

Batta K. 2002. Research on the Educational Effects of Gymnastics. University of Oulu. Publications of the Kajaani Department of Teacher Education. Electronic publications. ISBN 951-42-6641-2

My name is Klára Batta and I am an instructor at the Physical Education Department of Nyíregyháza Teacher's Training College for more than 20 years now. Besides teaching, my occupation includes training a gymnastics team in the college-club. I worked as head coach of a trainer team for 15 years training gymnasts taking part in competitions on a regular basis, some of which were selected into the representative team of Hungary. My experiences from that period prompted me to investigate the pedagogical effects of this particular branch of sport, especially focusing on gymnastics pursued regularly. The scope of my research includes four sub fields: the investigation of the personality of gymnasts who are members of the representative team with the application of the Eysenck-test, comparing them with non-gymnasts of the same age group. Further, it extends to information processing on the basis of a questionnaire about the opinion of gymnasts and their coaches of the pedagogical work in the branch of gymnastics, and eventually it comprises a research on the popularity of gymnastics among primary school students. The latter is of particular interest, since in my opinion this branch of sport has recently become a neglected area among P.E. teachers, and I was eager to discover whether this tendency of unpopularity is spreading to the students as well.

SUMMARY

Gymnastics is a kind of body exercise, which with its specific exercise material contributes to the realisation of the requirements towards physical education to a large extent, and it greatly helps the improvement of muscles and muscle groups responsible for posture at the same time. It is important to speak about this topic if we consider data about public health, which reflect that regarding the number of disabled kinetic system disease was the second most frequent one after cardinal problems in 1996. According to surveys 47% of students are in a weak or reprehensible physical state. 24% of students can be regarded as healthy and 29% of them had good or even excellent results. The latter take part on sport competitions regularly. These data absolutely show negative tendencies, which suggest that there should be put more emphasis on the improvement of the physical and health state of students by increasing the number and effectiveness of physical education classes both in primary and secondary schools, that would hopefully decrease health problems in adulthood.

Instructors training PE teachers are on the opinion that this branch of sport is unpopular among primary school students, children do not like it, there fore, the number of gymnastics lessons should be decreased at the Teachers Training College. That has already happened, which made the matter even worse. These facts have prompted me to get some information about the popularity of gymnastics among primary school students in the form of questionnaire. Altogether 1714 primary school students were asked to fill in our questionnaire.

All in all we can conclude that the estimation between Physical Education and the PE teacher shows co relational connection. Gymnastics is being taught within Physical Education, however not very frequently, and perhaps this can account for the fact that 42% of the students would like to do more gymnastics. In the ranking of branches gymnastics takes up a place rather in the middle field. Girls place it higher up in the ranking than boys do.

SOME THOUGHTS ABOUT THE EFFECTS OF GYMNASTICS ON HEALTH AND ITS POPULARITY, AMONG PRIMARY SCHOOL STUDENTS

Klára Batta
College of Nyíregyháza, Hungary

One of the major problems of these days is that “the educated man” became an article in short supply. This statement suits especially the Eastern European countries, because in the last forty years on the scenes of education after an initial boom (liquidation of illiteracy, general obligatory schooling, modern system of professional training, adult education) stagnation is often observable. That is why the value of those places is put up where intensive and effective education and within this the purposeful improvement of personality components takes place. These places can be the institutions of physical education and sport, more concretely the “workshops” of gymnastics, where the professional education of its movement material takes place. The competitive nature of sport is a very important, attractive motif for children and for the young, whereby it can be the most effective activity of physical abilities and skills, and it raises interesting problems regarding pedagogy, psychology and sociology. This competitive nature carries more and more problems within itself, since achievements, results are improving, which makes trainers to begin systematic training of children as young as possible (gymnastics and swimming already at the age of 5–6) and at the same time the hours spent on training are also increasing. H. Kantelona’s (1980) research data shows that gymnasts between 8 and 14 years of age have six hours train a day, swimmers at the age of 6–12 swim three to five hours. These measurements suggest the possibility of both physical and psychical overburdening and hereby it may cause health damage as well. These factors have inspired me to examine the effects of sport, or more precisely sport that was taken very seriously from a pedagogical aspect. “Workshops” of gymnastics may serve as scenes of educational process, whereby personality developing, behaviour and activity formation may significantly be realized.

Gymnastics is a kind of body exercise, which with its specific exercise material contributes to the realisation of the requirements towards physical education to a large extent, and it greatly helps the improvement of muscles and muscle groups responsible for posture at the same time. It is important to speak about this topic if we consider data about public health, which reflect that regarding the number of disabled kinetic system disease was the second most frequent one after cardinal problems in 1996.

TABLE 1. Number of new disabled /National Centre of SpinalTherapy, preventive program.

	*1975	1994	1995	1996
cardinal	17486	17541	18027	17088
Kinetic	4436	5657	6486	6585
Respiratory system	3700	1729	1673	1624
Mental	3207	10815	10429	9391
Total	42994	53935	58305	56298

Whereas in 1975 there were only 19,2 among 1000 examined skilled worker students who suffered from spine problems, their number rose to 106,2 till 1995, which means a fivefold increase within ten years.

TABLE 2. Number of skilled worker students with spine problems among 1000 examined ones /National Centre of Spinal Therapy.

