The subject of the research is to find ways for improving physical education of students in accordance with the current challenges based on the competence-building approach. The purpose of the paper is to develop a structure and content of the unified physical culture competences and criterion-evaluating tools for their assessment as well as due pedagogical environment for the development of bachelor’s physical culture competences. The paper presents a pattern of physical culture competences profile and the algorithm of its development. Authors have showed the possibilities for organization a proper physical culture and sporting environment depending on the subject’s needs and direction of the educational process. It was summarized that physical education assumes creation of such physical culture and sporting environment that would be saturated with various microenvironments and incentives for students to have personal achievements in academic and extracurricular activity, and would be favorable for expression of one’s individuality by means of physical culture and popular sport.

Keywords: higher professional education, physical education, competence building approach, competence and awareness; physical culture competence; physical culture and sporting environment; integrative and dynamic environment, algorithm for subject competences profile; formation of physical culture competence; program units of teaching material, information resources.

Introduction

Sharp increase of knowledge-intensive industries, active development of technical scientific information scope and its fast ageing, changing requirements to the production sphere at the beginning of XXI century have actualized the necessity to improve the quality of professional education based on techniques of independent study and lifelong education, providing professional and social awareness and mobility of specialists, that have changed the concept of education goals, content and methods [5, 6, 9].

Attempts to provide «lifelong education», based on the idea about stability of future professional activity terms, have failed to meet present requirements. A.G. Asmolov has emphasized that “the main thing – is not to direct education towards the solution of common tasks which posses all the answers in advance, but to say clearly: “Education should help people to live in a world of uncertainty” [17].

The educational system of the world leading countries started a multidimensional...
Irina V. Manzheley and Svetlana N. Cherniakova. Development of Bachelor’s Physical Culture Competences

restructuring process as the response to current challenges, where a special place was occupied by a competence building approach. “A competence-based education is a very controversial under-researched subject, where the transition from academic educational model to a competence – based model is considered as a transition from the German conceptual philosophy to the philosophy of empiricism” [21].

The history of this process began in 70s of the last century due to change of specialist’s skill standards, based on labor market demand. In Germany it solved by the introduction of “key qualifications” as personality characteristics, which were not connected with a particular occupation; and in Russia – through training universal workers based on the integration of blue-collar occupations as the characteristics of activity (P.R. Atutov, S.Y. Batyshev, A.P. Belyaev, etc.).

The idea and the term of “awareness” were widely used in the USA and some European countries in connection with the generalization of the best practices of training process individualization in educational institutions during the development of curriculum theory (i.e. searching efficiency via making the learning process more meaningful and reflexive). The main idea of the integrated competence development was that it should not be limited by the amount of knowledge and skills acquired during the formal education (in the secondary school). In order to be really efficient, this knowledge must be linked to a wider range of knowledge acquired by man outside the formal education system (family education, cultural and educational activities, etc.) [3].

Awareness becomes a “nodal” term in the global educational practice. Firstly, because it represents an integrative intellectual and operational component of education for the wide spheres of culture and activity; secondly, it has an ideology of interpretation of the content of education formed as “based on the result”.

Such statement of a question is not new for domestic pedagogy. Investigations in the sphere of student’s skills and knowledge formation often reached the level of competences, but without using this term. Suffice it to mention studies of A.N. Leontiev, I.A. Winter, N.A. Lashkaryova, I.S. Yakimanskaya, P. Ya. Halperin, N.F. Talyzina and many other scientists. In general, the idea of competence-building approach, which was taken from the West is consistent with the national idea of personal-activity approach [3].

Personal-activity approach of education been formulated by the mid of 80s, is traditionally viewed from the perspective of a professor, as management of the educational activity within the process of solving specifically developed training tasks, which is mostly subject-oriented, that improves not only objective and communicative awareness, but also the personality of a student. Based on the definition of educational activity of D.B. Elkonin, its specificity is aimed at development and self-development of the subject of this activity, the question was stated on dual personality-oriented activity approach: from the perspective of a professor and from the perspective of a student [7, 18].

At the same time the problem of preserving and strengthening the health of children and youth is one of the most important problems for the global pedagogical community at the modern stage of public production development.

