

# Kinesiology and Sustainable Future

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## Abstract

*According to a number of definitions (Findak, 1995; Klavora, 2008; Momirović, 1969; Mraković, 1971, 1992, 1997), Kinesiology as a science “studies the effectiveness of human movements, the controlled process of exercise, its principles and consequences for the human body in the broadest sense” (Prskalo & Sporiš, 2016, p. 12), and attempts to fulfil its futuristic role in securing the future of humankind, especially for its most sensitive and vulnerable members. This role is realized through all its applied areas and branches, and especially through kinesiology education, which is the only one that includes the entire population within the compulsory school subject Physical and Health Education. With respect to the already accepted values of physical and health education: biological, economic, health, cultural and pedagogical (Findak, 1999), the importance of changing the name Physical and Health Education to Kinesiology Education is emphasized (Findak, 2014). The value of kinesiology education has been confirmed in achieving many anthropological and educational tasks, and has even become the foundation of different virtues, including religion, which may be defined as a subjective state of mind, a certain lifestyle and consistency in faith (Enciklopedijski teološki rječnik, 2009). Prskalo (2018) points out the issues of sustainable development contained in the Millennium Declaration of the United Nations, with the goals attainable by 2015 and the ones applicable today (Državni zavod za statistiku et al., 2006; Pavić-Rogošić, 2016), and refers to the improvement of living conditions at a global level. All of the above-mentioned issues correlate with the issues dealt with by kinesiology and all its applied fields.*

**Key words:** *kinesiology; kinesiology education; sustainable development; students.*

## Introduction

In his life, every man has had to wonder about his personal future, but also very often he has wondered about the future of his family, his people, society and civilization. And like it or not, in principle, he has looked at that future with optimism, at the same

time relying on the constant of the positive. However, history has confirmed and continues to confirm the only constant in people's lives - changing living conditions (Findak, 2016). A look at this uncertain, and above all, changing future, necessarily becomes a central object of interest, and therefore different methodology is applied in the attempt to predict the trend of these changes and determine their regularity. Kinesiology, as a science which, based on a number of definitions (Findak, 1995; Klavara, 2008; Momirović, 1969; Mraković, 1971, 1992, 1997), "studies the effectiveness of human movements, the controlled process of exercise, its principles, and its consequences for the human body in the broadest sense" (Prskalo & Sporiš, 2016, p. 12), strives to accomplish its futuristic role in securing the future of humankind, especially for its most sensitive and vulnerable members. This role is actualized through kinesiology education and other applied areas and branches. Apart from the already consensually established values of physical and health education: biological, economic, health, cultural and pedagogical (Findak, 1999), the same author (2014) highlighted the importance of changing the name physical and health education to kinesiology education, which would reflect the attitudes of the fundamental science and profession; however, this change has not happened yet. In addition to the values realized within the school subject, whose name should be kinesiology culture because of its scientific foundations, the value of kinesiology education has been confirmed in accomplishing a series of anthropological and educational tasks, and has even become the basis of different virtues including religion (Prskalo, 2017), which may be defined as a subjective state of mind, a certain lifestyle and consistency in faith (Enciklopedijski teološki rječnik, 2009). Prskalo (2018) points out that the issues of sustainable development contained in the Millennium Declaration of the United Nations, with the goals attainable by 2015 and the ones applicable today (Državni zavod za statistiku et al., 2006; Pavić-Rogošić, 2016), such as world without poverty and hunger, health and well-being, quality education, gender equality, clean water and sanitation, affordable energy from clean sources, dignified work and economic growth, industry, innovation and infrastructure, reducing inequalities, sustainable cities and communities, responsible spending and production, climate protection, preservation of life on Earth, peace, justice and strong institutions, and consolidation of global partnership for sustainable development, are not exclusively related to one scientific area or discipline. On the contrary, these issues belong to the field of kinesiology and all its applied fields.