	1975	1980	1985	1990	1991	1994	1995
Spine	19,2	23,0	43,1	93,6	81,1	93,3	106,2
Limbs	13,4	7,2	10,2	21,9	21,5	111,9	106,5
Eyes	39,7	60,7	68,7	120,4	106,7	120,4	122,0
Blood pressure	5,5	4,9	6,2	6,2	11,5	7,3	5,9
Diabetes.	0,3	0,6	0,7	0,6	1,5	1,0	1,2
Total	175,4	211,6	316,3	430,9	388,1	637,8	648,5

After summarising reports in the National Chief Medical Officer Service, it became evident that health state of children is sinking during the school years. The number of 11-year-old children with spine distortion was five times higher than that of 5-year-old children. Results of 1995-96 medical screening examinations showed that 33% of the boys, and 35% of the girls had alternations in the kinetic system.

According to surveys/diagram 1. /47% of students are in a weak or reprehensible physical state. 24% of students can be regarded as healthy and 29% of them had good or even excellent results. The latter take part on sport competitions regularly.

Physical condition of schoolchildren /TOTAL RESULTS /

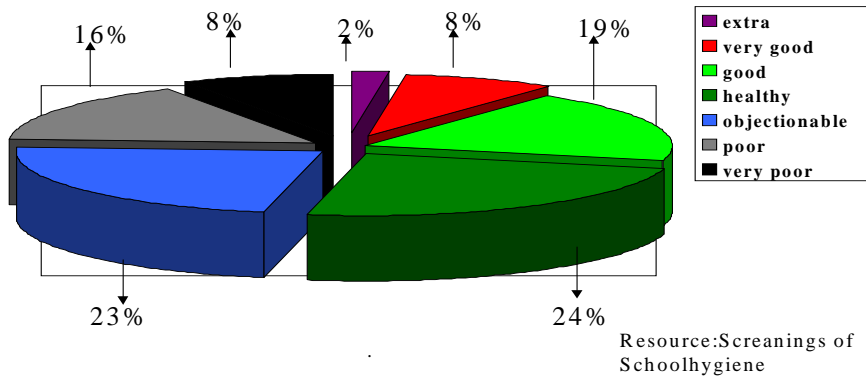


DIAGRAM 1

This data absolutely show negative tendencies, which suggest that there should be put more emphasis on the improvement of the physical and health state of students by increasing the number and effectiveness of physical education classes both in primary and secondary schools, and that would hopefully decrease health problems in adulthood.

Instructors training PE teachers are on the opinion that this branch of sport is unpopular among primary school students, children do not like it, therefore, the number of gymnastics lessons should be decreased at the Teachers Training College. That has already happened, which made the matter even worse. These facts have prompted me to get some information about the popularity of gymnastics among primary school students in the form of questionnaire. Altogether 1714 primary school students were asked to fill in our questionnaire. The data were processed by SPSS-statistic program.

1648 of the questionnaires could be evaluated, from which 52% was answered by 12- year-old, 48% by 14-year-old children and 47% of them were girls and 53% were boys. They filled them out in the presence of their teacher. Results reflect the popularity of gymnastics in the region of East Hungary. In the first question students had to put into order 10 subjects and the teachers of these subjects. It can be seen on the third diagram that the order of physical education and the order of PE teachers are neck and neck.

Physical education and PE teacher
order of rank

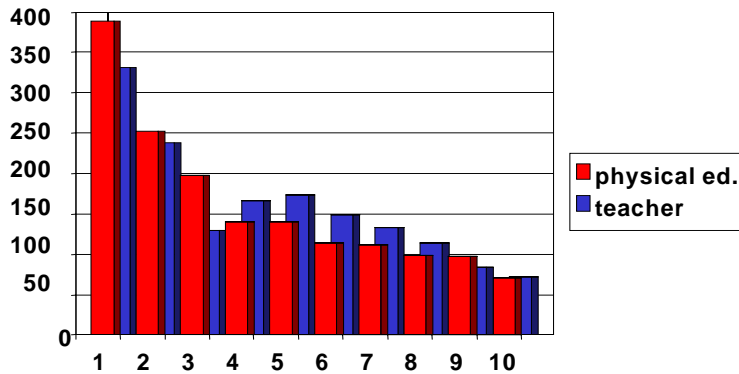


DIAGRAM 3.

Connections between results was established by correlation calculation / Table 3. /, The result of which a strong significant (0,933 a 0,01) can be put forward in the case of the ordering of the physical education and PE teacher, in other words there is regularly a close connection between the emotional attitude towards physical education and the personal judgement of the PE teacher. If we look closer at the results examining them there is a high rate of significant according to gender, but not according to class.

TABLE 3.