Numerous international investigations applied primarily biomedical methods, which were conducted in the first half of the twentieth century, allowed identification of specific quantitative indicators describing the state of health (I.I. Brekhman, D.N. Davydenko, and G.I. Tsaregorodtsev and the others). However, facts of decreasing the level of health has only helped to attract significant investments in production of
various medicines and did not allow development and implementation of complex programs for improvement of health of population.

“The society today began to realize, with certain difficulties, that the reproduction of health as physical, social and mental well-being of a man is mainly a function of education, rather than cure, since it is known that even the somatic component of health depends on state of medicine and public health by only 10-15%” [2].

Due to that at the beginning of 70s of XX century a special attention in international research projects was paid both to the investigation of style of life and its impact on the health of different groups of population and to self-preservation behavior based on the analysis of value-motivational structure of a personality and significance of health in this structure.

Investigation of self-preservation behavior peculiarities within the frames of the program «Heat Promotion» (providing health) was started due to increase of specific weight of chronic noninfectious diseases, which required development of behavioral pattern of real and potentially sick people. It was for the first time abroad that the health protection policy was radically shifted “from considering people as passive customers of medical services to recognition of their own active role in creating conditions providing preservation and promotion of health” [19].

At the beginning of 90s of XX century sociological investigations aimed at the study of lifestyle of teenagers (International Scientific Project “Health Behavior in School-aged Children”) and students (Student's health: cross-European analysis) began to be conducted also by experts of the branch “Physical Culture and Sports” because they had a decisive role in the formation of guidelines for children and young people to develop physical education value potential, healthy lifestyle, actualization of physical self-improvement that provides self-preservation behavior [14].

Among the first current priorities there are not only physical training of youth and acquisition of motor skills by children and students, but the development of physical culture competences, due health culture, individual physical and sporting culture, introduction to sport life style that successfully is implemented within sporting [1] sports-recreation and physical education [16].

**Discussion**

The system of university’s physical education plays a particular role in the development of bachelor competent personality.

As it is known, federal state educational standards (FGOS VPO) of the third generation have been elaborated on the basis of competence building approach, which proposes a fundamental restructuring of education content and structure, including physical education of students.

Modern pedagogical society is actively developing today criteria- assessing tools and pedagogical instruments for evaluation and forming of common cultural and occupational competences of bachelors. In our case we will focus on the traditional understanding of educational technology as a way (including tools, methods and forms) of the implementation of educational content.

In some common culture competences of core educational courses for different professional program profiles for bachelors training, described by FGOS, there are some diverse requirements for a bachelor after his mastering the course “Physical culture”. So, the question appears: “How it is possible to select, evaluate and develop the competences of such important course as the “Physical culture”, which, according to the standards, can be assessed only by 2 credit units, having 400 hours of in-class work?”. 
Investigation of standards of different program profiles (there are 47 in Tyumen State University) has showed the presence of different definitions of common culture competences, related to physical culture. To facilitate the development of competence profiles being carried out by professors for compendiums “Physical culture” for different bachelor training program profiles, we have put a task: to develop a structure, a content of key unified physical culture competences and due pedagogical tools for their formation and assessment.

Followed by A.V. Khutorskii [20] we understand the physical culture competence as the required preparedness of a certain personality to various physical training and sporting activities (specified requirement for bachelor training), and physical training awareness is understood as the ability to realize this preparedness to practice (completed personal quality – characteristics).

Physical training awareness, to wide extent, promotes personal self-actualization, helps finding student’s personal place in physical culture and sports field.

Physical culture awareness describes not only the level of acquired knowledge, skills and ways of activity, but also reflects the tendency and the preparedness of the person to carry out physical training and sporting activity as well the ability to thoroughly analyze and choose the most reasonable and effective way to provide motion activity.

