and *action* dominate in education. In the twentieth century, these three theories of teaching were joined by another major theory of teaching, *constructivism* (Glaserfeld 1995; Nahalka 2002). This view of learning based on *knowledge transfer* can be understood as a process of knowledge transfer in the form of language. This concept is deeply embedded in our thinking, as reflected in the metaphors of our language. We use the phrase "transfer of knowledge" many times. or learners "acquire" or "take on" knowledge. In this picture, the source of knowledge is information already processed in the spoken language form, initially existing in the teacher's brain, in a book or other information repository, and from there transferred to the students. Empiricism gave rise to the next knowledge-sharing theory, the *contemplative* view (Comenius 1992), whose main constituent is that man learns about his environment through experience. It should be pointed out that at this time, there were only sensory learning methods (experiments, observations, measurements). In addition to linguistic knowledge sharing, a sensory learning model was developed, which uses different stimuli to influence the child's brain. In Aebli's system, the third concept of learning, according to which man learns from his actions, the young child will

learn the connections through play, through trial and error, and through this process his views of reality will be formed (Piaget 1993). According to this learning principle, after a few trials, if the pupil is again in a similar situation, a shorter time is sufficient to complete the task well, because the plan for the solution is already in his head, and the appropriate actions just need to be carried out. Action plays a fundamental role in the development of knowledge.

In all three approaches, knowledge is created by something external to the learner that conveys information (language, visual information, response to action). *Constructivism*, on the other hand, argues that knowledge is not an "imprint" of the influences that one is exposed to, but an active, personal process of knowledge construction (Nahalka 2002). Further, Kovács (2022) has found that constructivist pedagogy can be effective in a number of cases in the field of sports games. The learner, interpreting words, sentences, ideas, but in each case using his/her prior knowledge, will produce specific interpretations, some of which may be helpful for later learning and some of which may be a barrier.

Motor (movement) learning

Motorcycle education is not only present in physical education and sport. It is present in many areas of life. When a mother teaches her child to walk, or practises the technique of eating with a knife and fork, she is in fact teaching a motor activity. In this approach, "input signals" (sensory and verbal information) are transformed into "output signals", in our case, into movement actions.

Learned movements are what sports science calls *skills*. Skills are only slightly dependent on inherited traits. They are learned movements that can be easily modified through practice and the experience that comes from it. *Skills*, on the other hand, are genetically determined, relatively stable characteristics that cannot be modified by practice or experience. A given *skill* is made up of a number of *abilities*, and these abilities determine the skill, its quality, its performance. Of course, in all cases, skill and ability are complex, almost inseparable from each other, "skills are embedded in abilities" (Ozsváth 2004) in kinetic actions. Motor learning can be defined as "Motor learning is a series of processes, through practice or experience, that lead to relatively permanent changes in the behaviour requiring the skill." (Schmidt 1996). Movement activities are, of course, at the heart of the motor learning process. By motor action, Báthori (1985) refers to a complex cognitive-motor activity involving meaning, consciously directed towards a specific goal. This is a much more complex concept for defining movement than simply the external manifestation of an activity. It is a conscious, planned instruction, as well as a pedagogical and didactic process. The domestic theory and methodology of movement learning is unified in the 3 phases theory developed by Schnabel (1978). According to this paradigm, the first phase of movement learning is the stage of gross coordination, the second is the stage of fine coordination, and the third is the stage of stabilized dynamic stereotypy. However, motor skills cannot develop without the internal feedback provided by motor perception (muscle kinesthesia). Kinesthesia is the perceptual information that is involved in all motor actions and only becomes conscious in later stages of learning. In fact, physical education aims to increase this internal feedback to the highest possible level through practice. In this process, it is the coach's/physical education teacher's task to identify kinaesthetic errors. The external manifestations of these errors are in fact errors in movement structure, i.e. errors in movement technique. Thus, to stabilise a movement technique element, regular progressive practice and continuous external error correction are necessary.

