

The efficiency of a remote tutor-program at increasing the professional competences of a swimming coach

ELENA ROMANOVA¹, MIKHAIL KOLOKOLTSEV², MARGARITA DUNAEVA³, VLADIMIR IVANITSKIY⁴, ANTON VOROZHEIKIN⁵, ELENA FALEEVA⁶, ANDREI TARASOV⁷, SERGEY AGANOV⁸

¹ Department of Physical Education, Altai State University, Barnaul, RUSSIA

² Department of Physical Culture, Irkutsk National Research Technical University, Irkutsk, RUSSIA

^{3,4} Department of Physical Culture, Siberian Federal University, Krasnoyarsk, RUSSIA

⁵ Department of Information Technologies, Kaliningrad Institute of Management, RUSSIA

⁶ Department of Physical Education and Sports, Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, RUSSIA

⁷ Department of Pediatrics and Preventive Medicine, Immanuel Kant Baltic Federal University, RUSSIA

⁸ Department of Physical Training, GPS Emercom of Russia St. Petersburg University, RUSSIA

Published online: May 31, 2022

(Accepted for publication May 15, 2022)

DOI:10.7752/jpes.2022.05141

Abstract:

Improving the level of professional competence of swimming coaches using different pedagogical techniques is an urgent problem in sports pedagogy. Research aim: to evaluate the effectiveness of using different technologies to improve professional competencies of children's swimming coaches. Research materials and methods. The coaches (n=22) of the control (CG) and experimental (EG) groups (11 persons each) participated in the experiment. During the academic year the CG coaches independently improved their professional competences by studying available modern educational-methodical and scientific sources on the Internet. The distance tutor-program of 80 hours (two hours a week) online was offered for the EG trainers. At the beginning and at the end of the pedagogical experiment the level of formation of professional competences of the coaches of both groups was determined by using self-analysis questionnaire and the expert evaluation of the specialists. Research results. At the beginning of the experiment the levels of pedagogical competencies of the coaches of both groups did not differ and were low in some types of competencies. After the completion of the experiment the EG coaches increased the level of only 1 competence. The EG coaches had the levels of 7 competences increased. There were no coaches with a low level of professional competences in this group. The increase in the values of the evaluation indicators of the levels of professional competences in both groups of observation has been established. The EG coaches showed 3-4 times more growth than the CG coaches. Conclusions. The on-line program to improve the professional level and qualification of the swimming coach was an effective tool in the pedagogical process and can be used in the education of sports coaches in other kinds of sports.

Key Words: swimming, sports pedagogy, professional competencies, tutor-program

Introduction

The involvement of children and adolescents in physical education and sports leads to the positive development of the necessary motor and cognitive skills, which are the basis for an active human life and maintaining its high quality (Holt et al., 2017; Reverdito et al., 2020). For a person of any age, one of the most effective and popular sports is swimming, where human motor actions are carried out in an aquatic environment (Görner et al., 2020; Ganchar et al., 2022). Swimming is especially useful in childhood for coordination qualities, general and fine motor skills development (Sigmundsson, 2021). Physical activity in the aquatic environment develops and improves the functional systems of the body, strengthens the musculoskeletal and cardiorespiratory systems (Yapıcı-Öksüzoğlu 2020) and causes children a feeling of great joy. When mastering swimming skills, the child actively reacts to the state of buoyancy of his body, his muscular corset tries to counteract pressure and resistance to the aquatic environment, which develops the psychomotor adaptation of the body to water (Benčurikova, Matúš, 2017).

There is an opinion among scientists that swimming activities development by a person has the specifics of training (Vogt, Staub, 2020; Sigmundsson, 2021). First, the child must master the basic techniques of breathing in water, swimming on the surface, jumping into deep water and movements to maintain buoyancy. Only after that, the child needs to master the elements of a simple swimming technique. Therefore, for children, a coach is a key link in the pedagogical process of mastering swimming skills (Luguetti et al., 2017). He/She must have high professional competence (Solytyk et al., 2017; Meier, 2020), including modern effective methods and technologies of active pedagogical influence. The coach's communicative competence is very important for the teacher's interaction with the child and his parents. According to Serepov et al. (2021), insufficient attention

of parents to the issues of improving their children's health affects the interaction level between the coach and the family.

