

Original Article

Effect of the quality of sport education based on the example of selected physical activities class at a school community center

MAŁGORZATA OSTROWSKA

Faculty of Earth Sciences and Spatial Management, Nicolaus Copernicus University in Torun, POLAND

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Abstract

Purpose: Certain concepts of sports training indicate that permanent and rational football training is conditioned by many interdependent factors. They create a specific quality of sports activities on the basis of the diagnosed needs and requirements of all participants of physical education. An important issue of qualitative activities is the consolidation of the desired attitudes, both declarative and practical. This involves the possibility of modifying the adopted stereotypes. The research material concerns itself with the level of organization and educational impact in relation to a selected group of young footballers. The aim of the article is to identify the quality of impacts in sport in an example of the physical education class at a community center. **Design / methodology / approach:** The subject of the research concerned the analysis of training, in view of the acquisition of instrumental processes, of a selected physical activities class taking place at a school community center. in the city of Bydgoszcz. To assess the qualitative aspect, the dialogue method was used (mutual exchange of thoughts and views), which involved young players and a football instructor, whereas the quantitative aspect concerned three simple football attempts in the area of motor coordination. The benchmark was to compare the results of the training individuals to the non-training individuals. Methods - three tests of special fitness; U-Mann Whitney statistical test. 39 young people (13-14 years old) were tested. **Findings:** A significant difference was discovered between the football skills of young people from the studied groups (to the advantage of participants of the community center classes). **Research and practical limitations / implications:** Raising the quality level of specific sports activities consists in the development of regulatory processes that guide the continuous improvement of all entities involved in education. **Originality / value:** The research work and pedagogical approach of the teachers of the instructors should be an innovation process.

Keywords: quality, sport, football, community center, educational strategies

Introduction

Certain concepts of sports education indicate that permanent and rational football training is dependant on many interdependent factors. They create a specific quality of sports activities on the basis of the diagnosed needs and requirements of all participants in the area of physical education. An important issue of qualitative activities is the consolidation of the desired attitudes, both declarative and practical. This is related to the possibility of modifying the adopted stereotypes. Playing sports affects the development of the body. This refers to both physical and mental aspects. “Based on semi-structured interviews, these expectations are mainly related to personal, social, and physical factors. In terms of personality, parents expect sports to improve their children’s self-esteem, sense of responsibility, and fair play approach” (Szalánczi et al., 2020). The role of physical exercise is multifaceted, it may include: organization of free time, creating an environment for competition, overcoming own weaknesses, developing specific motor skills, shaping character traits, as well as creating an entertainment for a wider audience, etc. “Nevertheless, determining the technical competence of athletes during the initial training stage and determining issues with acquiring expertise and mastering physical skills has become more and more important in football”(Hakman et al., 2018).

Quality in sport is related to satisfying the need for bodily exercise as well as the development of specific social contacts. One can also refer to organizational culture, in which the author includes: norms and rules of functioning in the team, values in the sense of inspiring the group to act better, philosophy shaping the desired attitudes and initiating training strategies while taking into account the competitors’ observations. “Quality is the application of... in processes and results – one’s own system - the method of continuous improvement ”(Bonstingl, 2002). It should also be added that “the effectiveness of the organization’s functioning depends, inter alia, on how many of its members want to do something more than their organizational roles require. For the effective functioning of the organizational system, numerous acts of spontaneous cooperation of personnel in achieving the goals of the organization are necessary. Therefore, issues related to the motivation inducing and sustaining people’s behaviour are so important. Its significance is considered not only from an

organizational and economic point of view, it is also important for quality, as it forms its basis for awareness" (Szczepeńska, 2010). This paper presents a school community centre as the organizational system. Community centres are institutions that offer a variety of activities, including art (painting, sculpture), music (learning to play various instruments, singing in a choir, etc.), a preschool club, poetry clubs, IT classes, as well as various sports activities in numerous areas of physical exercise. Thus, the participation of children and adolescents in sports activities is a broadly understood cultural activity. It is a subjective category. "Its source lies in the individual themselves: in their needs, perceived values, life orientations, will, possibilities" (Jankowski, 1999). Cultural activity has a specific dimension. Generally, it is emphasized that "...that in this process, not only socio-cultural activity is important, the results of which serve the common good, but most of all, the socio-cultural development of individual people is important (Kargul, 2012).

