

DEVELOPING MOTOR COMPETENCE AND HEALTH-ORIENTED MOTIVATION IN PHYSICAL CULTURE STUDENTS THROUGH INTEGRATED FUNCTIONAL TRAINING

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Abstract

The article examines the pedagogical potential of integrated functional training for developing motor competence and health-oriented motivation among students majoring in Physical Culture. The relevance of the study is determined by the growing contradiction between the social need for physically literate, professionally mobile and health-conscious graduates and the persistence of training models that often separate technical skill acquisition from personal motivation, self-regulation and lifelong physical activity habits. The research is designed as a theoretical and methodological study based on comparative analysis, pedagogical modelling, synthesis of sport science literature, and the construction of an applied training framework suitable for higher education. The proposed framework combines movement quality, strength endurance, coordination, balance, mobility, aerobic load, reflective self-assessment and motivational support within one didactic system. The results show that integrated functional training can be interpreted not merely as a set of exercises but as a pedagogical technology that links bodily performance, cognitive understanding and value-based attitude toward health. The article defines criteria for assessing motor competence, proposes stages for implementing the model, and explains how feedback, individualization and reflective tasks may increase students' responsibility for their own physical development. The discussion argues that the effectiveness of physical culture education depends not only on load volume or sport specialization but also on the meaningful organization of training content, the psychological climate of classes and the continuity between academic lessons and independent activity. The conclusion emphasizes that functional training, when methodically structured, can strengthen professional readiness, prevent



passive participation and support a sustainable culture of movement among future specialists in physical culture.

Keywords: Physical culture, motor competence, functional training, health-oriented motivation, physical literacy, student development, pedagogical technology, movement quality, lifelong physical activity.

Introduction

Physical culture in higher education should not be reduced to the mechanical accumulation of exercises, normative tests and short-term performance indicators; its deeper purpose is to form a person who understands movement, values health, can regulate physical load, and is able to transfer motor experience into professional and everyday contexts. For students of the Physical Culture direction, this task is especially important because they are not only participants in educational training but also future organizers, instructors, coaches, teachers and promoters of health-oriented activity. The quality of their professional preparation depends on whether they master a broad culture of movement rather than a narrow collection of sport techniques. Modern students live in conditions where sedentary digital routines, uneven daily schedules, stress, fragmented attention and reduced spontaneous physical activity create a persistent challenge for the educational process. In such conditions, the university lesson in physical culture must simultaneously perform several functions: it must improve physical fitness, refine movement coordination, prevent injury, develop self-control, cultivate motivation, and form professional reflection. A purely reproductive model, in which students repeat a standard set of exercises without understanding the purpose of load, the logic of progression or the criteria of movement quality, is insufficient for this task. The key problem is therefore not whether students should train more, but how training should be organized so that it becomes pedagogically meaningful, personally accepted and professionally transferable. Integrated functional training offers one of the most productive solutions to this problem because it combines strength, mobility, coordination, endurance, balance, posture control, agility and core stability in movement patterns that resemble real motor tasks. Unlike isolated approaches that emphasize a single physical quality, integrated functional training allows the teacher to connect different components of fitness within one lesson structure and to adapt tasks to the student's current level. This makes it valuable for the development of motor competence, understood as a complex ability to perform movements effectively, safely and consciously in changing conditions. At the same time, functional training has motivational potential: exercises are varied, measurable, scalable and often connected with visible progress, which helps students experience competence and personal agency. In the context of Physical Culture education, this motivational aspect is not secondary. A student may possess adequate physical capacity but remain dependent on external control, or may pass normative tests without forming a stable