Generalization of the theoretical fundamentals of personal-active approach (L.S. Vygotsky, A.N. Leontiev, PYa. Galperin, N.F. Taltyzina, I.A. Zimnya, etc.) of the structure of physical culture and sporting activities (G.G. Natalov, I.I. Suleymanov, etc.), as well as ideas about key and subject competencies (E.F. Zeer, A.V. Hutorskoy) allowed us identifying the following key unified physical training competencies which most fully reflect the creative potential of physical culture: health-improving and adaptive, health-improving and correctional, motor-conditional, motor-applied, sporting and recreational, each of which has an integrative nature and is a composition of sports value orientations, knowledge and skills, mental and physical conditions and physical-sporting experience of a Bachelor [11].

Health-improving and adaptive: possess knowledge and skills of healthy life, ways of health preservation and promotion; is able to follow socially significant ideas about healthy lifestyle and to maintain a healthy lifestyle.

Health-improving and correctional: has instruments and methods of health improving physical training; consciously refers to health, uses a different system of physical exercises to correct functionality of an organism, constitution and deviations of a body state.

Motor-conditional: possess the means for basic motor actions development, can independently develop basic physical qualities, and is able to develop mental qualities during the process of physical education.

Motor-applied: has professionally applied physical training fundamentals and due techniques of self training; controls psychophysical readiness to professional activity terms, can prevent occupational health problems by means of physical culture and sports.

Sporting and recreational: possess general physical and special training fundamentals in the system of physical education and athletic training; can independently choose sports or physical training complexes to improve health, keep workability and support outdoor activity.

We had made profiles of physical culture competences and one of them is given in the Table 1.

The general idea of the competence profile is common for practical-oriented subjects and
<table>
<thead>
<tr>
<th>Competence</th>
<th>General learning outcomes</th>
<th>Learning outcomes by educational levels</th>
<th>Activity kinds</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Possess knowledge and skills of healthy life style (HLS), methods of health improving and preservation. Can follow socially significant HLS concepts</strong></td>
<td>Knows the definitions and factors which determine human health and HLS</td>
<td>knows terms and notions and components of health and HLS; knows the ways of HLS organization</td>
<td>interpret HLS components; can evaluate the significance of health and HLS</td>
<td>tests; abstracts; control work and report</td>
</tr>
<tr>
<td></td>
<td>Understands an interaction of Bachelor’s culture and his life style</td>
<td>understands the role of HLS factors and their relationship; realize the place of health and HLS in the value system of human</td>
<td>lecture-presentation; methodical and practical classes</td>
<td></td>
</tr>
<tr>
<td><strong>Can follow socially significant HLS concepts</strong></td>
<td>can support HLS by tools and methods of physical culture and sports</td>
<td>can investigate the influence of different factors on health, workability and HLS</td>
<td>Methodical and practical classes; Educational and training exercises</td>
<td>Attendance; tests; control standards; abstract ; control work; portfolio; participation in DHSL and competitions</td>
</tr>
<tr>
<td><strong>Possess modern technologies of HLS</strong></td>
<td>possess methods and ways of health preservation and improving</td>
<td>possess approaches of HLS arrangement as well as due technologies for its effectiveness</td>
<td>Educational and training exercises</td>
<td>Attendance; tests; control standards; abstract ; control work; portfolio; participation in DHSL and competitions</td>
</tr>
</tbody>
</table>

is based on psychology patterns of knowledge gaining and skills development [4, 8], namely:

1st stage of competences mastering (minimal) – a grasp of a subject concept:
- knows the concept of the subject;
- understands the relationship between different concepts of the system;
- realize the concept place in a system of concepts;

2nd stage of competences mastering (basic) – an acquisition of actions accepted in this subject, and the level of their automation:
- knows about the existence of mode of action;
- can apply the mode of action for the typical situation;
- can apply the mode of action for the nonstandard situation;
- can modify the given mode of action and apply it to the existent conditions, understands the limits of its application;

3rd stage of competences mastering (advanced «А») – an acquisition of ways to study the given subject:
knows how to study the given subject matters;
• can hypothesize and organize the process of investigation;
• can interpret the research results and assess its efficiency;

4th stage of competences mastering (advanced “B”) – a creative activity is formed within the terms of a given subject.

