

THEORETICAL MODEL OF CLASSIFICATION OF MOTOR KNOWLEDGE

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Abstract

The level of human motor knowledge is the result of both quantity and quality of conditioning processes during one's life. All motor knowledge can be divided into the so-called biotic, general motor knowledge, professional or specific kinesiological motor knowledge. These types of knowledge stand in correlation, they have specific value within the levels of hierarchy, they function in accordance to the developmental age, and they have unequal transfer.

Keywords: *levels of motor knowledge, types of motor knowledge, structure model of motor knowledge*

1. The Expression "Motor Knowledge" and Its Definition

The expression motor knowledge implies the established "algorithms of instructions" placed in appropriate motor zones of the central nervous system - these algorithms enable the realization of purposeful motor structures of movements. "The algorithm of instructions" is responsible for activating and deactivating different muscle groups regarding chronology, intensity and duration of work in question, which results in performing a specific motor operation.

According to this model, all purposeful motor movements are regarded as motor information: the better the establishment of the "algorithms of directions", i.e. the motor programmes, the better the manifestation of these pieces of information. Clearly, motor reactions of a particular person will be less appropriate if performed without any programme or when the establishment of this programme is in the initial phase.

1.1. Acquisition of Motor Knowledge

The efficiency in solving different, not only kinesiological, problems that appear in one's life, depends to a large extent on both quantity and quality of motor programmes, especially those that a person is facing in everyday life and in the so-called urgent situations. Still, the only way to create these motor programmes is to learn the necessary structures of movement by repeating actual motor operations, where the number of repetitions depends on the complexity of the movement structure and, of course, on the constellation of the level of abilities and features of the person in question, as well as on the requirements of the expected programme level. It is obvious that efficient motor programmes will be acquired faster if the level of features and abilities is higher, and if the acquisition methods are more appropriate for the goal of the activity and for psycho-physical condition of a particular person. If the level of features and abilities is low, the person will not be able to learn many useful pieces of motor information or he/she will not be able to implement the

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motor programmes that he/she has already learned, because of the decrease of the level of these features and abilities. This can happen under the influence of long illnesses or during the deterioration processes. The efficiency of motor reactions is, therefore, defined by the relationship between two levels: the level of motor programmes and the level of features and abilities. Therefore, the purpose of the process of exercise is to increase both the level of features and abilities, and the level of motor programmes - this does not imply that every process of exercise will lead to the change of the level of either of them; if the primary goal is to form the motor programmes, it does not necessarily mean that these features and abilities will be altered, or vice versa.

1.2. Levels of Motor Programmes

Obviously, motor programmes can appear on different levels of development within the central nervous system. One of the possible brief taxonomies of the entire range of possible levels of motor programmes can contain the following levels of their acquisition:

1.2.1. The first level reflects the state in which different pieces of information have not yet reached the level at which they can be said to be functioning as the programme, which means that the person is not yet able to perform a particular movement although he can have the idea of how this movement can be performed. For example, one can have the idea of swimming, using the so-called dolphin butterfly stroke, or one can have the idea about how to perform a somersault, how one can overcome natural and artificial obstacles within the system of polygons, etc., but one is not able to perform these movements, because on this level one does not possess any motor information that could operate on the level of a programme. On the contrary, on this level one possesses the symbolic information and not the motor one.

1.2.2. The second level represents the state in which the motor information is formed in its rudimentary form, which makes it possible for a particular structure of movement to be performed, but in such a way in which the movements are rough and clumsy, i.e. they differ to a significant extent from the movement structures that have been performed in an ideal way. On this level, even the smallest hindrance makes it impossible to perform the particular movement. In more complex movements some attempts are successful and some are not, so that the movement is burdened with superfluous and unnecessary movements of differ-

ent parts of the body. Therefore is the expenditure of energy, and very often time, on this level significantly higher than it is the case when the structure of movement is completely acquired. For example, only a few roughly performed movements when swimming (dolphin butterfly stroke) can lead to such a fatigue that one cannot go on with the activity. The same thing will happen when, for example, climbing a rope, if the knowledge at this level corresponds to the average constellation of features and abilities.