need for independent activity. The formation of health-oriented motivation requires that students understand why they train, how physical activity influences their well-being, and how to design their own developmental trajectory. Therefore, the central scientific idea of the present article is that motor competence and health-oriented motivation should be developed together within a single pedagogical system. The object of the study is the educational process of students majoring in Physical Culture, while the subject is the methodological organization of integrated functional training as a means of developing motor competence and health-oriented motivation. The aim of the article is to substantiate a pedagogical model for the use of integrated functional training in Physical Culture education and to determine its structural, methodological and diagnostic components. To achieve this aim, the article addresses several tasks: to clarify the theoretical meaning of motor competence in the context of physical culture; to define the motivational mechanisms that support sustainable participation in physical activity; to describe the content and stages of integrated functional training; to propose criteria for evaluating students' development; and to explain the expected pedagogical effects of this model. The scientific novelty of the article lies in treating functional training not as a fashionable fitness format but as a structured educational technology that integrates physical, cognitive, reflective and value-based components of student development. The practical significance is that the proposed model can be used in university physical culture classes, sport-pedagogical modules and independent training programs for students who need both professional readiness and a stable health-preserving orientation.

LITERATURE REVIEW

Scientific literature on physical culture, motor learning and health promotion shows that effective physical education must develop more than physical qualities in isolation. The concept of physical literacy, widely discussed in contemporary sport pedagogy, emphasizes the unity of motivation, confidence, physical competence, knowledge and understanding that enables a person to maintain physical activity throughout life [1]. This idea is important for Physical Culture students because their future professional effectiveness depends not only on their individual physical form but also on their ability to explain, demonstrate, organize and justify motor activity for different groups of learners. Research on motor competence also indicates that movement skills are not formed automatically through participation; they require purposeful instruction, feedback, practice variability and progressive complication of motor tasks [2]. If students repeatedly perform the same exercises in predictable conditions, they may improve narrow technical execution but fail to adapt movement to changing pedagogical or practical situations. Functional training responds to this limitation by using multi-joint, multi-plane and coordinated movements that demand control, stabilization and adaptation. In sport science, functional training is commonly associated with the improvement of movement patterns, neuromuscular coordination and the ability to use strength efficiently in dynamic conditions [3]. However, when introduced into higher education, it should be interpreted more broadly: not only as conditioning, but as a method for teaching students to analyze movement, select load, prevent technical errors and understand the relationship between exercise and



health. Literature on motivation in physical activity also offers a necessary theoretical basis for this study. Self-determination theory argues that stable motivation develops when three psychological needs are supported: autonomy, competence and relatedness [4]. This framework is especially applicable to physical culture classes because students often differ in initial fitness, previous sport experience, body image, confidence and attitude toward compulsory training. If the educational process is built only on external evaluation, weak students may experience anxiety and avoidance, while stronger students may become bored by insufficient challenge. Integrated functional training allows the teacher to use scalable exercises and differentiated tasks, which can support autonomy and competence more effectively than rigid uniform norms. The literature on health-oriented physical education further stresses that students should acquire knowledge about load regulation, recovery, injury prevention and the long-term benefits of physical activity [5]. The World Health Organization's recommendations on physical activity underline the importance of regular moderate and vigorous activity, muscle-strengthening exercises and reduction of sedentary behavior [6]. For university students, these recommendations are not simply medical advice; they create a normative background for educational programs that should help young adults build lifelong habits. Studies on university physical education repeatedly identify low motivation, episodic attendance, passive participation and lack of independent training skills as major barriers to effectiveness [7]. These barriers show why a methodological shift is needed: the lesson must become a developmental environment rather than a formal requirement. Functional training also corresponds to modern views on injury prevention, because it pays attention to mobility, alignment, core control, landing mechanics and balance, which are essential for safe performance in many sports and daily movements [8]. For Physical Culture students, injury prevention is a professional competence: a future teacher or trainer must see not only the external result of movement but also the hidden risks created by poor technique, fatigue or unsuitable load. Pedagogical research emphasizes that reflective practice is another condition of professional formation. Students must learn to observe their own actions, compare them with criteria, correct errors and formulate conclusions [9]. Therefore, an integrated model should include diaries, self-assessment cards, pair observation, video analysis or short reflective discussions. Taken together, the analyzed literature supports the assumption that integrated functional training can become an effective pedagogical mechanism if it is based on clear principles: individualization, progression, variability, safety, feedback, motivational support and connection with professional tasks. At the same time, the literature also reveals a methodological gap. Many studies discuss physical qualities, motivation or functional exercises separately, but fewer works explain how these components can be combined in a holistic model for Physical Culture students. The present article addresses this gap by proposing a structured model in which motor competence and health-oriented motivation are considered interdependent outcomes of one educational process.