In recent years, the requirements for the quality of services in the field of sports activities have been increasing (Prado-Gascó et al., 2018). The assessment of the coaches' work activity is considered as a marker of the quality of providing sports services to the population and the success of mastering the discipline by students (Monteiro, Gabriella Nell et al., 2021). In some countries, such as Brazil, all coaches must have a diploma in physical education. The legislation of this country provides for annual continuous professional development in the field of coaching education in order to improve the pedagogical practice of sports coaches (Galatti, 2017). It is considered that a coach's professional training should correspond to the level of modern information and communication tools development. The professional competence of a coach should be constantly updated in the form of advanced training courses (Guillermo Felipe López Sánchez et al., 2018), where, in addition to traditional means, forms and methods of teaching, modern interactive pedagogical technologies are used, in particular, problem, project, discussion, design and others (Prystupa et al., 2020; Sgambelluri et al., 2021). Gazizova et al. (2019) reports on the inadmissibility of using a formal approach in modern pedagogical practice. According to Bicheva, Melentovich (2018), professional competence should be assessed using a systematic method. We believe that the modification or new programs development for organizing classes with swimming coaches to improve their professional competencies is an urgent problem of sports pedagogy (Madonna, Belfiore, 2020).

Research aim is to evaluate the effectiveness of using various technologies to improve children's swimming coaches' professional competencies.

Material & methods

The experimental project was carried out in the 2020-2021 academic year on the basis of two children's sports schools (Siberian Federal District, Russia). By a randomized method, the coaches (n=22) were divided into control (CG) and experimental groups (EG) of 11 people. The experience of coaching was 9.7 ± 1.2 years, 86.4% of coaches had a special physical education. In the experiment, we compared two methods of technology to increase the level of coaches' professional competencies. The CG coaches were invited to improve their professional competencies independently during the academic year, using any available modern educational, methodological and scientific sources on the Internet. EG coaches were offered a distance learning course according to the tutor program, lasting 80 hours, where classes were held for 2 hours a week online. To do this, we have compiled a program for the entire academic year, Table 1.

Table 1. The program of the online course to improve the coaches' professional competencies in the experimental group.

Content			
1 st week	2 nd week	3 rd week	4 th week
September			
Organizational webinar. Survey ^{1,3,4,5}	Discussion of the results of the coaches' first questionnaire ^{1, 2, 3, 4, 5,6, 9}	The concept and content of the teacher's professional standard ^{1, 2, 3, 4, 5, 7, 9}	Coaches' training to test children's general physical fitness and swimming skills ^{1, 2, 3, 4, 5, 6, 7, 9}
October			
Legal bases of sports education in the Russian Federation ^{1, 2, 3, 5}	Dynamics of the subject-developing environment formation in a group of children in accordance with the calendar-thematic plan ^{1,2, 3, 4, 5, 6, 7, 9}	Modern approaches and methods of teaching swim-ming ^{1,2, 3, 4, 5, 6, 7, 9}	Sanitary and hygienic standards and safety during swimming ^{1,2, 3, 5,}
November			
Indications and contraindications to swimming ^{1,2, 3, 4, 5, 9}	Teaching parents to play and swim exercises with children at home ^{1,2, 3, 4, 5, 6, 7, 9}	Tempering of the body using water procedures ^{1,2, 3, 4, 5, 6, 7, 9}	Recommended norms of motor activity of children in swimming ^{1, 2, 3, 4, 5, 7, 8, 9}
December			
Using games as a means of adapting children to the aquatic environment ^{1, 2, 3, 4, 7, 8, 9}	Children's cognitive abilities formation with the help of an aquatic environment ^{1, 2, 3, 4, 7, 8, 9}	Skills of creating game situations for children in an aquatic environment ^{1, 2, 3, 4, 7, 8, 9}	The influence of swimming on the child's body functional and motor systems' development ^{1, 2, 3, 4, 7, 8, 9}
January			
Video lecture about swimming in open water ^{1, 2, 3, 4, 9}	Coach's pedagogical technologies ^{1, 2, 3, 4, 5, 7, 8, 9}	Hydrotherapeutic procedures for children ^{1, 2, 3, 4, 5, 7, 8, 9}	Technology of consultations for parents of children engaged in swimming ^{1, 2, 3, 4, 7, 8, 9}
February			
Teaching children the	Teaching the chest	Skype - dialogue on game	The basic principles of the