1.2.3. The third level reflects the state in which some segments are performed correctly, while the other deviate significantly from the ideal movement trajectories. On this level, the movements are being performed with a significantly higher level of certainty and a significant economic energy and time expenditure. On this level, the role of an expert is very important - this expert is qualified to teach the particular type of movement - only such a person is able to notice the incorrect performance of a certain movement and to apply the proceedings necessary for its further improvement. Otherwise, the mistakes can take deep root and they can make it impossible to achieve the complete efficiency of particular movements, because the individual who is trying to perform these movements cannot see the incorrectly performed segments of movements by himself.

1.2.4. The fourth level reflects the state in which particular structures of movements are being performed correctly, but there are some insignificant deviations from ideal trajectories. On this programme level, movement structures are so well performed that only insignificant deviations can be observed, and this can be done only by accomplished experts in this field, i.e. by people that have an extensive experience over the years. This implies that these experts are the only ones who can work on the further improvement of the pieces of motor information that have reached this level. Different types of motor knowledge acquired at this level are equivalent to the pedagogical expression "skills". This level enables the performance of movement structures that, in the kinesiological practice, are treated as highly automatized motor activities, which are automatically developed as a response to a group of particular stimulations. Still, the actual movement is not complete yet. This level of knowledge would be graded with "B" in a classical system of evaluation.

1.2.5. The fifth level reflects the state in which the movement is performed either without any or only with insignificant deviations from ideal trajectories that can be attributed to the individual performing

style applied to a certain movement structure. On this level, the movement is performed automatically, as a response to the given group of stimulations. All existing potential is being put to maximum use. On this level, as well as on the previous one, but to a significantly lower extent, motor knowledge can be used as the contents of exercising, leading to the development of features and abilities that create the basis of this knowledge, because of their capacity to manifest certain features and abilities during the performance of these motor activities. It is because of these facts that the process of acquiring different types of motor knowledge differs on the second and on the third level from the exercising process. Should the knowledge on these levels be used as the contents for the development of features and abilities (i.e. in the system of supraliminal loads), the programmes acquired on this level would have many mistakes, which will appear to be the limiting factor in further improvement of programmes. Motor knowledge on this fifth level is equivalent to the pedagogical expression "habit". In the field of the applied kinesiology, this knowledge carries the name of dynamic movement stereotypes, whereas in scientific discussions it is often referred to as the so-called hard kinetic programmes in distinction from the flexible programmes that contain both the basic hard programme and the larger number of variable sub-programmes, responsible for solving non-standard situation problems.

2. Classification of Motor Knowledge

To be able to follow the problems of this text more easily, it is necessary to define, if only broadly, the expressions that are most frequently used in it. The expression "motor knowledge" is systematically used in the text. This expression is equivalent to the expression "motor programme". When one of these expressions is used, we imply the knowledge that is used in order to accomplish a particular kinesiological goal, i.e. to develop particular features and abilities and/or to achieve the results in a certain kinesiological activity.

The expression "motor activities", as well as the expression "kinesiological activities", i.e. "motor or kinesiological contents", are also equivalent to the expression "motor knowledge" or "motor programme" in their broadest meaning whereas for a particular individual these activities or contents represent his potential or operational knowledge.

The expression "motor reaction" is also used in the text. This expression implies the manifestation

of motor knowledge acquisition. Therefore, the expressions like motor or kinesiological reactions, movements, activities, programmes, stereotypes, habits, skills, etc. can be reduced to the expression "motor knowledge".

Human motor knowledge can be divided into two basic groups: biotic and social knowledge. Biotic motor knowledge is the genetically conditioned one of an individual and it has a double function: (1) to acquire and improve that motor knowledge which is necessary for accomplishing everyday motor tasks during one's life, and (2) to provide the optimal development of the largest number of anthropological features of people, specially morphological, motor and functional characteristics. Social motor knowledge, on the other hand, arose as: (1) knowledge necessary to accomplish a particular profession, (2) knowledge necessary for sports activities, and (3) knowledge that is primarily directly necessary for developing different morphological, motor and functional features.