MATERIALS AND METHODS

The study was conducted as a theoretical-methodological investigation with elements of pedagogical modelling. This approach was chosen because the aim was not to report a narrow experimental result but to substantiate a transferable model that can be adapted to different higher education settings in the field of Physical Culture. The methodological basis consisted of four interconnected procedures: analytical review of scientific and pedagogical sources, comparative interpretation of physical education approaches, modelling of an integrated functional training system, and development of diagnostic criteria for evaluating expected educational outcomes. The analytical review made it possible to identify key concepts related to motor competence, physical literacy, health-oriented motivation, functional training, self-regulation and reflective learning. Comparative interpretation was used to distinguish the proposed model from traditional physical culture classes based primarily on normative testing, sport specialization or general fitness exercises. Pedagogical modelling was used to construct the structure of the training process, including aims, principles, content blocks, lesson stages, teaching methods and evaluation indicators. The diagnostic component was designed to evaluate development in three domains: motor, cognitive-reflective and motivational-value. The motor domain includes movement quality, coordination, balance, mobility, strength endurance, aerobic capacity and ability to maintain technique under moderate fatigue. The cognitive-reflective domain includes understanding of exercise purpose, knowledge of load regulation, ability to identify technical errors, awareness of safety rules and capacity for self-assessment. The motivational-value domain includes interest in physical activity, perceived usefulness of training, willingness to participate independently, responsibility for personal health and readiness to apply acquired knowledge in professional practice. The proposed model is intended for students of Physical Culture and can be organized as a 12-week module within regular practical classes. Each week contains two or three training sessions depending on the curriculum, and each session follows a stable but flexible structure: introductory mobilization and psychological preparation; movement preparation and dynamic mobility; main functional block; coordination or balance tasks; short endurance or circuit component; recovery and reflection. The content of the main block is organized around fundamental movement patterns: squat, hinge, lunge, push, pull, rotation, anti-rotation, carry, jump and locomotion. These patterns are selected because they connect sport performance with everyday movement and professional demonstration skills. Exercises are adapted by changing range of motion, resistance, tempo, support base, complexity of coordination, duration and rest intervals. For example, a squat pattern may progress from bodyweight squat with technical feedback to goblet squat, split squat, jump squat or squat combined with medicine-ball throw, depending on students' readiness. The model excludes excessive maximal loads in the initial stages and prioritizes technical accuracy, controlled breathing, posture and joint safety. The teacher's methodological role is to explain the aim of each exercise, demonstrate correct execution, provide external and internal cues, organize peer observation and encourage students to compare performance with criteria. To strengthen motivation, students are not ranked only by absolute results; instead, progress, effort, technique, self-control and independent planning are



also valued. Reflection is organized through short written or oral tasks: “What movement error did I correct today?”, “Which exercise was most difficult and why?”, “How did fatigue influence my technique?”, “What load would be appropriate for my next session?” Such tasks transform training from physical repetition into conscious learning. The evaluation of outcomes is proposed through a mixed system combining teacher observation, practical tests, self-assessment and analysis of student training plans. Practical tests may include plank stability, single-leg balance, controlled squat quality, step-test recovery, medicine-ball throw technique, shuttle movement with posture control, and a circuit performed with attention to quality rather than speed alone. The use of integrated criteria prevents the common methodological error of evaluating students only by quantity while ignoring movement safety and understanding. Ethical and pedagogical considerations are also included: all tasks must correspond to students’ health condition, warm-up and recovery must not be omitted, and students should be encouraged without humiliation or comparison that damages confidence. Thus, the methodology of the article combines theoretical justification with an applied model that can be implemented in university physical culture practice and evaluated through observable, pedagogically meaningful indicators.