Against this background, sport can significantly contribute to shaping the personality and character traits. "So sport, like no other field of activity, offers the possibility of setting one's own norms and accomplishing them at the same time on one's own; in order to succeed in sport, one must constantly test oneself in competition with others, but also be able to face one's own failures; the attitude towards achieving a feat, characteristic of sport, shapes the readiness to perform it; sport demands regular pursuit of a set goal" (Heinemann, 1989). Teachers diagnose and monitor students' progress. "The current control is to examine the implementation process, as well as the improvements identified as a result of the control of the results" (Kieżun, 1997). "In the current school practice, physical education teachers most often diagnose the physical fitness of students (Dutkiewicz, 2004). Any research process in the field of soccer testing should be rational. "Rationality can be understood as: compliance of actions with the system of values; adjusting activities to the set goals; adapting activities to the conditions and circumstances (Bielski, 2004). An important thing in increasing the quality of interactions is to control football training. "The control is aimed at optimizing the actions of athletes by selecting exercises, methods, training programs - appropriately adapted to the condition of the trainees" (Przybylski, 1997). In football, "Exercises should be varied and comprehensive" (Bednarski, Koźmin, 2004), which allows for the comprehensive development of football skills. Football classes at the community center are aimed at, among other things, shaping health behavior. "Proper health behaviors are to multiply, or maintain health for as long as possible" (Drabik, 1997). In this light, a good style of working with young people is the use of non-directive pedagogy. One can speak of a teacher's creative activity here. "Creative activity becomes competence and readiness to design open educational situations" (Szempruch, 2013).

The material is of a research nature and concerns the level of organization and educational impact on a selected group of young footballers. The aim of the article is to identify the quality of interactions in sport, exemplified by the work group of the culture centre.

Material and methods

The subject of the research concerned the analysis of training, in the light of the acquisition of instrumental processes, of a selected group of the school culture centre of the city of Bydgoszcz (MDK No. 6 – Youth Culture House No. 6). In the qualitative aspect, the dialogue method was used (mutual exchange of thoughts and views), in which young players and a football instructor participated. "Thus, the dialogue method is above all a free conversation on a specific general topic, taking into account several or a dozen topics connected to it. This means it is a mutual exchange of thoughts and feelings, in which the researcher and the examined subjects participate on an equal footing. Such a conversation may sometimes take the form of a discussion, i.e. an attempt to negotiate a common position in the event of a disagreement. But in general, the use of the dialogic method strives for it to be, in particular, an exchange of information without attempting to re-evaluate the opinions, beliefs or attitudes of the interlocutors participating in it" (Łobocki, 2003). "There is no doubt that in qualitative research, a special role is assigned to the respondents. For example, the surveyed teachers highly appreciate their professional experience, and many of them consider themselves reliable advisers who can significantly help in solving a given problem. Children and young people are also treated as people from whom one can learn a lot. They are often eyewitnesses of what the research concerns" (Łobocki, 2003).

On the other hand, the quantitative aspect concerned three simple motor coordination football trials. The benchmark was to compare the results of the training units to the non-training units. The methods are three tests of special fitness (cf. Gołaszewski, 2003).

- Trial 1. Kicking the ball

The test consisted of kicking the ball 20 times against the wall from a distance of five meters. The player moves sideways within the width determined by the football plates set at a distance of four meters from each other. The trainee uses either leg, any part of the foot, with or without receiving the ball (one contact). The result of the task is the time measured from the moment of the first kick until the ball crossing the line after the last kick. The test was performed by the student twice, and the better result of both tests was assessed.

- Attempt 2. Juggling with the foot

At the signal, within the half of the football field, the trainee would juggle the ball in thirty seconds. The evaluation of the task was determined by the maximum number of foot strikes in the air. The test was performed by the student twice, and the better result of both tests was assessed.

- Attempt 3. Head juggling

At the signal, in the half of the football field, the trainee would juggle for thirty seconds. The evaluation of the task was determined by the maximum number of head bumps in the air. The test was performed by the student twice, and the better result of both tests was assessed. In order to protect health, volleyball was used in the tasks.

