Journal of Physical Education and Sport ®(JPES),Vol 21 (Suppl. issue 2), Art 152 pp 1197 – 1202, Apr. 2021
online ISSN: 2247 - 806X; p-ISSN: 2247 – 8051; ISSN - L = 2247 - 8051 © JPES

Original Article

Sport digitization management based on the example of physical education classes at the University of Lodz

PAWEŁ KUŹBIK[1], ANNA WRONKA[2]
[1,2,]Faculty of Management, University of Lodz, Łódź, POLAND

Published online: April 30, 2021
(Accepted for publication April 15, 2021)
DOI:10.7752/jpes.2021.s2152

Abstract:
The main objective of the article is to analyze the process of transformation of physical education classes at the level of higher education, forced by the COVID 19 virus pandemic, mainly based on the identification of the determinants of the management of digitization of classes from the perspective of the people implementing them, i.e. the head of teaching and employees of the relevant unit . In order to achieve the aim of the article, apart from the analysis of the world literature on the subject, two types of own research were conducted. First, it was an in-depth interview with the manager responsible for managing remote physical education classes. Then, a survey was conducted with the use of a questionnaire addressed to all employees of the analyzed entity in order to determine the determinants of digitization of disciplines conducted during classes for students. The results of the multifaceted analysis indicate that, according to the respondents, managing the process of digitizing physical education classes is difficult due to various identified barriers. However, it also has advantages which, in the opinion of the respondents, may with time even outweigh the disadvantages. However, this requires a process approach and skilful management with the support of all resources, from human resources to the broadly understood infrastructure. The research results obtained may be of use to many stakeholders: from other units conducting analogous physical education classes in a remote form, through recipients of this form of physical activity, to the government units responsible for the quality of physical education in society. However, it should be emphasized that the conducted analysis is only an illustration of the discussed issue, therefore the formulated conclusions cannot be applied to the entire population. The article presents the main aspects of managing the process of digitization of physical education. However, in order to better understand the complexity of the issue, it is also necessary to analyze the observations of the direct recipients of this type of activities, as well as other stakeholders, which thus indicates the direction of further research.
Key Words*:* **management, process, sportization, digital Age, digital competences**

Introduction

The pandemic, which started in March 2020, forced far-reaching changes on both production and service entities. Their necessity particularly affected the education system, which had to change the formula of almost all activities from traditional to remote virtually overnight (Laskowska-Rutkowska A. (red.), (2020). Although digitization in education was not a completely new issue, this fact caused many difficulties, both for teachers and students, at every stage of education, from primary schools to universities.

Digital education seems to be an unprecedented challenge (Sgro F., Quinto A. Barca M., Lipoma M. 2021), especially in terms of practical subjects, which undoubtedly also include physical education (Ferry M., Romar J.E., 2020). For this reason, the authors have made an attempt to show the path of transformation of classes, with particular emphasis on the issue of managing it based on the verification of individual stages of changes and the results of perception of people involved in them. The implementation of the assumptions of this article, apart from the analysis of the literature on the subject, required empirical research, namely an online interview and survey. The main objective of the article is to analyze the process of transformation of physical education classes, forced by the COVID 19 virus pandemic, at the level of higher education mainly based on the identification of the determinants of the management of digitization of classes from the perspective of the people implementing them, i.e. the head of teaching and employees of the relevant unit.

From the point of view of the article and its purpose, it is not reasonable at this point to define what digitization is because it is not clearly defined and is used in many different meanings. Therefore, the authors of the article adopted the definition and assumptions of the Ministry of Digitization in the Digital Poland Program, where we can distinguish three areas for it: the first is broadband infrastructure enabling access to high-speed Internet, the second is projects that increase the pool of public services available electronically, and the third area comprises projects encouraging people to use the Internet and increasing their digital competences (Nowak M., 2019).

