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Social perspective

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The Tasks And Trials In PETE At The University Level in Japan

Yoshinori Okade, Etsushi Hasegawa ,Hiromi Miki and Akiyo Miyazaki

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Abstract

After the worldwide physical education crisis, so called PETE at university level is one of the focal point to promote quality Physical Education.

In this situation, in 1997, Education Personnel Training Council in Ministry of Education , Science and Culture(since 2001 Ministry of Education, Culture, Sports, Science and Technology; MEXT) in Japan has informed the Council Report on strategy for improving teacher education system in the future. In 2008, the Course of Studies for elementary and junior high schools were introduced in 2008 and that of for senior high school in 2009. Also system for renewing educational personnel certificates is introduced formally from 2009. Based on this situation on PETE reform movement, tasks and trends in PETE at university level in Japan was shown in this article.

In Japanese PETE system, there is discrepancy between needed competency for physical education teachers and image of physical education teacher in general. Most important problem in this recognition would be poor knowledge on competencies requested for physical education teacher as profession. To overcome this discrepant, one need to discuss the better way to change employment system to profession.

At university level, even through simulated class based on reflection has introduced in some universities, content knowledge and pedagogical knowledge are usually taught separately. In this sense, one should consider again better way to enhance PCK at university level and to make tentative content and performance standard for them related with CPD. In this context, first step to improve PETE curriculum has just begun in JAPAN.

Key words: *PETE, Reflection, Quality Physical Education, Content knowledge, Pedagogical knowledge, Pedagogical content knowledge, CPD*

Introduction

After the worldwide physical education crisis [11, 7, 8] so called PETE (Physical Education Teacher Education) is one of the focal point to promote quality Physical Education. So AIESEP has set the Symposium on PETE and discussed the future direction in PETE worldwide [9]. Also Unesco [46] has shown the framework for international discussion on quality physical education and sport. In the Unesco's final report, promoting research on PETE is set as the one of the 6 tasks to be achieved in the future.

In Japan, in 1997, Education Personnel Training Council in Ministry of Education, Science and Culture (since 2001 Ministry of Education, Culture, Sports, Science and Technology; MEXT) has informed the Council Report on strategy for improving teacher education system in the future. Also system for renewing educational personnel certificates is introduced formally from 2009 in Japan.

At the same time, poor outcome in physical education classes, especially in elementary school was criticized in the discussion in the Central Council for Education [2]. Also Central Council for Education [3] has reported the future direction and expected outcomes in physical education. After these reports, in the ad hoc committee for revising the Course of Study, future direction and contents for the Course of Studies for Physical Education in each school levels were discussed. As the result, in 2008, the Course of Studies for elementary and junior high schools have informed [16, 17] and that of for senior high school in 2009 [18]. In these revisions, total number of physical education class has increased again from 90 hours per year to 105 hours per year in junior high school. In this sense, physical education teachers should be aware of their accountability to achieve goals

in the Course of Study much more. PETE at university level and also in service level should be key factor in this context.

On the other hand, in USA, NASPE [25, 26, 27] has published 1st edition of National Standards for Beginning Physical Education Teachers in 1995, it's 2nd edition in 2003 and it's 3rd edition in 2009. Through this process, requested competencies for beginning teachers have changed a little bit, but most important things in this process would be the fact that people in this research filed are always trying to find out better way to be accountable to the society.

For example, as the background of such publication, one recognize scientific research outcomes in sport pedagogy such as Graham [4, 5, 6], Metzler [15], Mosston [19, 20, 21, 22, 24], Rink, [29], Siedentop [33, 34, 35, 36, 37], and Silvermann [39, 40] and so on.

These research have shown teaching skills, instructional strategies and pedagogical models in physical education which should be acquired in the process of continual professional development (CPD) to implement effective physical education. On the other hands, research on teacher cognition and subjective theory has shown the importance of knowledge, value orientation and cooperation in teachers in professional community [10; 45; 47]. So such skills and knowledge are reflected in PETE program.

In this context, after about 2000, in Japan also, simulated classes based on reflection was rapidly introduced in PETE program at university level.

Aim

Based on such situation on PETE, background and trends in research on PETE in Japanese context would be shown in this article.

Materials and methods

To achieve this aim, following 2 documents were mainly analyzed based on recent research outcome in sport pedagogy.

1) document on PETE from MEXT after 1997.

2) document related with PETE in sport pedagogy.

Result and discussion

Request on Teacher Education at under graduate level from MEXT and required credits for Physical Education Teacher Certificates

Education Personnel Training Council [1] has shown expected competencies for teachers and divided them into two categories as shown in Tab.1.

Tab. 1 Expected competencies for teachers (Education Personenel Training Council, 1997) [1]

Competencies requested to teachers at any time	Firm sense of mission as educator. Deep understanding about human growth and development. Educational affection to infant, pupils and student. Specific knowledge about subject content. Rich culture. Competency in teaching based on such components.
Competencies specially requested to teachers in the future	Competencies to behave with global aspects
	Competencies requested to be member of instable society
	Competencies requested from professional accountability

In the Japanese Education Personnel Certification Law, minimum requirement of credits for teaching certificates is regulated. Tab. 2-4 show that of first-classes teaching certificates (undergraduate level) in junior and senior high school teachers. Student who would like to be physical education teachers should take required credits in 4 categoirs; pedagogy, content knowledge, pedagogy and subject matter content and others (Tab.2). Lectures on pedagogy would be divided into general pedagogy and special pedagogy. Generally to say, in Japan, at the pre service level, acquisition of general competency as teachers would be

emphasized at university level training. In this context, students have only limited time to learn special knowledge in physical education pedagogy. For example, at Tsukuba university, student can take 6 credits for junior high schools certificates and 4 credits for senior high schools teacher certificates in special pedagogy in physical education. Also 63 in 70 universities (61%) set between 6-8 credits lectures related with pedagogy in physical education [43].

Tab. 2 Minimum required credits for first-classes teaching certificates

	junior high schools	senior high schools
Lectures on pedagogy	31	26
Lectures on content knowledge	20	20
Lectures on pedagogy and subject matter content	8	16
Other lectures	10	10
Total Credits	69	72

Tab. 3 Minimum required credits on lectures on pedagogy for first-classes teaching certificates

	junior high schools	senior high schools
Lectures on meaning of teachers as profession	2	2
Lectures on basic pedagogy	6	6
Lectures on curriculum and teaching methods	12	6
Lectures on student guidance, educational counseling and career guidance	4	4
Seminar on integrated learning	2	2
Practice in schools	5	3
Total Credits	31	23

Tab. 4 Minimum required credits for first-classes teaching certificates on lectures on content knowledge in physical education

	junior high schools	senior high schools
practice	More than 1 credit	More than 1 credit
"Sport philosophy or Sport psychology or Sport administration or Sport sociology" and Training science(including teaching methods)	More than 1 credit	More than 1 credit
Physiology(including Exercise physiology)	More than 1 credit	More than 1 credit
Hygiene and Public Health	More than 1 credit	More than 1 credit
School Health(including infant health, mental health, security in school and Firs-aid)	More than 1 credit	More than 1 credit
Total Credits	20	20

Discrepancy between needed competencies for physical education teachers

In the revised Course of Study for Physical Education in junior high schools, development of competencies for life time sport is set as the goal of physical education class [16]. To achieve this goal, physical education teachers should develop and improve their competencies based on pedagogical content knowledge in this subject.

On the other hands, the Education Personnel Certification Law request pre service teachers to complete only at least 1 credit in sport practice. Also in related to the Course of Study, in some universities, pre-service teachers should complete Budo credit such as Judo and Kendo because Budo is taught in many junior high schools. But, this regulation is not enough to enhance content knowledge in physical education in junior and senior high schools. So at the examination for employment as in service teachers, most of prefectural administration set performance test in 4 sport disciplines in average. There is discrepant between requested competencies at universities and that of expected at educational board and schools.

On the other hand, image of physical education teacher is so diverse. One think physical education teachers as coach for after school sport club in schools or teachers responsible for educational guidance.

In this sense, one could find out discrepancy between needed competencies for physical education teachers and image of physical education teacher in general. Most important problem in this recognition would be poor knowledge on competencies requested for physical education teacher as profession. As other subject teachers, physical education teacher should develop special competencies requested in this subject area as profession.

Problem in pre service PETE curriculum and staffs awareness at universities

As mentioned above, student in pre service program in university should acquire knowledge and skills on pedagogy and content in this subject. But implementing quality and effective teacher education program at university is not easy. There would be many reasons, but one could summarize reasons from following 5 points;

1) Attitude of staffs in university to PETE/ They should be responsible for teacher education, but there are surely some staffs in teacher education program who are so strongly oriented only to their own major science and have little enthusiasm about physical education teacher education program.

2) Week connection of lecture content with realistic problems in physical education class.

3) Student's poor sport performance in physical education major.

4) Poor ability to teach health education.

5) Image of teachers characterized as consumer of knowledge [31].

Recently, teacher is recognized as active learner and also cooperative creator of knowledge in profession. But, the concrete curriculum based on this teacher image is not yet developed.

Based on Takahashi's report [43], only in 25 universities in 52 universities (45%), all lectures on pedagogy in physical education were taught by staffs who are members of Japan Society of Pedagogy for Physical Education. In contrary, 6 (11%) universities have no major staffs in Pedagogy for Physical Education. Also in 133 lectures in 188 lectures, procedure for lesson planning is taught, but knowledge in pedagogy for physical education isn't taught enough to make realistic lesson plan.

Some trials for improving present physical education teacher education curriculum status quo

As already reported in other countries [14], one can find out also easily some trial to change PETE program at university level in Japan.

For example, 81% of all lectures in 63 universities are taught in lecture style. On the other hands, in 30% in 63 universities which have PETE program, simulated class is introduce in lectures in pedagogy in physical education. Also 13% in those 63 universities, simulated class is given as the independent lecture [43].

In this trial to improve PETE program at university level, one can recognize performance orientation and also reflection orientation in it. Like in Australia [14], New Zealand and USA [45, 12] et al., after about 2000, in Japan also, some PETE staffs have begun to introduce reflection based simulated classes in PETE program.

For example, in simulated classes, teacher behavior was taken in video and analyzed through systematic observation. Teachers and students can understand some tendency in their teacher behavior easily based on such analyzed date. These dates are also used to promote reflection on their performance and also student performance and procedure in simulated classes in peer group or by oneself. With such reflection, one can improve their performance and also deepen their reflection on simulated physical education classes [30].

Basic concepts in such PETE program are constituted with following 2 points;

1) Let pre service teachers to move from the position to be taught to the position to teach. With enhancing teaching experience, they can be aware of need of learning skills. It makes them easier to acquire basic teaching skills, pedagogical models in physical education and improve their image on quality physical education

2) Let pre service teachers experience collaboration in professional community. In cooperating with peers to make lesson plan, observe teaching behavior using systematic observation system, analyze outcomes and discuss the better lesson plan would give them indispensable experience in tentative professional community. Indeed, only in 3 days intensive program, pre service student at university level could develop their teaching skills like management skills and interaction skills.

On the other hand, it is hard to enhance content knowledge and believes on teaching in physical education in short time course without direct teaching experience for K - 12 pupils. To enhance their PCK, long term curriculum development would be requested for promoting CPD.

These trials are also supported by publication of academic research outcomes in journals and so on. Through this support, information on effective physical education and teaching skills in physical education, and procedure to promote effective reflection in undergraduate level are shared with teachers in this profession.

For example, books based on academic research outcomes for pre service teachers [41, 42, 44] are published and used at university level to improve competencies in teaching physical education. Not only introducing simulated PE class and lesson analysis through systematic observation system, but also using simple questionnaire to learners based on enhancing teaching experience, one could activate more effective reflection on physical education lesson and also improve their ability to reflect in action.

Conclusion: some remarks in the future direction in PETE curriculum development in JAPAN

To overcome the discrepant, one need to discuss the better way to change employment system to profession. Also to achieve quality physical education in schools based on the revised Course of Studies in Japan, quality physical education curriculum development in professional community, PETE curriculum and also CPD are indispensable. On the other hand, to evaluate effectiveness of such programs, we need appropriate assessment tools for these tasks and also criteria to evaluate it. Content standard and performance standard for expected competencies at pre service level should be shown based on academic evidence.

In this context, some research have suggested following points to make PETE curriculum more effective;

1) Enhance experience to know schools, learners and profession.

2) Recognize importance of reflection in professional community.

It would be very hard to make pre service teachers in PETE curriculum at university level to acquire specific content knowledge and pedagogical knowledge enough to teach in school setting because of time limitation, teacher’s believe and environment conditions so on.

In addition, as mentioned above, at university level, content knowledge and

pedagogical knowledge are taught separately. Even though simulated class is introduced into PETE curriculum, in this system, it would be hard to combine and enhance both knowledge needed for teaching. One expects it in 3 weeks school practice, but expected outcome of it depends on usually on mentors ability and their strategies [45].

In this sense, one should consider again better way to enhance PCK at university level. Making tentative content and performance standard for them related in considering with CPD would be one of such idea. To make reliable proposal on this task, we need much more scientific evidence in cooperation with schools, administrations and universities. To change teacher image would be the first step.

Teachers are not passive learners to learn knowledge for practice, they are also active learners and researchers to produce knowledge of practice. They enhance also their knowledge in practice through reflection [32].

Also content and curriculum for PETE at university level should be reconstructed based on research evidence [43]. In the process for this reconstruction, one should define standard for beginning PE teachers such as NASPE's proposal [25, 26 27] and assess outcomes in PETE curriculum. Off course, as explained above, one can find out some trials to change present status quo. In this sense, first step to change PETE curriculum has just began in JAPAN.

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THE PHYSICAL EDUCATION TEACHER IN SELF AND PEER ASSESSMENT

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Abstract

Teacher personality patterns, shaped in the form of characteristics attributed to particular groups of teachers of the given subject, as if they were accepted in school practice.

Such opinions are generally formulated by pupils. The present study is an attempt to analyse opinions on distinguishing characteristics of physical education teachers as they are perceived by teachers of other subjects, and to compare them with the PE teachers' self-assessment.

The study results show that, in the opinion of physical education teachers, the strongest features of their professional identity are their organisation skills and dynamics in action; they are also distinguished by their optimism, clothes style, manners, commitment to work, and being resourceful in life. They perceive these image attributes as of high quality. However, teachers of other subjects assess these features much lower. In their opinion, the strongest distinguishing feature of physical education teachers in the school is mainly their outfit; they are also identified by dynamics in action, optimism, lifestyle, involvement at work, and courage. This means that - either the physical education teachers have a very high opinion of their value, or their peers teaching other subjects underestimate the assessment. Undoubtedly, the self-perception factor and related mechanisms of self-promotion and depreciation play certain role in this case.

Key words: *perception, attribution, self-promotion, depreciation*

Introduction

While formulating any opinions about another person, we discuss elements of his/her personality concerning chosen spheres of his/her physical, intellectual, emotional or social existence. The popular understanding of somebody's personality refers to his/her appearance, behaviour, delivery, temper, knowledge and skills, sensibility, interests, attitude towards people and environment. These determinants, in total and dynamic terms, describe his/her character. They allow to answer the fundamental question – "Who am I?" or "Who is he?" – that is, to establish his/her personal identity or relatively social identity being basic determinants of a person's identification.

he research studies on personal identity are based on targeted self-analysis of oneself and depend mainly on the ability of carrying out the impartial self-assessment. In turn, the social identity is based on perceiving another person, the ability to see and assess his/her personality traits. In psychology such an action is defined as perception. This concept has much wider meaning then perceiving. Most definitions encountered in the literature suggest that this is a process of becoming acquainted with another people, consisting of three components [11, p.7]:

- attribution, i.e. ascribing temporary and permanent features;
- ascribing expectations;
- generating emotions.

Process of perception serves as a regulatory function of relations between an individual and the environment, allows formulating opinions, and determines individual's activity. Future of a man is also conditioned by his/her own perception of reality. Perception is determined mostly by the characteristics of the person perceiving it. Based on numerous research studies, it was stated that human perception is influenced to a high degree by the characteristics, being relatively permanent, (such as sense of security, attitudes, beliefs, personality traits), as well as temporary

emotional and motivational states (such as fear, hunger, wrath), along with the features of cognitive structure (their complexity and abstraction) [10].

As a result of accumulated experience, everyone has shaped more or less sharp picture of himself/herself, i.e. sense of personal identity, which can modify to some extent, the perception of other people. In general, people tend to perceive others as similar to them, as well as to ascribe positive traits to popular persons, and negative traits, not accepted by themselves, mainly to unpopular peoples. It is also common that the characteristics that are not accepted in his/her own person, and ascribed to another person, are "attributed to the popular people in order to re-evaluate his/her own value [10, p. 26–27].

Human perceptual processes are explained by the attribution theory initiated by Fritz Heider. Attribution is an ascription of specified personality traits or values system, needs, motives to other people or to the individual himself/herself on the basis of external behaviour, inter alia, utterance, mimics, gestures. In the classic attribution theories, the process of deduction about internal states of active person, along with internal self-states, on the basis of the external circumstances. According to Heider, a man watching another man tries to answer the question: Why does he behave in such way and not otherwise? Why does somebody like him exist? Why does he act like this? Questions raised by all of us indicate our attributional tendencies with the appearance of certain human behaviours.