2.1. Biotic Motor Knowledge

We should consider biotic motor knowledge as basic or general knowledge. It is the imperative factor in the development of man during phylogenesis and ontogenesis. Long throughout the history of mankind, occupying even the longest period of evolution of man, these kinds of knowledge have been the only types of knowledge, and therefore sufficient for the survival and for the development of mankind. In fact, we are talking about the kinds of motor knowledge that made it possible for the man to orient himself in space (on different types of surface, different distances, tilts and directions), to overcome the obstacles (of different sizes and shapes), to overcome the resistance (passive or active) and to handle the objects that differ in size and shape. All these types of knowledge are usually called basic or natural forms of movement, and being genetically conditioned, they can also be called general existential motor knowledge. These types of knowledge are important not only for the whole mankind, but they are also crucial for the development of every individual during ontogenesis. Namely, the man today also has a significantly expressed need for improving the above mentioned types of knowledge, beginning with his birth and throughout his growth and development. Complexity of these types of knowledge is significantly high because it is necessary to form all features and abilities important for the development and creation of personality. The necessity of forming the basic motor programmes is so strongly expressed that any hindrance of its manifestation can have many negative consequences in the process of cre-

ating the personality - these consequences can be seen not only at the level to which the features and abilities, as well as the mentioned types of knowledge have been developed, but also in their relationships. In other words, basic motor knowledge is, according to everything that has been said, the important prerequisite or the basis of the development and of the efficient integration of the individual into working conditions and life.

Because of everything that has been said we can draw a conclusion that we should pay much more attention to this group of motor knowledge during childhood and youth, where the role of parents and all institutions that conduct educational programmes appears to be crucial. Kinesiologists have a specially important place in the acquisition of motor knowledge, both from the scientific research point of view, as well as from the point of view of the scientific foundation of practical work, with the objective to meet the primary biotic needs.

2.2. Social Motor Knowledge

In distinction from biotic motor knowledge that is the immanent need of every man from the past, the present and the future, other numerous types of motor knowledge have appeared during the development of human society. This type of knowledge is primarily used to increase the efficiency in accomplishing different human activities and it is the result of the need to improve the knowledge necessary for accomplishing these activities. Any new activity required the acquisition and improvement of motor knowledge possessed by those people who were in for this activity. Motor knowledge, whose application value was disappearing, i.e. whose original purpose disappeared in a particular time, that motor knowledge gradually vanished from the life of an individual. We are, in fact, talking about knowledge that is mostly connected to appearing and disappearing of different professions or to changes that appear because of the improvement of means of production, altogether leading to disappearing of the old knowledge and appearing of the new one. During the development of human society some of these types of knowledge have lost their primary function, for example, the knowledge necessary for the survival gradually transformed into the knowledge necessary for fun, sport or other unprofessional purposes.

2.2.1. Professional Non-Kinesiological Motor Knowledge

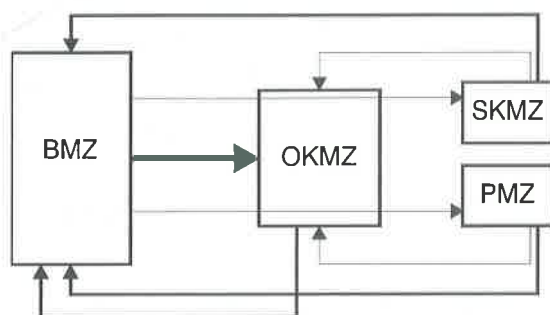
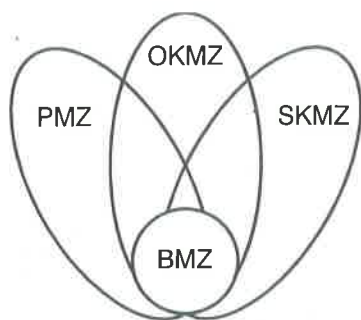
Professional, non-kinesiological motor knowledge is acquired in the childhood if it is suitable for games

and/or development of features and abilities, whereas the other types of motor knowledge are being acquired in later phases of maturation process. As human society developed, these types of knowledge appeared later and later in the life of most people, especially in some professions. It is possible that the need for acquiring professional motor knowledge has already appeared in childhood, during the period of development, which negatively affected, the general psycho-physical development, especially in people working under specifically difficult conditions.

It is natural that the acquisition of professional motor knowledge relies on biotic motor knowledge, which is, as it has already been emphasized, of the utmost importance for the optimal development of human features and abilities in childhood and in youth. These features and abilities represent an important basis for the range and quality of levels of many types of professional and kinesiological motor knowledge.

On the other hand, professional motor knowledge must permanently rely more and more on general motor knowledge when a particular profession implies less muscular efforts. Therefore, professional motor knowledge in many occupations does not suffice for the optimal functioning of the human organism, which has negative consequences for the individual and his profession, despite even the highest level of motor knowledge.