The non-parametric Mann-Whitney U test was used to compare the statistical data. In the method developed by Mann-Whitney, the ranks of the measurement quantities are used for calculations. The above-mentioned independent-sample test is defined as:

$$U = N_1 N_2 + \frac{N_1(N_1 + 1)}{2} - R_1 \quad U' = N_1 N_2 + \frac{N_2(N_2 + 1)}{2} - R_2$$

The construction of the test “comes down to the conformity assessment of two empirical distributions obtained from independent Samales” (Maszorek-Szymala, 2007). The following criterion should be used in accepting or rejecting H_0 :

if $U > U_\alpha(N_1; N_2)$, then H_0 should be accepted,

if $U < U_\alpha(N_1; N_2)$, then H_0 is to be rejected.

From the two calculated values of U and U' , the criterion value is the one which is smaller.

“Experiments or observations are usually carried out in order to find differences between the studied groups, e.g. under the influence of a factor” (Stupnicki, 2000).

When analyzing the teacher’s research work, two groups of participants were established. Group (A) are students participating in standard physical education lessons. Characteristically, the classes were coeducational. Thus, physical education classes took place in a diverse educational environment. Co-education made it somehow difficult to pursue the interests of movement. Young people’s interests are manifested in various forms. The distinctiveness of adolescents is taking shape. Girls’ and boys’ athletic patterns differ from each other. Boys choose more team games such as soccer and basketball; girls, on the other hand, prefer dance forms, elements of gymnastics or games and plays with accessories (skipping ropes, gymnastic bands, ringo, etc.). Such a situation leads to some educational problems and it is difficult to fully achieve the intended educational goals. Moreover, differences related to sex determine the variability of object preferences concerning motor skills. The participants of group (A) took physical education lessons in difficult organizational conditions. There were often two school forms in the gym, with 26 students in each of them. In total, 52 young people were present in the limited area. These are serious deviations from the norms of organizational culture, but the Ministry of National Education does not take any remedial measures in this regard (e.g. modification of the regulation of occupational health and safety in educational institutions). In such conditions, the teacher was forced to use the style of work known as directive. Formal influences prevailed here - the organization of lessons was strongly stiffened. Decisions were communicated categorically. The result of the task activity was very difficult due to the organizational chaos. The constant information noise (too numerous and sexually diverse groups) did not favour direct pedagogical relations.

The participants of group (B) had appropriate conditions for the implementation of physical activities:

- a homogeneous group with targeted interests (football),
- an appropriate number of participants in relation to the size of the gym,
- warm-up mostly with balls, with the focus on mastering individual contact with the ball,
- the instructor used a non-directive educational style; the most important thing is the emotional and creative development of young footballers; free search for solutions that accept creativity; shaping the ability to independently deal with specific educational problems, etc.

In the light of the methodological assumptions, two research problems were formulated:

- 1) Does the organizational culture of the selected facility affect the quality of football activities?
- 2) Is the application of a specific pedagogical trend conducive to increasing the sports work of young footballers?

The football tests were carried out in March 2018/2019 (8 boys - primary school; 10 boys - community center) and December 2019/2020 (9 boys - primary school; 12 boys - community center).

Results

Table 1. Summary of the results of an attempt to kick the ball (bouncing against a wall)

No.	Pupils in Group A	Pupils in Group B	Statistical commentary
(1)	32	39	
(2)	58	53	Data for Group A
(3)	46	46	
(4)	70	33	$N_1 = 20$
(5)	40	42	Arithmetic mean = 51 s
(6)	72	40	Sum of ranks = 473
(7)	44	43	$U = 117$
(8)	54	36	
(9)	60	58	Data for Group B
(10)	34	38	

(11)	59	38	$N_2=19$
(12)	55	34	Arithmetic mean = 42 s
(13)	54	34	Sum of ranks = 307
(14)	43	41	$U = 263$
(15)	32	36	
(16)	68	38	$U_{(\alpha=0,05)} = 117 < U_{crit.}=119$
(17)	39	47	
(18)	41	64	
(19)	45	37	
(20)	80	-	

(Time in seconds)

On the basis of the compilation made (comparison of the arithmetic means of the obtained results), it can be concluded that the participants of the football activities of the House of Culture achieve better results in the attempt of hitting the ball against the wall than their non-training colleagues. Since $U (\alpha = 0,05) = 117 < U_{crit.} = 119$, the hypothesis H_0 should be rejected. H_1 should be assumed, which says that the distributions of the variable's values are different in both studied groups.