RESULTS

The main result of the study is the development of a pedagogical model of integrated functional training aimed at simultaneous improvement of motor competence and health-oriented motivation among Physical Culture students. The model contains five structural components: target, content, methodological, motivational-reflective and diagnostic. The target component defines the general aim as the formation of a physically competent, professionally conscious and health-oriented student capable of performing, analyzing and organizing movement activity. The content component includes functional movement patterns, physical qualities, safety knowledge, self-regulation skills and professional-pedagogical tasks. The methodological component is based on principles of progression, individualization, variability, technical priority, feedback, continuity and practical relevance. The motivational-reflective component includes autonomy-supportive tasks, visible progress markers, peer cooperation, reflective diaries, problem situations and connection of exercises with future professional activity. The diagnostic component includes motor, cognitive-reflective and motivational-value indicators. This structure shows that functional training becomes educationally effective only when exercise content is connected with explanation, reflection and evaluation. A second result is the identification of three stages of implementation. The first stage, adaptive-diagnostic, lasts approximately two to three weeks and focuses on identifying students’ initial level, correcting basic movement patterns and creating a psychologically safe atmosphere. At this stage, the teacher avoids excessive complexity and emphasizes correct posture, breathing, joint alignment, mobility and confidence. Diagnostic tasks are used not as punishment but as orientation points. The second stage, developmental-integrative, lasts six to seven weeks and introduces progressive circuits, coordination challenges, paired work, unstable but safe conditions, moderate resistance and more complex combinations of movement patterns.



Students begin to understand how one physical quality supports another: mobility improves squat depth, core stability improves balance, coordination improves agility, and endurance helps preserve technique under fatigue. The third stage, reflective-professional, lasts two to three weeks and focuses on independent planning, peer teaching, correction of errors and application of functional training principles to different learner groups. At this stage, students may design a mini-training session, justify exercise selection and explain safety rules. The third result is the development of criteria and levels for assessing outcomes. A high level of motor competence is characterized by accurate and controlled execution of basic patterns, stable balance, coordinated transitions between movements, adequate endurance and ability to adapt technique to task conditions. A medium level is characterized by generally correct execution with episodic errors under fatigue or complexity. A low level is characterized by unstable posture, poor coordination, inability to maintain technique and weak understanding of movement criteria. In the motivational-value domain, a high level is expressed in stable interest, independent activity, awareness of health benefits and readiness to use training knowledge professionally; a medium level shows situational interest and partial self-regulation; a low level shows dependence on external control, avoidance of effort and weak personal meaning. The model also produced a recommended lesson algorithm. In the first five to seven minutes, the teacher organizes psychological readiness, explains the aim of the lesson and activates attention. The next ten to twelve minutes are devoted to mobility, dynamic stretching and activation of stabilizing muscles. The main block lasts twenty-five to thirty minutes and includes four to six functional exercises performed in stations or sequences, with careful control of technique. The coordination or balance block lasts five to eight minutes and may include single-leg tasks, reaction drills, directional changes or partner exercises. The endurance component lasts six to ten minutes and uses moderate circuit work, interval walking-running tasks or low-impact aerobic combinations. The final five minutes are devoted to breathing, recovery and reflection. This algorithm is flexible; its value lies not in rigid timing but in the integration of preparation, load, skill, recovery and meaning. Another important result is the clarification of pedagogical conditions necessary for effectiveness. First, the teacher must prioritize movement quality before intensity, because poor technique repeated under load increases risk and forms incorrect motor habits. Second, exercises must be scalable; otherwise, weaker students lose confidence and stronger students lose challenge. Third, students must receive understandable criteria, because motivation grows when progress becomes visible and controllable. Fourth, the lesson must include reflection, because without reflection functional training remains a physical routine and does not become professional knowledge. Fifth, the emotional climate must support effort rather than shame. In this sense, the model shifts the emphasis from “who is stronger” to “who is developing more consciously.” The final result is the formulation of expected educational effects: improvement of general movement quality, increase in students’ confidence in performing and demonstrating exercises, better understanding of load regulation, stronger motivation for independent training, improved ability to prevent technical errors, and greater readiness to apply health-oriented physical activity principles in future professional work. These results are conceptual and