technique of swimming on the back and chest. Diving. Auxiliary tools ^{1, 2, 3, 4, 5, 7, 8, 9}	swimming technique. Supports. ^{1, 2, 3, 4, 5, 7, 8, 9}	methods of teaching swim-ming ^{1, 2, 3, 4, 5, 7, 8, 9}	subject-developing environment organization in a group of children engaged in swimming ^{1, 2, 3, 4, 5, 7, 8, 9}
March			
Types of physical exercises in swimming ^{1, 2, 3, 4, 5, 7, 8, 9}	Basics of communication with parents of children engaged in swimming ^{4, 5, 7, 9}	Creating an interactive case «Games in the water. Supports. Methods. Inventory at home» ^{1, 2, 3, 4, 5, 7, 8, 9}	Training of coaches in methods of assessing the health and physical development of children engaged in swimming ^{2, 3, 4, 5, 7, 8, 9}
April			
Preparation of a consultation for parents «What you need to know when your child learns to swim» ^{1, 2, 3, 4, 5, 9}	IT technologies use in sports activities ^{1, 2, 3, 5, 7, 9}	Development of a swimming lesson notes for children ^{1, 2, 3, 5, 7, 9}	Tutor's master class in a swimming-pool ^{1, 2, 3, 5, 7, 8, 9}
May			
Organization of the final lesson in the swimming-pool ^{1, 2, 3, 4, 5, 6, 7, 9}	Conducting a final questionnaire of coaches ^{1, 2, 3, 4, 5, 6, 7, 9}	Analysis of the final questionnaire of coaches ^{1, 2, 3, 4, 5, 6, 7, 9}	A test class. Solving case problems ^{1, 2, 3, 4, 5, 6, 7, 9}

Note. 1-9 – № of a professional competency.

The topic of each lesson in EG corresponded to the improvement of one or more professional competencies (Kovalenko et al., 2014):

- 1) psychological and pedagogical, related to the educational and educational process in swimming;
- 2) gnostic – the process of accumulating new knowledge, the means to achieve the goal;
- 3) design - the ability to carry out current and long-term planning;
- 4) communicative - the ability to build communication, dialogue and interaction with the subjects of the educational process;
- 5) organizational - about actions related to the effective implementation of the pedagogical project;
- 6) scientific research - about actions related to scientific research in the field of swimming;
- 7) diagnostic - the ability to evaluate the pedagogical training methods effectiveness;
- 8) motor - the development of a sufficient proficiency level of swimming motor skills by the coach;
- 9) acmeological - conceptual attitude to the level of one's own activity.

The level of professional competencies formation of the coaches in both observation groups at the beginning and at the end of the pedagogical experiment was determined using a questionnaire of introspection and expert assessment from 0 to 9 points: low, medium and high. Coaches with more than 25 years of experience were brought in as experts.

In this study, generally accepted statistical methods of material processing were used. The conducted experiment does not violate the rights of trainers, ethical norms and rules of the Committee on the Rights of Biomedical Experiments of the Helsinki Declaration of 2008.

Results

At the beginning of the experimental project, it was found (Table 2) that the level of pedagogical competencies of swimming coaches in CG and EG was approximately the same ($p > 0.05$) and was low for certain types of competencies.

Table 2. Results of professional competence assessment at the beginning of the experiment ($M \pm m$)

№	Competency	Points		Level		Number of coaches (%)	
		CG	EG	CG	EG	CG	EG
1	Psychological and pedagogical	4.2±0.23	4.1±0.26	High	High	81.8	81.8
2	Gnostic	3.8±0.11	3.9±0.15	Average	Average	63.6	55.5
3	Design	3.9±0.12	3.8±0.18	Average	Average	72.7	72.7
4	Communicative	4.0±0.27	4.0±0.23	Average	Average	63.6	63.6
5	Organizational	3.3±0.19	3.4±0.20	Low	Low	63.6	55.5
6	Scientific research	2.7±0.15	2.6±0.15	Low	Low	55.5	55.5
7	Diagnostic	3.6±0.28	3.7±0.22	Low	Low	55.5	55.5
8	Motor	4.4±0.34	4.5±0.39	High	High	81.8	81.8
9	Acmeological	3.5±0.26	3.4±0.28	Average	Average	72.7	72.7

At the beginning of the experiment, all coaches in both groups had a high level of motor and psychological-pedagogical competencies, an average level of gnostic, design, communicative and acmeological

competencies and a low level in research, organizational and diagnostic competencies. Analysis of the survey results at the end of the experiment showed that there were positive changes in the responses of the coaches in both observation groups (Table 3).