It should be marked that the logics of competence development is traditional: learning, understanding, application. Each subsequent level of competence mastering incorporates the previous one. While forming competences, maximum attention should be paid to the formation of personal experience of sports activity through the integration of educational, scientific, pedagogical, sport-and-fitness, health improving and mass sports activities. Besides, it is necessary to organize various physical training and sporting environments and practices based on the integrative connections with additional education institutions and due socio cultural environment of the municipality [14].

Teaching material of the section “Physical culture” consists of two blocks: basic block or biological, sociological and cultural, aimed at the acquirement of the variety of physical culture' valuables and at integral intellectual, physical, moral and aesthetic development of a person in its context; and a variable block or individual and personal, which considers individual sporting abilities and students needs. Wherein, within the educational process during internalization of physical training a value into personal values the share of basic component decreases and the share of variable component increases.

The variability of curriculum is being determined not by a professor, through choosing some sections according to his own idea about the necessary set of knowledge and skills, but by a student who is based on the desired expected learning outcomes (16 electives sports).

Traditional approach determines the goals of physical education based on the particular physical conditions, skills and knowledge, which are to be mastered by a student. Our case assumes the previously designed learning outcomes as the main goals, which are determined based on the available student’s competence level. A content of educational sphere “Physical culture” is understood as social experience adapted for education which structure is identical to physical culture. “Physical culture” consists of the following units aimed at formation of certain physical education competences:

- Fitness for bachelor (I -VI semester).
- Health-promoting complexes (I- VI semester).
- Selected sports (I – IV semester).
- Physical culture in a fitness for bachelors (V semester).
- Social and biological fundamentals of physical training and healthy lifestyle (V semester).
- Professional applied physical training of a bachelor (VI semester) (Table 2).

It should be marked that due to a specificity of the educational sphere “Physical culture” and its practical- oriented content, some program units are being studied within several semesters and are referred to as program units attached to a semester.

Each program macro unit is divided in mezounits (educational topics), which are implemented through designing pedagogical situations (macro units) of INCLUSIONS aimed at forming athletic competences (Fig. 1).

We understand the situation as a combination of external world circumstances and the internal state of a person, against which some event has been actualized. Pedagogical situation is a kind of a cell in the whole educational process, for which
Table 2. The section «Physical culture»

<table>
<thead>
<tr>
<th>Physical culture competences</th>
<th>Macro units of training material for the section «Physical culture»</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Health promoting complexes</td>
</tr>
<tr>
<td>Health improving and adaptive</td>
<td>☒ ☐</td>
</tr>
<tr>
<td>Health improving and correctional</td>
<td>☒ ☐</td>
</tr>
<tr>
<td>Motor- conditional</td>
<td>☐</td>
</tr>
<tr>
<td>Motor applied</td>
<td>☒ ☐</td>
</tr>
<tr>
<td>Sporting and recreational</td>
<td>☒ ☐</td>
</tr>
</tbody>
</table>

Note: – purposeful formation; ☒ – conjugate formation; ☐ – situational application; ☐ – creative application.

**Program macro unit of teaching material**

![Diagram](image)

Fig. 1. Fragment of the content of program macro unit of a section “Physical culture” for Bachelors (1st year)

Comments: Б – core component; В – electives. *Pedagogical cases*: Π – problem and goals statement; A – updating problem in the minds of students; Д – diagnostics of a real state of a problem in the context «I» and «We»; С – self-determination of a student (specified goal, hypothesizing); М – creation of an ideal model; П – designing a process for goal achievement; Р – project implementation in 2 or more stages: 1- the upbringing level; 2 – at the educational level; 3 – at the level of development; 4- health preservation; К – current control & correction; О – results evaluation; Ж – application of subject’s experience in life activity.
The external media is formed on the basis of its goals and tasks and are mediated by the internal state of the subjects of training interaction (by motivation, cognitive and conditional preparedness, etc.) [16].

Criteria and indicators of physical culture competences are given in the Table 3.