## **Kinesiology and the Subject of Its Interest**

Although the root of the name of this young scientific discipline implies motion and movement which may, for the reader who literally understands its essence, suggest the movement science (Dally, 1857; Prot, 1997; Renson, 2002), this science is not based solely on the concept, but on methodologically based knowledge (Prskalo & Sporiš, 2016). Mraković (1997) established the goal as the basic criterion for

judging kinesiology activity, setting a strict limit with respect to all other physical activities which form a significantly broader term. The mentioned criteria are health improvement, optimal development and maintaining a high level of human traits, abilities and motor knowledge, preventing the decline of anthropological features and motor knowledge, and maximizing the development of traits and abilities in competitive kinesiology activities. It is clear that in the modern world, when movement has become marginalized and redundant, as will be explained in the next chapters, kinesiology science has much to offer to children and young people, who are the only true future of the nation, society and civilization. Moreover, as today there are virtually no “pure” sciences, it is evident that kinesiology as a young discipline is “doomed” to interdisciplinarity and multidisciplinary as presented by Hoffman (2009), pointing to the need for multidisciplinary, and there certainly is room for a broader view of the multidisciplinary area of kinesiology (Prskalo & Sporiš, 2016). It is this approach that provides an important place for kinesiology, as a fundamental science, and its subdisciplines in contributing to sustainable development (Prskalo, 2018).

## **Modern Living Conditions - Development as the Progress or a Setback**

Overall developmental trends, including scientific progress, contribute to the quality of life. One of its indicators is life expectancy, which has changed significantly, resulting in life expectancy for women increasing from 63.2 in 1953 to 80.5 in 2014 (the difference being 17.3 years). For men, the difference is slightly lower and ranges from 59.1 to 74.6 (the difference being 15.5 years) (Državni zavod za statistiku, 2016). However, people have on a daily basis witnessed the consequences of the so-called progress since the Industrial Revolution, which inevitably contributed to higher levels of pollution and a threat to the population, until the so-called information boom in which manipulation of information and data has become the basis of exploitation, consequently directing all the forces of society towards the prevention of negative effects of the trade of information. The trend of ecological disasters, pollution of drinking water and atmosphere can be observed on a daily basis, so it is justifiable to question whether we are experiencing progress or whether the deceptive quantified experience of progress is actually a setback threatening to destroy civilization or a decent lifestyle in a relatively clean environment. The disproportion between the biotic and the so-called civilizational, or rather, anti-civilizational needs at the expense of the former, including the need for muscular activity, is a serious threat to humanity (Findak & Prskalo, 2003). “Concentration of the population in cities is not a suitable circumstance of a balanced development even from demographic point of view, and it imposes poor conditions on the majority of the population of the Republic of Croatia both from an ecological and kinesiology point of view” (Prskalo & Babin, 2008, p. 32). Such concentration of the population is evident from the data collected during the 2011 census (Buršič, 2013) and the data of the City Office for Strategic

Planning and City Development, according to which 18.44% of the population inhabit the capital (City of Zagreb, 2014). Standards of the growth in body mass and height have changed under the influence of the secular generational trend of growth and external factors, which necessitates continuous monitoring (Čatipović, Miklič, Čabrić, Bobonj, & Žnajder, 1998). The aforementioned acceleration trend needs to be investigated on larger samples of subjects to confirm statistical significance (Cetinić, Vidaković-Samaržija, & Cetinić, 2008), especially since Mraković (1997) associated many postural problems with acceleration accompanied by insufficient muscular development. Insufficiently developed musculature is a characteristic of the early years of development (Kosinac & Prskalo, 2017), so the problem of acceleration at that age should be taken seriously, as the increase in length implies a greater load, for which the musculature responsible for maintaining the posture should be appropriately adjusted.