Corresponding Author: PAWEŁ KUŹBIK, E-mail: pawel.kuzbik@uni.lodz.pl

As already mentioned, conducting classes remotely (most often in the form of lectures) was not a particular challenge for theoretical subjects (Altavilla G., Manna A., Lipoma M., 2021). The introduction of IT tools, including communication platforms with the use of the global Internet network, was mainly based on changing the method of communication with students, prepared by academic teachers (Raiola G., Di Domenico F., 2021). A definite problem arose in the case of typically practical classes taking place in laboratories or any practical classes where it was necessary to cooperate not only between students but also between students and teachers conducting the classes in order to achieve the right results. When it was necessary to conduct classes remotely, both physical education instructors and the institution where these classes were held faced a number of challenges that had to be undertaken in order to implement the subject assumptions (Bodsworth H., Goodyear W.A., 2017)

First of all, it became necessary to prepare the right "place" for meetings, i.e. an appropriate communication platform that could be used thanks to the global Internet network, and then start cooperation of data, infrastructure and employee competences (Coppola R., Schembri R., Manzo G., Sgro F., 2021). Thus, the digital transformation began as part of conducting physical education classes, where such elements as connectivity, digital data, process automation and digital access of the student became a significant dependency (Fig. 1.)

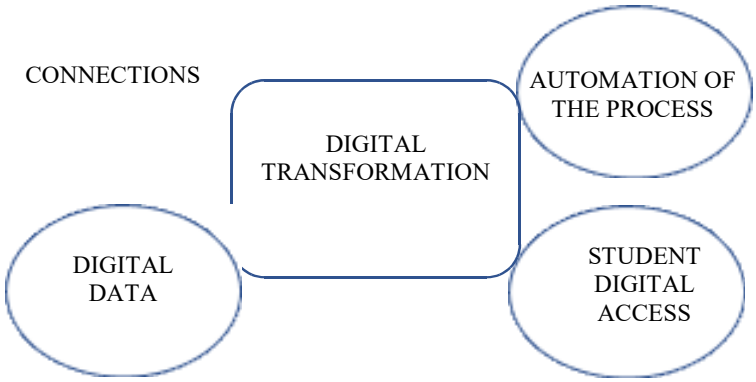

Fig. 1. Factors driving digital transformation at the Institute of Physical Education, University of Lodz
Source: Own study based on Roland Berger, BDI, (2015), https://www.rolandberger.com/media/pdf/Roland_Berger_digital_transformation_of_industry_20150315.pdf (3/9/2021)

The key fact was that the management of the institution, but also the teachers themselves, had to understand that this process was a continuous change and improvement, not a project that could be completed within a year or two (Hilvoorde I., Koekoe J., 2018). Thus, the process of digitization of classes had to be looked at in a long-term way, while correcting and improving the activities at every stage, also taking into account the preferences and expectations of students. It seems that the employees and managers of the institute took actions in a manner consistent with the assumptions of digitization (Gajewski J., Paprocki W., Pieriegud J., (Ed.), 2016, p. 14), acting on a point-by-point basis, using technology to transform specific processes, functions or teams. Thus, as part of the preparation of physical education classes, digitization was looked at pragmatically, and the improvement of efficiency has become a slogan that started outlining the directions of change.

However, the digitization process in the case of physical education classes, apart from purely technological aspects, should also be viewed through the prism of the competences of teachers, who have become personal trainers and coaches (Stefaniak T., Harmaciński D., Groffik B., Pawlak G. (2016), and the specificity of the classes, because sport, especially physical education, plays a role in formal and non-formal education, which strengthens human capital in the academic environment (Wallhead T., O'Sullivan M., 2005).

The values conveyed by sport contribute to the development of knowledge, motivation, skills and readiness for personal effort. Time spent on sports at school and university brings health and education benefits, which is why PE classes are so important. (EC, 2007). Therefore, the process of digitization of PE classes at the University of Lodz becomes an important element of maintaining academic identity among young people, and people involved in the entire project are obligated to sportization (Cieśliński W., 2019), i.e. searching for an organizational model of participation in this phenomenon in the age of digitization and mediatization of social and economic life (Sznajder A., 2018) (Fig. 2).