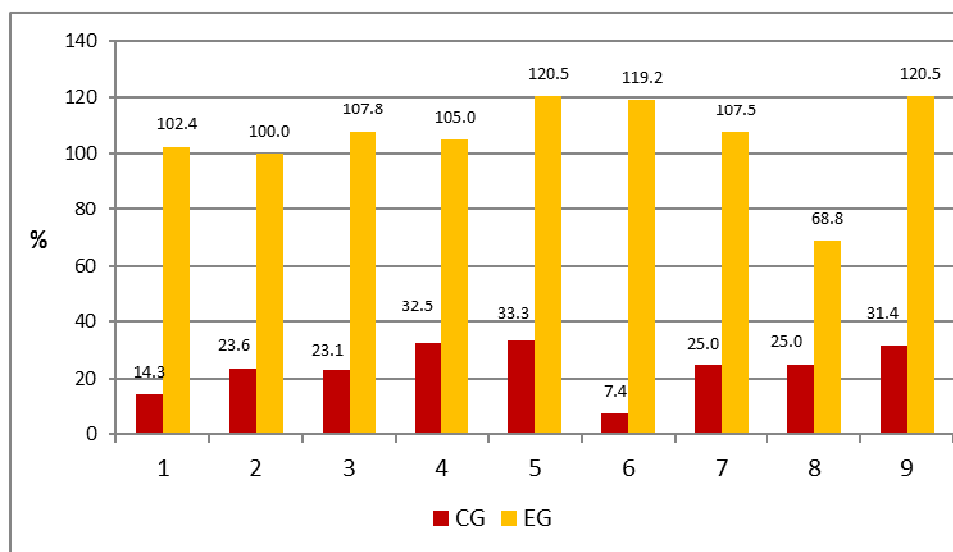
Table 3. Results of professional competence assessment at the end of the experiment (M±m)

№	Blocks	Points		Level		Number of coaches (%)	
		CG	EG	CG	EG	CG	EG
1	Psychological and pedagogical	4.8±0.28	8.3±0.46	High	High	81.8	90.9
2	Gnostic	4.7±0.17	7.8±0.45	Average	High	63.6	72.7
3	Design	4.8±0.22	7.9±0.38	Average	High	63.6	72.7
4	Communicative	5.3±0.37	8.2±0.43	Average	Average	63.6	63.6
5	Organizational	4.4±0.29	7.5±0.42	Average	High	63.6	72.7
6	Scientific research	2.9±0.17	5.7±0.35	Low	High	55.5	72.7
7	Diagnostic	4.5±0.38	6.8±0.22	Low	High	55.5	72.7
8	Modor	5.5±0.44	7.6±0.39	High	High	81.8	81.8
9	Acmeological	4.6±0.46	7.5±0.28	Average	High	63.6	90.9

After the experiment, the coaches of the control group increased the level of only 1 (organizational) competence. The CG trainers' levels of research and diagnostic competencies remained at a low level.

After the experiment, the EG coaches' levels of 7 competencies (psychological, pedagogical, gnostic, design, organizational, research, diagnostic and acmeological competencies) increased to high values. There are no coaches with a low level of professional competence in this group.

The figure shows a graph of the increase in the values of the professional competence assessment indicators of all coaches at the end of the experiment.



Note. 1-9 – № of a professional competency.

Fig. The increase in the values of the indicators of the point assessment of the professional competencies level in the CG and EG coaches at the end of the experiment

At the end of the experiment, an increase in the values of professional competence assessment indicators was established in both observation groups. The growth of the EG coaches turned out to be greater than the coaches in the CG (Figure). The increase of >100% was for EG coaches in 8 competencies (with the exception of competence No. 8). The highest increase (>120%) was registered with EG coaches in 2 out of 9 professional competencies (No. 5 and No. 9). The result of the analysis of expert assessments of the respondents' survey at the end of the experiment showed that the use of a remote tutor program to improve the professional competencies of children's swimming coaches is an effective pedagogical technology for training teachers.

Dicussion

The formation of professional competencies among coaches and teachers in the field of physical culture and sports is an urgent problem of modern sports pedagogy therefore, the topic of our experimental project is in demand. This is also consistent with the opinion of other scientists working in this field (Soltysk et al., 2017;

Prado-Gascó et al., 2018; Meier, 2020). The presence of professional competencies among professional sports teachers (Kovalenko et al., 2014) is especially important for coaches working with children. The level of professionalism, the formation of professional competencies, communicative, organizational and other qualities of a coach will largely determine the formation of children's motivation for regular physical activity and the child's further career in a particular sport (Monteiro et al., 2021; Kursanova, & Anfilatova, 2020).