		PE	Teacher	Sex	Class
PE.	Pearson Correlation	1,000	,385**	,190**	,004
	Sig. (2-tailed)	,	,000	,000	,868
	N	1575	1559	1575	1575
PE. teacher	Pearson Correlation	,385**	1,000	,105**	,012
	Sig. (2-tailed)	,000	,	,000	,627
	N	1648	1576	1576	1576
Sex	Pearson Correlation	,190	,105**	-,058	-,058*
	Sig. (2-tailed)	,000	,000	,018	,018
	N	1575	1576	1651	1651
Class	Pearson Correlation	,004	,012	-,058*	1,000
	Sig. (2-tailed)	,868	,627	,018	,
	N	1575	1576	1651	1651

** Correlation is significant at the 0,01 level (2-tailed), 018

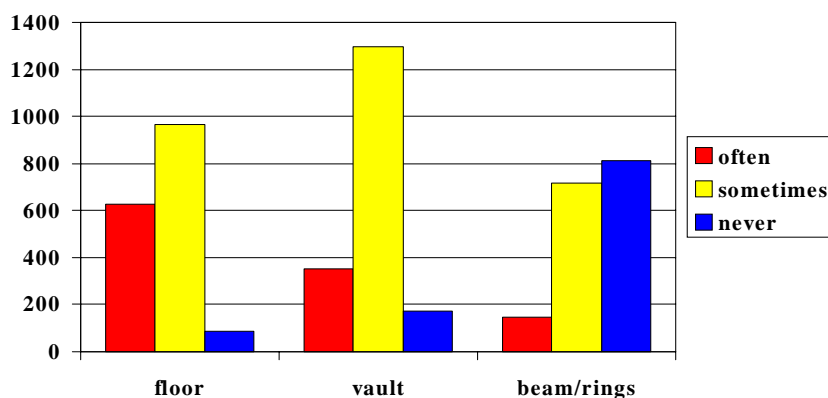
The following three questions of the questionnaire concerned the regularity of doing exercises on the floor, on the beam (girls), on the rings (boys), and on the vault. They could choose from three possible answers: often, sometimes, never.

The diagram and the table show that regarding floor and vault “sometimes” is predominating whereas in the case of beam and rings half of the questioned children answered “never”. These results underline the fact that since this kind of sport needs great attention and disciplinary mastery, less conscientious teachers are likely to neglect its exercise material, although it could contribute to a great extent to the stabilisation of proper posture of children and to the improvement of their movement co-ordination.

TABLE 4.

	Often		Sometimes		Never	
Floor	627	37 %	968	58%	85	5%
Vault	354	19 %	1295	72 %	173	9 %
Beam/rings	148	9 %	716	43 %	813	48 %

Frequency of these of gymnastic apparatus



In the next question I was curious if they would like to do more, as much, or less gymnastic exercises in the class. It becomes evident from the answers that 42 % /diagram 4. / of the students miss gymnastics from PE classes, which can be brought into connection with the answers given to the previous question since the students judged the amount of gymnastic exercises small, that is why they would like to do gymnastics more often.

Would you like to do gymnastics :
more, so much, or less?

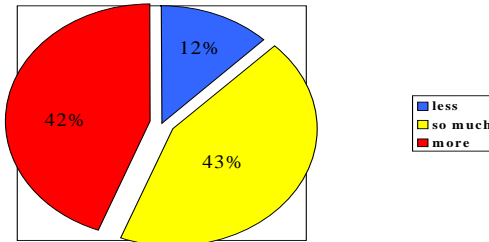


DIAGRAM 4.

The eighth task of the questionnaire was to put in order the apparatuses, according to their preference. If we take a look at table 5., it is obvious that 45% and 37% of the children put floor and beam on the first place. This ordering must be the consequence of the fact that these two apparatuses are used most often compared to the beam and the rings.

TABLE 5.

	Floor		Vault		rings/beam	
6 th grade total	386	45 %	336	39 %	136	16 %
8 th grade total	353	42 %	257	40 %	149	18 %
Boys total	331	42 %	282	36 %	174	22 %
Girls total	406	49 %	311	38 %	111	13 %
Total	739	45 %	593	37 %	285	18 %

In the ninth question students were supposed to signal those branches of sports which they do in classes. Both table 6. makes us clear that gymnastics and basketball are thought in a quite great percentage compared to the others.

TABLE 6.

	6. total		8. total		total	
		%		%		%
Gymnastics	767	89,3	746	94,1	1513	91,8
Basketball	682	79,4	788	99,4	1470	89,1
Athletics	604	70,3	601	75,8	1205	73,1
Football	562	65,5	605	76,3	1167	70,8
Handball	566	65,9	486	61,3	1052	63,8
Volleyball	193	22,4	252	31,8	445	27,0
Swimming	68	7,9	119	15,0	187	11,3
Aerobics	105	12,2	37	4,6	142	8,6

In the last phase the different sport branches in P.E. lessons had to be ranked. The diagram 5. and the percentages/table 6./ show that students put gymnastics only to the second, third and fourth place. There is no significant difference between 6th and 8th grade students, but there is between girls and boys as far as the 1-3 ranks are regarded. Girls like gymnastics by 25,2% better, than boys do.

TABLE 6.

rank	6. total %		8. total %		Boys total %		Girls total %		Total %	
1.	109	12,7	75	9,4	66	7,6	118	15,3	184	11,1
2.	166	19,3	150	18,9	120	13,8	196	25,4	316	19,1
3.	208	24,2	169	21,3	176	20,2	201	26,1	377	22,8
4.	173	20,1	146	18,4	182	20,9	137	17,7	319	19,3
5.	72	8,3	114	14,3	118	13,6	68	8,8	186	11,2
6.	18	2,0	35	4,4	28	3,2	25	3,2	53	3,2