Table 2. Summary of the results of the football juggling with a foot test

No.	Pupils in Group A	Pupils in Group B	Statistical commentary
(1)	5	14	
(2)	2	20	Data for Group A
(3)	2	6	
(4)	7	3	$N_1=20$
(5)	10	3	Arithmetical mean = 5.1
(6)	1	15	Sum of ranks = 297
(7)	3	8	$U = 293$
(8)	8	5	
(9)	3	7	Data for group B
(10)	12	9	
(11)	2	3	$N_2=19$
(12)	4	5	Arithmetical mean = 10.3
(13)	6	5	Sum of ranks = 483
(14)	2	9	$U = 87$
(15)	2	16	
(16)	3	15	$U_{(\alpha=0,05)} = 87 < U_{crit.}=119$
(17)	15	25	
(18)	12	23	
(19)	2	6	
(20)	2		

(Data in the number of ball kicks)

On the basis of the compilation made (comparison of the arithmetic means of the obtained results), it can be concluded that the participants of the House of Culture's football classes achieve better results in the attempt to juggle the ball with the foot than their non-training colleagues. Since $U (\alpha = 0,05) = 87 < U_{crit.} = 119$, the hypothesis H_0 should be rejected. H_1 should be assumed, which says that the distributions of the variable's values are different in both studied groups.

Table 3. Summary of the results of head banging trial

No.	Pupils in group A	Pupils in Group B	Statistical commentary
(1)	1	2	
(2)	1	2	Data for Group A
(3)	2	3	
(4)	1	4	$N_1=20$
(5)	4	5	Arithmetic mean = 2.4
(6)	2	3	Sum of ranks = 271
(7)	2	2	$U = 319$
(8)	2	6	
(9)	3	5	Data for Group B
(10)	1	3	
(11)	4	7	$N_2=19$
(12)	2	6	Arithmetic mean = 4.7
(13)	2	6	Sum of ranks = 509
(14)	2	3	$U = 61$
(15)	3	5	
(16)	1	7	$U_{(\alpha=0,05)} = 61 < U_{crit.}=119$
(17)	5	6	
(18)	5	6	
(19)	3	8	
(20)	2		

(Data in the number of bangs of the ball)

On the basis of the compilation made (comparison of the arithmetic means of the obtained results), it can be concluded that the participants of football activities at the Cultural Center achieve better results in the attempt to juggle the ball with the head than their non-training colleagues. Since $U(\alpha = 0,05) = 61 < U_{crit.} = 119$, the hypothesis H_0 should be rejected. H_1 should be assumed, which says that the distributions of the variable's values are different in both studied groups.

The author presents below a few statements in the context of qualitative research. Characteristic for this issue is to make a short reconstruction of observations in direct contact with the pupil.

Group A

"The teacher makes us angry. He's screaming all the time and won't let him play on the mattress".

"These classes are sometimes pointless. We can't hear the teacher because the second grade is yelling during the game".

"The teacher tries hard, but the girls always want to do something different than what the boys agreed upon".

"I like physical education class. I just wish there were enough balls for everyone".

"Sometimes I feel like everyone is nervous, especially when the noise is unbearable".

"The boys are stronger than we are, they pass the ball to each other during the game, and we girls are left out. It's no fun to stand by and wait for a pass".

Group B

"It's great because we often play football".

"I relax in this class and a break away from my school duties".

"After all, nobody bothers us because as there are too many people in PE".

"Our instructor conducts an interesting warm-up and motivates us to exercise without shouting".

"I really like soccer competitions and various forms of soccer".

"The most important things in class are a quiet and nice atmosphere".

It should be emphasized that the role of a football instructor in the process of securing the free time of children and adolescents is suitably difficult and complex. As illustrated by selected statements of students, they see the strengths and weaknesses of the class. They are carried out in various conditions (organizational culture), with a varied strategy and educational climate. These factors are the system that influences the quality of interactions in sport.