At the same time, mediatization should be understood here as a certain set of processes resulting from changes both in the media itself (podcasts, YouTube, streaming, etc.) and social and cultural changes (Krotz F., 2007), especially taking into account the speed of these processes during the Covid-19 pandemic.

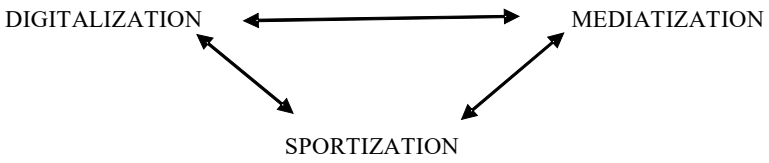

Fig. 2: Sportization or Sport (PE) in the Digital Age
Source: Cieśliński, W. (2019).

Material & methods

In order to explore the process of implementing digital technologies in physical education classes, the first method to use was the IDI (In-Depth Interview) method of qualitative research, i.e. an individual in-depth interview with an expert, i.e. the Head of Didactics at SFWIS University of Lodz. The study was conducted on February 16, 2021, at a sports facility owned by the University of Lodz. The selection of the respondent was deliberate because it is the person responsible for managing the substantive side of physical education classes at the studied University.

The structure of the interview was subordinated to the assumptions of the so-called classical approach to management, and therefore taking into account its key functions: planning, organizing, coordinating, leading and controlling (Koźmiński, Piotrowski, 2007).

Planning of the class digitization process began with the announcement on March 11, 2020. the Rector's decision to suspend the teaching activities of the University of Lodz in all modes and forms of education, including sports and recreational activities conducted at the University (Giorgio P., Ohri L., Marzin K., 2018). The School of Physical Education and Sport (SWFIS) of the University of Lodz, like other university units, has been obliged to prepare and implement the didactic process by means of distance learning, starting from 18/03/2020 (Appelo J. (2016). Time pressure and at the same time a completely new situation are factors that forced the management of the University of Lodz SWFIS to immediately begin working on the process of transition to remote learning. While developing the modified concept of the classes, they took into account the variables that allowed reconciling the requirements with the possibilities, and therefore, the scope of the material which was consistent with the previously prepared syllabuses, and at the same time suitable for the formula of remote work. In addition, the technical capabilities and competencies of employees that are key to the effectiveness of the digitization of education had to be identified (Capiga M., 2021). A detailed study, containing the issues and rules for passing the subject of physical education, was presented and then approved for implementation by the Vice-Rector for Education of the University of Lodz. After all the employees had been acquainted with the developed guidelines, the stage of the preparation of individual sports began, and then the findings were presented to students of all exercise groups.

The mixed model of classes adopted for the 2020/2021 academic year extended the need to implement the teaching process through distance learning measures for most subjects, including physical education (Kuźbik P., 2016). This decision necessitated the development of new regulations for the implementation and principles of crediting physical education classes in a remote form (Moy B., Renshaw I. Pavey T. 2020). Before being published on the University of Lodz SWFIS website, the regulations were approved by the Legal Department of the University of Lodz and the Vice-Rector for students and quality of education at the University of Lodz. Moreover, the developed guidelines were presented by the head of the University of Lodz SWFIS at the Rector's College, and the principles of the classes were also discussed at the University of Lodz Senate.