In the theory of physical education, movement is classically divided into two didactic units, which is complemented by the didactic aspect of knowledge transfer (transmission, acquisition) in Király's (2001) model of movement learning. In this model, the first stage is the presentation of a new movement task, followed naturally by the child's initial thinking activity to organise the movement. The understanding of the task depends on several factors. The first is the motor repertoire that the child already has and can use, the second is the information communication techniques (teaching methods) used by the teacher. The task can be called understood when the so-called "ideomotor imagery" is developed. This internal image or movement image is the starting point for motor action learning (Rétsági 2004), which is actually the idea of how to perform a movement correctly, using mainly kinesthetic information.

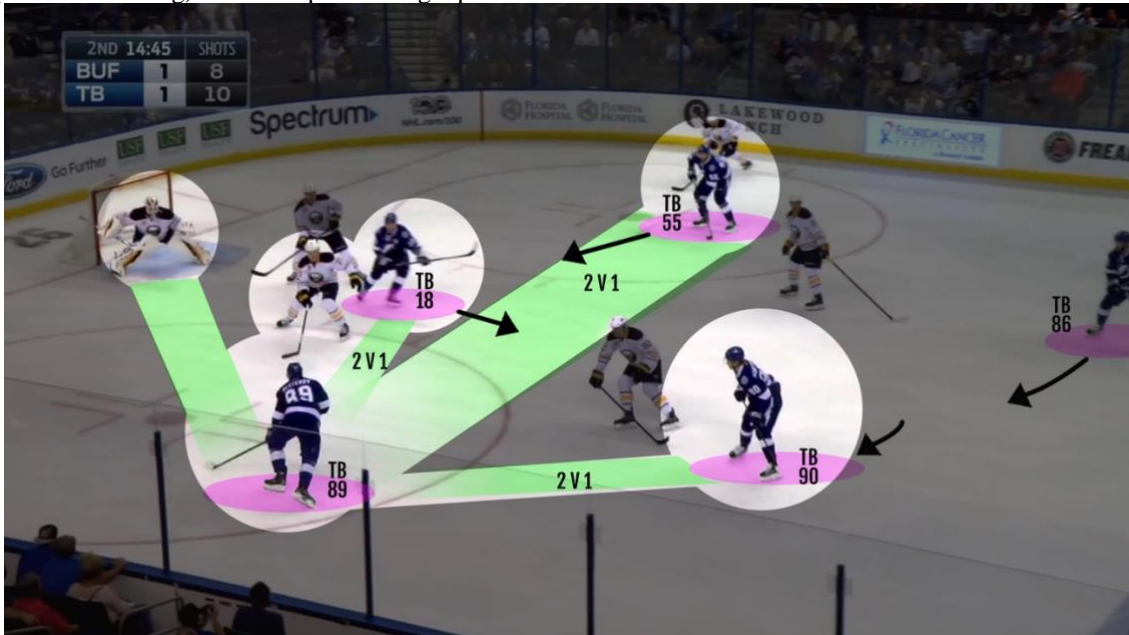
Material and method

The learning and teaching of movement in two different sports is examined. One tactics dominated sport is ice hockey (open skill), the other is a technical sport, gymnastics (closed skill), both sports naturally contain technical and tactical elements. A comparative analysis of the biomechanical dimensions of the two sports movements and their teachability along the learning principles is carried out.

Results

Technical sports can be divided into two groups. Activities based on natural movements and activities with little natural movement. Sports based on natural movements are, according to recent theories, skating, which is the basic movement of ice hockey. During sequential development in the young child, these movements develop spontaneously (running, jumping, throwing, sliding, skiing, etc) and the coach has to "refine" them to achieve the best possible performance. These movements are mainly copied by the child from his parents or other children. The trainer is able to bring about change by simple verbal communication, demonstration, practice and process feedback. Even with a new movement that is not yet known, the child has some ideomotor concept in his/her mind, since it is based on natural movements or their combination. The technical repertoire of ice hockey can be divided into two