The process of attribution assessed in terms of interpersonal perception may cause cognitive distortions leading to improper interpretations of social situations.

Psychologists distinguish three mechanisms of information processing:

1. Information filtering – is a selective perception of disposition (permanent traits) of our interlocutor. It occurs that such a "filter", which transmits only part of the information to reach our consciousness, is also active during the interpersonal communication. The reception of the interlocutor's traits is influenced by our previous relations with that person. Also our mood can affect our assessment of the interlocutor, since we are sensitive to the reception of certain impulses. An important role in perception plays the so-called "effect of false universality" consisting in the establishment that other people share our attitudes and behaviours. Thereby, we assess the behaviours which differ from ours as deviant.

2. Influence of the so-called "central categories" on social perception.

Solomon Asch, a pioneer of social psychology, presents central categories, which are the basis for assessment of other people. They are: emotional warmth and emotional coldness. It was proved that such categorisation has certain consequences. When we perceive a person as emotionally warm, we usually assess him/her positively on other dimensions too, even if we did not have any opportunity to verify our assumptions. Conversely, we ascribe negative traits to a person perceived as emotionally cold.

The term "central categories" is connected with one of the most often committed cognitive distortions called "halo effect". According to its definition, general impression of our interlocutor or his/her single well-defined trait influences our assessment of his/her entire person. Therefore, a person making good impression is favourable assessed by us in all other aspects ("halo effect" or the so-called "angel halo effect"). This mechanism also works backward, namely it is sufficient that the person makes bad first impression on us, and we automatically tend to assess such person negatively ("devil halo effect").

It is important to emphasize that our attributions are not based on earlier experience. We rely on our intuition, which, unfortunately, is often wrong.

In a situation when we meet any person for the first time, we often make such mistakes in social perception. We usually automatically pay attention to physical appearance of our interlocutor, along with his/her mimics, gestures, voice characteristics (e.g. intonation). We also quickly add him/her to one of the categories, usually bipolar, e.g. perceiving him/her as a friendly or hostile person.

3. Self-presentational behaviour

American sociologist E. Goffman [12] was the first sociologist, who observed that very often the man is not absolutely himself, but presents others his/her staged faces. For example, he/she does not want to show his/her anger in a group, whereas he/she cares to be perceived as an intelligent and attractive person. Such attitude is called self-presentational behaviour and it is an integral element of human nature. Each of us wishes to be perceived favourably by the environment and use various self-presentational techniques to achieve it. In the private sphere, we behave unconsciously, e.g. smiling or agreeing with other's opinion is typical verbal and nonverbal behaviours aimed to make an impression of an amiable and peaceful person. Thus self-presentation is defined as a set of actions made by the subject, in order to manage the impression of the interlocutor, and influence his/her reactions towards the subject. Goffman examines the interpersonal communication as a theatrical performance, in which interlocutors are sometimes aware of the game played by them, but, thanks to it, they can predict his/her interlocutor's behaviour [17].

Studies on interpersonal perception showed that there is some regularity in perceiving other people [9]. For example, in a situation like this, when we like two persons at the same extend, each of them more raises our sympathy even more, when we see them at the same time. We also conclude that they like each other. When we like only one of these two persons and see both of them simultaneously we usually conclude that they do not like each other. If we do not like any of these people, seeing them together, we conclude that they like each other.

Material and method

Current studies on personality characteristics of Physical Education teachers are mainly focused on recognition of their personal and competence traits on the basis of pupils' opinions or self-analysis of responders - teachers. Studies among other people outside the school environment are very rare. If pupils' or other people's opinions are analysed, such studies are based on the experience gained as a result of direct contact with the teacher and related with it expectation fulfilment. It is a study of social identity, based on the perception of a teacher by pupils. Its objectivity depends on relations between these two subjects. However, if self-assessment of own identity is carried out, a relation with our own ego occurs, a compromise between the perfect I and the real I.

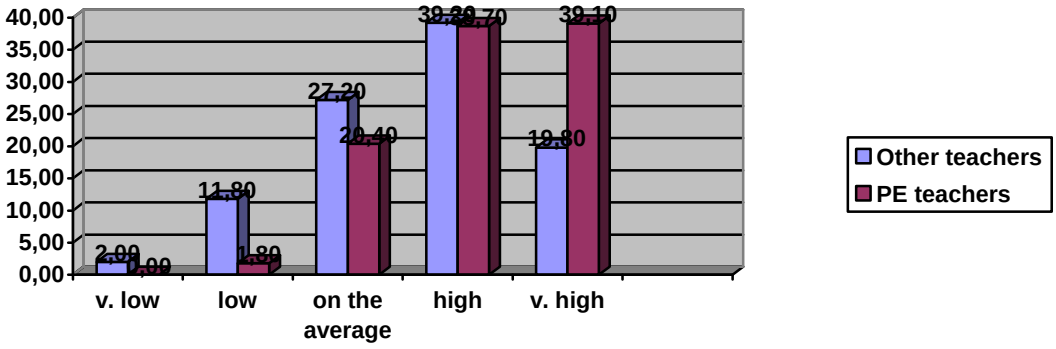
Depending on the level of aspiration and self-criticism, the positive self-creation can be the issue. From a methodological point of view, this is a study of personal identity. Both of these types of studies are linked by a very close relation between the observer and the observed, or even the identity of the "actor" and the "observer". Therefore, they have high educational value, but they are not devoid of a certain amount of subjectivism. Thus, it seems to be interesting to undertake comparative studies with an observer situated a little bit outside, but at the same time, close enough, so he/she could easily determine the strength of identity attributes of the Physical Education teacher. Such observers in the school environment are teachers of other subjects. Their perception has different context than in the case of pupils; they are not tied with Physical Education teachers by subordination, dependency nor interest mechanisms. They are connected by their work place, implementation of overall school development plans, and sometimes shared task implementation, spending breaks together, participation in school meetings and special events, as well as performing other common actions in school environment. They are on similar educational level; they know the role of a teacher in the school. Due to their pedagogical background, they are able to estimate other people. And adding to this usually long-term co-existence, it can be concluded that they have a good basis to perceive and assess analytically the personality characteristics of the observed person, rather in narrow school environment. This situation influences the results of perception to be more objective, and significantly affects the exclusion or reduces the impact of experiences connected with the so-called "halo effect".

Guided by these premises, quite extensive comparative studies on perception of Physical Education teachers, based on the self- and peer perception, were carried out. On the basis of the preliminary surveys conducted among physical

education teachers, a questionnaire for the actual studies was developed. The object of this study was personal and social identity of Physical Education teachers of selected personality and professional traits. The actual study was undertaken in 2009 and 2010 in the region of Opole and Silesia Voivodships.

In surveys, the physical education teachers have often emphasized not only the specific character of their profession, but also their otherness that distinguish them in the school environment. Consequently, they indicated examples of traits distinguishing them among other teachers. Therefore, besides the other studies, an attempt to verify this thesis has also been undertaken. For this purpose, thirteen identity attributes which in the opinion of Physical Education teachers distinguish them in the school, were subject to self- and peer assessments. The questionnaire consisted of scale questions; and to determine the strength of certain trait the Five-point Likert scale was used, where the lowest nominal value was assigned to one, and the highest results were described by the number of five. The average value of the scale is 3. Results lower than the average have low connotations and the results with greater numbers were perceived as positive.

In the study, Physical Education teachers were perceived as a monogamous group without distinction of females and males. Teachers of other subjects seen as “observers” and Physical Education teachers in a dual role (“actor” and “observer”) were the independent variables. Percentage index of the respondents’ opinions and calculated average values of the Five-point scale (VS) were used to analyse the results of the study. They indicate the strength of each dependent variable value. Statistical significance of differences between the independent variables was determined by the χ^2 test at $p< 0.05$.



χ^2= 60.00 df=4, p< 0.001

Fig.1. Distinction of Physical Education teachers on the basis of their clothes style in self- and peer- opinions.

Tab.1. Distinction of Physical Education teachers on the basis of their clothes style.
– in terms of a fraction of the surveyed teachers (VS – values of the scale index).

Gender	Peer assessment		Self-assessment	
	Primary schools	Secondary schools	Primary schools	Secondary schools
Females	3.64	3.59	4.00	4.17
Males	3.59	3.78	4.03	4.26

Results

In the prism of self-attribution the self-image of a person reflects the one that is desired by the person. However, in the exterior perception, attributes that are the strongest ascribed to another person are the most characteristic, expressive, unequivocal and vivid. The leading role in perceiving these signals plays the visual perception channel. Perhaps the saying "fine feathers make fine birds" is derived from this. In the course of further cognition, the first observations are strengthened by information received from perception of other personality traits, transmitted by verbal communication and behavioural evaluations. An observer develops more precise opinion about the observed person as a result of longer relation with him/her and different experiences. In this respect, it should be more objectified.

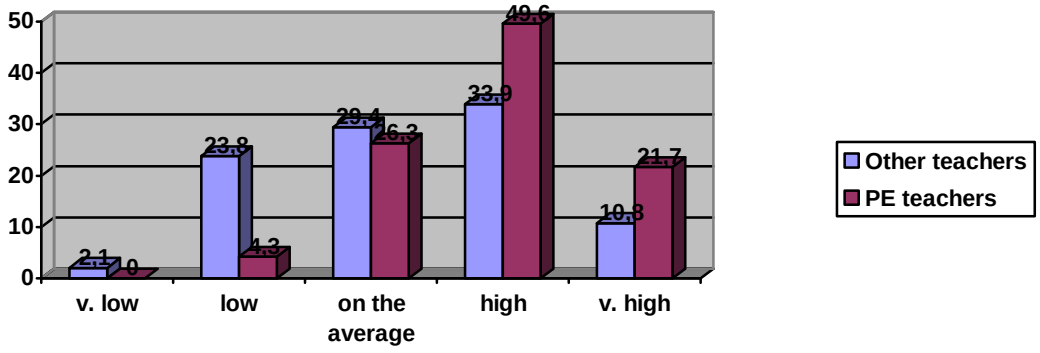
In this survey, opinions on characteristics that distinguish Physical Education teachers in the school environment were presented by 312 PE teachers and 600 teachers of other subjects taught in primary and secondary schools.

Among thirteen examined attributes classified as the so-called "social distinguishing features", according to teachers of other subjects, Physical Education teachers can be distinguished in the school environment by their clothes style. The average value of the scale for this attribute of their professional identity amounts to VS=3.64. This attribute is estimated much higher by physical education teachers, VS=4.11. The result distribution for this characteristic (Fig. 1) is strongly differentiated (χ^2= 60.00, df=4, p< 0.001).

Differences in perception of the professional identity attribute are very clear (0.47 points), which can be easier noticed in Table No. 1, including the average values of the scale index for fractions of the surveyed teachers.

Analysis of the test results of this variable confirms the popular opinion that the PE teacher clothing style is rather a strong attribute distinguishing him/her among teachers of other subjects, but not as strong as the PE teachers think it is.

The specificity of clothing style influences the aesthetic impression assessment made on the observers. Not everyone can be impressed by frequent watching even shapely silhouette of a woman or man dressed in sporting clothes, especially in the staffroom during a break or after classes. Perhaps that is one of the reasons why the personal appearance of Physical Education teachers was assessed much lower than their clothing style by teachers of other subjects (VS=3.15). It is worth emphasizing that 26% of the teachers "observers" assessed PE teachers in the categories of low (Fig. 2). Such opinion was expressed by only 4.3% PE teachers. The PE teacher appearance was marked with the lowest grades by female teachers from primary schools (VS=2.89). Apparently, they rather do not accept such model of appearance or they have different requirements.



χ^2= 80.37, df=4, p< 0.001

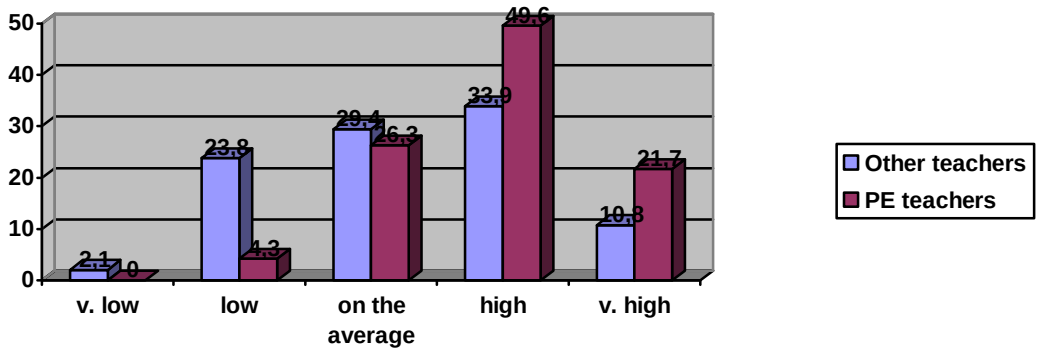
Fig.2. Distinction of physical education teachers on the basis of their appearance in self- and peer opinions.

Tab.2 . Distinction of physical education teachers on the basis of their appearance – in terms of the fraction of the surveyed teachers (VS – values of the scale index).

Gender	Peer-assessment		Self-assessment	
	Primary schools	Secondary schools	Primary schools	Secondary schools
Females	3.30	2.89	3.81	3.82
Males	3.12	3.08	3.84	3.86

The issue of appearance can be perceived differently, thus it depends on personal aesthetic opinions, lifestyle, or even followed values. It is common to say: “clothes do not make the man” or “it is not what outside, but what is inside that counts”.

For attribution of identity traits of others, their way of being in a certain social environment is important. This concept means an individual behaviour in a variety of social situations or in fixed manners, described as a lifestyle. The way of being comprises of different types of proceedings, manners, attitudes, customs and traditions. There are people strictly following traditional conventions, but there are also those who behave differently, according to another formula, or following their own principles. The way of human being is also influenced by many intellectual, emotional and ethical factors. The character plays here an important role, including “… relatively stable characteristics of human behaviour, which is expressed in his/her attitude towards other people, himself/herself and his/her own actions” (Psychological dictionary, Słownik psychologiczny 1985). The lifestyle is often identified with the personality. One of the important personality traits is cheerful lifestyle expressed as openness towards other people, honesty, positive thinking and acting, not concentrating on unimportant issues, self-acceptance without inferiority or superiority complexes, avoiding unhealthy competition, and manipulation. Eupeptic person is characterised by serenity, warmness, optimism, friendliness, naturalness. Such personality attributes facilitate interpersonal relations and functioning in certain community. A cheerful person easily communicates with others, gains their trust, people are willing to meet with him/her. A cheerful teacher is popular among pupils, and it facilitates their cooperation and implementation of the charged tasks. In social feeling, the school environment should be a model of behaviours accepted in the culture. And so it is due to the lifestyle of teachers and tutors, which is firmly rooted in traditionalism. The question concerning the lifestyle of Physical Education teachers, answered by the respondents, is an attempt to verify this thesis by very strict observers, such as the peers – teachers of other subjects in the school.



χ^2=1343.43, df=4, p <0.001

Fig. 3. Distinction of Physical Education teachers on the basis of their lifestyle in self- and peer- opionions.

Tab. 3. Distinction of physical education teachers on the basis of their lifestyle – in terms of the fraction of the surveyed teachers (VS – values of the scale index).

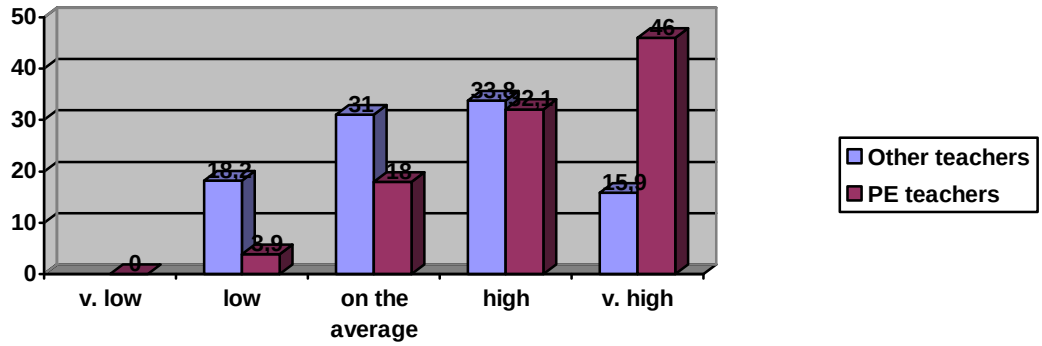
Gender	Peer-assessment		Self-assessment	
	Primary schools	Secondary schools	Primary schools	Secondary schools
Females	3.20	3.10	4.05	4.00
Males	3.38	3.27	4.19	4.03

As it can be seen in statistical presentations (Fig. 3 and Table 3), the lifestyle strongly differentiates opinions of respondents on this topic. Teachers of other subjects in the school assess the lifestyle of PE teachers much lower (VS=3.23) than they do (VS=4.06). The statistical significance of differences in the distribution of opinions is $p < 0.001$. Perhaps the teaching environment, keenly aware of the attributed role-model, is too strongly stacked with the classic model, and PE teachers do not fit to this canon to some extend.