Order of rang of gymnastics

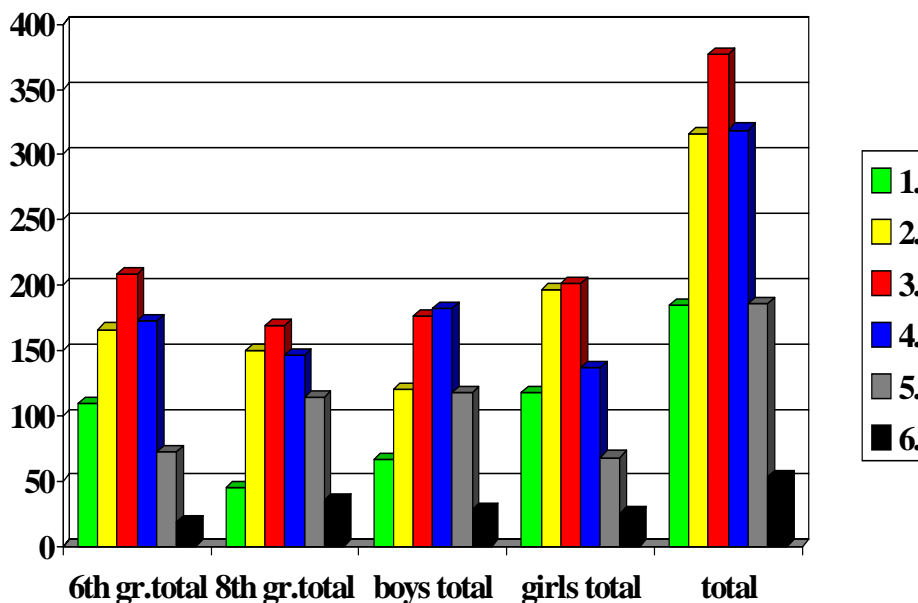


DIAGRAM 5.

All in all we can conclude that the estimation between Physical Education and the PE teacher shows co relational connection. Gymnastics is being taught within Physical Education, however not very frequently, and perhaps this can account for the fact that 42% of the students would like to do more gymnastics. In the ranking of branches gymnastics takes up a place rather in the middle field. Girls place it higher up in the ranking than boys do.

References

1. Bíróné Dr. Nagy Edit: Sportpedagógia Sport Bp.1977.
2. Brezinka, W.: Von der Pedagogik zur Erziehungswissenschaft. Eine Einführung in die Metatheorie der Erziehung. Beltz, Weinheim-Berlin-Basel, 1971.
3. Földesiné Szabó Gyöngyi Sport a változó világban Budapest, 1985.
4. Lénárd. Ferenc: Képességek fejlesztése a tanítási órán. Tankönyvkiadó, Bp., 1979.
5. Mihály Ottó: Nevelésfilozófia és pedagógiai célelmélet Akadémiai Kiadó, Budapest 1974.
6. Nagy Sándor:Az oktatáselmélet alapkérdései. Bp.,1979.
7. Nagy Arpád: A személyiség nevelésének alapkérdései Tankönyvkiadó, Budapest, 1981.

SUMMARY

Society's demand on education and pedagogy has risen remarkably in the last few years, and the increase of effectiveness in pedagogy and the creation of a more successful school guaranteeing personal development has become more and more to the front. István Bábosik also emphasises: "the most general task of pedagogy is to socialize the individual, which means to prepare him for fulfilling social functions and duties of a high rank. Since in the fulfilment of these functions the personality components of the highest rank and of social nature play the most important role, their development should be declared as a pedagogical aim."¹

One of the major problems of these days is that "the educated man" became an article in short supply. That is why the value of those places is put up where intensive and effective education and within this the purposeful improvement of personality components takes place. These places can be the institutions of physical education and sport, more concretely the "workshops" of gymnastics, where the professional education of its movement material takes place.

These factors have inspired me to examine the effects of sport, or more precisely sport that have been taken very seriously from a pedagogical aspect. "Workshops" of gymnastics may serve as scenes of educational process, whereby personality developing, behaviour and activity formation may significantly be realized. This place is also important because children begin gymnastics already at the age of 5-6 and spent three hours, later even six or seven hours on training a day in a very tight relationship with their trainers. Bábosik says: "We can consider only those actions as to be the functional part of the educational process, that is to say as real educational activity, which serve the purpose of behaviour and activity formation. Those actions which do not come up to these criteria are functionless elements of the pedagogical activity, which can be therefore the obstacles of effective educational work."²

¹ Bábosik I.: Személyiségformálás közvetett hatásokkal Tankönyvkiadó, Budapest, 1982, 9,

² Bábosik I.: A Modern nevelés elmélete Telosz Kiadó, Budapest, 1997. 255. P.

SOME THOUGHTS ABOUT THE EFFECTS OF GYMNASTICS ON PERSONALITY

“In human training education serves progression which is in its possibilities unlimited.”¹ “Education gains its own optimistic dynamism from man’s infinite intention, which acknowledges no limits at all.”² With these words Natorp wanted to awaken people and his own nation from the apathy following the I. World War and also to show the promise of future: man himself. Unfortunately those days were gone, as another even more terrible world war had swept through the earth since then, after which it was more difficult to stand up as a human creature.

These days “on one hand almost incalculable perspectives open up for the instrumental mind in our over-rationalized, computerized world, on the other hand everything seems to close before man, and especially before the young representing future.”³ -writes these optimistic and at the same time pessimistic lines Ferenc Schaffhauser in 1997.