## **The Global World as a Unique System**

Since there are no “pure” sciences, and instead the results of the human mind inevitably “overflow” and intertwine thus enriching human experience, although they may sometimes even impoverish it through the imposition of anti-values, the world, primarily the community, can also respond to the risks of the anti-values only if it is united. By embracing the value orientation of coexistence, tolerance and humanity in the broadest sense, the world community, as the highest political decision-making body at the planetary level, and beyond, adopted two significant documents - the Millennium Declaration with the goal to ensure the conditions for sustainable development by 2015 and the global goals of sustainable development by 2030, which rest on the Millennium Goals and other acts (Državni zavod za statistiku et al., 2006; Pavić-Rogošić, 2016). The Millennium Goals have sought to combat poverty and hunger, disease, infant and child mortality, make education accessible to all, promote gender equality and global cooperation, and ensure environmental sustainability. The latter still firstly promotes the vision of the world free from poverty, hunger and disease, the quality of education, gender equality, the availability of “clean” energy, dignified work and economic growth, and the protection of the eco-system in its broadest sense. It is clear that in order to achieve these ambitious goals, given the world in which we live and relations and divisions among different groups, there must be a strong international consensus, and from the view of scientific foundation, the only paradigm is that of interdisciplinarity and multidisciplinary, which implies that no science has the monopoly nor the privilege of addressing this issue at the highest scientific level, since neither this right nor obligation is related to one nation or state, at the highest administrative level. Analysing the potential power of kinesiology science at the opening of the 2017 OMEP World Assembly, Prskalo (2018) highlighted the particular impact on the global goal of “health and well-being”, the 4th goal “quality education” and the 8th goal “dignified work and economic growth” by comparing them with Findak’s (1999) emphasis on the economic, biological, health, cultural and

pedagogical values of kinesiology culture. Emphasizing a more significant impact on achieving individual goals certainly does not negate the impact on the others.

## **The Role of Applied Kinesiology Areas in Securing a Sustainable Future**

When the term future of a nation, society and civilization is mentioned, everyone immediately thinks of children and young people, and the popular saying “the young shall inherit the earth” is realized in its entirety here. Securing the future clearly cannot be achieved without the influence of the “most significant” factor. That is, although we judge our past on the basis of archaeological artefacts and findings, works of art and both material and written sources, we admire ancient civilizations based on their impressive buildings, etc., it must be clear to everyone that a child is the only true future of every nation, society and civilization. That future should primarily accept values as the basis of educational and any other institutional and non-institutional construction, because maturation without value orientation that is connected to tradition, culture, religion, humanism, altruism and other general civilizational values is like a body without soul. The above-mentioned clearly outlines the objective risks associated with lifestyle changes that can already be observed and recorded, especially in their most drastic form, the most common cause of mortality - cardiovascular diseases (Buršić, 2013). Since movement is the only prevention and cure for the onset of heart diseases, it is clear that the future of health as the basis of the overall progress lies in kinesiology activity, be it education, recreation, sports or kinesitherapy. The increasing mismatch between personal abilities and traits, as well as the increasing and more demanding challenges in the psychological, intellectual and emotional spheres, result in frustration among young people, which is often one of the causes of increasing percentage of addictions. Therefore, persistence on a completely wrong model and style of living, from the kinesiology standpoint, is surprising (Findak & Prskalo, 2004). In addition to this important assumption regarding the future of civilization, it has to be emphasized that when it comes to different areas of applied kinesiology, in the scientific sense of the present system of science, organized as scientific branches, it can be argued that there are few activities that “can affect such a large number of characteristics, traits and abilities as can professionally guided physical and health education, training or sports and recreational exercise” (Findak, 2016, p. 19; Findak, Mraković, & Metikoš, 1995). The unnatural and inappropriate way of life, expressed through insufficient muscular activity, as well as the inappropriate state of their health, is most effectively counteracted through proper teaching of kinesiology culture, which is also a prerequisite and the best way to form environmental awareness (Findak & Prskalo, 2004). The survival and development of man as the creator of positive values and material goods is conditioned by his motor activity and movement. The consequences of insufficient movement can be mitigated and compensated by appropriate kinesiology programmes. Research to date shows that regular physical

activity has a positive impact on creating a healthy lifestyle. Physical exercise creates balance in many physiological, regulatory and functional mechanisms (Badrić & Barić, 2006).