The approved regulations were communicated to all employees of SWFIS University of Lodz via official e-mails, and all doubts were clarified at regularly convened Pedagogical Councils, held using the MS TEAMS platform. Moreover, the differences in the forms of implementation, resulting from the specificity of the individual sports, were discussed. The stage of implementing the planned general arrangements gave individual teachers freedom, both in the selection of IT tools for the implementation of the program of a given sport and in the form of verification of the presented content. Such a flexible approach influenced the variety of means of communication with students, as well as the materials provided and methods of obligatory weekly confirmation of activity resulting from the discipline of sport chosen by the student, e.g. exercises performed individually and confirmed by applications used to record physical activity (e.g. Endomondo, Huawei Health, Calorie Counter, Nike +) or short films documenting the physical effort recommended by the trainers, as well as additionally at least four in each semester, presentations/papers in the field of broadly understood physical education. Moreover, some lecturers, in order to verify the effectiveness of remote physical education, conduct online knowledge tests, especially for team games. Apart from the weekly sending of materials, the lecturers are also responsible for the verification of homework, and therefore their analysis, evaluation and commentary for each of the students enrolled in a given exercise group. Moreover, employees of SWFIS University of Lodz are obliged to account for their work in reports sent once a week to the Teaching Manager. These e-mails are the basis for counting the hours worked into the planned number of hours.

Throughout the digital transformation of physical education classes, employees have the support of both the management of their unit and the University of Lodz IT Center, which offers a number of free training courses in

tools supporting distance learning. In addition, from the beginning of the analyzed process, knowledge exchange between employees is practised, both through meetings on MS TEAMS or Moodle platforms, as well as through e-mail or telephone contact. Due to the lack of equipment, each employee had to provide himself with the necessary IT infrastructure. However, as the Manager emphasizes, so far no one has reported a need in this regard.

Results

The analysis of the process over the course of the year (two academic semesters) confirms that distance learning in physical education is constantly being improved. The lecturers who conduct classes use various IT tools, diversify the topics taken by including "fashionable" issues, and at the same time important for the proper physical and mental development of students, such as elements of dietetics or proper breathing techniques. The improvement activities undertaken are appreciated by students who, despite the remote formula, rate the physical education classes very highly, as evidenced by numerous e-mails with thanks and appreciation to the teachers.

In order to illustrate the issue more fully, a survey was also conducted on the perception of the management of the transformation process by the employees of SWFIS University of Lodz. The study in the form of an online survey (available on February 24-28, 2021) was sent to all employees of the unit described. The structure of the questionnaire, similarly to the qualitative research, refers to the key elements of management and also verifies the subjective feelings of teachers conducting remote physical education classes. However, it should be emphasized that due to the relatively small research sample, selected on purpose, the following conclusions should be treated as preliminary and setting the direction for further in-depth analyzes.

23 people participated in the study, which indicates a reflexivity of 97%. The structure of the respondents was analyzed in terms of gender, age, seniority at the university and the sport represented. And so, in terms of gender, 13 women and 10 men took part in the study, of whom 6 respondents belonged to the age range 36-46 years, another 11 persons indicated the age range 47-57, and the rest were aged 58-68 years. More than half of the survey participants were people with many years of experience at the University, i.e. over 25 years. This is a variable that is undoubtedly important for the analysis of further indications in terms of the perception of the process of transforming classes into distance learning. The respondents conduct classes in many different sports, both individual and team.

Moving on to the analysis of the responses, it is evident that the preferred form of classes, mainly due to their effectiveness, is the traditional, stationary class practised before the pandemic. Only 13% of the respondents believe that there should be both forms of physical education teaching in the future, as each of them has its own advantages. One person was in favour of only remote physical education classes, which accounts for almost 4% of all responses (Chart 1).

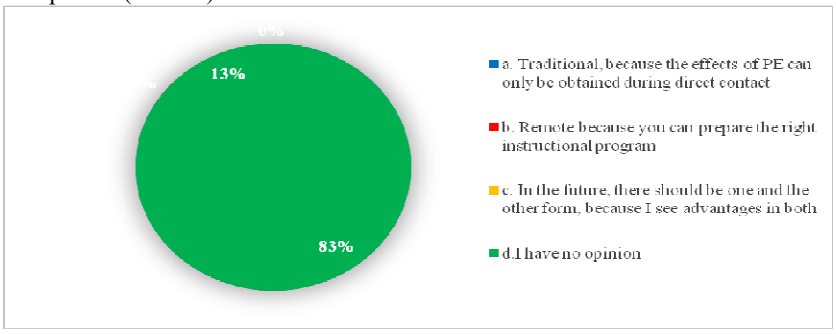

Chart 1: The form of PE classes preferred by teachers, Source: Own study based on research

These preferences translate into the degree of satisfaction with the quality of the classes, as only 34% of respondents rated them as good and very good. The prevailing grade on a scale of 1-5 is 3 (48% of responses), attributed to the average sense of satisfaction with the remote physical education classes (Chart 2).