In our hectic world, in the seventies and eighties of the previous century appeared antipedagogy as a theoretical movement in West Germany, in the U.S.A., and in France, some of whose representatives (Viktor Frankl, Manfred Hättich, Ekkehard von Braunmühl, Heinrich Kupffer) advocate for the traditional pedagogy to be set aside and they think about the end of education. We are living in an era, when old traditions are fading away, symbols are losing their value and beliefs are going to nothing. In this period, when human values are becoming worthless, the role of pedagogues, educators and those being active on those fields who are on the opinion that “A society cannot exist without the basis of common beliefs, without tradition and symbols”⁴ - writes Brezinka.

The tendency is becoming more and more observable in pedagogy, that the possibilities of personality development and human formation appears in more and more concrete, clear forms, including the more accurate defining of concepts and methods, whereby a more optimistic perspective may occur.

1. Natorp, P.: Sozialpädagogik. Stuttgart, 1922, 200.1.
2. Natorp, P.:i. m.240.1.
3. A Modern Nevelés Elmélete szerk.: Bábosik I. Telosz Kiadó, Bp. 1997 Schaffhauser F. Optimista nevelési perspektívák 234.
4. Brezinka, W.: Von der Pädagogik zur Erziehungswissenschaft. Eine Einführung in die Metatheorie der Erziehung. Beltz, Weinheim-Berlin-Basel, 971, 201.I.

“Life lives and it wants to live on”⁵

Society's demand on education and pedagogy has risen remarkably in the last few years, and the increase of effectiveness in pedagogy and the creation of a more successful school guaranteeing personal development has become more and more to the front. István Bábosik also emphasises: “the most general task of pedagogy is to socialize the individual, which means to prepare him for fulfilling social functions and duties of a high rank. Since in the fulfilment of these functions the personality components of the highest rank and of social nature play the most important role, their development should be declared as a pedagogical aim.”⁶

One of the major problems of these days is that “the educated man” became an article in short supply. This statement suits especially the Eastern European countries, because in the last forty years on the scenes of education after an initial boom (liquidation of illiteracy, general obligatory schooling, modern system of professional training, adult education) stagnation is often observable. That is why the value of those places is put up where intensive and effective education and within this the purposeful improvement of personality components takes place. These places can be the institutions of physical education and sport, more concretely the “workshops” of gymnastics, where the professional education of its movement material takes place.

“To build in physical education, sport and tourism in children's lifestyle is important and socially significant not only because their physical improvement should be encouraged during the individual development but also because these should have an educational effect on them”-say the Czech authors Merhautova-F. and Joachimstaler in one of their studies.⁷

During the course education moral, voluntary properties, practical skills have to be developed in children, they have to be prepared for a healthy lifestyle, for their later profession in adulthood, for social roles, and simultaneously it is a good opportunity for them to get positive emotional experiences through their sport activity either individually or among friends which provides a possibility to reproduce their physical, mental and emotional energy

5. Ady Endre: Élünk, vagy nem? In: A halottak élén. Pallas, Bp., 1918, 63. I., Czeizel E.: Az élet él és élni akar. MTV-Minerva Bp. 1987, 208. I.

6. Bábosik I: Személyiségformálás közvetett hatásokkal Tankönyvkiadó, Budapest, 1982.9.

7. Földesiné Szabó Gyöngyi (szerk.): Sport a változó világban. Budapest, 1985.

The competitive nature of sport is a very important, attractive motif for children and for the young, whereby it can be the most effective activity of physical abilities and skills and it raises interesting problems regarding pedagogy, psychology and sociology. This competitive nature carries more and more problems within itself, since achievements, results are improving, which makes trainers to begin systematic training of children as young as possible (gymnastics and swimming already at the age of 5–6) and at the same time the hours spent on training are also increasing. H. Kantelona's (1980) research data show that gymnasts at the between 8 and 14 train six hours a day, swimmers at the age of 6–12 swim three to five hours (they swim thirteen to fifteen kilometres during this time, or for example skaters may practise even eight to ten hours a day). These measurements suggest the possibility of both physical and psychical overburdening and hereby it may cause health damage as well. This is one our great dilemmas today and then widespread use, which means a considerable threat regarding some branch of sports.

These are the reasons that make the representatives of sport science try to examine those possibilities in a more complex way (pedagogy, psychology, biology), with which the effects of negative tendencies can be excluded or at least decreased.

These factors have inspired me to examine the effects of sport, or more precisely sport that have been taken very seriously from a pedagogical aspect. "Workshops" of gymnastics may serve as scenes of educational process, whereby personality developing, behaviour and activity formation may significantly be realized. This place is also important because children begin gymnastics already at the age of 5–6 and spend three hours, later even six or seven hours on training a day in a very tight relationship with their trainers. Bábosik says: "We can consider only those actions as to be the functional part of the educational process, that is to say as real educational activity, which serve the purpose of behaviour and activity formation. Those actions which do not come up to these criteria are functionless elements of the pedagogical activity, which can be therefore the obstacles of effective educational work."⁸ This fact has to be mentioned here because the quality of the educational work in an educational institution mainly depends on to what extent is the activity loaded with such formal, and from the point of view of behaviour and activity formation such unproductive actions. That is why I would like to examine the effectiveness of educational activity done in this field of serious sport. Of course it is worth mentioning the effects of movement material of this kind of sport on the physical improvement of the individual, but it is qualified as educational activity only if it has consequences concerning personality. Here I am not regarding the widely known fact that any kind of

physical activity has some kind of effect on the personality, since man can only be identified as a psychosomatic creature.