It is evident that a healthy and positive lifestyle, directed towards the right values and coordinated, secures the entire future, primarily of the individual, the family, nation, society and the global community. The kinesiology profession based on kinesiology as the fundamental science has a great potential in ensuring positive values, and its comparative advantages must be considered by every respectable society. Kinesiology education, which is compulsory and comprehensive, is the precondition for the inclusion of children, students and young people in other kinesiology areas. "The foundation of kinesiology education rests on the achievements of the fundamental science of its applied discipline, and its power to influence the development of Croatian society and on the possibilities of influencing health, the systematic development of anthropological features in the broadest sense, the acquisition of kinesiology knowledge and optimized improvement of the level of motor achievement" (Prskalo & Babin, 2016, p. 38). It is considered that such a starting point should be a basis for reforms of the education system, primarily because of the emphasized compensatory role of this subject in relation to physical inactivity (Findak, 2014), and the opportunity it provides in forming a complete personality. The same author emphasizes the importance of changing the name of this subject into kinesiology culture which would reflect the attitudes of the fundamental science and profession; however, this change has not happened thus far. In addition to the values realized through the school subject, whose name should be kinesiology education because of its scientific foundations, the value of kinesiology education has been confirmed in accomplishing a series of anthropological and educational tasks, and has even become the basis of different virtues, including religion (Prskalo, 2017), defined as a subjective state of mind, specific lifestyle and consistency in faith (Enciklopedijski teološki rječnik, 2009).

## **The Culture of Free Time and Kinesiology Activities**

Hyper-industrialization dating back to the beginning of the 20th century has given way to hyper-computerization (Prskalo, 2005), and Dumazedier's (1967) functions of free time - relaxation, entertainment and leisure are becoming more and more relevant in this time of computerization, when work can also be done while travelling by public transport, thus making free time virtually a non-existent category. There is a paradox, namely, although manual labour has given way to machines and robots, the working population has become ever more burdened, while the unemployed are happy if they find a job at all. People with lower levels of education used to have more demanding jobs and less free time (Mišigoj-Duraković, Heimer, Matković, Ružić, & Prskalo, 2000). With the advent of advanced technologies, new problems related to free time have also emerged. The issue of free time is no longer a marginal one, it is a phenomenon that is present in everyday life. Free time is considered to be important for everyone today

and it is seen as one of the main segments of the culture of living, but it is also closely associated with all the problems related to work, family and politics. Unfortunately, today it can be concluded that one cannot organise one's leisure time on his/her own, and that global communication services apply aggressive approach towards their consumers, bombarding them with irrelevant information thus leading them into a passive state and incapacitating them from independently creating their own free time (Badrić, Prskalo, & Matijević, 2015). One of the primary tasks of kinesiology education is to form a habit of daily exercise for students, that is, a kind of healthy dependence on physical activity in general, and especially on kinesiology activities. Unfortunately, nowadays free time of children and young people is increasingly filled with activities involving minimal muscular effort (Prskalo, 2015).

Already during their primary education, students show a preference for kinesiology activities. However, in school, fewer students are involved in extracurricular activities compared to out-of-school activities, which in itself confirms school's unwillingness to meet children's interests and needs (Prskalo, 2007). Based on the above-mentioned, it is clear that the emphasized biotic need for movement with little effort and goodwill of all the participants in the educational process can transform this need into a lasting value and habit of daily exercise. Every young man as an individual has the opportunity to choose the activities which will contribute to satisfying his interests and needs. In an interaction with other individuals and groups, children and young people experience an increase in self-confidence, and thus become more deeply aware of the world outside themselves, and naturally, the world around them and their immediate social environment. The key issue in planning educational activities is the development of the culture of free time and active participation and action amongst numerous possibilities and incentives. Educational activity begins in the family, where the process of primary socialization begins and where the first spontaneous educational processes take place and value systems are acquired (Badrić & Prskalo, 2011).