It is reasonable to do the following for the process of physical education:

*firstly*, to design educational process according to age, gender, ethnicity and other specific personal and individual characteristics;

*secondly*, to actualize all mechanisms of personal development (needs for self-preservation and self-improvement; contradictions between requirements of the environment and individual abilities; between the needs of the individual and medium resources: between “CAN” and “WANT”, between “CAN” and “MUST”, between “I” and “WE” between “WE “and” THEY “, etc.) [22];

*thirdly*, to provide a possibility for a free selection of physical education content, form, methods and techniques through differentiated training process based on integration of educational activity and extracurricular work as well as creation of practically oriented environment and cases of inclusion [13].

During the process of physical education the following components are interconnected: educational work of the section “Physical education”; electives (by sports and additional courses “Basics on Self-massage”, “Health preserving technologies” etc.) independent and optional classes; volunteering as referees and press secretaries at competitions; the joint research activities of teachers and students (conferences, projects, etc.); participation in sports improving groups and higher sportsmanship groups as well; health and motor-recreational activities within the school day; extracurricular health-improving and sporting activity (OFSD) in the institution (sections, clubs, competitions, sports contests, tourist meetings, etc.) and outdoor; OFSD at the place of residence, during the summer vacation and practice.

<table>
<thead>
<tr>
<th>Physical culture competences</th>
<th>Criteria</th>
<th>Parameters and methods to be assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health-improving and adaptive</td>
<td>Somatic health, physical development, physical workability</td>
<td>Rapid assessment of physical health by Apanasenko, indexes, functional tests, other trials, etc.</td>
</tr>
<tr>
<td>Health-improving and correctional</td>
<td>Practical preparedness for self-diagnostics and correction of health and constitution</td>
<td>Special techniques and practical tasks, control exercises, tests</td>
</tr>
<tr>
<td>Motor-conditional</td>
<td>Physical state: general and special endurance, strength, speed, power and speed characteristics, flexibility, etc.</td>
<td>Control exercises, tests (Rough Federal program, the program for institutions of additional training in the field of Physical culture and Sports, authoring)</td>
</tr>
<tr>
<td>Motor-applied</td>
<td>Coordination abilities, special technical and tactical, professionally applied physical training</td>
<td>Control exercises, tests (Rough Federal program, the program for institutions of additional training in the field of Physical culture and Sports, authoring)</td>
</tr>
<tr>
<td>Sporting and recreational</td>
<td>Athletic and sporting needs, activity, motivation, methodological and practical, physical, technical and tactical training</td>
<td>FS needs – activity – motivation (Tropnikov-Yadov-Manzheley), muscular endurance tests, competitions, defending projects, etc.</td>
</tr>
</tbody>
</table>

Table 3. Criteria and tools for assessment of physical culture competences
For the due arrangement of the whole process of physical education in Tyumen State University and in order to develop effective physical culture competences of bachelors, an integrative-dynamic environment has been created, where the number of micro environments and components ratio (subject-spatial, technological and social) can vary depending on the subject’s needs and direction of educational process [11, 22]. Besides, the education environment has been computerized (data bases “Monitoring of physical status of students”, “Portfolio”, “Health route”, “Electronic tutorial” were created); building block system for educational material structuring, rating evaluation of educational achievements of students and project method were introduced [15]. Each student has an opportunity to choose his own way of realization of personal potential in sports environment of a high school (Fig. 2).

Student is given an opportunity to select independently the most appropriate “route” of education in the section “Physical culture” based on personal goal set, health level and motor preparedness. At the beginning of a school year all students are included in database. Students select electives of “Physical education” course from suggested 16th sports. Students with broken health go in for special medical groups they take a “Route of Health” considering their diagnosis. Talented students are included in groups of sports improvement and filled “Physical culture and sporting portfolio”. Knowledge are controlled by electronic testing, which one can pass after studying the electronic tutorial. All students collect performance appraisals of the section “Physical Culture” (61-100 points) not only by attending classes, but also by active participation in university’s fitness and health activity. An electronic resource “the Route of Health” has been developed for a special medical group. Within the frames of this program, after self-diagnostics students fill electronic file on health state and after that a computer program gives recommendations on due corrections of the existing physical condition. For students of correspondence education and students-sportsmen such electronic results allow evaluating their independent work in the section “Physical culture”.