In this case gymnastics can only be regarded as the functional part of educational process if the cognitive, affective spheres and the character also develops, and hereby valuable customs evolve.

It is foremost important to mention the fact that sport activity, in this case the attendance of gymnastic training is determined by an innate motivating power. The activity of a person is regulated by two main functional components of the personality, which are closely interrelated:

- encouraging-regulating character group
- organizing-executive character group.

The encouraging-regulating character group includes motivating-demanding formations.⁹ Thus behaviour and activity, which is developing in close relation with personality development is considerably influenced by the motivating inventory. That is why it is justified to focus on the scenes of sport activities and the pedagogical work going on there and additionally to examine the effectiveness of education.

The research is likely to bring to the surface new facts and valuable pieces of information in connection with the development of the personality, which may benefit not only gymnastic competitors but trainers as well and may help them to increase the effectiveness of their educational work.

8. Bábosik István: A Modern Nevelés Elmélete Telosz Kiadó, Budapest, 1997..255.

9. Lénárd. F.: Képességek fejlesztése a tanítási órán. Tankönyvkiadó, Bp., 1979.Nagy S.: Az oktatáselmélet alapkérdései. Bp.,1979.

Refernces

1. Ady Endre: Élünk,vagy nem? In: A halottak élén. Pallas, Bp., 1918.
2. Bábosik István : A Modern Nevelés Elmélete Telosz Kiadó, Budapest, 1997.
3. Bábosik István: Jellemformálás és jellemfejlődés Tankönyvkiadó, Budapest, 1987.
4. Bábosik István: Személyiségformálás közvetett hatásokkal Tankönyvkiadó, Budapest, 1982.
5. Bábosik István-Mezsei Gyula: Neveléstan Telosz Kiadó, Budapest, 1994.
6. Bábosik István: A nevelés folyamata és módszerei Leporard Könyvkiadó Bp.1993.
7. Bíróné Dr. Nagy Edit: Sportpedagógia Sport Bp.1977.
8. Brezinka, W.: Von de r Pedägokik zur Erziehungswissenschaft. Eine Einführung in die Metatheorie der Erziehung. Beltz, Weinheim-Berlin-Basel, 1971.
9. Czeizel E.: Az élet él és élni akar. MTV-Minerva Bp. 1987, 208. I.
10. Földesiné Szabó Gyöngyi: Sport a változó világban Budapest, 1985.
11. Gordon W. Allport: A személyiség alakulása Kairosz 1998.
12. Lénárd. Ferenc: Képességek fejlesztése a tanítási órán. Tankönyvkiadó, Bp., 1979.
13. Mihály Ottó: Nevelésfilozófia és pedagógiai célelmélet Akadémiai Kiadó, Budapest 1974.
14. Nagy Sándor:Az oktatáselmélet alapkérdései. Bp.,1979.
15. Natorp, P.: Szocialpädagogik. Stuttgart, 1922.
16. Nagy Árpád: A személyiség nevelésének alapkérdései Tankönyvkiadó, Budapest, 1981.

SUMMARY

It is a well-known fact, that education always materialises through an activity and that all activity manifest itself as a movement. The great advantage of various sport activities lies in that it is inspired with the internal motivation of the individual, and when choosing a branch of sport or while doing it the inner drive is a dominant factor. That is why it is important to me how education of the individual is realised in the case gymnasts through sport activity, and whether there are some personality traits, which will perhaps show significant difference between sportswomen and ordinary women of the same age.

I examined the personality of gymnastics with the Eysenck personality Questionnaire. The Eysenck Questionnaire was filled in by gymnasts who take regularly part in contests as well as by non-athletes. If we determine the level of Signification at 0,15, and the very strong Signification at 0,05, there is a significant difference in the case of risk taking and a very strong signification value in the case of extroversion. Eventually, in the case of adults the data about neuroticism show an even more significant difference, which means that gymnasts are emotionally more balanced.

RESEARCH ON THE PERSONALITY TRAITS OF GYMNASTS WITH THE EYSENCK PERSONALITY QUESTIONNAIRE

Klára Batta

College of Nyíregyháza, Hungary

I Introduction

It is a well-known fact, that education always materialises through an activity and that all activity manifest itself as a movement. The efficiency of education greatly depends on the external and internal motivation of the activity, as it is an autonomous manifestation of the individual. The fact that we consider man as a moving being has real significance regarding P.E., as well as the field of development and education.

The great advantage of various sport activities lies in that it is inspired with the internal motivation of the individual, and when choosing a branch of sport or while doing it the inner drive is a dominant factor. That is why it is important to me how education of the individual is realised in the case gymnasts through sport activity, and whether there are some personality traits, which will perhaps show significant difference between sportswomen and ordinary women of the same age.

Hypothesis

I suppose gymnasts to be less extroverted, rather introverted, less neurotic, more balanced and emotionally controlled in comparison to the non-athlete population. It is of course possible that the above mentioned personality traits are already noticeable in the course of orientation towards gymnastics, but since selection for gymnastics already begins in the early childhood (6–7 years old), we can presume, that certain personality dimensions may be come stressed in the course of doing this branch of sport.