## **Conclusion**

Kinesiology, as an interdisciplinary and multidisciplinary science, the efficacy of human movement and a legitimate influence on man in the broadest sense of the word in its epicentre, seeks to fulfil its futuristic role in securing the future of humanity, primarily for its most sensitive and vulnerable members. This role is achieved through all of its applied fields or branches, and in particular through kinesiology education, which alone includes all of the population within the compulsory school subject physical and health education throughout every individual's compulsory education. With the already consensually accepted values of physical and health culture, emphasis is placed on the importance and the need to change the name into kinesiology culture, which would then reflect the views of the fundamental science and profession, but to date this change has not occurred. In addition to the values realized through the school subject, whose name should be kinesiology culture because of its scientific

foundations, the value of kinesiology education has been confirmed in accomplishing a series of anthropological and educational tasks, and has even become the basis of different virtues, including religion. The sustainable development issues contained in the United Nations Millennium Declaration with the goals achievable by 2015 and goals currently applicable by 2039 are not exclusively linked to one scientific field and one discipline, on the contrary, this is the issue belonging to kinesiology and all its applied fields.

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# Kineziologija i održiva budućnost

## Sažetak

Kineziologija kao znanost koja na temelju niza definicija (Findak, 1995; Klavora, 2008; Momirović, 1969; Mraković, 1971, 1992, 1997) „proučava učinkovitost ljudskih pokreta, upravljani proces vježbanja, njegove zakonitosti te posljedice na ljudski organizam u najširem smislu” (Prskalo i Sporiš, 2016, str. 12.) nastoji ostvariti svoju futurističku ulogu u osiguranju budućnosti čovječanstva, i to prije svega u svom najosjetljivijem i najranjivijem dijelu. Ta uloga ostvaruje se putem svih njezinih primijenjenih područja odnosno grane, a posebice putem kineziološke edukacije koja jedina podrazumijeva potpuni obuhvat populacije obveznim nastavnim predmetom Tjelesna i zdravstvena kultura tijekom cijelog trajanja obveznog obrazovanja. Uz već uvriježeno konsenzualno prihvaćene vrijednosti tjelesne i zdravstvene kulture: biološke, ekonomske, zdravstvene, kulturne i pedagoške (Findak, 1999) isti autor (2014) ističe važnost promjene imena u kineziološka kultura koji bi odražavao stavove supstratne znanosti i struke, ali se do danas ta promjena nije dogodila. Uz te vrijednosti koje ostvaruje putem nastavnog predmeta koji po svim znanstvenim utemeljenjima treba imati naziv kineziološka kultura, kineziološka edukacija ima niz potvrđenih vrijednosti u ostvarenju niza antropoloških, obrazovnih i odgojnih zadaća, pa postaje čak i uporište različitih kreposti uključujući i religioznost (Prskalo, 2017), definiranu kao subjektivno duševno stanje, određen životni stil i dosljednost u vjeri (Enciklopedijski teološki rječnik, 2009). Prskalo (2018) ističe kako problematika održivog razvoja, sadržana u Milenijskoj deklaraciji Ujedinjenih naroda s ciljevima ostvarivim do 2015. godine te današnjem trenutku primjenjivim ciljevima (Državni zavod za statistiku i sur., 2006; Pavić-Rogošić, 2016), svijet bez siromaštva i gladi, zdravlje i blagostanje, kvalitetno obrazovanje, spolna ravnopravnost, čista voda i sanitarni uvjeti, pristupačna energija iz čistih izvora, dostojanstven rad i ekonomski rast, industrija, inovacije i infrastruktura, smanjenje nejednakosti, održivi gradovi i zajednice, odgovorna potrošnja i proizvodnja, zaštita klime, očuvanje života na zemlji, mir, pravda i snažne institucije te učvrstiti globalno partnerstvo za održivi razvoj, nije isključivo povezana s jednim znanstvenim područjem i jednom disciplinom. Naprotiv, ta problematika je problematika kineziologije i svih njenih primijenjenih područja.

**Ključne riječi:** kineziologija; kineziološka edukacija; održivi razvoj; učenici.