The lifestyle of a person is influenced by many intellectual, emotional and ethical factors. The leading role is played by his/her character, covering "… relatively stable characteristics of human behaviour, which expresses his/her attitude towards other people, himself/herself and his/her activity" (Psychological dictionary, Słownik psychologiczny 1985). Lifestyle is often identified by personality. One of the important personality traits is cheerful lifestyle expressed as openness towards other people, honesty, positive thinking and acting, not concentrating on unimportant issues, self-acceptance without inferiority or superiority complexes, avoiding unhealthy competition and manipulation. Eupeptic person is characterised by serenity, warmness, optimism, friendliness, naturalness. Such personality attributes facilitate interpersonal relations and existence in a certain community. A cheerful person easily communicates with others, gains their trust; people are willing to meet with him/her. A cheerful teacher is popular among pupils, and it facilitates their cooperation and implementation of the assigned tasks.

Our study shows that according to teachers of other subjects (peers) this personality trait of PE teachers (VS=3.47) does not distinguish them as strongly as it is assessed by them (VS=4.17). In their assessment this trait is marked definitely higher (0.70 point), which shows the differences in perception of other people behaviours by representatives of both fractions of teachers. In this moment it is essential to point that the PE teachers have a mechanism of self-presentation, which increases the importance of their virtues, to make better impression on others. An example of such situation are the results presented in Figure 4, where we can see that 78% of PE teachers is convinced of their well-developed serenity, while their colleagues perceive this trait in 50% of cases.

Another specific trait ascribed to PE teachers connected with serenity is their immediacy. It is one of the components of the cheerful personality attribute, it stands for simplifying complicated conventions and behaviour forms during the mutual communication, in favour of simple relations between people, based on assertive behaviour. An immediate person sends his/her communicate directly to the receiver of the message, without any mediator.

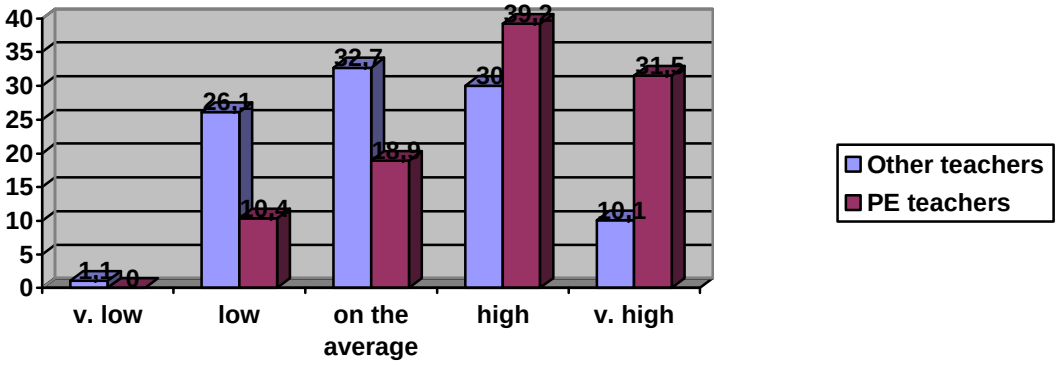


χ^2 = 120.75, df=4, p< 0.001

Fig.4. Distinction of Physical Education teachers on the basis of their serenity in self- and peer- assessments.

Tab.4. Distinction of physical education teachers on the basis of their serenity – in terms of the fraction of the surveyed teachers.

Gender	Peer-assessment		Self-assessment	
	Primary schools	Secondary schools	Primary schools	Secondary schools
Females	3.34	3.23	4.13	4.35
Males	3.68	3.57	4.03	4.21



χ^2= ,df=4, p<102.41

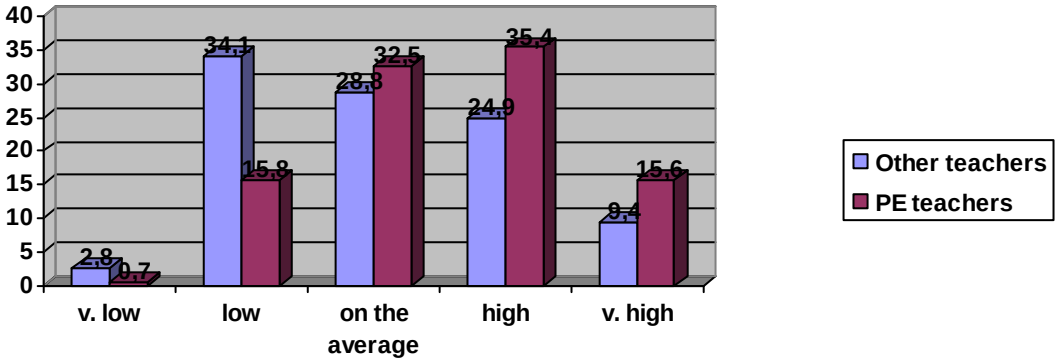
Fig.5. Distinction of Physical Education teachers on the basis of their immediacy in self- and peer-assessment.

Tab.5. Distinction of Physical Education teachers on the basis of their immediacy – in terms of the fraction of the surveyed teachers.

Gender	Peer-assessment		Self-assessment	
	Primary schools	Secondary schools	Primary schools	Secondary schools
Females	3.01	3.17	3.65	4.11
Males	3.45	3.22	3.96	3.95

According to teachers of other subjects, this personality attribute of PE teachers is estimated a bit higher (VS=3.21) than the average. However, in self-presentation of PE teachers this attribute is assessed remarkably higher (VS=3.92), and very close to be ranged as "high" attribute. The difference is 0.71 scale point. The lowest notes were received from female teachers of other subjects from primary schools (VS=3.01) and the highest notes were from PE female teachers from secondary schools (VS=4.11).

Another trait, similar to immediacy is straightforwardness, describing an upright, honest person going straight to the goal. When PE teachers talk about their personality traits this attribute is often exposed and treated as a reason to be pride of, however, not everybody approves such behaviour. The study shows that the external opinion on the level of this personality trait among PE teachers is similar to the one from self-assessment, thus the average of the scale index of the "observers" is VS=3.33 and PEs is VS=3.43. Thus it is more impartial. The results are shifted to lower values. The difference between average values is very small and amounts to 0.10. However, the distribution of opinions is strongly differentiated (χ^2 = 96.00, df=4, p<0.001).



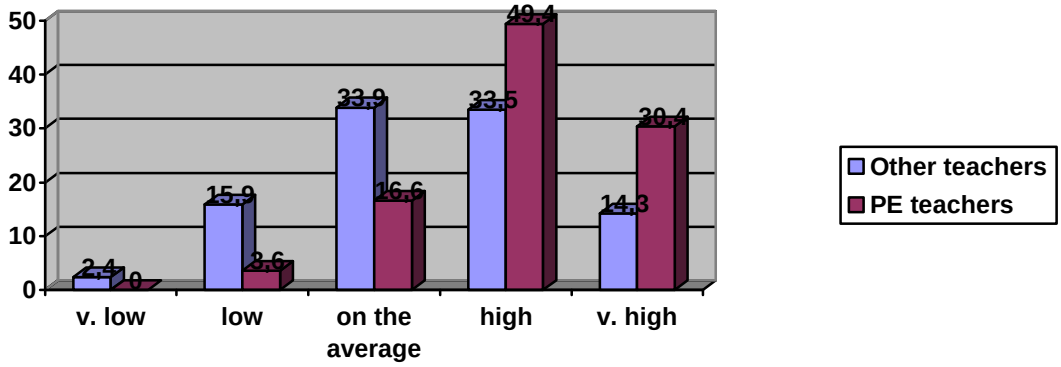
χ^2=45.96, df=4, p<0.001

Fig.6. Distinction of Physical Education teachers on the basis of their straightforwardness in self- and peer-assessments.

Tab.6. Distinction of Physical Education teachers on the basis of their straightforwardness – in terms of fraction of the surveyed teachers.

Gender	Peer-assessment		Self-assessment	
	Primary schools	Secondary schools	Primary schools	Secondary schools
Females	3.33	3.27	3.48	3.52
Males	3.30	3.45	3.36	3.36

Being an open, immediate, and honest person requires a certain dose of caution, prudence to not to commit faux pas in too sensitive and nervous teaching environment, or not to offend anybody, and in consequence, not to fall into disgrace. Caution corresponds to courage, resolute attitude towards things and people. Sometimes it takes the form of fearlessness and bravery, but without proper caution it could become madness. In school environment extreme situations occur seldom, they are rather dominated by practice and set in a specific context to become cautious behaviours. However, in some situations, e.g., extreme situations and during physical exercises, the courage is needed.



χ^2= 96,27,00, df=4, p < 0.001

Fig.7. Distinction of Physical Education teachers on the basis of their courage in self- and peer-assessment.

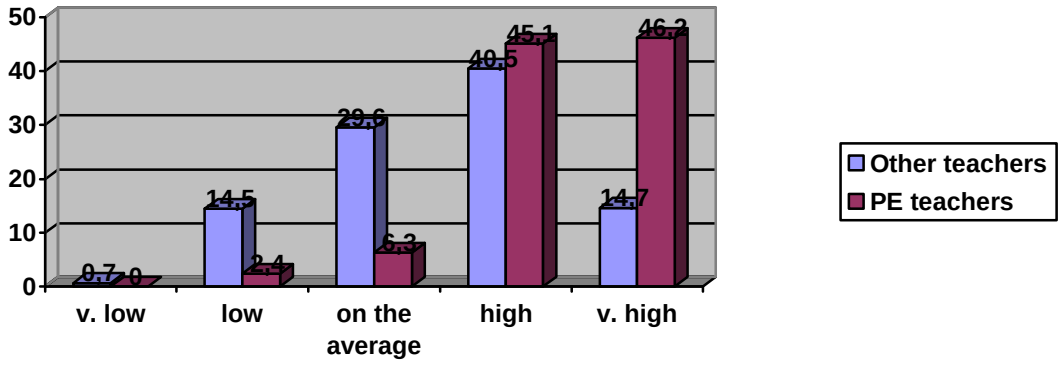
Tab.7. Distinction of Physical Education teachers on the basis of their courage – in terms of the fraction of the surveyed teachers.

Gender	Peer-assessment		Self-assessment	
	Primary schools	Secondary schools	Primary schools	Secondary schools
Females	3.16	2.90	3.65	4.05
Males	3.40	3.20	3.73	4.06

The courage of PE teachers was assessed by peers as slightly above the average (VS=3.29), whereas, the self-assessment was close to the high value (VS=3.88). The diversity of opinion distribution is very high (Fig. 7); 80% of PE teachers assessed their courage as high or very high, while peers assessed this attribute much lower, in 48% of cases. Teachers from secondary schools assess themselves as more courageous (VS=4.06), than their primary school counterparts (VS=3.69).

Another characteristics associated with the work specificity of PE teachers are activity dynamics and organisational efficiency. High efficiency in management of an athlete team, as well as time and space management skills are essential to deal with physical education classes effectively. For activity implementation are also needed: high operability and ability to perform multiple tasks at the same time, as well as the ability to shift quickly from one task to another. Such organisational and methodical mobility can be transferred to other areas of PE teacher activities.

This attribute of their profession identity is self-assessed high (VS=4.35). Much lower, about 0.81 of scale point, it is assessed by peers (VS=3.54). In their opinion, this trait is seen a little higher than average, and thus, it is not any special distinguishing characteristic.



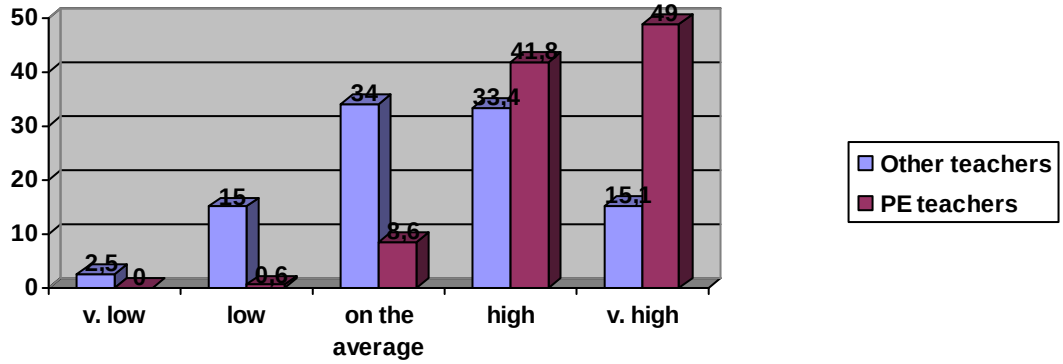
χ^2= 164.2, df=4, p < 0.001

Fig.8. Distinction of Physical Education teachers on the basis of their dynamics activity in self- and peer-assessment

Tab.8. Distinction of Physical Education teachers on the basis of their dynamics activity – division of questioned teachers into fractions.

Gender	Peer-assessment		Self-assessment	
	Primary schools	Secondary schools	Primary schools	Secondary schools
Females	3.43	3.36	4.30	4.50
Males	3.59	3.79	4.36	4.26

It is difficult to say, whether this very strong, from a statistical point of view, discrepancy (p<0.001) results from the temperance of "observers", or is due to the lack of observation of their peers' work, or results from extortionate self-assessment of PE teachers. The difference between opinions of respondents increases to 1.04 point on the scale in assessment of PE teachers' organisational efficiency.



χ^2= 193.73, df=4, p < 0.001

Fig.9. Distinction of Physical Education teachers on the basis of their organisational abilities in self- and peer-assessment.

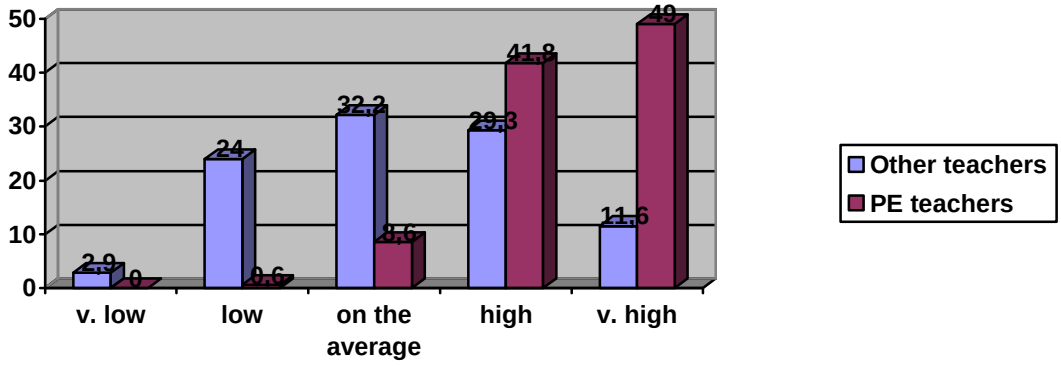
Tab.9. Distinction of Physical Education teachers on the basis of their organisational abilities – in terms of the fraction of the surveyed teachers.

Gender	Peer-assessment		Self-assessment	
	Primary schools	Secondary schools	Primary schools	Secondary schools
Females	3.33	3.27	4.39	4.53
Males	3.30	3.45	4.27	4.30

It can be presumed that perhaps the sphere of organisational work activity of PE teachers is not well known by teachers of other subjects.

Subsequent attribute of the professional identity, connected with the quality of activity, is the level of the involvement in the work at school. During various PE teachers' meetings there are shared opinions about their remarkable involvement in the work within the range of physical education at school, thus apart from regular classes, they also conduct extracurricular and sports activities. They often go to sport events, rallies or camps. They organise summer and winter camps, and are responsible for maintenance of sports facilities and equipment at school. In addition, like other teachers, they are class masters and perform various ad hoc tasks ordered by school management.

The research shows that according to 82% of the PE teachers, their involvement in school work is high and very high. Whereas, according to peers, the number is lowered about half (41%), and quarter of them perceived the PE teachers' involvement in school work as low (Fig. 10). In this case, the variable of the scale index is 0.77 point. The statistical significance of differences in the distribution of the surveyed results is very high ($p<0.001$).



χ^2= 103.43, df=4, p< 0.001

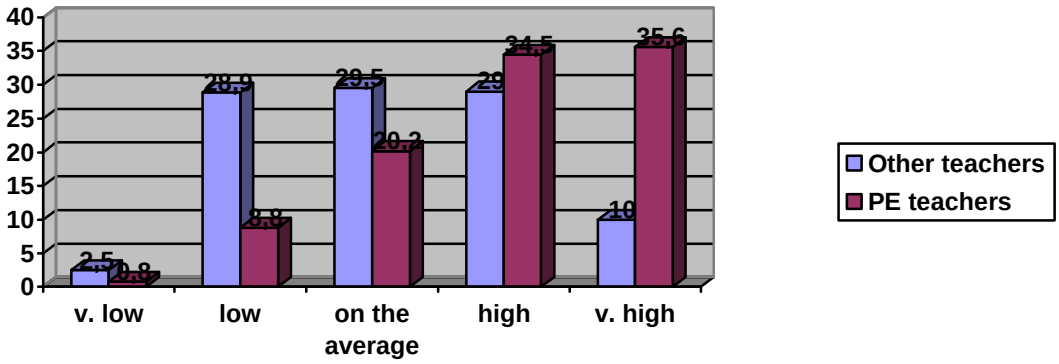
Fig.10. Distinction of Physical Education teachers on the basis of their involvement in the work in self- and peer-assessment.