II Eysenck's Personality Research

Eysenck has carried out a wide range of theoretical mathematical research, whereby he came to the conclusion that personality is hierarchically built up of four basic dimensions. He distinguishes the following personality traits:

extroversion, neuroticism, (emotional balance) psychoticism and it also contains a lie scale, which controls the reliability of the questionnaire. These four has been extended with three further factors: impulsivity, risk taking and empathy. To study the latter ones, a new questionnaire has been designed. According to Eysenck, it is not personality factors that are indirectly hereditary, but a kind of nerve system, which predisposes a person to develop in a certain direction. Personality is defined as the summary of the biological inheritance of the individual together with the influence of the environment, to which a person is exposed to throughout his/her whole life.

In 1982 Ágnes Matolcsai compiled the Hungarian Adult Eysenck Personality Questionnaire, whereas the Hungarian Junior Eysenck Personality Questionnaire by Béla Kozéki, which was mentioned in various studies several times. The Eysenck Impulsivity, Risk taking and Empathy was adapted by Béla Kozéki in 1984, whose adult standard values has not been set up so far, but the values of the junior version are available.

III Participants of the Research

The Eysenck Questionnaire was filled in by gymnasts who take regularly part in contests as well as by non-athletes. I was present by the filling in of the questionnaire, ensured a peaceful environment and attended that the participants work by themselves. In the process of selection the participants were restricted to gymnasts who had spent at least 7 years in the gym on a daily basis. They were from cadet, junior and adult age groups who are members of the representative team of Hungary. In the following table the distributional ratio of the gymnasts according to age, sporting age and qualification level.

TABLE 1.

Age /year/	person	%
13	11	27,5
14	15	37,5
15	3	7,5
16-23	11	27,5
total	40	100

TABLE 2.

Qualification level	person	%
adult	10	25,0
junior	22	55,0
cadet	8	20,0
total	40	100,0

TABLE 3.

Sporting age	person.	%
7	10	25,0
8	14	35,0
9	4	10,0
10	3	7,5
11	2	5,0
12	3	7,5
13	2	5,0
14	1	2,5
16	1	2,5

The label 'adult' refers here not to the classical 18 years age limit, but to gymnasts who have completed their 16th year, since in gymnastics this age is the lower limit of the adult age group. The average age of girls above 16: 18,27 years.

As I have mentioned before, the Hungarian adult EPQ (1984), HJEPQ (1980), IKE (1984) and the standard values of the different personality dimensions can be figured out from studies that appeared those days, except for the IKE adult dimensions. Since comparison with a control group is necessary. 53 female students from Nyíregyháza College filled in the questionnaire their average age being: 20,72 years.

The findings of research done in the 80s compared with the results of gymnasts who participated in my research, is illustrated in the 4. table in which you can find the means and standard deviation, except for the adult IKE figures. As far as psychoticism is regarded, the means obviously show a significant difference between 13 and 14-year-old young girls as well as in the case of risk taking with the 13-year-olds.

TABLE 4.

Age	N	Imp.		Riskt.		Emp.		Psych.		Extr.		Neuro.		L-scale	
		\bar{x}	Std.	\bar{x}	Std.	\bar{x}	std	\bar{x}	std	\bar{x}	Std.	\bar{x}	Std.	\bar{x}	Std.
13 year gymn.	.11	10,82	5,34	11,36	6,09	17,73	3,41	7,18	2,23	13,27	4,38	11,64	5,55	9,82	3,40
13 year cont.	96 153	9,8	4,2	16,1	4,2	18,0	4,4	2,33	1,47	15,17	3,60	9,65	5,30	12,46	5,43
14 year gymn.	14	10,14	3,21	15,43	5,96	15,86	3,88	6,43	1,02	14,71	3,00	10,79	3,79	6,14	2,57
14 year cont.	79 139	10,4	4,6	16,3	4,2	18,6	3,9	2,19	1,09	15,18	4,06	10,56	5,23	10,89	5,87
15 year gymn.	3	11,67	4,04	13,33	6,43	15,00	3,00	5,00	1,00	14,00	1,73	8,67	3,51	8,67	2,08
15 year contr	114 44	11,0	4,6	15,1	4,6	18,3	3,2	2,57	1,97	14,20	4,41	10,56	5,23	10,20	4,77
16-22 gymn.	11	8,00	3,10	7,73	2,61	14,27	1,68	1,64	1,8	14,00	3,71	9,45	3,72	8,45	4,99
adult $\bar{x}=31,2$	414	-	-	-	-	-	-	1,31	1,63	11,64	4,32	11,44	4,99	7,70	4,06

To compare the two different means I have applied the Independent Samples T-test, whose primary condition is that the two expected values of the given variable have the same standard deviation value.

Because the value of psychoticism, that shows the degree of aggression, was extremely high by 13, 14 and 15-year-old gymnasts, with the scale of signification being also rather high, the possibility has arisen that these values might be high not only with gymnasts but also with this age group in general, which would mean that a high degree of psychoticism is a general tendency with teenagers nowadays. To verify this hypothesis, 20 students from each age-group (13,14,15) filled in the same questionnaire. As there were only 3 gymnasts in the 15-year-old group, I first contracted the 3 groups, their total number being 29, and then compared their figures with the non-athlete control group consisting of 69 13,14,15-year-old teenagers.

The 5.table shows the 7 personality factors and the Means, Standard Deviations and Standard Error Means both of the athlete and non-athlete groups. The 6. Table the degree of mean difference, Levene's Test and the level of the related signification. If the level of p is less than 0,05, the t-test usually cannot be used, since the values of standard deviation are very different. That is why you can find both the Equal and Unequal variances, the degree of freedom, the 2-tailed Signification, the Standard Error Difference and the 95% Confidence Interval of the Difference in the table.