blocks, skating and stick handling. Skating is technical, the most optimal and efficient aspect of sliding on the ice, including forward, backward and turns in different directions. At the same time, these movements are not alien to the child, it is just that the medium in which they are performed is different, and the existing movement must adapt to the physical laws of the ice. Another group is the percussion, which requires eye-hand coordination. This group includes puck-handling, dribbling, and various types of shots, all of which can be easily learned (high technical skill is only achieved through much practice). Instrumental movement is also something that the child is exposed to relatively early on outside of sport, whether it is sweeping or drawing sticks in the sand. When looking at the repertoire of movements in sport, it can be concluded that it can be taught well with a constructivist pedagogy, because it is based on natural movements or movements that the child has used in other circumstances to perform almost identical movements, so that he or she is able to use existing knowledge to practice a new movement (for the technical performance of the sport), even without the guidance of a coach. Ice hockey is an open skill sport, so in addition to technical skills, tactical skills are required. Tactics is a cognitive skill, the main pillar of which is the principle of gradualism. Easier less complex tactical instructions are built upon more complex strategies. When a child reaches a sufficient level of maturity (when he is able to work with his peers), the development of tactical thinking begins. Tactics is nothing more than making the best possible decision under pressure, choosing the right move from the technical repertoire and then executing it. The feedback that we have made the right choice is immediate as the game either goes on (of course there may have been a better decision) or stalls. If the game stops (or the team loses the game piece), the player is immediately informed of what not to do next time in a similar situation, thus creating a self-regulatory learning in the relationship of decision making. As an athlete matures, he or she is able to see and learn more complex combinations based on simple tactical formulas. He can also apply the simple forcing (pass - back pass) game (after a sufficient amount of practice) when the field is full. This fact also shows the athlete's ability to create from his prior simple tactical knowledge (two-man training) more complex strategic procedures.



1. Offensive Tactics for Scoring (based on triangle)

<https://www.hockey-intelligence.com/shop/p/offensive-concepts-10pack>

Gymnastics is very different from hockey in several ways. The movement material of gymnastics contains very few basic movements and is a closed skill activity, which means that the athlete is not influenced in the execution of his exercise, always demonstrating the same thing (as he practiced in training) and following the technical elements in exactly the same order. Two statements follow from this, firstly the role of tactics in the sport of gymnastics is negligible, and secondly the sport movements cannot be based - or can only be based to a small extent - on what has been learned during sequential development. A significant part of the movement material of gymnastics is dominated by balancing on the arms, rotations around the longitudinal and latitudinal axis. Movement around the axes (especially the latitudinal axis) is considered by the human nervous system to be unnatural movement. This is a major problem when learning to move, as the child will resist the turn because he or she cannot imagine what will happen during the movement, and may even be afraid. It can be concluded that there is no prior knowledge to develop the ideomotor image in this sport, it takes a few attempts to make the child aware of what he/she is doing and where he/she is positioned in space. The coach provides the feedback to the athlete during this period of repetition, failure does not provide clear feedback to the athlete on what needs to be improved in the movement.



2. Simone Biles: back handspring – full in-full out.

<https://www.ispo.com/en/people/gymnast-simone-biles-these-6-reasons-make-her-role-model>

The two sports are therefore not only different in nature, but also in the didactic possibilities of teaching movement. Ice hockey is a fast and complex team sport, requiring two technical skills (skating and stick handling), but neither of these is as complex a movement as the movement of gymnastics in its own unnatural way. The sport of ice hockey is dominated by tactical thinking and its speed, and therefore its teaching and the way it is taught is very different from a closed skill sport where the role of tactics is negligible.

Summary:

In an open-skill sport, where tactics and technique are both present, and most of the movements are based on natural movements or the child has done similar activities before, all four methods may be appropriate choices. A constructivist approach is particularly good for developing tactical thinking, the child is able to learn independently and individually, and is able to construct new formulas from existing knowledge, thus taking his/her strategic repertoire to a higher level. However, in a closed-skill sport such as gymnastics, which involves few basic movements, the constructivist approach is not the most effective. For teaching such complex, unnatural movements, the other three approaches (knowledge transfer, demonstration and action) may be more effective didactical methods.

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