Discussion

Culture House models focus on various areas of securing free time. "All of them are to introduce participants to the world of broadly understood culture, organize communication situations and various activities related to culture" (Bobrowska, 1997). Unlike school, homogeneous groups are created in the community centre for specific classes. One of the main factors here is the satisfaction of interests. Interests arise in relation to the needs and abilities of young people. They also require emotional and cognitive involvement. In this light, the correct measure of comparing the effects of the didactic and educational process were three selected football trials. "The scope and possibilities of using tests, trials and tests in football are quite wide. Depending on the needs, they can be helpful to the trainer as a selection criterion, in controlling the correctness of their own training work, as well as in assessing the progress of mastering sports skills by players at all levels of advancement. Most often, the level of general and special physical fitness as well as mental fitness are assessed. All these abilities are most often tested with appropriately selected trials in evaluation and control processes" (Talaga, 1997).

Therefore, the quality of the tasks performed varied. The youth from the community centre showed better results than their peers whose football skills were only realized during physical education classes.

According to general management theory, the impact on the perception of quality includes:

- "psychological factors - a well-organized work environment and properly prepared and organized work evoking positive feelings that cause satisfaction and promote a more qualitative attitude towards the environment and objects,
- ethical and aesthetic norms and rules - if they are followed by a person, they conduct their activities in a creative way, paying attention to quality and beauty, trying to achieve the best results,
- social factors - people try to create something around themselves and live in an environment conducive to their development and creativity; this environment should be characterized by such features as: democracy, humanization, kindness, mutual support, etc.,
- technological conditions - they depend on the quality of materials used at work" (Łunarski, 2012).

Referring to the above observations, it should be noted:

1) A specific pedagogical trend is an important thing that increases the quality of impact in sport carried out by educational institutions (schools, community centres). In the present case, these were elements of non-directive pedagogy. The community centre instructor adopted this mode of work. In general, one can list what is important in this approach:

- “Ensuring an atmosphere of psychological safety and trust through the readiness to listen to the other person, making direct contact with them without hidden intentions or willingness to manipulate.
- Communicating open and adequate to one’s own experiences and feelings.
- Listening carefully, taking care to understand the meaning of what others want to communicate to us.
- Giving feedback, i.e. how the other person is perceived and how they feel.
- Free search for information and solutions that stimulate and accept the pupil’s creativity.
- Respecting the child’s ability to deal with their own problems or difficulties independently, thanks to which they will be able to choose the way they perceive their behavior” (Sliwerski, 2001).

2) To increase the quality level one must implement the systematics of football exercises, spread over time, e.g. with the inner part of the foot in motion, strikes with a simple instep in motion, strikes with an inner strike in motion, situational strikes, feints, reception, dribbling, football juggling, etc. Football classes at the community centre gave young people more time to pursue their interests than at school. Physical education teacher has a curriculum in which the optional classes leave a certain area of understatement. “These shortfalls highlight an obligation to investigate a physical education teaching alternative, underpinned by more contemporary motor learning theory” (Moy et al., 2020). In the teaching work of a community centre, more attention is paid to animation. However, at school there is an advantage of formalism over animation. It should be added that “Animation brings together: initiating, encouraging, stimulating, animating, advising, promoting, instructing, organizing. Movement specialists are animators. They have to break the stereotype that free time is a private matter of an individual, that encouraging to exercise is an interference with the right to choose a way of life” (Napierała, Muszkieta, 2011).

3) Organizational culture is an important factor shaping quality in sport. At school, the coherence of the interests of the teacher and the class-planner the classes was divergent. Combining classes and the co-educational nature of exercise groups lowered the level of control scores in the field of football.

Conclusion

“Even the most sophisticated means of schooling and physical education (i.e. methods, organizational forms, devices and equipment do not automatically keep up with the progress in this field of education. This progress, understood as adapting the ad hoc tasks of this process to the requirements of the future, with the simultaneous use of the experience gained) from the past, is also a synonym of modernity” (Grabowski, 1997). Modernity is the quality associated with intellectualization, humanization and individualisation of physical activities. Generalizing the answers to research problems, one can say:

- Organizational culture, and in particular organizational values, had a specific impact on the obtained research results.
- Non-directive pedagogical work may be a desirable solution for creating flexible relationships.

The aforementioned trend is close to the TQM theory. It should not be forgotten that “Convincing sports club employees to introduce TQM may prove difficult (...), but the use of at least some of the implementation support tools is already quite feasible” (Tomanek, 2019). Therefore, increasing the quality level of specific sports activities is the development of regulatory processes that determine the continuous improvement of all entities involved in education.