Numerous authors have suggested different classification systems of human work, and consequently different classification systems of motor knowledge. Without going into further detail, because it is not the objective of this paper, human work, and together with it the motor knowledge needed in this work, can be classified: (1) according to energy consumption (from hard to easy physical labour, with and without the help of mechanisation), (2) according to physiological indicators of work intensity (from easy, medium hard to exhausting work), (3) according to duration (from short, medium to long-lasting work), (4) according to continuity (from continuous ones, to smaller and larger oscillations in strain and breaks during work), etc. One of the usual divisions of work, necessary for kinesiological recreation, is the following one: dynamic physical labour, static, sensory and intellectual strains. Within these groups there are many sub-groups and individual professions that are further divided into hundreds of work activities that require a specific motor knowledge. The description of workplace is one of the fundamental indicators on basis of which kinesiological programmes are being formed to prevent any possible consequences of monoto-



BMK - basic motor knowledge

GKMK - general kinesiological motor knowledge

SKMK - specific kinesiological motor knowledge

PMK - professional motor knowledge

nous or insufficient muscular efforts, to set aside the early fatigue, to prevent accidents, to improve work and human health.

2.2.2. Sports-Kinesiological Motor Knowledge

Together with the development of different profession-related activities, different sports activities appeared, and required the creation and improvement of specific motor knowledge needed for achieving better results in sport.

Many kinds of profession-related and sports-related motor knowledge are very similar to each other according to their complexity, and they require a longer process of acquisition - very often they do not differ from one another, not even in their outward manifestation, specially when we talk about professions that require a high level, especially of motor and functional abilities (as for example, ballet in comparison to the rhythmic sports gymnastics...). According to many of its features elite sports activity (not the recreational one) today belongs to the group of professions.

Still, there are certain differences between kinesiological (sports-related and sports-recreational)

and non-kinesiological (the so-called professional) motor knowledge. These types of knowledge differ, mostly, in the goal that has to be accomplished by using a particular group of different types of motor knowledge. Kinesiological, sports-related motor knowledge is primarily needed to achieve a result in a certain sports event - for this purpose, a specific system of material, personnel, organisational and other conditions is being developed according to the rules that have been accurately defined in advance. It is because of this reason that such motor knowledge is sometimes called conventional kinesiological motor knowledge.

On the other hand, professional, non-kinesiological motor knowledge is used primarily in order to produce a certain material - a cultural product, in which the process of using motor knowledge is not needed for competitive purposes, but primarily for existential ones.

The need to create special groups of motor knowledge arises during the development of kinesiological and professional motor knowledge. The purpose of this knowledge are development, improvement and maintenance of those basic anthropological features that provide a higher level of exploitation of motor knowledge, either for kinesiological or for professional purposes. This group of attainments has in the beginning been formed as experience-based cognition of the influence of particular profession-related and sports-related motor knowledge on the development of anthropological dimensions. The cognition of the influence of some athletic skills, like jumping, sprinting and throwing, has been used, for example, in the process of developing explosive strength for all professional and other activities in which this feature represents a parameter that is important for achieving the success. These attainments have gradually developed as the separate system of the so-called general physical preparation or unconventional motor knowledge, which has, in praxis, resulted in a larger number of different types of motor knowledge, whose specification equations gave predominant importance to individual morphological, motor or functional dimensions. If it is necessary, for example, to induce a better mobility of a particular skeleton system, to reduce the subcutaneous fat, to develop the active muscular tissue of some muscular group or to develop balance, aerobic endurance, etc., then it is necessary to use those types of motor knowledge that influence the development of these features to the greatest possible extent.

It is not possible to accomplish these or other partial goals by using profession-related or sports-related motor knowledge, because these types of

knowledge are more complex, according to their structure, so that they have smaller influence on individual characteristics.

Experience and scientific attainments confirm that this type of motor knowledge is also much more suitable for the development of those factors that represent the basis for health, which is otherwise not the primary function of professions in the field of sport. Therefore, this type of knowledge has a double function: to develop the features and abilities that are important for motor improvement in a particular profession or sport, when the goal is to achieve the top results (that are accomplished only by very few people) and to influence the development and maintenance of human features that represent the basis of human health.

There are some other sports and occupations that arise from this type of motor knowledge, e.g. aerobics, body building - their goal is the maximum development of particular human abilities.