Tab.10. Distinction of Physical Education teachers on the basis of their involvement in the work – in terms of the fraction of the surveyed teachers.

Gender	Peer-assessment		Self-assessment	
	Primary schools	Secondary schools	Primary schools	Secondary schools
Females	3.19	3.11	3.97	3.97
Males	3.42	3.23	4.08	3.98

On this basis, it can be assumed that the sphere and specificity of the PE teachers work is not well known by their colleagues – teachers of other subjects.

Another very important professional trait of a PE teacher is a way to communicate with other people, especially the ability to start a conversation easily and share information with other people. These competences depend on many factors, but especially on personal capacities, such as the mentioned earlier: openness, immediacy, straightforwardness, cheerful personality and temper type. Apart from these elements, an important role is played by the willingness to communicate with other people. Contacts can be established verbally or by body language. The way in which the PE teacher communicates is characterised by specificity of the subject. During classes, the given messages should be clear, simple, given at the right time and in the right pace. They should be understood by all participants at the same time. The nonverbal message in the form of established signs is very helpful for the performance of these tasks. With regard to the multiplicity of events during physical education classes, the language used by the teacher should be essential. Often it takes the form of commands. The specificity of communicating with pupils during classes influences the way the PE teachers communicate with other people in other situations.



χ^2= 120.91, do=4, p < 0.001

Fig.11. Distinction of physical education teachers on the basis of their way of communication in self- and peer-assessment.

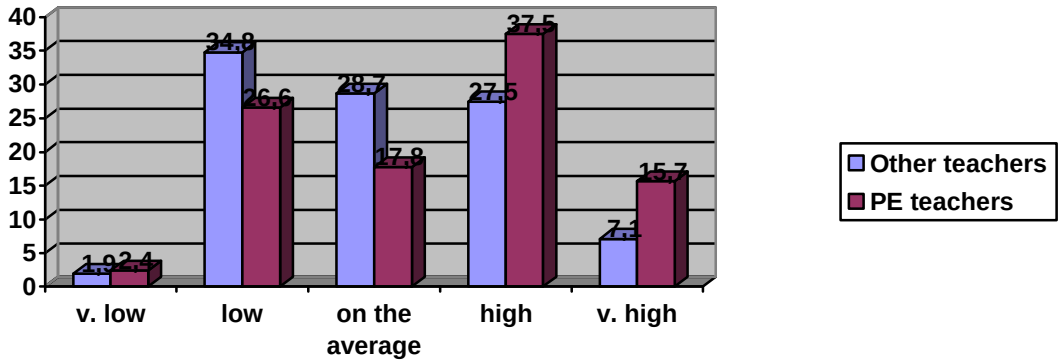
Tab.11. Distinction of physical education teachers on the basis of their way of communication – in terms of the fraction of the surveyed teachers.

Gender	Peer-assessment		Self-assessment	
	Primary schools	Secondary schools	Primary schools	Secondary schools
Females	3.12	2.88	3.67	4.17
Males	3.42	3.25	3.84	3.80

As with the previous attributes, the teachers - "observers" assessed the PE teachers' ability to communicate with others, slightly above the average (VS=3.16), which is 0.71 point lower than the PE teachers. The remarkable discrepancy (1.29 point) is visible between female teachers of other subjects from secondary schools (VS=2.88) and PE female teachers from the same type of schools (4.17). It should be informed here that such low score was influences by low assessments among female

teachers of mathematics and natural sciences (VS=2.70).

It is hard to find the reason of such diversity. Perhaps it is influenced by the way of speaking, including: vocabulary, grammar and stylistic correctness of the utterance, along with the intonation, and sensibility of messages. It is also essential to emphasize the specific character of the teaching environment, responsive to the linguistic correctness and the way of speaking. The distribution of results concerning the way of speaking of PE teachers is placed on the lower lever (Fig. 12).



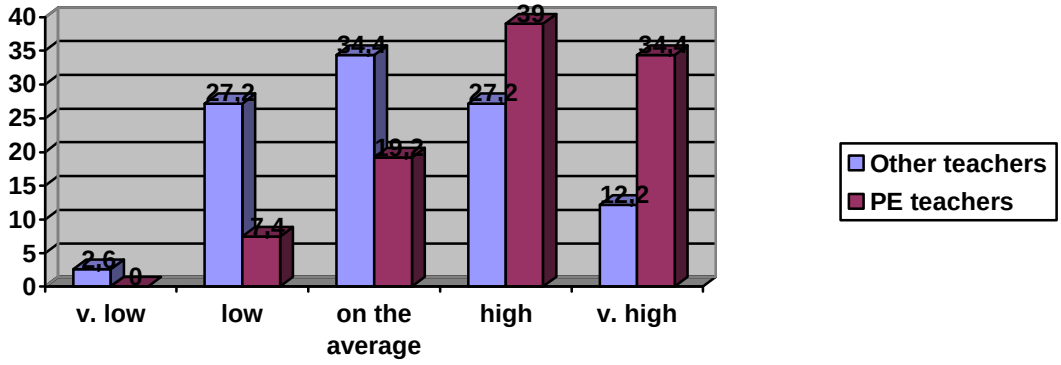
χ^2= 36.7, df=4, p< 0.001

Fig.12. Distinction of physical education teachers on the basis of their speaking manner in self- and peer-assessment.

Tab.12. Distinction of physical education teachers on the basis of their speaking manner – in terms of the fraction of the surveyed teachers.

Gender	Peer-assessment		Self-assessment	
	Primary schools	Secondary schools	Primary schools	Secondary schools
Females	2.95	2.76	3.25	3.50
Males	3.27	2.90	3.30	3.36

The average value of the scale for teachers of other subjects was VS=2.97, being almost average, and the index for PE teachers was slightly higher, amounting to VS=3.35. For this attribute it is difficult to find any special reasons for the discrepancy of assessments, as the perception of the way other people speak is an individual matter and depends on various personal factors. The difference of 0.38 point can be seen as the influence of the self-presentational factor. Based on the collected material, the PE teachers' personality traits cannot be described as distinguishing factors in teaching environment, neither as positive or negative.



χ^2= 151.74, df=4, p < 0.001

Fig.13. Distinction of physical education teachers on the basis of their self-help in the face of life in self- and peer-assessment.

Tab.13. Distinction of physical education teachers on the basis of their self-help in the face of life – in terms of the fraction of the surveyed teachers.

Gender	Peer-assessment		Self-assessment	
	Primary schools	Secondary schools	Primary schools	Secondary schools
Females	3.14	2.95	3.90	4.14
Males	3.38	3.14	4.09	3.91

The last question concerning the distinctive personality attributes of PE teachers was concentrated on their resourcefulness of life, as the ability to deal with problems in various life situations, finding the correct way in difficult situations, forethought, or the so-called "enterprise tendency". The strength of this variable is rather high in the opinion of PE teachers and amounts to VS=4.01, which means that it is placed in "high" categories. As in the case of previous identity attributes of physical education teachers, the peers' assessment is remarkably lower, and amounts to VS=3.15. The highest marks were given by the female PE teachers from secondary schools (VS=4.14) and by their male colleagues – male PE teachers from primary schools (VS=4.09). The lowest marks were given by female teachers of other subjects from secondary schools (VS=2.95).

Discussion and Conclusion

The aim of the study was to verify the opinions of PE teachers concerning the certainty that they can be distinguished among teachers of other subjects by their peculiar identity attributes. The results show (Table 14.) that, according to the PE teachers, the strongest values are their organisational ability and activity dynamics, and they are distinguished by their cheerful personality, clothes style, lifestyle, commitment to work, and resourcefulness in life. They perceived the level of these values as high. Such traits as immediacy, courage, communicativeness and self-presence are assessed slightly lower in their opinions. Even worse notes, but still above the average was given to the way they speak and their straightforwardness.

Table 14. Hierarchy of attributes that distinguish PE teachers in the teaching environment by values of the scale of self- and peer-assessment.

Attribute	PE teachers		Other teachers		Difference
	Position	VS	Position	VS	
Organisational ability	1st	4.37	4th	3.33	1.04
Dynamics activity	2nd	4.35	2nd	3.54	0.81
Cheerful personality	3rd	4.17	3rd	3.47	0.70
Clothes style	4th	4.11	1st	3.64	0.47
Lifestyle	5th	4.06	6th	3.23	0.83
Resourcefulness in life	6th	4.01	10th	3.15	0.86
Commitment to work	7th	4.00	4th	3.23	0.78
Immediacy	8th	3.92	8th	3.21	0.71
Courage	9th	3.87	6th	3.29	0.58
Way of communication	9th	3.87	9th	3.16	0.71
Presence	11th	3.84	11th	3.10	0.74
Way of speaking	12th	3.55	13th	2.97	0.42
Straightforwardness	13th	3.49	12th	3.05	0.44
Average value	3.97		3.26		0.71

Meanwhile, teachers of other subjects assess these traits much lower, by nearly one point of the scale (0.71). In their opinion, PE teachers can be distinguished mostly by their clothing style, as well as by their dynamics in actions associated with cheerful personality, lifestyle, commitment to work, and courage. Interpersonal communication and presence are also perceived slightly above the average. The lowest notes were given to the way the PE teachers' speak. The largest discrepancy between perceptions of the presented attributes is visible in assessment of the organisational abilities of PE teachers and amounts to 1.04 of the scale point. In terms of statistics, all distributions of results are strongly differentiated and go even above the level of significance of $p < 0.001$. That means that either physical education teachers have a very high opinion on their values, or teachers of other subjects understate their assessments. Undoubtedly, the self-perception factor and related to it self-promotion and depreciation mechanisms play certain role in this case.

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Mass sports and recreation events as effective instruments of health-oriented education

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Abstract

Effective health-oriented education in the area of sports and recreation events organization - is not a goal which is easy to achieve. The idea is certainly worthy of attention, since the benefits can be passed on to the organizer, sponsor and the entire society.

The purpose of this paper is to present sports and recreation events as a means of promoting physical culture and health-oriented education. Motions, proposals, and preconditions (as described here) of effective educational intervention in the organization of events are based on 15-years-long secret (hidden) participatory observation of 141 different (in terms of their organizational specifics) street runs - both in Poland and in the neighbouring countries - Germany, Czech Republic and Slovakia.

Sports and recreation events can become an effective instrument of education for a healthy lifestyle only if they are widely available (easily accessible), if they draw media attention, are popular, cyclical (recurring), have a specific program and atmosphere.

The organizers of events in the area of physical recreation should not encourage competition but rather educate for regular participation in health-oriented training, while active participation in sports and recreation event might fit in the pre-planned health capacity control.

For sports and recreation events to become a carrier of socially desirable values such as health or healthy lifestyle, promoters should intentionally put emphasis on these values and place them above commercial or marketing strategies of sponsors.

Key words: *health education, health promotion, sports and recreation events*

Introduction

Health problems prevail in the contemporary world despite the extensive technological progress which enables rising standard of living and significant achievements in medicine. Still, even if over the years mankind has successfully coped with a number of dangerous diseases, new ones emerge in their place.

Global health policy, achievements in the domain of hygiene and modern methods of treatment permit to draw the conclusion that we have already learned how to control the most serious health risks. Observed over the last few decades a marked decline in infant mortality and increased life expectancy in the European Union prove this beyond a reasonable doubt [20].

At this time, health problems which are of the utmost importance both in the developing countries and in the highly developed areas are associated with the civilization diseases. As has been repeatedly shown, these diseases have their source in the people's environment and behaviour [14]. That explains why the concept of lifestyle and more precisely – the concept of healthy lifestyle has entered the popular culture of western societies and is now rapidly spreading.

The purpose of this paper is to present sports and recreation events as a means of promoting physical culture and health-oriented education. Motions, proposals, and preconditions (as described here) of effective educational intervention in the organization of events are based on 15-years-long secret (hidden) participatory observation of 141 different (in terms of their organizational specifics) street runs - both in Poland and in the neighbouring countries - Germany, Czech Republic and Slovakia.

Health perceived as a value

Amid the multitude of definitions and concepts of health it is not an easy task to unmistakably identify the right one which would be appropriate for all the communities in the entire world. At its establishment just after World War II the World Health Organization (WHO) adopted the definition saying that health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity [18]. This excessively idealistic, albeit comprehensive, definition has been widely applied to this day. Without much doubt it has become the reason why the notion of well-being was introduced to the wide circulation (also scientific one). However, the concept was often understood differently and, what is more, wrongly associated with happiness and high quality of life. The mentioned above most frequently cited definition has firmly established itself in popular culture and the concept of well-being has become excessively associated with notions like wellness or fitness.

Multidimensional perception, positive way of defining health, focusing on health and not on illness have opened up new opportunities for recreational and preventive health care services. Health promotion ideas are being increasingly adopted everywhere. Programs with local or international reach are implemented all over the world with the aim to promote health and healthy lifestyles. Awareness of the value of health perceived multidimensionally can be easily traced in a number of international legal acts and the legal systems of most countries, including Poland. The National Health Programme and recent reform of education which introduces physical education issues to the core curriculum in the field of health education are good examples of declarative concern of the State for the health and quality of life of its citizens [12, 8]. However, specific provisions implying individual responsibility for one’s health very slowly (too slowly) translate into concrete, practical behaviours aimed at strengthening health.

Significant failures in this regard relate not so much to the way the health information is spread but rather to negligence in developing health-oriented attitudes, including the ability to make the right choices. T. Maszczak [11] assumes that "all health behaviours are culturally conditioned, so you have to be able to select the appropriate models from a variety of proposals and reject then the unfitting ones." In the process of making choices useful are role models, beliefs and held values [3].

According to G. Kloska [9] value is "what is precious and desirable, and what constitutes the goal of human endeavour." K. Denek gives great importance to the values in human life. It is believed that they serve as the compass that guides the behaviour of people, affects their conduct and also makes possible their assessment [6].

Health is a universal value because it has the capacity of prerequisite making possible achievement of other values. High potential of health opens the way to satisfying important needs related to self-fulfilment and contentment and thus enabling increased quality of life both for individuals and entire social groups. WHO in its official documents promotes health as a value, giving emphasis to the fact that only a healthy society is able to grow and produce material and non-material goods.

Health-oriented education through physical education

In public education an important role is assigned to axiological category. M. Kowalski and A. Gawel claim that there is a need – more urgent than ever before – to emphasise the values in the educational practice because these values pertain to goals, content and methods of any educational process. Values, as both authors assume, are "an essential element construing an educational situation and forming the foundation which makes possible the educational process to take place" [10].

The process of health-oriented education begins at an early age and is sustained and supported by educational institutions. According to theoretical assumptions, physical education has a vital role to play in enhancing the value of health. However, A. Pawłucki argues that physical education teachers unfortunately are not prepared to meet the need for health-oriented personality formation that would emphasise taking care of the body [16].

Health education of children and adolescents usually focuses on abstract - from their point of view - problems. It is difficult indeed to convince to health-oriented values somebody who is in good health due to his young age. Still, health must not necessarily be treated as a physical condition; it may also be perceived as a process [17]. Understanding health's continuous heterostasis - moving through the continuum from one end of full health to the other of total disease - may result in developing personal interest and commitment [1].

Self-improvement can be a pleasant and rewarding experience. Working on health basically boils down to the implementation of a healthy lifestyle; one just works on himself. Effort that is put in the implementation of specific health-oriented behaviour can enhance your health and increase the potential. Understanding health in terms of resource or potential may also be an important factor that increases the motivation to work on it. At this point begs the fundamental question: why are we witnessing so many expressions of lack of respect to the health, even though in our culture it is commonly considered to be a great value, worthy of almost any efforts? Dangerous, risky behaviours are more attractive than the prudent ones. Refraining from any effort - physical and mental inertia - is the preferred pattern of resting. With no doubt it constitutes the educational challenge which parents, schools and other educational institutions are unable to cope with. Of utmost importance is to search for new solutions, new channels of communication and ways to build awareness.

Physical culture is the carrier of many socially desirable values. One of them is health. This value is especially appreciated in the context of its institutionalized forms such as physical education, recreation and rehabilitation. Physical recreation area is the broadest domain and most directly refers to the value of health and ways of increasing its potential. At this time, a wide range of available recreational activities makes it possible to put together an offer which accurately fits individual needs and abilities.

It should be noted that health-oriented education which emphasises value of health is a continuous process which proceeds through all stages of human life and ever more often advances beyond school environment. Organizers of sports and recreation events might be among those who take on the role of educators and health promoters.