Such sporting and physical education environment extends the scope of the section “Physical culture” through the integration of class and curriculum work, personifies the process of
physical education and provides a feedback in the system “professor-student” as well as develops database for collecting, processing and storage of information on phased, current and operational state of a student and methods for its correction.

Moreover, the reflection of “the real and the required state” in minds of students encourages young people for “developing” their own way to master physical culture and sports values.

A great attention is paid to a symbolic function of environment and conditions for development of physical culture and sporting values, ideals and traditions: Museum of Sports has been established, University website describes all sport events, summarizes the results of Athletic Days and “Days of Health” (news section, special web page “the University of healthy lifestyle” and the newspaper “University and the Region”). Besides, students are awarded with diplomas, medals and prizes marked with symbols of the University; each student has an opportunity to choose his own way for self-realization in sports environment of the University.

According to variable content and different forms of physical education we used both traditional and innovative approaches of education, development and health preservation [13].

Basic limitations of methods are connected with pedagogical interaction nature, which can be both constructive and humane, but not directive, which assumes an alternative approved choice of educational content and methods made by a professor and a student [12].

Methods of labialization, semantic reconstruction, conviction were applied to clarify value-semantic fundamentals of physical education and sporting activity [11].

Labialization represents a purposeful impact on certain relationships in the student’s conception of the world in order to break their stability and increase sensibility for perception of everything which is new, that is followed by construction of new relationships with people around. For example, especially for a student, who is negative to physical training, but wanting to change his constitution and to develop different physical qualities etc., due situations are simulated (so as watching video), where indirect examples demonstrate various options of choice by “antinomy” type, namely what can happen with a man firstly after going in for active physical training for some time and secondly as the result of self-destroying behavior. It can be possible only in the process of constructive interaction between a student and professor [12].

Meanings actualization, exchange of meanings and rearrangement of activity content (D.A. Leontiev) take place within the process of student’s internal dialogue; the dialogue between a professor and a student; dialogues between students to find out personal meaning of physical culture and sporting activity, specific exercise, situation (“my personal meaning”, “why do I need it?”), in terms of it (the meaning of exercises) attachment to values and goals, as well as to activity and behavior of a particular person at a certain stage of his life [10].

Persuasion is applied for changing personal setting either at the expense of explanation and logic arguments (cognitive strategies, often on the basis of indirect examples-mediated impact) or by simulation of “antinomy” and “boomerang” types.

Conclusion

So, in order to form student’s physical culture competences it is necessary to provide the following requirements: introduction of different modality micro mediums in the institution environment (electives, sport groups, optional classes sports contest, competitions, etc.); environment computerization; integration of academic and extracurricular activities (scientific,
Therefore physical education suppose development of physical culture and sporting medium, which would be saturated with different micro mediums and incentives motivating student to find his own results of educational and extracurricular activity, and would be favorable for expression of his individuality by means of physical culture and mass sport.

References

Формирование физкультурных компетенций у бакалавров

И. В. Манжелей, С. Н. Чернякова
Тюменский государственный университет
Россия, 625003, Тюмень, ул. Семакова, 10

Проблема исследования связана с поиском путей совершенствования физического воспитания студентов в соответствии с вызовами времени на основе компетентностного подхода. Целью работы стала разработка структуры и содержания унифицированных физкультурных компетенций и критериально-измерительного инструментария для их оценки, а также педагогических условий формирования физкультурных компетенций бакалавров. В статье предлагается образец карты физкультурной компетенции и алгоритм ее разработки. Авторами показаны возможности организации физкультурно-спортивной среды образовательного учреждения в зависимости от потребностей субъектов и направленности образовательного процесса. Сделан вывод о том, что организация физического воспитания предполагает создание такой физкультурно-спортивной среды, которая бы насыщена различными микросредами и стимулами, побуждающими студента к поиску собственных результатов учебной и внеучебной деятельности, благоприятна для проявления и самовыражения его индивидуальности средствами физической культуры и массового спорта.

Ключевые слова: высшее профессиональное образование, физическое воспитание, компетентностный подход, компетенция и компетентность, физкультурная компетенция, физкультурно-спортивная среда, интегративно-динамическая среда, алгоритм составления карт предметных компетенций.