Keeping in mind the civilization trends that free the individual from the necessity of muscular work, and, on the other hand, keeping in mind that many professions, especially in sport, require a special constellation of predispositions (mostly genetically determined), this type of knowledge gains importance for a large number of people, because it adapts itself to every individual, so that the number of participants that take an active part in these sports, is rising. So has, for example, aerobics appeared to be the system of motor knowledge whose primary purpose is to develop endurance, strength and flexibility, to gradually establish the rules that make it possible for the best athletes to take part in competitions.

Kinesiological specific motor knowledge has developed parallel to the development of human society. The number of types of this knowledge increased with time - the same happened to professional knowledge. In any new sport, as well as any new profession, it was necessary to learn and to improve specific motor knowledge that helped to achieve good results in a particular activity. Of course, the bigger the differences between particular activities in movement structures, and the bigger the range and complexity of motor knowledge, the higher the need to find the individuals who would, according to their features and abilities, have more chance to acquire specific structures of motor knowledge and to achieve top results in a particular activity.

Although the positive transfer of specific kinesiological motor knowledge on the development and maintenance

of many human functions, including health (if sport is considered to be the recreational activity) is significantly bigger than the transfer of many types of professional knowledge (many of which are being counterindicated to health and optimal functioning of the organism), these types of knowledge have a limited character when applied to an individual. This limitation increases together with the specific quality of motor knowledge. Therefore, this type of motor knowledge must be constantly supplemented with acquisition, improvement and application of general motor knowledge, that, on one hand, lowers or annuls the negative influence of the specific quality of a particular sport, and at the same time, increases the chance of improving basic abilities, features and motor knowledge that are crucial parameters of achievements in a particular sport.

The above mentioned types of knowledge and their relationships can generally be shown as follows:

2.2.2.1. Division of Sports-Related Motor Knowledge According to Biomechanical Features

If we take the biomechanical basis of the entire number of kinesiological activities for dividing specific kinesiological motor knowledge, we can classify this motor knowledge into the following four groups:

- 1) monostructural motor knowledge, that is a dominant feature of activities like athletics, swimming, cycling etc.;
- 2) acyclic motor knowledge, that is the important feature of the so-called contact sports like boxing, wrestling, judo, karate, etc.;
- 3) complex motor knowledge, i.e. cyclic and acyclic, that can be found in sports games like football, basketball, volleyball, handball, etc.;
- 4) "aesthetic" motor knowledge (or knowledge where the aesthetic criterion is the important factor for success) which is found in gymnastics, rhythmic gymnastics, diving, etc.

According to these four features it is possible to classify all known kinesiological activities, keeping in mind that these activities differ according to quality and quantity of the so-called technical elements, that imply specific motor knowledge.

2.2.2.2. Atypical Kinesiological Activities

It is possible that a particular kinesiological activity does not belong, according to its features, to just one group, but to more of them. Still, these

features are not crucial for the given classification, i.e. for classifying typical kinesiological activities. The problem appears when trying to classify those sports where the success does not exclusively depend on an athlete, on his features, abilities and motor knowledge, but where it significantly depends on outward factors (like in motor racing, car racing, rifle shooting, horse racing, etc.). These activities are, in fact, atypical kinesiological activities, and they are often more similar to the so-called professional than to the specific kinesiological activities.

Therefore, we shall regard as specific kinesiological motor knowledge the knowledge that requires significant changes of morphological, motor and functional abilities during its improvement, because these features represent the basis of the success in kinesiological activities. It is because of this reason that typical kinesiological activities can be used as stimuli for developing the above mentioned human features, which cannot be achieved with atypical kinesiological activities or they can be developed only to an insignificant extent. Besides, many atypical kinesiological activities are utterly inconvenient for application in kinesiological transformation processes. Therefore are these activities not included into the kinesiological system. Furthermore, the success in these activities directly depends more on the development of engineering and technological discoveries, than on the individual, and they help to achieve the economic, rather than kinesiological goals.

2.2.2.3. General Kinesiological Motor Knowledge

General kinesiological motor knowledge comprises those motor structures of movement whose primary role is to develop and improve the basic functional, motor and morphological features of an individual. When realizing this motor knowledge, we can either make individual functional, motor and morphological features and abilities active to the maximum extent or we can stimulate the increase of the active muscular tissue as well as the reduction of the subcutaneous fat. Therefore, the primary application value of this knowledge lies in the possibility to change the above mentioned human features according to the previously defined goals, that can be accurately specified regarding quantity and quality of changes.