Sports and recreation events as carriers of health values

The vast majority of events in the domain of physical education involve emotions and competing. They act as motivators inducing people to gather in a particular place and time. Engagement which takes place between contestants – actors in this show - is restrained by strict rules and its aim is to single out the winner.

In the process of examining sports events one has to differentiate between the spectacle of sports and recreational event. While sport events attract large audiences which gather to cheer professional athletes, the typical recreational events involve massive participation of amateurs. The distinction is important as it determines the person's behaviour and the impact on health. Sporting events create the opportunity for dissemination of negative behaviours. Cheering often involves the consumption of alcoholic beverages and unhealthy snacks. Sport events can of course play a meaningful role in terms of psycho-social well being and indirectly affect the level of participation in physical recreation. H. Zdebska [21] is of the opinion that sports are an important part of popular culture; transcending the realm of sport, they act as a catharsis (discharge negative emotions).

However, active participation in recreational event not only encourages a healthy life but also enforces it through health-enhancing training, which opens the way for a successful participation in a recreation event with sport activities in its programme. Even if there are sports and recreation events which do not require prior preparation, the mere participation in a sporting activity has already a health-enhancing value. J. Szczepański writes "only action has the magical power that can trigger a new action, release new strength, ascertain the human possibilities, wake dormant forces, set in motion the chain of individuals, groups, social classes and nations in order to achieve very

different purposes, all of them multiplying and developing human strength and capabilities "[19].

Event organisers take on the responsible task of educating for the value of health by way of creating communities. Almost all the regulations of sports and recreation events have a provision relating to promotion of a healthy lifestyle. Unfortunately, in some cases it is nothing more than twaddle. Of course, the mentioned provision is always effectuated in an indirect way - to a lesser or greater extent.

The sport and recreation event programme may include provisions related to healthy lifestyle, prevention and health promotion. Event can also be a carrier of a “hidden agenda" – message unconsciously transmitted both by organizers and participants. Promotional power of events is being noticed by more and more cities and businesses interested in image building. Events can promote almost anything; a particular activity, place, people, goods or leisure offers [2].

It is important for the organizer to be fully aware of the influence it exerts and, going even farther - consciously model it through the events’ programme. The impact may vary, depending on the characteristics and size of the event. It is worth noting that not only the active participants but also the spectators and passers-by who watch the event from the outside can experience self-reflection regarding their own performance, health and lifestyle. Thus, the goal of mass commercial sports and recreation events may surpass the popularization purposes and include education for active participation in the health training.

Occasionally, during recreational events participants can undergo a free, preventive examination and talk with experts in many fields that are relevant to a healthy lifestyle. So, the programme may be intentionally directed at socially desirable values.

One should not overlook the socio-cultural determinants of health behaviour. Though the lifestyle is shaped in adolescence in the process of socialization, it is subject to change in the later stages of ontogeny. Change in the way of life is preconditioned however by re-orientation in the value system of the individual. M. Nijakowski assumes that "the mode of existence of a human being differs from the mode of existence of animals in this that it constitutes an intermediate form of satisfying particular system of needs by means of values." Following this line of thinking, he believes that the way of life is determined by the way the values are implemented [13].

As healthy lifestyle is of great worth from a social point of view, important is also education aimed at promoting and fostering the values of a healthy lifestyle.

Changes in the lifestyle of adults are usually carried out in several successive stages [4]. The first, preliminary, is characterised by manifesting resistance to change. The second step is considering - the individual begins to deliberate about the eventual changes. The next step is preparation - the person is ready to make substantial changes in his life. The fourth stage is action - it is only now that the specific changes are implemented. The last stage is about sustaining - putting the changes into regular practice. The ultimate goal in the process of change of the particular health behaviour is upholding this change. Perseverance in the self-imposed change and firmness in implementing it in the own life are usually the most difficult tasks.

Recreational events are able to not only inspire to action and cause the desired change, but most importantly - make it possible to maintain and deepen the changes introduced in the lifestyle. A well filled calendar of regular events in combination with putting forth one, dominant form of recreation (such as street runs, bike rallies, kayaking, etc.) creates the possibility of allocating significant share of people’s free time to a hobby activity. This entails a permanent change in the overall philosophy of life.

It should be noted that the process of changing health behaviours is influenced by many different factors which affect people participating on the regular basis in sport and recreation events such as popular street runs. These are the *reinforcing factors* (i.e. success – as a result of competing, not necessarily with the other contestants, but also with oneself; social support - the coach, the community of runners, etc.), *facilitating factors* (setting goals, self-assessment, planning, time management, etc.), *predispositional factors* (motivation, readiness for

self-development, etc.) and *personal factors* (age, sex, recent health condition, etc.) [4].

Events have the capacity of meetings integrating a community of runners, cyclists, skaters, etc. – a community of active people with lifestyle characterised by health-enhancing behaviours. This sports community focuses on health values and strengthens the members' attachment to them. People who establish contacts in the place set by the organizer move to virtual reality to continue their encounter. Focusing on common values leads to ever bigger involvement in the preferred activity. Still, preparation that enables achieving satisfactory results requires understanding, approval and implementation of principles of the healthy lifestyle. Here comes the awareness-building role of a coach, instructor, organizer of sports and recreation events, of people who should assume responsibility and act as leaders in the world of physical culture and health. They should act as educators and health promoters, and not just limit themselves to organising leisure time events amassing unreflective participants.

Self-reflection on health-oriented values - in other words, a volitional act of thinking about oneself, about one's performance - is a necessary pre-condition for having full control of one's life, embarking on an active lifestyle and implementing plans which change one's way of living and improve health. Events which mobilise people to work on their psychological and physical fitness can be qualified as effective instruments of health promotion. M. Demel is of the opinion that health promotion belongs in an axiological category as it is oriented towards a tangible value [5].

For sports and recreation event to become an effective educational tool it should meet several conditions. The following factors should be considered:

Cyclical character of the event – produces motivation for training and other activities, usually health-enhancing ones, with the aim to achieve improvement of results in future contests; periodicity contributes to event's tradition, increases thus its importance and augments organiser's credibility.

Programme - should enclose specific messages and take into account the way they are communicated. The programme should be diversified, include various forms of contests belonging to different categories (particularly important are the entertaining ones). There may also be so called "hidden agenda", which will change not only the level of participant's health awareness, but also his personality.

Availability - events should be open to all interested parties, regardless of age, gender, level of fitness, physical disability, etc. Rules for competition should be flexible - tailored to the participants and the costs of participation should be small.

Mass scale - the larger the event in numbers, the greater the potential impact on the promotion of the fostered value. The mass participation verifies the attractiveness of the event and draws media attention, enhancing thus influence exerted on the participants and also on spectators.

Activity – emphasis put on dominant role of active participation.

Familiarity - the programme builds on the family nature of the event, and therefore makes possible joint multi-generational participation.

Mediality - extensive cooperation with the mass media such as television, Internet, newspapers or radio stations.

Opinion leaders - active participation of well-known and admired people who attract both the viewers and potential participants. The use of celebrities authenticates the main message of the event.

Building relationships - the organiser's website should serve as a channel of communication and platform for creating and maintaining relationships among the participants.

Authority of the organiser - his credibility; much can be gained if the event falls within the auspices of a recognized institution or organization.

Sports event as a commercial venture

As demand for recreational events is large and growing, new companies spring up with services like organisation of events (in various places), IT infrastructure or media coverage. Trends favouring development of the event industry are firmly rooted in the encouraged model of taking leisure on weekends. This form

of taking leisure, defined as the average, is gaining popularity. More and more fans of physical activity (runners, cyclists, skaters, kayakers, etc.) engage in events held far away from their place of residence. The amateurs are tempted to combine sport objectives with sightseeing and recreation. Rapid growth is observed in the international event tourism [7].

In my country (Poland) operate numerous businesses which specialize in complex services. For instance, to runners they offer organized trips to places abroad where street runs are being held. Community of runners has access to information and knowledge related to their discipline through web portals, books, various publications and periodical magazines for runners (currently three). Guiding the interests of such a large group of people, counting thousands of fans of running events, is certainly not an easy task and requires in-depth knowledge and responsibility. Developing health-oriented attitudes should prevail and replace the purely instrumental approach to physical activity [15].

There is a risk that the idea of sustaining health might get warped and transformed into a cult of body or fixation on efficiency, independence and success. This could happen as an outcome of commercialization - process, which is gaining ground also in the areas of physical culture and health education.

It is hard not to notice its consequences; one of them is the undermining of the importance of a healthy lifestyle. Health-oriented education should not mean building loyalty with the purpose of attracting potential clients for recreational services. Unfortunately, more and more examples of how the notion of health is being exploited are easily traceable in marketing strategies of corporations, various institutions and in politics.

There is no doubt that the commercial dimension of events makes them more attractive and this, in turn, significantly boosts their popularity. These days, evidence of commercial approach to sports and recreation events is omnipresent, but is especially abundant in the case of large events which attract thousands of people. The organizers are competing among themselves and this business practice serves well to the quality of events. It can be assumed that in this area free market will procure added value under the corporate social responsibility. The organizers of major international events (e.g. marathons held in the capitals of Western Europe) do not usually complain about the lack of sponsors.

Businesses are willing to support events which play the role of clamorous manifestos of activity, fitness and health awareness even if their products or services are in no way related to the value of the health-oriented lifestyle. The necessity to undertake quality enhancing actions - carried out under the quality policy - obliges the organizers to create health-oriented programmes and long-term social activities which are based on health – value which is listed high in the generally accepted hierarchy. This is particularly evident in the efforts of the organizers to get their business certified (less often - the event itself), under the international quality standards (e.g. ISO 9001 et seq.)

Effective health-oriented education in the area of sports and recreation events organization - is not a goal which is easy to achieve. The idea is certainly worthy of attention, since the benefits can be passed on to the organizer, sponsor and the entire society.

Conclusion

- Sports and recreation events can become an effective instrument of education for a healthy lifestyle only if they are widely available (easily accessible), if they draw media attention, are popular, cyclical (recurring), have a specific program and atmosphere.
- The organizers of events in the area of physical recreation should not encourage competition but rather educate for regular participation in health-oriented training, while active participation in sports and recreation event might fit in the pre-planned health capacity control.
- For sports and recreation events to become a carrier of socially desirable values such as health or healthy lifestyle, promoters should intentionally put emphasis on these values and place them above commercial or marketing strategies of sponsors.

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BIOLOGICAL AGE AS A DIAGNOSTIC BIOMARKER LEVEL OF THE HEALTH OF STUDENTS

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Abstract

The article presents the study to determine the biological age (BA), adaptive potential (AP), level of physical condition (LPC) and shown to be informative for the diagnosis of the level of health of students. With a battery of tests for BA were tested 50 students aged 17 to 19 years. Analyzed the factors that have the strongest relationship with the index BA. Determination of BV can identify risk groups and effectively valeological recreational activities at school.

Key words: *health, biological age, adaptive potential, level of physical condition.*

Introduction

Health is a psycho-somatically human state, characterized with the absence of pathological changes and functional reserve that is satisfactory for the valuable adaptation and conservation of physical and mental working capacity under environmental conditions [1]. The point of health is the vital activity of organism, but the most essential point for this vital activity assessment is given to general biological characteristic of its state rather than to sickness rate coefficient. Such an assessment is submitted by the biological age of a human [4].

Biological Age (BA) – is a coefficient of structure and certain structural element functions deterioration degree of organism in general, expressed in the units of time in a way of correlations of measured individual biomarkers values with sample average – populated conversion dependences of these biomarkers from the calendar age [4]. The norms of BA can be morphological, functional, biochemical, immunological, cytochimical coefficients, the value of which in determination of maturity degree of organism changes in relation to the stages of postnatal ontogeny. The passport age comes at the same time for everybody. BA directly depends on the state of health.

The research activation of these problems in recent years is caused by the coefficient of health status of different age groups, especially by the premature “wearing out”, senescence of organism [3, 6]. The considerable number of works is devoted to the problems of premature senescence, namely: Akhaladze N. studied the assessment of human aging rate, health status and viability being evaluated from biological age assessments [2]; Romanyshyn O. and others [11] studied the level of somatic and physical condition and biological age of students of pedagogical college; Loshyts`ka T. [8] determined the level and rates of senescence of organism; Shamardina G. [12] studied the complex approach to donozological diagnosis of human health. However, in our opinion, the problem of BA evaluation concerning pupils and students is not studied enough.

The research was conducted under the research work programme of the department of anatomy, physiology and valeology of Drogobych State Pedagogical University named after Ivan Franko.

Purpose:

examine the peculiarities of aging rate of students based on the biological age definition and assess the health status in terms of adaptive

capacity, “rapid assessment” and the level of physical condition.

Materials and methods

50 first-year students of the Faculty of Physical Education of Drogobych State Pedagogical University named after Ivan Franko were involved in the pilot study. The total assessment of level health (TALH) (after Apanasenko G.) [1], adaptive potential (AP) (after Bayevs`kyi R.) [7], level of physical condition (LPC) (after Pyrogova E.) [9] and biological age (BA) (after Vojtenko V.) [4] were determined under the results of biomedical research.

We used the following formulas for BA calculation:

$BA_{m.}$ = 26,985 + 0,215*SP – 0,149*II – 0,151*SB + 0,723*SRH;

$BA_{w.}$ = - 1,463 + 0,415*PP – 0,141*SB + 0,248*W + 0,694*SRH.

SP – Systolic pressure; PP – pulse pressure; II – Inhibition of respiration in the inspiratory; SB - static balancing; W – weight; SRH – self-rating health.

Individual BA was compared with proper calendar age in order to judge in what extent the degree of aging corresponds to the calendar age (CA) of the inspected. The magnitude of PBA was determined with the formulas:

$PBA_{m.}$ = 0,629*CA + 18,56;

$PBA_{w.}$ = 0,581*CA + 17,24.

Senescence evaluation of examined contingent included the following steps: calculating the actual value of BA for each individual, calculating the proper value of BA (PBA) according to calendar age, the collation of the actual BA and calendar age. The difference between the BA and PBA coefficients characterizes the rate of senescence.

The software package “Microsoft Excel 2007” was used for the statistical analysis.

Results and discussion

BA is the integral coefficient that is determined as correspondence of individual morpho-functional level to a certain average rate of the given population and reflects the disproportional development, maturity and senescence of various physiological systems and rate of age-related changes in adaptive capacity of the organism.

It was determined on the basis of attained values of morpho-functional indexes that mass-stature index coefficient of boys and girls is normal (table 1). The majority of examined groups had a high rate of power and respiratory index, vital capacity lung (VCL).

Table 1. Characteristics of average parameters for calculations AC, BA, TALH та LPC (n=50)

Indicators	Statistical characteristics of			
	boys		girl	
	M ± m	σ	M ± m	σ
Calendar age, years	17,68 ± 0,12	0,61	17,48 ± 0,11	0,57
Weight, Kg	68,71± 1,47	7,21	56,02± 1,41	6,93
Heigth, cm	176,64 ± 1,27	6,25	162,48 ± 1,14	5,62
Heart rate, beats/min	72,8 ± 2,12	8,01	74,36 ± 1,98	9,71
Systolic pressure, mm/Hg/c	124,68 ± 1,63	5,78	109,16 ± 1,94	9,54
Diastolic pressure, mm/Hg/c	70,28 ± 1,18	6,96	64,56 ± 1,31	6,43
Pulse pressure, mm/Hg/c	54,4 ± 1,42	10,41	44,6 ± 1,37	6,72
Average blood pressure, mm/Hg/c	88,41±1,17	5,63	79,43±1,41	6,92
Dynamometry, kg	47,48 ± 1,34	6,58	28,39 ± 0,96	4,17
Vital capacity of lungs, l	4,51 ± 0,11	0,56	2,91 ± 0,12	0,59
Self-rating health, points	3,8 ± 0,58	2,84	6,92 ± 0,64	3,13
Static balancing, s	14,74 ± 4,21	20,64	12,51 ± 2,84	13,92

Index Rufye, arbitrary units	7,55 ± 0,50	2,46	8,44 ± 0,73	3,58
Quetelet Index, arbitrary units	388,4±6,73	33,00	344,5±7,92	38,81
Respiratory index, arbitrary units	65,86±1,51	7,28	52,22±1,87	9,19
Power index, arbitrary units	69,35±1,67	8,04	51,06±1,65	8,10
Robinson`s index, arbitrary units	90,91±3,05	14,66	80,6±1,73	8,51
Breath-holding test (Shtange), s	65,94±2,65	12,73	45,52±3,92	19,23
Breath-holding test (Gench), s	31,55±2,16	10,4	30,86±2,03	9,97
The total assessment of level health (TALH), points	8,76±0,58	2,79	8,92±0,61	3,02
Adaptive potential, arbitrary units	2,11±0,04	0,22	1,876±0,03	0,14
The level of physical condition, points	0,68±0,02	0,11	0,73±0,01	0,07

The Robinson`s index rates reflect the state of cardiovascular system functioning and make 80,6±1,73 for girls and 90,91±3,05 for boys, that witnesses to have a slight declination and a satisfactory regulation of cardiovascular system functioning. The studying of adaptation possibility level of the organism after Rufye`s index showed that it corresponds to the average level of working capacity, namely: for girls – 8,44±0,73 arbitrary units and for boys – 7,55±0,50 arbitrary units. The analysis of the gained results affirms the satisfactory adaptation reserve level of cardiovascular and respiratory systems in groups that were examined.