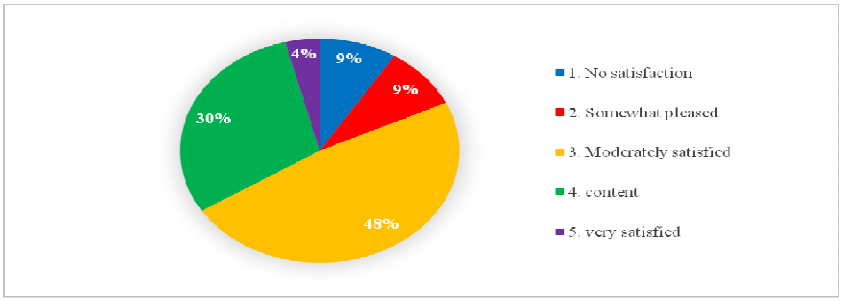

Chart 2: Level of satisfaction with the quality of classes conducted by themselves
Source: Own study based on research

Regarding the perception of the effectiveness of the sports taught, the voices are divided, although over 39% of the lecturers declared their satisfaction at a high level. Only one person expressed extreme dissatisfaction (Chart 3).

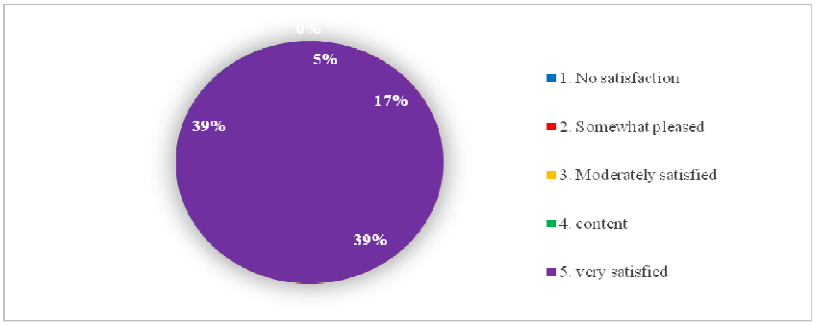

Chart 3: Assessment of the satisfaction with the effectiveness of the conducted classess
Source: Own study based on research

61% of respondents showed awareness of the effectiveness of the process of digitization of classes. According to 43% of respondents, the transformation process was conducted correctly and effectively. 39% of the respondents stated that they had no opinion on this topic.

The measures to implement the digitization of sport are primarily private infrastructure (91% of responses) and platforms such as MS TEAMS or Moodle. In addition, some respondents use USOS Mail, Youtube, One drive or voice presentations. In addition to peer collaboration, as well as their own inventiveness and competences, almost all respondents confirmed that the University offered them support in transformation in the form of free training in methods and techniques for distance learning. However, this support was still inadequate for most of those interviewed. The main disadvantages of digitization of physical education include fatigue resulting from working in front of a computer (73%) and isolation and, consequently, the limitation of contacts with others (64%). In addition, the following barriers to the distance learning process were identified as significant: stress, lack of motivation and poorly transparent guidelines for online classes. Interestingly, the variable of the lack of interest on the part of students was indicated by only 3 people, i.e. 14% of the analyzed sample. On the other hand, the key advantages of the transformation process in question include the flexibility of working time (64%), the possibility of self-development (32%), as well as savings in terms of costs incurred during stationary classes (32%). The surveyed group expects the possibility of further training in the field of IT tools used (61%), sharing good practices with other teachers and similar units (35%), as well as financial rewards commensurate with the degree of involvement in the distance learning process (30%) (Chart 4).