Because of these features, this type of knowledge is used: 1) for the development of the basic anthropological features that represent the basis of human health (as far as this goal is concerned, general motor knowledge is the logical continuation of biomechanical motor knowledge and is essen-

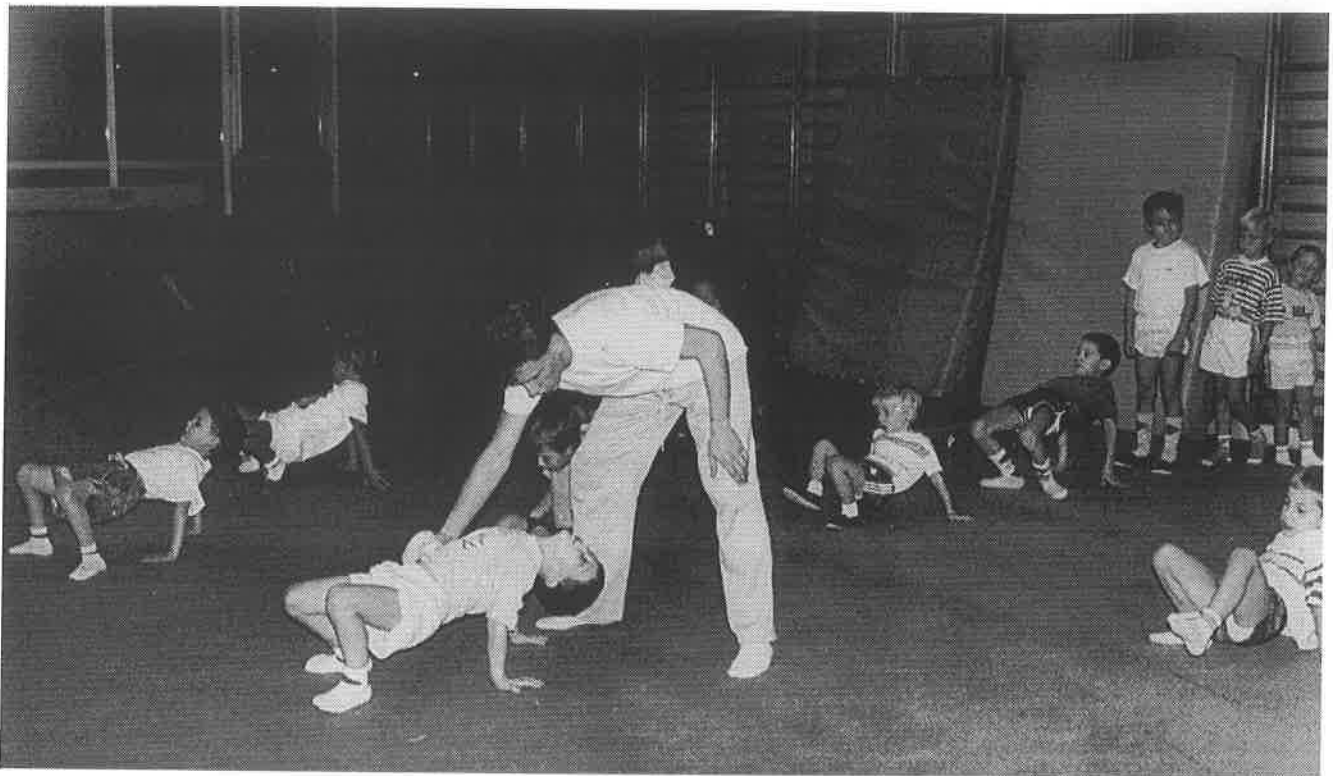
tially the substitute for natural types of movements that have, in the past, kept the human functions on the necessary level throughout the life of an individual, and today, in the period of development of an individual. Because of the importance of the goal, general motor knowledge is fundamental for the development of health of an individual. Every individual should possess this knowledge and create a habit of systematically using this knowledge during his whole life); 2) for the development of particular functional, motor and morphological features that are directly responsible for the successful accomplishment of particular sports and professional activities. This kind of knowledge is consciously applied in sports, mostly in the so-called preparation period when the goal is to develop those basic features that represent the basis of the efficiency within a particular sport. The application of this knowledge is similar in different professions, in which we can influence the elimination of numerous negative consequences of professional work which has not been adapted to human nature.