According to the results of computations, BA was divided into conditional groups. Tables 2, 3 present the data about distribution of female students on conditional age groups concerning BA indexes with an average corresponding data of CA, PBA, AP, TALH, LPC.

Table 2. These girls on the conditional distribution of age groups of BV indicators relevant to an average CA, PBA, AP, TALH, LPC

BA, years	Calendar age, years	PBA, years	TALH, points	AP, arbitrary units	LPC, points
To 25 (n=1)	18	27,7	9	1,79	0,646
26-30 (n=6)	17,33	27,31	8,5	1,84	0,721
31-35 (n=8)	17,5	27,41	10,25	1,87	0,715
36-40 (n=8)	17,63	27,48	8,62	1,87	0,758
More 40 (n=2)	17	27,12	6	2,03	0,735

Due to donoological diagnosis it was determined, that TALH in female group is 8,92±0,61 points, LPC – 0,73±0,01 points, the value of AP – 1,876±0,031 arbitrary units, that corresponds to satisfactory functioning of adaptive mechanism and medium level of physical health.

Table 3. These boys on the conditional distribution of age groups of BV indicators relevant to an average CA, PBA, AP, TALH, LPC

BA, years	Calendar age, years	PBA, years	TALH, points	AP, arbitrary units	LPC, points
To 25 (n=11)	17,82	29,77	9,81	2,03	0,728
26-30 (n=4)	17,5	29,57	8,75	2,18	0,604
31-35 (n=9)	17,56	29,6	7,44	2,16	0,659
36-40 (n=1)	18	29,88	7	2,2	0,65

Statistical analysis of health assessment of male students is average, namely AP is 2,11±0,04, TALH – 8,76±0,58, LPC – 0,68±0,02. The BA distribution on conditional age groups and statistical analysis suffer to determine that with the increase of BA the reducing the reserve

capacity level of the organism, which provide the foundation of health, and the tensity of regulatory mechanism occurs.

BA indexes of students of faculty of Physical Education are for girls 32,7 years, for boys – 26,68, in the comparison with an average data of other authors [8, 10, 11] differ significantly. In our researches we got the follow results: only boys were found to have abruptly slowed rate of aging (24%) and slowed rate of aging (24%); BA of 6 students coincide with passport age (24%). BA indexes of girls are much worse, thus 5 girls are observing to have abruptly rapid rate of aging (32%), rapid rate of aging is recorded in 34%; and in 32% BA coincides with the passport age (fig. 1).

In our view, such differences with other authors can be explained by increased compensatory-adaptive possibilities of organism of students under the influence of increased weekly physical workload, kinds of sport, a good state of cardio-respiratory system and place of residence, the majority of respondents lives in the mountainous districts of Lviv region.

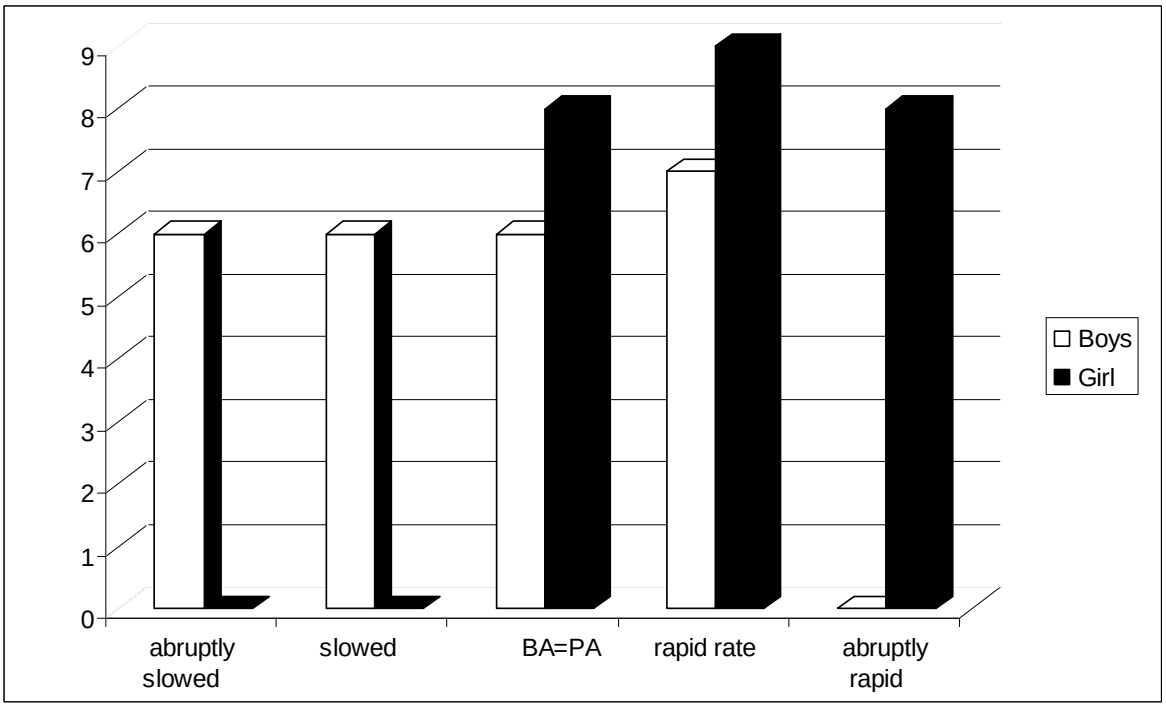

Figure 1. Correlation between BA and PA

Research made by Akhaladze N. showed the slow rate of aging is typical for Western Ukrainian population than for Crimea and Kiev population [13]. Dynamics of average indicators used to determine the BA and PBA, enabled us to judge the limiting levels that affect the rate of aging of student youth.

The coefficients of the relationship were determined by the method of pair correlation. Under the analysis of indicators included in the formula for determining BV in young men, found that improving the functional state of the organism is primarily caused by the increase of breath-holding during inspiration (r = -0,74), static balance (r = -0,52), and less influenced by self care – POPs (r = 0,26), systolic blood pressure (r = 0,28); for girls: self care – (r = 0,71), pulse pressure (r = 0, 67), static balance (r = -0,27), weight (r = 0,22), that correspond to the results of other authors [8, 10]. Self assessment of health was determined subjectively – by the method of questioning.

Analysis of the data obtained during the investigation showed that students` POP (especially girls`) is characterized with symptoms inherent neurosis and conformed to objectively data. This fact is confirmed by similar studies of O.V.Drozd (1998).

The process of higher education is often connected with considerable intellectual and

emotional workloads, with didactic barriers that lead to adverse functional changes and deflections in health status of children and youth [5].

BA – a result of valeological knowledge and skills to serve their own body. In our opinion, the calculation of BV, AP, "rapid assessment" – a simple procedure that requires no special training or multiplex equipment, but gives the lecturer information on resistance of host defenses, physical condition, the flow of adaptive processes, reserves of cardio-respiratory system, stableness of nerve processes individually to each student and allows to match means and methods of training, adequate to biological development.

Conclusions

Our research connected with determination of biological age, adaptive potential, the total assessment of level health and level of physical condition showed them informational content. Their dynamic determination promotes timely assessment of health level and functional reserves of the organism that allows you to conduct donozological diagnosis and identify the risk groups and effectiveness of conducted valeological curative activities in school.

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HEALTH PROMOTING SCHOOLS; interventions and strategies to increase physical activity: Review and recommendations.

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Abstract

Prevalence of childhood obesity and health problems resulting from a lack of physical activity are in a position to increase in most developed countries. Scientific evidence of the relationship between physical activity levels and health problems resulting from inactivity not fully studied. Levels of physical activity for young people and teenagers are insufficient. There is little evidence of positive results in relation to interventions with children. In general, interventions achieved significant changes in physical activity levels of approximately 13% in moderate and vigorous physical activity. Most interventions are not significant in children although teenagers. In the case of children is effectively a direct influence over the type of physical activities that are proposed, with a high recreational component and multicomponent interventions course include families and supporting institutional campaigns. For adolescent interventions must also be multicomponent and focus on environmental intervention center to have some assurance of effectiveness.

Key words: *School-based, interventions, physical activity, children.*

Introduction

The prevalence of childhood obesity and health problems resulting from a lack of physical activity are in a position to increase in most developed countries and the growth forecast by 2010 is increasing, [29].

Scientific evidence of the relationship between physical activity levels and health problems resulting from inactivity (weight gain, metabolic diseases, obesity, stroke, etc.) is not fully studied [2, 25], although in the current effort to stop or minimize the growth of the epidemic of childhood obesity is clear that the promotion of physical activity in order to increase the level of this, it is proposed as a key tool agreed by all [13].

Currently no evidence that levels of physical activity for youth and adolescents is insufficient (a far cry from the 60 minutes of physical activity of medium and high intensity, journals recommended by the ACSM American College of Sports Medicine in its 2008 recommendations) and low levels of physical activity are maintained into adulthood, this makes physical inactivity among children younger i a risk factor for cardiovascular disease, cancer, osteoporosis, etc.. at later ages. The development of initiatives to promote physical activity in general is a priority and should be of particular school. The education system, social customs and the evolution of the consumer society, we have bequeathed a sedentary society and schools must act contributing their bit to promote the practice of AF, and certainly not from the Education Physical exclusively, but as center work, as content transversal part of the health education (EPS).

The worldwide network of health promoting schools, like the European network of health promoting schools give some coverage to these initiatives, but will always be schools, within the possibilities of their local environment, which must act.

There are many interventions in schools to promote the practice of physical activity in the next review we present those considered most significant.

METHOD

The method consists of a systematic review of interventions to promote physical activity in children and adolescents using six electronic databases (PubMed, Psychlist, SCOPUS, Ovid Medline, and Embase SportDiscus), including revisions through December 2012. The search strategy focused on four key elements: population (children, youth, and adolescents), type of study (randomized, intervention case studies ...), type of behavior (physical activity, walking, exercise) and intervention (health education, behavior change).

Inclusion Criteria

The studies in this review will focus on include the following studies published in peer review journals:

Studies in children and adolescents (below 18 years), interventions where the main component of the intervention was the promotion of physical activity and the increase in their practice.

A total of 57 studies entered the inclusion criteria were excluded from the study specific interventions that could contain physical activity, such as specific interventions for the prevention and treatment of childhood obesity, and were also excluded interventions intervention did not include a control group.

Data Analysis

Data extraction was divided into two different groups, elementary school children (<12 years) and high school adolescents (> 12 years)

Level of efficacy

5 were developed efficiency levels, high, moderate, limited low and no efficacy.

RESULTS

3045 studies were surveyed (n = 2000 PubMed, Pshycinfo n = 340, n = 692 scopus, Ovid Medline n = 591, n = 472 SportDiscus, Embase n = 400). Of these 51 met the inclusion criteria and six more were added after consulting references. Of these 33 concerned 24 children and adolescents included.

Characteristics of studies

Most studies were conducted in the United States some in the UK and the rest in different countries of the European Union, most of the studies done in children evaluated 14 of them school interventions included a component of family or community, approximately half of the interventions were educational, about a third were multicomponent (involved in more than one area) most used physical activity questionnaires completed by themselves or by parents, only 12 studies used objective measures and only 5 of them evaluated the daily physical activity with accelerometers or heart rate monitors, the other assessing physical activity alone in the school schedule.

Interventions in Children

Here are some of the most representative studies from the review:

Rosenkranz [15], USA, SNAP (Scouting Nutrition & Activity Program). Interactive educational curriculum focus on nutrition and PA delivered by trained troop leaders as part of regular troop meetings (twice a month)

Jones [8], USA, 18 month intervention. 10-min warm-up of high impact activities during regular PE classes. A peer based behavioral journalism with role model stories.

Spruijt-Metz [19], USA, “Get Moving”, classroom media intervention in wich teams of 7-10 children were asked about presenting a commercial supporting PA engagement.

Barbeau [2], USA, After-school program offered daily. Subjects wore heart rate monitors to maintain heart rate above 150 bpm.

Christodoulos [4], in Greece, made an intervention one year. Includes two weekly PE classes and theoretical activations three minutes on physical activity and health, working class containing physical activity, the primary class teachers were trained and included in the curriculum also included family activities encouraging to participate in physical activities.

Yancey [27], in Ireland, makes a 16-week intervention on people of low socioeconomic status. The intervention consists of 10 sessions of 30 minutes focused on minimizing the TV and computer time, and increase the level of physical activity. The intervention in school takes place in hours of tutoring, the control group is charged the normal curriculum.

Verstraete [23] in Belgium, proposed an environmental intervention, seeking dead material in school periods (before and after

dining, periods before and after entry to school etc.

French [6], in the U.S., is implementing a two-year intervention with 10 sessions lasting 90 minutes each year based on calcium-rich food choices and physical activity aimed at weight control, the operation is performed on girls only

Palmer [9], in the U.S., made an intervention of one month in a web based interactive content from cardio vascular disease prevention, physical activity, smoking etc. 2 sessions a week in the computer room of the center

Stratton [20] in the UK, other environmental interventions, undertaken to increase the level of physical activity by providing sports equipment and painting the school playgrounds during recess (recess)

Pangrazi, [10], in the U.S., with a population of 606 subjects underwent. Program (PLAY). Duration 12 weeks, 15 minutes a day of physical activity led, after school, intervention teachers to invigorate children to be physically active

Van Beurden, [22] in Australia, is the largest ever with 1045 subjects underwent. The duration is one year and consists of five strategies to stimulate teachers to encourage children to practice physical activity

The oldest of the review but probably the most famous. Sallis [16] in USA, SPARK program. Increased physical education, personalized information sessions for students, homework, involvement of parents through brochures etc.

Interventions in adolescents

Here are some of the most representative studies from the review:

Ardoy [1], in Spain, included 2 extra sessions of Physical Education weekly, the results in fitness improvements 20-34%, no physical activity was assessed in this intervention.

Dudley [5], in Australia, six 90-min sessions delivered during school sport time. Enjoyable, challenging and new activities (yoga, pilates, dance) with commertially purchased instructional videos.

Webber [24], USA, TAAG, Trial of activity for adolescent girls. Physical education teachers were tranined to provide at least 50% of their classes in high intensity exercise. Incentives given to participants.

Sneider [18], USA, project FAB II (fitness and Bone). PE classes five days a week, plus supervised PA four days a week, aerobic and strength building activities.

Jago [7], in the U.S., has a 9-week intervention period with a weekly session and intervention via the Internet where subjects initiated session twice a week, the main objective is the dissemination of possibilities of physical activity, goal setting, meetings with partners for physical activity and a weekly physical activity directed.

Robins [14], the U.S. made an intervention aimed at women "Girls on the move". A 9-week program with three weekly sessions controlled by computer controlled by the school nurse. Parents were operated through brochures.

Young [28], made in the USA a multicomponent intervention. During a school year group discussions, homework activities, monitored physical activity with accelerometers during physical education classes to maximize the impact on the level of weekly physical activity. Families participated in a workshop on family strategies to increase the level of AF.

Pate [11], raises a number of interventions carried out in a program with 2744 subjects in the LEAP program "life education programm activity". It is based on a multicomponent intervention for adolescents to experience positive physical activities. Change of school physical education with a streamlined component of health education, creating a conducive school environment, school health services and family activities.

French [6] made a speech on the Internet 8 sessions in science class, record control with daily physical activity.

Tsorbatzoulis [21], in Greece, offers a 12-week intervention, three sessions per week plus encouraging behavior change theory sessions of 45 minutes in goal setting.

Prochaska [12], in the U.S., made an intervention of 30 minute sessions of health education with individualized plans to develop activities that included increasing daily physical activity.

Sallis [17] proposed a two-year intervention period based on an ecological model of physical activity and nutrition. The intervention included the change in structure of the physical education subject content specific health education through physical activity, increased choices and physical activity during recess periods and time between sessions, free use equipment, etc.

DISCUSSION

We note that there is little evidence of positive results in relation to interventions with children. In general, interventions achieved significant changes in physical activity levels of approximately 13% in moderate and vigorous physical activity.

It is interesting to note that in the case of children interventions at household or community level were unsuccessful, it appears that interventions useful in this age focus on the work of equals and that the focus is physical activity itself, looking intrinsic motivation on task and using a communication style by the teacher based on the task and not the result, making fun classes and offering games and activities for leisure time feasible and fun.

There was much more evidence of the effects of interventions on adolescents, on the one hand many of the studies with larger samples were teenagers. Furthermore it is known that adolescents are more sedentary than boys, as it produces a large part of sport dropout at that age, and the margin of improvement is much larger.

Unlike young children if they are susceptible to educational interventions based on health education and can sense a certain rationalization of work for the future, and community-based interventions and multicomponent were significant.

Table 1. - Summary of levels of effectiveness of interventions to promote physical activity in children and adolescents stratified by location, type of intervention and target group.