Conflicts of interest

The author declare that have no conflicts of interest

References:

- Bednarski, L., Koźmin A. (2004). Football. A textbook for students and teachers, AWF, Warszawa. p. 208.
- Bielski, M. (2004). Fundamentals of the theory of organization and management. Wydawnictwo CH BECK, Warszawa. p.194.
- Bobrowska. E. (1997). *Model Transformations of Cultural Center Institutions*, Wydawnictwo Uniwersytetu Jagiellońskiego, Kraków. p.236.
- Bonstingl, J. (2002), *Quality Schools. Introduction to Total Quality Management in education*, CODN, Warszawa. p.53.
- Cieszkowski, S., Lenik, J. (2017). *Theory and Methodology of Sport. A guide to the Issue for Trainers, Teachers and Students*, Wydawnictwo Uniwersytetu Rzeszowskiego, Rzeszów.
- Drabik, J. (1997). Testing physical fitness in children, adolescents and adults, AWF, Gdańsk. p. 16
- Dutkiewicz, W. (2004). Diagnosis and evaluation in physical education, Wydawnictwo Akademii Świętokrzyskiej, Kielce. p. 28
- Gołaszewski, J. (2003). *Football*, Akademia Wychowania fizycznego, Poznań. p.190.
- Grabowski, H. (1997). *Physical Education Theory*, Wydawnictwa Szkolne i Pedagogiczne, Warszawa. p.134.
- Greń, J. (1982). *Mathematical statistics. Models and tasks*, PWN, Warszawa.
- Hakman, A., Vaskan, I., Kljus, O., Liasota, T., Palichuk, Y., Yachniuk, M. (2018). Analysis of the acquisition of expertise and mastery of physical skills for performing techniques by young footballers. *Journal of Physical Educations and Sport*, 18(Supplement issue 2), p.1237-1242.

- Heinemann, K. (1989). *Introduction to the Sociology of Sport*, COM SNP, Warszawa. p.246.
- Jankowski, D. (1999). *Self-education as a Challenge Today*, Wydawnictwo Adam Marszałek, Toruń. p.117.
- Kargul, J. (2012). *Dissemination, Animation, Commercialization of Culture. Academic textbook*, Wydawnictwo Naukowe PWN, Warszawa. p. 163.
- Kieżun, W. (1997). Efficient management of an organization: an outline of theory and practice, SGH, Warszawa. p. 361.
- Łobocki, M. (2003). *Introduction to the Methodology of Pedagogical Research*, Oficyna Wydawnicza Impuls, Kraków. p.274.
- Łobocki, M. (2003). *Methods and Techniques of Pedagogical Research*, Oficyna Wydawnicza Impuls, Kraków. p.94.
- Łunarski, J. (2008). *Quality Management. Standards and Rules*, Wydawnictwo WNT, Warszawa. p.29.
- Maszorek-Szymala, A. (2007), *Basics of Statistics for Students and Teachers*, Oficyna Wydawnicza Impuls, Kraków. Cracow, p. 110.
- Moy, B., Renshaw, I., Pavvey, T. (2020). Impact of the constraints-led approach on student's motor performance. *Journal of Physical Educations and Sport*, 20(6), p.3345-3353.
- Napierała, M., Muszkieta, R. (2011), *Introduction to the Theory of Recreation*, Bydgoszcz, Wydawnictwo UKW, Bydgoszcz. p. 145.
- Przybylski, W. (1997). Control of training and training loads in football, AWF, Gdańsk. p. 12
- Stupnicki, R. (2000). *Biometrics. Concise Outline*, AWF, Warszawa. p. 33.
- Śliwerski, B. (2001). *Contemporary Theories and Trends of Education*, Oficyna Wydawnicza Impuls, Kraków. p.122.
- Szalączi, Z., Kowács, B., Bácsnébába, E. (2020). Socializing effect of child soccer players on their parents. *Journal of Physical Educations and Sport*, 20(6), p.3340-3410.
- Szempruch, J. (2013). *Pedeutology. A theoretical and pragmatic study*, Impuls, Kraków. p. 108.
- Szczepańska, K. (2010). *TQM in Human Resource Management*, Poltext, Warszawa. p. 57.
- Talaga J. (1997). *Football practice*, COS-RCMSKiS, Warszawa. p.106.
- Tomanek, M. (2020). *Quality Management in a Sports Club*, Wydawnictwo Naukowe UMK, Toruń. p.59.