On the basis of all that has been said, general motor knowledge can be divided into: 1) knowledge necessary for the development of functional abilities, under the type of knowledge necessary for the development of aerobic and anaerobic abilities, 2) knowledge necessary for the development of motor abilities, which implies the knowledge necessary for the development of: co-ordination, balance, speed, accuracy, flexibility, explosive, repetitive, static strength and dynamometric force, and 3) the knowledge necessary for the regulation of morphological features, i.e. the knowledge necessary for the regulation of the active muscular tissue and for the regulation of subcutaneous fat.

2.2.3. The Relationship Between Profession-Related and Sports-Related Motor Knowledge

The basic message of this paper is that the motor programmes that enable the performance of the so-called natural forms of movement, i.e. biotic motor knowledge, are the source, the basis or the nucleus, to which all other types of knowledge are added, and that they can be both kinesiological and non-kinesiological. Of course, the larger these motor programmes, i.e. elementary programmes, are according to their range and level, the faster and easier is the acquisition of any other type of motor knowledge.

As far as general motor knowledge is concerned, it is more general and more necessary, the smaller the range of professional or specific kinesiological motor knowledge, i.e. the lesser the number of the



types of motor knowledge required in a particular profession or sport. At the same time, this knowledge is the basis of higher efficiency of profession-related and sports-related knowledge, because it contains knowledge that has a positive transfer for the development of other types of knowledge. The higher the level of the notion about the development of human abilities and features, and the quicker the technological development, the larger the number of new types of motor knowledge, more suitable and more efficient for the development of particular features and abilities. Therefore is this type of motor knowledge more important for forming the anthropological basis on which specific types of sports- and profession-related motor knowledge can be formed more quickly, and it is important for the health of the largest number of people, regardless of sport or profession, as well as for development in general.

Accordingly, all profession-related and sports-related motor knowledge necessarily relies on biotic knowledge in the first place, but also on general motor knowledge. The relationship between biotic and general motor knowledge should be considered as the continuation of the necessity of movement important for the survival and development of mankind in such a way that general motor knowledge appears as the substitute for biotic motor knowledge, that has today ceased to be the basis

of existence, from the period of maturing till the end of one's life. In other words, general motor knowledge is the product of civilization that enables the efficient improvement of abilities and features when living and working in modern technology conditions. These types of knowledge wouldn't even appear during the development of mankind if the man remained to be tied exclusively to nature. This can be confirmed even today by analysing the life and wars waged by some so-called primitive peoples.

2.2.4. Model of Grouping Different Types of Motor Knowledge

If we try to define the suitable classification model of different types of motor knowledge, then it could be as follows:

All biotic motor knowledge or the so-called natural forms of movement, could be divided according to their utility into groups that enable:

- 1) efficient SPACE covering,

(which includes different forms and kinds of rolling, looping, crawling, walking and running, that help us cover the distances on different kinds of surface, tilts and in different directions);

- 2) efficient surmounting of OBSTACLES,

(which includes different kinds and forms of dragging through a narrow space, climbing, landing, jumping, that help us overcome different kinds of vertical, diagonal and horizontal obstacles without using some technical or other kinds of devices);

3) efficient RESISTANCE overcoming,

(which includes different kinds and forms of pushing, pulling, holding, carrying, that overcome the passive resistance of objects that have different volumes and shapes, and different kinds and forms of individual or group resistance and their combination, that overcome unforeseeable active dynamic forces of people that take part in exercising);

4) efficient OBJECT MANIPULATION,

(which includes different kinds and forms of throwing and catching, targeting and shooting, that enable us to operate simple and complex operations of handling the objects that differ in number, shape and volume, in a particular space and time).

The given groups of biotic motor knowledge appear in different combinations, which means that in the period of growth and development one should make it possible for the children to live in conditions that enable exercising of all kinds and forms of

biotic knowledge. It is the kinesiologists that should pay special attention to these facts when programming the teaching process.

(3) Conclusion

All three groups of problems that are connected to the motor reactions of people are being researched in this paper. One of the possible models of gradation of goal-oriented motor reactions of people is shown in the first part. The second part deals with different terminology specifications that describe different kinds and levels of motor knowledge, and that can, principally, be put under the expression "motor knowledge".

The important part of this paper is connected to the attempt of establishing the model of classification of motor knowledge, from phylogenetic and ontogenetic point of view and from the point of view of purposefulness of motor knowledge, i.e. its application for development-related, profession-related and sport-related purposes. We assume that this paper will have positive effects in creating a better communication among kinesiologists and that it will be a stimulus for further theoretical speculations on problems of motor behaviour of people.

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