	Children (33)		Adolescents (24)	
VARIABLES	**Nº of studies**	**Efficacy level**	**Nº of studies**	**Efficacy level**
Tipe of Intervention				
Educational	19	No	17	No
Environmental	4	***Limited***	1	low
Multicomponent	10	low	6	***High***
Place				
School	13	low	14	Low
School + family	14	low	6	***High***
Family	4	No	1	low
Community	2	No	1	low
Primay care setting	0	No	2	low
Intervention Group				
unisex	5	No	9	low
Etnic minority	10	No	0	No
Low SES[1]	3	low	2	low

[1]SES. Socio-economic status

Notably, the children's physical activity responds to a different pattern than adolescents. Children are intermittent while adolescents are more structured and planned. Thus, traditional cognitive approaches to design interventions combined with environmental changes increase the activity in adolescents while structural changes and changes in educational policies will be more effective in children.

CONCLUSIONS

There are many policy recommendations to act against the huge lack of physical activity in the general population and the child population in particular, and there are many institutions and states that are pursuing policies to promote physical activity The main example is the WHO global strategy [26], for diet, physical activity and health, which has been the benchmark for the majority of UN states began promotion strategies activity physics at all levels.

The main problem is that there is still much evidence of the effectiveness of interventions and the parameters that must be adjusted.

If we rely on published scientific evidence on the effectiveness of school-based interventions to promote physical activity among children and teenagers can see that most interventions are not significant in children although teenagers.

It appears that interventions were successful pass through a measure of physical activity more objectively (accelerometers for a week), and in the case of children a direct influence over the type of physical activities that are proposed, with a high recreational component and of course multicomponent interventions that include families and supporting institutional campaigns. Interventions need of coordinated projects from schools and initiatives not only give the area of physical education.

For adolescent interventions must also be multicomponent and focus on environmental intervention center, providing materials and sports equipment during periods of recess and downtime school (before and after dining etc.).

Recommendations for intervention

• Designing a good strategy for measuring physical activity level of the school (questionnaire, more objective measures, etc.).

• Propose formats interventions innovation or improvement projects which involve center all areas of the curriculum and not just be working from the specific time of class (teachers and professors are too saturated transverse Content)

• Identify potential environmental interventions at the middle (healthy eating, walking trails or bike trails to come to the center from nearby environments, adaptations specific material for recess periods and downtime from school-related extracurricular activities encourage physical activity, etc.

• Redefine the subject of physical education as a part of health education through physical activity, keeping the games, in primary and secondary instructional.

• Relate the school health center their surroundings and establish specific lines of cooperation in promoting physical activity

• Establish intervention strategies for families (lectures, brochures etc.)

• Participate in SHE projects, European Network of Health Promoting Schools (www.schoolsforhealth.eu)

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HOW TO PAVE THE ROAD TO A BETTER FUTURE FOR PHYSICAL EDUCATION

This text was originally presented on the occasion of the 100th anniversary of the HILO at Ghent University (September 2007)

Bart Crum

Introduction

"Those who cannot remember the past are condemned to repeat it"
George Santayana

Reflecting on the approach to my assignment – (to speak about the "future of physical education (PE)[1]") – my first option was to deliver a paper focusing solely on a futuristic perspective. However, mindful of the Arab saying "prediction is difficult, in particular when it is about the future" and considering that I would not come much further than forcing open doors, e.g. forecasting that in the coming decade IT technology will become a major factor in the delivery of PE lessons, I dropped the idea of a futuristic approach. Instead I decided to present a paper that, starting from a solid theoretical basis, focuses on the question 'what are the changes the PE profession needs to carry out in order to secure a solid position within the core curriculum of the schools of the future?'. In keeping with the sentiment expressed in the motto above (borrowed from Santayana) my lecture on the future of PE will be solidly grounded in reflections and analysis on the past and the present status of PE.

In the coming 40 minutes you can expect:

1. a brief description of symptoms of the current misery,
2. a diagnosis of problems related to the quality of PE and a theoretical explanation of the causes (at least some of them),
3. some proposals for improvement interventions.

1. A brief description of the current misery

That PE sails on a turbulent sea and has to cope with legitimization pressure has been going on for a long time. It has been almost 40 years since Konrad Paschen [29] wrote about the "Schulsportmisère". In the not too distant past Larry Locke [26] made the critical statement "If PE is to have a significant presence in the secondary schools of the 21st century, it is better to chuck the dominant model and start over from scratch" (p. 362) and Bart Crum [12]concluded that PE suffers from a serious identity crisis.

More recently – in particular after the Berlin World Summit of PE (1999) – a choir of plaintive and warning voices could be heard. I'm not going into details, but will confine myself to a series of catchwords which are largely extracted from the worldwide survey by Hardman & Marshall [20], the comparative study by Pühse & Gerber [32] and a recent report for the European Union by Ken Hardman [21].

Of course, also concerning the situation of PE, there are substantial differences between countries (there are even some countries where PE is flourishing and on the rise), but the following problems and deficiencies have been observed in many countries and worldwide:

- low status of the subject
- decline and marginalization

[1] In my mother tongue (Dutch) the term PE is mostly avoided because of its dualist connotation. In the Netherlands the school subject is increasingly labeled as *(teaching) movement and sport.*

- reduction of curriculum time
- neglect of PE in primary education
- poor conditions / facilities
- lack of teacher competence
- low standard of programs
- weak PETE programs
- discrepancy between curriculum as text and curriculum in action
- credibility gap.

Recently in an USA PE Newsletter, an Academy Director stated: "If PE was a business, we would have gone bankrupt about 15 years ago". Fortunately PE is not a business, but it is obvious that its deficiencies have to be tackled if PE will survive as a school subject.

The above listed issues are doubtlessly interrelated. Nevertheless it makes sense to distinguish between problems which have rather a political-financial character (e.g. reduction of time, neglect of PE in primary education, poor facilities) and problems which are due to the lack of quality of the PE profession itself. Tackling the first category demands political lobbying by national and international PE organizations (e.g. BVLO, KVLO, EUPEA), while the second category requires first and foremost theorizing and research by sport pedagogy scholars in order to reveal the causes of the deficiencies.

2. A diagnosis of the quality problems and a theoretical explanation

Currently in PE discourses the term *quality PE* is increasingly used. Alas, often without specifications of what is actually meant. However, for an analysis of the present misery and for the plotting of courses of action for the future, clear quality benchmarks are needed. So, let me tell you what my conception of *quality* PE is. Since speaking time is rather limited, I'm going to do so in telegram style.

The first issue is *legitimization.* How can PE in a plausible way be justified as a subject that deserves a place in the core curriculum of our schools? I summarize my answer in three theses, which should be seen as successive steps in a line of argumentation.

Thesis 1: In modern societies – in which due to transport and labor technology body and embodiment are more or less sidetracked – participation in movement culture (an umbrella concept for movement, play, exercise, sport and dance) contributes to the quality of life for many.

Thesis 2: A ***personal, self-reliant****, lasting and satisfying participation in movement culture demands a repertoire of movement competencies, which does not come automatically to people, but requires an organized teaching-learning process.*

Thesis 3: Given that every youngster goes to school for at least 12 years and that schools are provided with professional PE teachers, the responsibility for the introduction into movement culture and the acquisition of a repertoire of movement competencies should be in the hands of the school.

In conclusion: legitimization of teaching movement and sport should be given analogous to legitimization of teaching language and literature. While the latter introduces youngsters into a language culture, the first introduces youngsters into a movement culture. For an extensive treatment of this concept the reader is referred to Crum, [6] or [11] or [13].

The second issue regards the *objectives (the desirable outcomes)* of teaching movement and sport (PE if desired). On a more abstract level the general objective can be formulated as follows: on the one hand giving students opportunities to develop a personal movement identity and on the other introduction into movement culture in such a way that students can acquire the competencies needed for a self-reliant, sensible, lasting and satisfying participation in movement culture. It is about personal development and social equipment as two sides of the same coin.

Learning outcomes should have utility value, relevance for the students for now and later in their lives. Then, on a more concrete level, the following desirable outcomes can be specified:

- a personal movement identity,
- development of a positive bond with exercise, play, sport and dance (if you don't learn to like it you will not develop an active life style) – I label this as *affective learning*,
- competence in solving technomotor problems – these are movement problems in the narrow sense; e.g.: to catch a ball, to

close or to open a passing line, to serve a tennis ball, to jump across an obstacle, to run a specific distance, to dive into the water, to swim across the water, etc. – here *technomotor learning* is the goal,

- competence in solving sociomotor problems – these are interpersonal problems that are inherent to movement and sport situations; think for example of how to deal with winning and loosing, to know oneself as a player or dancer while having empathy for the sport identity of others, to accept help from others and to give help – I label this as *sociomotor learning,*
- knowledge and reflective capacity which are needed to organize and rule one's own exercise and sport activities (examples: knowledge and reflective capacity to solve a rule problem or to organize a school tournament or to plan an exercise program for the enhancement of one's own endurance) – here *cognitive-reflective learning* is the goal,
- enrichment of the school life (especially through organizing extra-curricular activities).

Consequently it can be said that a PE program demonstrates *quality* (and this is the 3rd issue), when it has utility value, and to the degree that it contributes to:

1. development of a personal movement identity
2. affective learning concerning movement / exercise / sport / dance
3. technomotor learning
4. sociomotor learning
5. cognitive-reflective learning concerning movement /exercise / sport / dance
6. enrichment of school life.

Alas, we must conclude that coming up to these quality standards is an exception rather than the rule. Why is that? A first answer was given by Larry Locke [25] stating that the community of physical educators does not unanimously accept and give priority to the proposition that a physical educator's primary function is to help pupils learn. It seems that many physical educators, maybe even the majority, are not really committed to teaching as the essential and central element of their profession. A disconcerting conclusion! How could this have happened?

The answer can be found in my *'theory of the self reproducing failure of PE'* [9, 11]. I will briefly elucidate this (partly still speculative) theory with the help of the 'vicious circle' graphic below (see Figure 1)

My explanation starts with the box 'conventional PE ideologies' at the bottom of the figure. I believe that the precarious situation of the PE profession can, at least partly, be explained by the ideological legacy of the profession. Since the beginning of the 20th century two ideologies, which were constructed to gain recognition in the educational world, continue to negatively influence the perspectives of physical educators and their practices, either in a conscious or in a more subconscious way.

The first ideology – characterized by the idea of *'education-through-the-physical'* – has its roots in German and Austrian pedagogical idealism. Adherents of this ideology believe that movement (especially the traditional canon of gymnastics, play and dance) has a special potential for the cognitive, aesthetic, social and volitive development of children. Central is the idea of *funktionale Bildung* (functional education), which claims that the described effects on character and personality development come more or less automatically simply by taking part in movement activities with the ascribed educational potential. This idea seduces many physical educators into believing that intentional teaching is superfluous, that their task is just to organize in good order and atmosphere the activities with the educational potential.

The second ideology stems from Sweden and Denmark and is rooted in biological reductionism. The main idea is *'training-of-the-physical'.* The human body is seen as a machine, an object, that has to be kept in good shape by physical exercise. In former days PE was justified as a guard against tuberculosis, today as a weapon against cardio-vascular disease and obesity. Consequently the objectives of PE are formulated in terms of training effects and the content is described in terms of exercises that are classified according

to the desired effects and/or body parts. The main methodological rule of thumb is: keep students busy with frequent repetitions of simple exercises.

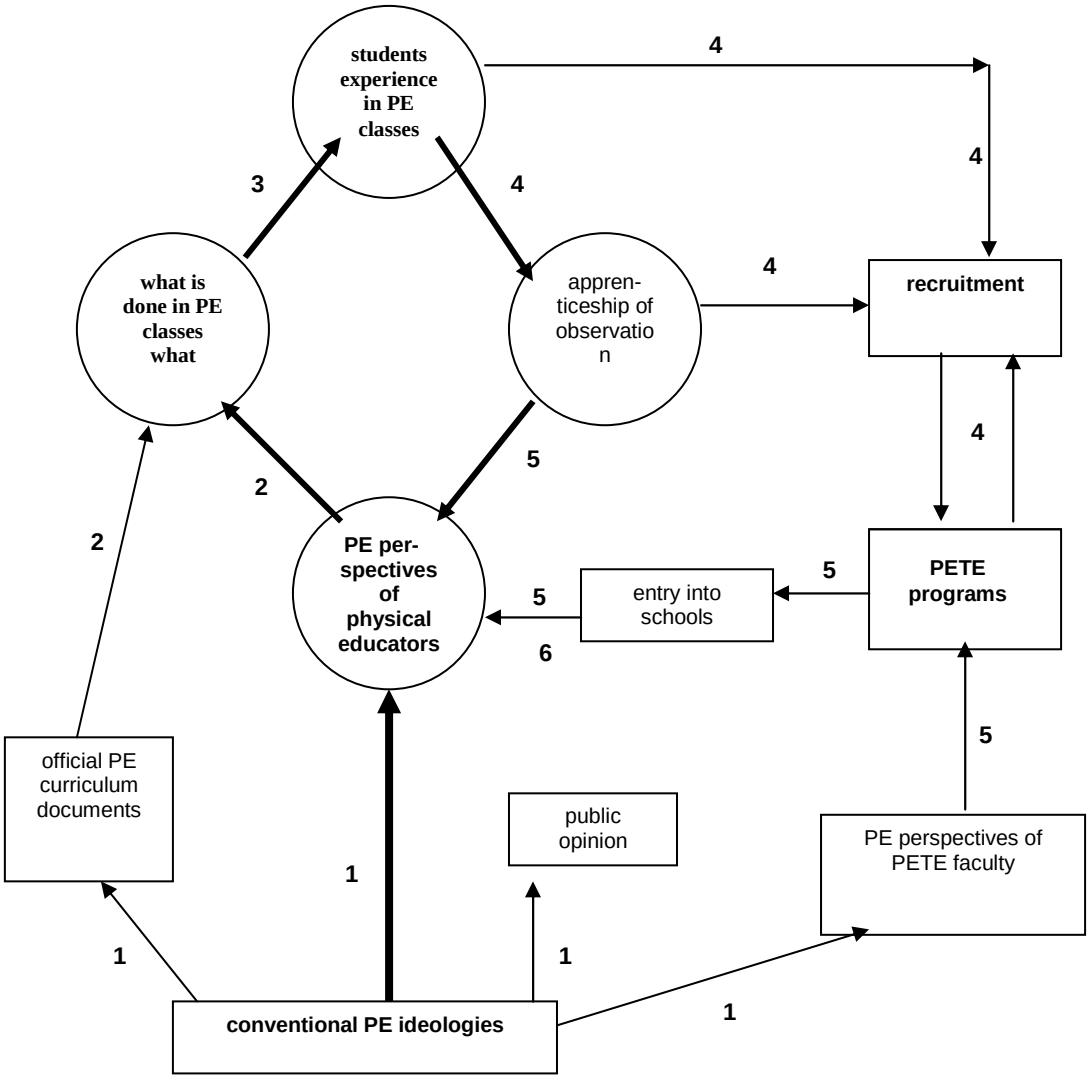

Figure 1: The vicious circle of the self-reproducing failure of PE

The two ideologies – still widely practiced in the profession (I remind of how a few years ago PE jumped on the bandwagon of the 'European Year of Education through Sport' and how today the profession tries to improve its status by using the obesity hype) – are essentially different in their fundamental assumptions (e.g. concerning the body, movement, children, schooling). In the past they have often competed with each other for an exclusive position. Yet, they display noticeable similarities:

- Both are based on a mind-body dualism.
- In both movement is not the objective but the means of the intervention act. In the first case, movement is a means for personality building and character shaping and in the second, movement is a means for the shaping of the body and the enhancement of fitness.
- In both the idea of 'compensation' is predominant. In the first case, compensation of the lack of 'real education' in the academic teaching-learning subjects. In the second case, compensation of the lack of movement in everyday school life.
- Both were constructed during PE's struggle for public recognition. As such both are characterized by strong rhetoric and

pretentious claims for outcomes. Even though evidence shows that these claims can not be substantiated under school conditions (see e.g. Brettschneider,[1]; Evans, [16]; Evans, Rich & Davies,[17], the PE profession still returns to fitness and character building whenever it is called to justify itself by public opinion.

- Both induce non-teaching PE practices. While the first ideology easily leads to PE classes that have the character of supervised recess or entertainment, the second ideology leads to PE as fitness training. This can be fatal in times in which schools are hold accountable for good teaching and relevant learning outcomes.

The further elucidation of the 'vicious circle' model can be done by following the steps in the loop of the circle.

Step 1: Due to conventional PE ideologies, a considerable percentage of physical educators hold non-teaching perspectives about their work [18, 5, 7]. The two ideologies, either apart or in combination, also influence the official curriculum documents and have impact on professional perspectives of PE teacher education (PETE) faculty as well as on public opinion concerning the sense of PE.

Step 2: As consequences of non-teaching perspectives held by physical educators, and the many misleading, vague directions of formal curriculum documents, the activities in PE classes often do not display teaching-learning character, but rather are oriented towards fitness training or entertainment [5, 7,30]. Very recently, research carried out in The Netherlands revealed that – even in a country in which the PE conceptions of the PE authorities, the objectives and content as formulated in the official curriculum as well as the supporting manuals are fully in line with the aforementioned quality standards – only 15% of the PE teachers in secondary education meet the quality standards and that as much as 70% arrange their classes on the basis of an 'entertainment' idea [37].