methodological, but they provide a clear basis for future experimental verification in specific university groups.

DISCUSSION

The proposed model should be understood within the broader transformation of physical culture education from a discipline of formal physical preparation into a discipline of human development, health literacy and professional competence. Traditional systems often evaluate students through standardized norms that may be useful for control but insufficient for explaining how and why students develop. A student may improve a running time or perform more repetitions, yet still lack movement awareness, knowledge of recovery, ability to teach exercises safely, or motivation for lifelong activity. This limitation is particularly serious in the Physical Culture direction, where the graduate's body is not only a private instrument of health but also a professional means of demonstration, communication and pedagogical influence. Integrated functional training helps overcome this limitation because it connects movement effectiveness with awareness, adaptability and personal meaning. However, it must be admitted that functional training is sometimes misunderstood in practice. In popular fitness contexts, it may be reduced to random circuits, excessive intensity, unstable surfaces, competitive speed or visually impressive exercises without pedagogical logic. Such an approach is not educational; it is merely energetic chaos wearing sport shoes. In university physical culture, functional training must be scientifically structured: every exercise should have a purpose, every progression should be justified, and every student should understand the criteria of safe performance. The discussion of motivation is equally important. Many students participate in physical culture classes because attendance is required, not because they have internalized the value of movement. External control may produce short-term compliance but rarely produces a stable health habit. From this point of view, integrated functional training is useful because it can create frequent experiences of competence: students feel that they can perform more accurately, control posture better, complete a circuit with less fatigue, or design a small program independently. These experiences are pedagogically stronger than abstract lectures about the benefits of exercise. At the same time, motivation does not appear automatically from exercise variety. Variety without meaning may entertain students for a few lessons but will not necessarily form responsibility. The teacher must connect tasks with personal goals, professional situations and health outcomes. For example, when teaching a lunge, the teacher may explain its relevance to knee stability, gait mechanics, sport movement and injury prevention. When teaching plank variations, the teacher may connect them with trunk stabilization, posture and safe lifting. Such explanations do not overload the lesson; they give it intellectual structure. Another discussion point concerns individualization. Physical Culture students are often assumed to be uniformly prepared, but in reality their backgrounds differ substantially: some come from competitive sport, others from general school physical education, some have high strength but poor mobility, others have endurance but weak coordination. A rigid program may privilege one type of student while leaving others behind. Functional training allows differentiation because the same movement pattern can be simplified