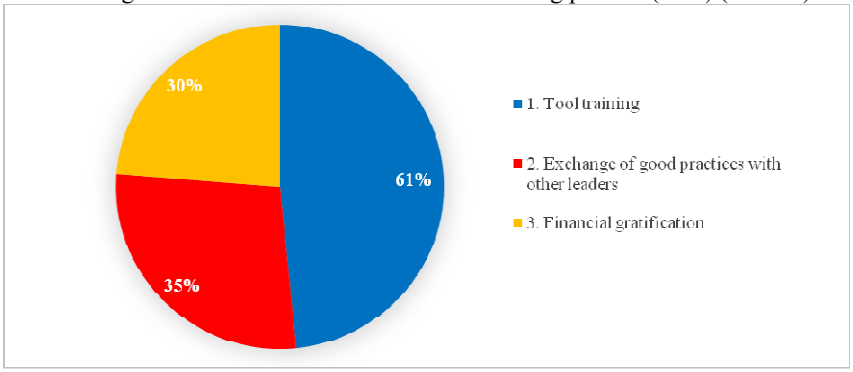

Chart 4: Expectations from the further stages of digitization, Source: Own study based on research

Discussion

The two perspectives of the perception of transformation indicate gaps that require improvement, both typically administrative and managerial. Despite the support offered, both at the level of the unit and the entire University, the lecturers still feel the need for help, and not only, as the research results show, in technical matters. Perhaps multi-faceted improvement activities will change their perception of remote classes and thus contribute to an increase in satisfaction and self-esteem. The more so that students who were initially sceptical about this formula of physical education show a high level of interest in classes which, as they say, themselves, increased their awareness of the importance of physical education in everyday life and showed wide possibilities of taking care of their physical and mental state, especially important in a prolonged pandemic (Mozolev O., Polischuk O., Kravchuk L., Tatarin O., Zharovska O., Kazymir V., 2020).

Conclusion

In conclusion, it should be emphasized that the digitization of physical education classes, although the concept of eHPE (electronic Health and Physical Education) is not a new issue in the world (Casey A., Goodyear

V.A., Armour K. 2016), is a long-term and multidimensional process. It requires the integration of areas related to modern technologies with those of a typically pedagogical nature (Izzo R., Giovannelli M. Cejudo A., Vardei C. H, 2021) , In addition, continuous innovation is desirable, both in terms of the effective implementation of the content of the subject and the assessment of students' achievements (Hilvoorde I., Koekoe J., 2018). Transformation understood in this way must undoubtedly be skillfully managed, and this requires the awareness and voluntary commitment of all parties involved in it, especially when they are at its initial stages, as is the case with universities in Poland.

References:

Altavilla G., Manna A., Lipoma M., (2021), Relevance of empathy in educational relationships and learning processes, Journal of Physical Education and Sport ® (JPES),Vol 21 (Supplement issue 1), Art 84 pp 692 – 695

Appelo J. (2016), Zarządzanie 3.0. Kierowanie zespołami z wykorzystaniem metodyk Agile, Wyd. Helion, Warszawa

Bodsworth H., Goodyear W.A., (2017), Barriers and facilitators to using digital technologies in the Cooperative Learning model in physical education, Physical Education and Sport Pedagogy 22(6)

Bradley J. Cardinal,Zi Yan &Marita K. Cardinal (2003), Negative Experiences in Physical Education and Sport: How Much Do They Affect Physical Activity Participation Later in Life?, Journal of Physical Education, Recreation & Dance, Volume 84

Capiga M., (2021), Kompetencje przyszłości, Coaching nr 4 (Grudzień 2020-Luty 2021), str. 8

Casey A., Goodyear V.A., Armour K. (2016), Rethinking the relationship between pedagogy, technology and learning in health and physical education, Sport Education and Society 22(2):1-17

Cieśliński, W. (2019). Digitalizacja przestrzeni organizacyjnej sportu. W: P. Godlewski i P. Matecki (red.), Marketing sportowy. Nowoczesne aspekty zarządzania sportem. SportBiz.