Step 3: The non-teaching character of many PE classes leads to poor learning outcomes. The less talented students especially will have problems finding good learning experiences [5, 7, 8].

Step 4: In PE classes with a focus on fitness training and/or entertainment, in particular students who already possess athletic talents and attachment to exercise and sport will gain positive experiences. For them it is also easy to identify with their physical educator and to see PE as a possible career. Lortie [27] pointed to the strong impact of what he called *the apprenticeship of observation.* The biographical experiences, that prospective teachers collect during 12 years of PE classes at school, may strongly influence their later professional perspectives. It can be assumed that during their apprenticeship of observation many PETE recruits attended PE classes that were organized according to non-teaching principles, causing recruits' professional orientations to reflect primarily fitness-training and entertainment ideas. Thus, a considerable part of the potential PETE recruits are started on the wrong foot.

Moreover, PETE institutions often fail to present themselves explicitly as teacher education schools, instead profiling themselves as sport schools by selecting recruits on the basis of athletic tests. In doing so they perform their gate keeping function in a careless or non-enlightened way, thus sending the wrong message by allowing the entry of less eligible or inappropriate recruits [14, 24].

Step 5: PETE programs often have a weak impact in comparison with the strength of the *apprenticeship of observation*. Many PETE programs suffer from a lack of consistency and PETE faculty do not have a shared technical culture because they were self socialized in a climate of confusion about professional ideology. Therefore, such programs can hardly be instrumental in leading prospective physical educators to a clear teaching-oriented PE conception [10].

Step 6: Even if a PETE program succeeds in accomplishing the desired PE teaching perspective, there is a great chance that these changes will appear to be cosmetic once student teachers or beginning teachers confront the constraints of the real work in schools. Because many supervising cooperating teachers, older colleagues, principals, parents and students hold non-teaching perspectives and expectations

concerning PE, the old perspectives will be reinforced [15, 19, 28, 30, 36]

The circle is closed. The conventional professional perspectives of physical educators bring about a practice in which entertainment and fitness-training principles have a prominent place. The daily practice of PE strongly affects the conceptions of recruits entering PETE programs. The lack of consistency in preparation programs causes that the earlier developed non-teaching perspectives of the student teachers are not systematically replaced by correct teaching perspectives. Moreover, the 'wash out' effect of entry into schools enhances the backslide of teachers into entertainment and fitness-training practices. This in turn affects the PE conceptions of a new generation of recruits. And so on.

3. How to break the vicious circle?

In my view there are three obvious points in the vicious circle where interventions for change can be launched. They are: (1) PETE, (2) curriculum development, and (3) the reality of PE classes. I present some intervention proposals concerning each of these three areas.

3.1 Strengthening the power of PETE programs

PETE is undoubtedly the paramount agency for the realization of changes in the desired direction. However, I am compelled to make a marginal comment. Maybe my view is colored too much by the situation in the Netherlands, but I have some concerns about recent developments in higher education. I'm afraid that the consequence of the Bologna treaty – implementation of the BA-MA structure in European higher education – will be harmful. I think not only of the extra bureaucratic load for the teaching staff, but also of the increase of overhead costs at the expense of the interests of the students, the loss of transparency in the curriculum and the loss of time for the 'core business' of teacher education due to the major-minor structure. Yet, I strongly hope that the European PETE colleges will find enough time and energy to pay attention to the following issues.

- **Conceptual Cohesiveness Among Faculty**

I paraphrase Pat Dodds' warning: When primary socializing agents neither share nor value a common PE perspective, and when differences among professors may be even greater than those between one professor and one cooperating teacher, trainees' views of PE will be shaped by random influences in field experiences rather than coordinated messages reiterating a familiar programmatic PE perspective [15]. In other words: as long as the professor of biomechanics teaches a different message about the essence of PE than the pedagogy professor and as long as the games methodology teacher has a different PE perspective than the teacher for gymnastics methodology (just to give some examples), a PETE program will never be able to defeat the power of the apprenticeship of observation.

An essential condition for breaking the vicious circle is that in PETE colleges the conceptual needles of the faculty point to the same compass direction, that the old ideologies with their non-teaching practices are abandoned and that the faculty (including student teaching supervisors / cooperating teachers) think and act on the basis of the idea that PE should be a teaching-learning enterprise. In this respect in many colleges there is still a world to be conquered.

- **Careful Gatekeeping**

Careful recruitment and gatekeeping is another point needing attention. PETE institutes should make themselves known as real teacher education institutes, not as sport institutes. If a PETE college attracts more high school graduates than can be accommodated, selection procedures with a predictive validity for success in the teaching profession should be used rather than only sport skill tests.

An interesting strategy for coping from the very beginning with possible inappropriate PE perspectives, which the recruits acquired during their apprenticeship of observation, is to make their PE perspectives and experiences explicit by taking them as the main theme of an introductory analysis seminar in the first weeks of the

program. Such a confrontation with one's own tacit prejudices, perspectives, and expectations and the discovery that others have different ones can function as the start of an unfreezing process and may be a sound entry to a reflective PE teaching perspective.

- **Program Coherence – Pedagogical-Content Knowledge Central**

A third point concerns the structure and content of the PETE program. I am afraid that there are still many PETE programs that suffer from either 'sportification' or 'scientification'. In the first case the program is overloaded with skill performance lessons. In the second case the disciplines (the biological or the social-scientific or both) are more or less self-sufficient and consume too large a part of the program time. Thus, it is overlooked that these program elements only have to function in support of the development of pedagogical-content knowledge, which forms the heart of a teacher's competency [19].

Figure 2 presents a scheme of the relationships between program elements that can be useful when developing a coherent program directed toward the education of professional PE teachers.

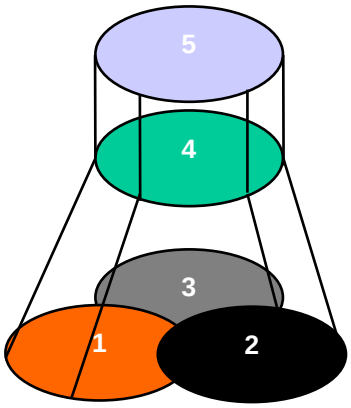

Figure 2 Model of Hierarchical Relationships between Program Elements Course Contents

Circle 1 (red) represents all the program elements that are directed to the improvement of the students own sport performance. Circle 2 (black) represents the coursework in the theoretical-scientific disciplines (such as biomechanics, exercise physiology, history of PE, psychology, sociology and general educational science). Circle 3 (grey) represents the coursework and practical experiences directed toward sport political and organizational competence. Circle 4 (green) represents the courses and practical work directed at the enhancement of curriculum knowledge (how to plan a curriculum, how to design a series of lessons, how to evaluate own teaching) and of pedagogical-content knowledge (see further). Finally, Circle 5 (blue) represents the student teaching experiences (micro-teaching and the first induction of the student teachers into schools).

Special attention should be given to the element of circle 4 which has been labeled as 'pedagogical-content knowledge. According to Shulman [35, p.8]this is the "special amalgam of content knowledge and pedagogy that is uniquely the province of teachers, their own form of professional understanding". It is his/her pedagogical-content knowledge that enables a PE teacher to transform knowledge about and experience in movement activities and sport (think e.g. of biomechanics, exercise physiology and own sport skills / experiences) into pedagogical actions by the arrangement and (if necessary) the modification of movement situations that invite to learn. It also comprises an understanding of what makes the solving of a specific movement problem difficult or easy for students of different ages, talents and backgrounds. I underline that the concrete filling-in of pedagogical-content knowledge is strongly

dependent on the PE perspective that is supported. Starting from my view of PE, pedagogical-content knowledge is knowing how to arrange, how to 'cook' a particular movement activity (e.g. basketball) so that technomotor learning can be realized and at another moment, how to use a different 'cooking' style for the realization of sociomotor and/or cognitive-reflective learning outcomes.

Now attention to the relationships between the circles. First, the figure tries to express that the program elements comprising PE teaching experiences (Circle 5) should be rooted in and based on the program elements represented by the other four circles. A second message is that the program content belonging to the Circles 1, 2, 3 and 4 should be chosen and organized as a function of the content of Circle 5. A special role should be reserved for the program elements belonging to Circle 4. They form the transmitters between the courses in basic scientific knowledge, one's own sport skills, and political-organizational coursework on one side and the student teaching practice on the other side. As such the program work in the area of Circle 4 – courses in sport pedagogy, didactics and methodology – should function as a focusing lens and an organizer of program coherence and cooperation between faculty.

• Continuous Professional Development

If PETE colleges fulfill their assignment with quality, then they deliver PE professionals

who are critically reflective and open to new ideas. PE teachers don't work within stable and simple environments; they rather have to cope with complexity, instability and change. Change in the organizational structure of schools, change in the movement culture, change in the attitudes and preferences of youngsters. Consequently the ability to respond to, and manage change is a central requisite for a professional PE teacher [21]. Therefore professional development is not completed with initial teacher education; it should be a continuous process. Well organized continuous professional development (CPD) can play a key role in the enhancement of the quality of PE.

There are countries that have already organized programs for CPD. Alas, there are also EU member states where CPD is not yet developed. I think that it is urgent that PETE colleges start collaboration with PE teacher associations in order to build up a well-structured CPD program with a variety of courses. I also think that yearly participation in at least one course should become compulsory for every PE teacher and that official registration at school level of the fulfillment of that duty should become a rule.

3.2 Development of longitudinal and ecological curricula

A second agency that can play a key role in breaking the 'vicious circle' is curriculum development. I think that in many countries exists an urgent need to re-write PE curricula. Often the official curriculum documents are still rooted in the old, traditional PE perspectives. Thus, they start PE teachers on the wrong foot and fail in giving concrete guidance for teaching-learning practices. I recommend devoting energy in the development of curricula that clearly start from the idea that PE should be directed to relevant learning in the domain of movement and embodiment. Of course there should remain enough range for the acceptance of diverse ideas about teaching and learning. Special attention should be given to (a) longitudinal planning, and (b) development of 'ecological' curricula.

• Longitudinal Planning

In many countries PE in primary education is characterized by low quality. Often the facilities are poor, but the most serious problem is deficiency in the teaching competence of the generalist teacher responsible for the delivery of PE. This is most regrettable since in primary education – in particular in the upper grades – the children are very receptive to learning how to solve movement problems. Analogous to the teaching of language, in primary school PE should provide a solid basis of 'movement vocabulary' and 'movement grammar'. Therefore longitudinal planning of the teaching-learning processes is required.

A few years ago the Dutch Institute for Curriculum Development (SLO) has published a manual which is very supportive for teaching PE

in primary education [33]. Recently a following manual for teaching 'movement and sport' in the first 3 grades of secondary education was published [33].Thus the learning in PE in secondary school can be arranged as a continuation of the learning in primary school. Both books have been produced in cooperation between SLO and the Dutch PE teacher association. In my view these manuals form excellent examples of longitudinal planning.

In both documents the idea of longitudinal learning lines is central. Starting from the core objectives for PE as formulated in official Dutch PE curricula, the authors have selected a range of key movement activities and then present extensively the didactical-methodological aspects of how to arrange movement situations, which give children the possibility to reach (intermediate and final) goals on different performance levels. I strongly recommend these longitudinal planning documents to you.

• Ecological Curricula

It has been 15 years since Tinning & Fitzclarence [38] sounded the alarm by stating that they observed considerable discrepancies between what is going on in PE classes and what is going on in the movement culture of youngsters outside the school. It appears that not much has changed, for recently the same conclusions have been drawn [1, 27]. Again the complaint is that the traditional content of PE classes has little relevance for the students and does not fit with their life-styles.

In my view it is of vital importance, especially for students of 16 yrs and older, to overcome the stifling de-contextualization of their PE movement experiences by breaking the restrictions of the traditional time table, the old-fashioned equipment in the gym and the compulsory grouping of students according to their grades. I think it is high time to respond to changes in the movement culture and in the needs of youngsters. Assuming that a longitudinal PE curriculum in primary school and the lower grades of secondary school has laid a firm basis of 'movement vocabulary' and 'movement grammar', I recommend beginning experiments in the development of what I label as an *'ecological'* PE program for students beyond the age of 15. I emphasize that the keyword for an ecological program is '*relevance'* and certainly not just fun (for the students).

An ecological PE program is characterized by the following elements:

- inclusiveness, which means that it provides to each student chances for relevant
- learning; thus it is not only performance oriented;
- students are obliged to choose out of a number of thematic options; for example: 'physical activity, health and fitness' or 'games, competition and cooperation' or 'nature sports, challenge and adventure';
- students get the option to choose for a particular teacher (teachers specialize in teaching specific thematic units);
- learning experiences are presented in thematic units and relatively long time units (e.g. a whole afternoon or a project week);
- the learning experiences are as much as possible provided in real settings (qua facilities as well as qua staging);
- institutional openness, which means that the PE department of a school strives for cooperation with sport providers in the direct environment and with community work agencies;
- students have a substantial share in the planning, organization and evaluation of programs;
- the sport specific know how of particular students is intentionally and intensively used.

I am aware of the fact that the realization of an ecological PE program requires a substantial de-schooling of PE. However, I am convinced that only ecological programs can expel the de-contextualization and the related 'de-motivating' conditions, which are so typical in traditional programs.

3.3 Control of quality of PE classes

The third key to break the 'vicious circle' is regular control of the quality of 'what happens in the gym' (or at the playground). Quality control and transparency of the daily reality of PE should not only be seen as an obligation to school management, students and parents, it gives also feedback to the teachers themselves. Thus it

makes them aware of their strong and weak points and might stimulate them to improve.

In speaking about quality control a distinction can be made between output-oriented control and input-oriented control. While the first relates to the students learning outcomes, the second is directed at the teaching process (Krick, 2006).

Regarding the control of output, PE has a unique position when compared to the other so-called 'academic' subjects. Learning outcomes and more specifically grading in subjects like math, physics and languages are important for selection and allocation of the students in the light of continuing education. Therefore in these subjects control of output is done by standardized achievement tests and exams. Setting aside the meaning of grading in PE for some very specific training programs (related to the military, police, fire brigade or sport), I believe that standardized grading in PE makes no sense. First, desired outcomes in the sociomotor and the affective domain are very resistant to adequate operationalization in achievement tests. Moreover, and more importantly, in PE it should be the intention to motivate each student for an active life style and to equip each of them with the needed competencies (which are very personal and surely not standardized). Standardized grading is reductionistic and very de-motivating and thus counter-productive for the less talented movers. Consequently, I strongly advocate that PE learning progress should be measured along a subjective scale.

Which options for output control do we have if we abandon a standardized assessment of learning outcomes? First, the use of *'learner reports'* should be mentioned. Students (in the upper grades of primary school and of secondary school) are very well able to indicate what they learned from their PE lessons. By administering on a regular basis (e.g. twice per year) a simple questionnaire with a standard format to students, the PE teacher can obtain a useful impression of the extent and nature of student learning in his/her classes. The format could be as follows: a series of items all starting with "In the PE classes of the last half year I have learned that … (or, how to ….)". At the place of the dots specifications of technomotor, sociomotor, cognitive-reflective and affective outcomes, that were intended by the teacher are filled in [5]. Another option can be found in the digitalized student progress follow-up system (*Beleves*), which has been developed under the umbrella of the Dutch Institute of Curriculum Development (SLO). With this, easy to handle, instrument PE teachers can monitor the learning progresses of each individual student. Central in *Beleves* is that the learning lines for each key movement activity are operationalized in student achievement goals at four different levels. Level 0, which means that the student needs extra attention (e.g. remedial teaching); Level 1, a minimum achievement level that is reached by 90% of the students; Level 2, an average level attainable for 50%, and Level 3 that is attainable for only 20% [3, 4]. Currently a group of German sport pedagogy scholars in Bielefeld, starting from a similar idea, are developing *MOBAQ,* a system for the assessment on four levels of students' motor basis qualifications [23].

Finally, the issue of input-oriented control. Which indicators of quality depict what the physical educator is doing during class? Is he/she really teaching or is he/she 'just rolling out the ball' or is the teacher simply producing students who are just sweating? Here the focus should be directed to the question of how far the PE teacher provides the students with *opportunities to learn*. Standards for the assessment of opportunities to learn have been developed for math in the USA and Finland [22]; however, a similar approach has yet to be developed for PE. In this regard *PEPOI* (Physical Educator Profile Observation Instrument), an observation instrument for the assessment of the degree to which a PE teacher sends to his/her students either 'learning' messages or 'fun and entertainment' messages or 'fitness training' messages, could be an useful tool [8]. With the help of such an instrument colleagues in a PE department could give each other now and then feedback.

Ladies and gentlemen, I hope that my recommendations concerning PETE, curriculum development and quality control can materialize. If so, there is a good chance that the 'vicious circle' will eventually be broken and only then

can I see a bright future for PE in the schools of the 21st century.

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