If we determine the level of Signification at 0,15 and the very strong Signification at 0,05, it can be seen in the 6. table that there is a significant difference in the case of risk taking and a very strong signification value in the case of extroversion. Furthermore, if you consider the means it is evident that in both cases the athlete group has lower values meaning they are more introverted, less risk taking and more reserved than the non-athlete girls of the same age. This result also supports the findings registered in the relevant special literature, namely that considering the affection for variety there is a correlation between risk taking and extroversion. Perhaps because it is an individual sport, and it often involves monotonous repeating of exercises requiring great endurance, gymnasts are more introverted, and perhaps also a bit more reserved. The lower value of risk taking may be due to the fact that gymnasts are relatively often exposed to dangerous and decisive situations, so they weigh more precisely, whether the given situation is worth risking or not, as a result of which they become more thoughtful. If you take a look at the signification values according to age -groups, it is evident that it is very strong with the 13-year-old girls regarding risk taking and extroversion ($p=0,01$; $p=0,000$); the lower means show the difference of these two dimensions compared to normal students. Eventually, in the case of adults with a 0,15 Signification level the $p=0,138$, which shows an even more significant difference than it was in the case of neuroticism, which means that gymnasts are emotionally more balanced. The following explanation can be given to that: the exercises and hard training requiring great endurance may result in an emotionally more self-controlled, more balanced personality.

TABLE 5-6

Group Statistics /13, 14, 15-year-olds/

	státusz	N	Mean	Std. Deviation	Std. Error Mean
impulsivity	gymnast	29	10,66	4,07	,76
	controll	65	11,18	4,82	,60
risktaking	gymnast	29	13,66	6,03	1,12
	controll	65	15,51	5,18	,64
empathy	gymnast	29	16,55	3,59	,67
	controll	65	16,77	3,67	,46
psychotism	Gymnast	29	6,52	1,68	,31
	Controll	65	6,45	1,57	,19
extroversion	Gymnast	29	14,14	3,44	,64
	Controll	65	16,80	3,47	,43
neuroticism	Gymnast	29	11,10	4,54	,84
	Controll	65	10,88	4,80	,60
lie	Gymnast	29	7,72	3,33	,62
	Controll	64	7,53	3,29	,41

Independent Samples Test /13, 14, 15 years old/

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
impulsivity	Equal variances assumed	1,655	,202	-,515	92	,608	-,53	1,03	-2,57	1,51
	Equal variances not assumed			-,549	63,152	,585	-,53	,96	-2,46	1,40
risk taking	Equal variances assumed	1,993	,161	-1,522	92	,131	-1,85	1,22	-4,27	,56
	Equal variances not assumed			-1,435	47,190	,158	-1,85	1,29	-4,45	,74
empathy	Equal variances assumed	,082	,776	-,267	92	,790	-,22	,81	-1,84	1,40
	Equal variances not assumed			-,269	54,993	,789	-,22	,81	-1,84	1,40
psychoticism	Equal variances assumed	,187	,667	,198	92	,843	7,11E-02	,36	-,64	,78
	Equal variances not assumed			,193	50,686	,848	7,11E-02	,37	-,67	,81
extroversion	Equal variances assumed	,002	,967	-3,448	92	,001	-2,66	,77	-4,20	-1,13
	Equal variances not assumed			-3,457	54,217	,001	-2,66	,77	-4,21	-1,12
neurocism	Equal variances assumed	,132	,717	,215	92	,830	,23	1,05	-1,87	2,32
	Equal variances not assumed			,220	56,749	,827	,23	1,03	-1,84	2,29
lie	Equal variances assumed	,090	,765	,261	91	,794	,19	,74	-1,27	1,66
	Equal variances not assumed			,260	53,571	,796	,19	,74	-1,29	1,68

References:

1. Anastasi, 1988, p.488.
2. Derszi B.- Karczag J.: Versenytorászok személyiség vizsgálata Testnevelési Főiskola TudományosKözleményei. Budapest 1974, p.49–60.
3. Karczag J.: Evezős versenyzők Személyiségvizsgálata a Chattell-féle 16 faktoros személyiség kérdőívvel. Testnevelési Főiskola Tudományos Közleményei Budapest 1974, p.33–49.
4. Forrás: Dávid Peck-David Whitlow: Személyiségelméletek Gondolat Kiadó, Bp.
5. Szerkeztette: Mérei Ferenc-Szakácsy Íferenc Pszichodiagnosztikai Vademecum....I. Explorációs és biográfiai módszerek 2 rész....Budapest Tankönyvkiadó
6. In.: Mastolcsai Ágnes: Az Eysenck-féle személyiség kérdőív gyermek változatának korai adaptációja 1982, 282.–2866–292.o.
7. 4.: Kozéki Béla: Eisenck-féle Személyiség Kérdőív /EPQ/ felnőtt változatának hazai adaptációja 1983, 28
8. Tóth László: Pszichológiai Módszerek a tanulók megismeréséhez, szöveggyűjtemény Kossuth Egyetem Kiadó, Debrecen Egyetem 2000,
9. Kulcsár Zsuzsanna: Személyiség-pszichológia Tankönyvkiadó, Budapest 1991.