or complicated. This is pedagogically efficient: the group works on a common task, but each student receives an appropriate version. The model also supports inclusive practice, as many exercises can be adapted for students with temporary limitations or different readiness levels. From the standpoint of professional training, this teaches future specialists a crucial lesson: good instruction is not the same exercise for everyone, but the same educational aim achieved through suitable variations. The reflective component deserves special emphasis. In many physical education settings, reflection is neglected because the lesson is considered purely practical. This is a methodological mistake. Physical action without reflection can improve condition, but it does not necessarily form competence. A future teacher must be able to notice errors, explain causes, select corrections and evaluate progress. Short reflection tasks after training can develop this ability without turning the practical lesson into a seminar. For example, asking students to identify one technical error and one correction strategy creates a bridge between motor experience and professional thinking. Over time, this habit may increase students' independence because they begin to monitor their own movement rather than wait for the teacher's command. The proposed diagnostic system also changes the meaning of assessment. If only quantitative indicators are measured, students may sacrifice technique for speed or repetitions. If only technique is observed, students may lack evidence of fitness development. Therefore, integrated assessment is necessary. The combination of movement quality, physical capacity, knowledge and motivation provides a more realistic picture of development. Nevertheless, the model has limitations. Since this article offers a theoretical-methodological framework, future research should test it empirically with control and experimental groups, pre-test and post-test indicators, and long-term observation of independent physical activity. It would also be valuable to examine gender differences, the influence of previous sport experience, and the relationship between functional training and academic stress reduction. Another limitation is the need for teacher competence. Poorly prepared instructors may use functional training superficially or unsafely. Therefore, methodological training of teachers is a condition for successful implementation. Despite these limitations, the model is relevant because it responds to real educational needs: students require not only stronger muscles, but also smarter movement, clearer motivation and better professional readiness. In this sense, integrated functional training can become a bridge between sport science, pedagogy and health culture.

CONCLUSION

The study substantiates the pedagogical value of integrated functional training as a means of developing motor competence and health-oriented motivation among students majoring in Physical Culture. The analysis shows that modern physical culture education should move beyond a narrow focus on isolated physical qualities and normative control. It should form a student who can move effectively, understand the logic of training, regulate physical load, evaluate technique, prevent injury and maintain a stable personal commitment to health. Integrated functional training is suitable for this purpose because it combines fundamental movement patterns, strength endurance, mobility, coordination, balance, aerobic load,

reflection and motivational support within one educational system. The proposed model includes target, content, methodological, motivational-reflective and diagnostic components. Its implementation is organized through adaptive-diagnostic, developmental-integrative and reflective-professional stages. The model emphasizes the priority of movement quality over uncontrolled intensity, the need for scalable tasks, the value of feedback, the role of reflection and the importance of a supportive psychological climate. The expected results include improved movement control, greater confidence, stronger interest in independent physical activity, better understanding of load regulation and increased readiness for future professional work in physical culture. The article also demonstrates that motivation and competence should not be treated as separate outcomes. Students become more motivated when they experience meaningful progress, understand the purpose of exercises and see the professional relevance of what they are learning. Conversely, motivation supports competence because students who value training participate more consciously and consistently. The practical recommendations derived from the study are as follows: physical culture classes should include functional movement patterns; teachers should use differentiated exercise variations; assessment should combine motor, cognitive and motivational indicators; each lesson should contain a short reflective element; and students should gradually be involved in designing and justifying training tasks. Future empirical research may verify the model through experimental testing, but its theoretical and methodological basis already indicates strong applicability in higher education. For students of the Physical Culture direction, integrated functional training is not simply a method of becoming fitter; it is a way of forming professional movement culture, health responsibility and pedagogical readiness. In the language of practice, it teaches the body to work; in the language of science, it teaches the student to understand why the body works in that way.

DIAGNOSTIC INDICATORS OF THE PROPOSED MODEL

The following table summarizes the practical diagnostic logic of the proposed model and may be used by teachers to organize formative assessment during the module.

Domain	Core indicators	Evidence in practice
Motor competence	Movement quality, coordination, balance, mobility, strength endurance and technique preservation under fatigue.	Teacher observation, functional movement tasks, circuit quality, posture control, balance tests and corrective performance.
Cognitive-reflective readiness	Understanding of exercise purpose, load regulation, safety, error identification and self-assessment.	Training diary, oral explanation, peer observation, correction of technical mistakes and individual planning.
Motivational-value orientation	Interest, responsibility for health, independent activity, perceived professional relevance and persistence.	Attendance quality, voluntary practice, reflective comments, goal setting and readiness to design training tasks.



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