Coppola R., Schembri R., Manzo G., Sgro F., 2021, Possible use of technological tools in outdoor movement education, Journal of Physical Education and Sport ® (JPES),Vol 21 (Supplement issue 1), Art 86

Ferry M., Romar J.E., (2020), Physical education preservice teachers' physical activity habits and perceptions

of the profession and subject: development during teacher education, Journal of Physical Education and Sport ® (JPES), Vol 20 (Supplement issue 6), Art 422 pp 3108 – 3119

Giorgio P., Ohri L., Marzin K., (2018), A whole new ball game Navigating digital change in the sports industry, Deloitte Raport

Hilvoorde I., Koekoe J., (2018) Digital technologies: A challenge for Physical Education in Changes in Childhood and Adolescence: Current Challenges for Physical Education. Logos Verlag Berlin

Izzo R., Giovannelli M. Cejudo A., Vardei C. H, (2021), Outdoor activity: orienteering, one step towards an advanced scientific evaluation of game determinants using latest dedicated technologies combined with literature review, Journal of Physical Education and Sport ® (JPES),Vol 21 (Supplement issue 1), Art 68

KE, (2007), Biała księga na temat sportu, Bruksela

Koźmiński, Piotrowski (2007) Zarządzanie. Teoria i praktyka.Wyd. PWN, Warszawa

Krotz, F. (2007). Die Mediatisierung kommunikativen Handels. Der Wandel von Alltag und sozialen Beziehungen, Kultur und Gesellschaft durch die Medien. Wiesbaden: Westdeutscher Verlag.

Kuźbik P., (2016) Sport jako platforma komunikacyjna w społeczeństwie informacyjnym, „Zeszyty Naukowe Uniwersytetu Szczecińskiego Ekonomiczne Problemy Usług" (1640-6818) nr 123, s. 91-100

Laskowska-Rutkowska A. (red.), (2020) Cyfryzacja w zarządzaniu, Wyd. CEDEWU, Warszawa

Moy B., Renshaw I. Pavey T. 2020, Impact of the constraints-led approach on students' motor performance, Journal of Physical Education and Sport ® (JPES), Vol.20 (6), Art 453 pp. 3345 – 3353

Mozolev O., Polischuk O., Kravchuk L., Tatarin O., Zharovska O., Kazymir V., (2020), Results of monitoring the physical health of female students during the COVID-19 pandemic, Journal of Physical Education and Sport ® (JPES), Vol 20 (Supplement issue 6), Art 445 pp 3280 – 3287

Nowak M. (2019), Cyfryzacja – na czym polega i jaka ma być z niej korzyść dla przedsiębiorcy, https://digitalandmore.pl/cyfryzacja-na-czym-polega-i-jaka-ma-byc-z-niej-korzysc-dla-przedsiebiorcy/ (09.03.2021)

Raiola G., Di Domenico F., 2021, Physical and sports activity during the COVID-19 pandemic, Journal of Physical Education and Sport ® (JPES),Vol 21 (Supplement issue 1), Art 49 pp 477 – 482

Sgro F., Quinto A. Barca M., Lipoma M. (2021), Towards a method to support trail selection for the outdoor movement education proces, Journal of Physical Education and Sport ® (JPES),Vol 21 (Supplement issue 1), Art 50 pp 483 – 488

Stefaniak T., Harmaciński D., Groffik B., Pawlak G. (2016), Ocena preferowanych predyspozycji trenera personalnego, QUALITY IN SPORT 3 (2) 2016, s. 43-53

Sznajder A., (2018), Technologie informacyjno-komunikacyjne w marketingu sportu, Journal of Marketing and Market Studies, t. XXVII, nr 3/2020

Wallhead T. , O'sullivan M., (2005), Sport Education: physical education for the new millennium?, Physical Education and Sport Pedagogy, Volume 10