We agree with the opinion of Reverdito et al. (2020) that it is mandatory in sports pedagogy to observe the principle of continuous improvement of the coaching staff's professional competence. This is a condition for their professional growth. Therefore, we have developed and tested the tutor program of an online course for improving the professional competencies of children's swimming coaches, which allows supporting the process of continuous improvement of pedagogical skills. This is especially true for young coaches who do not have sufficient experience in sports pedagogy.

It is known that information and communication technologies are widely used in pedagogical practice (Wulfovich, 2017). The use of the online tutor program proposed by us allowed children's swimming coaches-instructors to significantly increase the level of necessary professional competencies, compared with the indicators of the coaches of the control group who were engaged independently. Pedagogical diagnostics showed that the level of increase in quantitative and qualitative indicators of coaches-instructors' professional competencies in the experimental group is significantly higher than in the control group. Similar conclusions are available in the works of other authors (Reverdito et al. 2020; Ganchar et al., 2022). In our project, there is a trend towards positive dynamics of obtaining the results of distance learning using a computer, which is consistent and complements the results of other researchers (Soltyk et al., 2017) who used full-time education with the presence of a lecturer.

We believe that coaches-instructors who have professional pedagogical knowledge, skills, well-developed competencies and work skills can effectively and modernly carry out the training and educational process in children's sports.

Conclusions

Our pedagogical research results have shown that the quality of professional training and improvement of professional competencies of children's swimming coaches is influenced by circumstances related to the educational dialogue environment, the form and technology of training.

After the experiment, the coaches who were engaged in an online format with a tutor increased the levels of seven of the nine competencies (gnostic, design, organizational, research, diagnostic and acmeological competencies). There are no coaches with a low level of professional competence in this group. Coaches, who studied independently, without a tutor, increased the level of only one competence (organizational). The EG coaches' level of professional competencies increased by an average by 3-4 times, relative to the level of the CG coaches. According to the results of the coaches' self-analysis, a higher level of professional competencies was achieved in the experimental group compared to the control one.

We believe that in order to maintain the professional level and qualifications of a teacher, taking into account modern requirements for the pedagogical process of education and upbringing, independent training of swimming coaches to improve their professional competencies is not very effective. Only technologies of communication with the tutor in the form of dialogue, discussions and consultations are an effective tool for practical improvement of sports coaches' professional competence.

Conflicts of interest. The authors declare no conflict of interest.

References:

- Benčuriková, E., & Matúš, P. (2017). The influence of motor activity on the swimming ability of preschool aged children. *Journal of Physical Education and Sport*, 17(3), Art 160, pp. 1043-1047, DOI: <https://doi.org/10.7752/jpes.2017.03160>
- Bicheva, I. B., & Melentovich A.V. (2018). Individual trajectory of professional development of a teacher of a preschool educational organization. *Bulletin of the Orenburg State Pedagogical University*, 4(28), 267-279. DOI: <https://doi.org/10.32516/2303-9922.2018.28.19> (in Russian)
- Cherepov, E., Kalugina, G., Schelgacheva, K., Aminova, A., & Balakhonova, L. (2021). Professional training of physical education teachers to provide methodological assistance to parents of preschoolers. *Journal of Physical Education and Sport*, Vol. 21 (issue 6), Art 463, pp. 3420 - 3426, DOI: <https://doi.org/10.7752/jpes.2021.06463>
- Galatti, L. R. (2017). AFEs, Human Development and Sport High Performance. In R. N. d. D. H. d. Brasil (Ed.), *Movement is life: physical and sports activities for all people*. Brasília, DF: United Nations Development Program (UNDP).
- Ganchar, A., Ganchar, I., Chernyavskiy, O., Ciorba, C., Medynskiy, S., Pylypko, O., & Arkhypov, O. (2022). Monitoring the formation of swimming skills among men and women in the world Universiade program (at stages I-II from 1959 to 2019). *Journal of Physical Education and Sport*, Vol. 22 (issue 1), Art 16, pp. 130 - 137. DOI: <https://doi.org/10.7752/jpes.2022.01016>

- Gazizova, F. S. Nurieva, A. R., Utkina, T. A., & Egorova, Yu. N. (2019). Improving the professional competencies of a teacher in working with young children. *Problems of modern pedagogical education*, 64(3), 62-65 (in Russian)
- Görner, K., Krućanica, L., & Sawicki, Z. (2020). Selected socio-economic factors influencing swimming competency of secondary school students. *Journal of Physical Education and Sport*, Vol.20 (4), Art 226, pp. 1666-1672. DOI: <https://doi.org/10.7752/jpes.2020.04226>
- Guillermo Felipe López Sánchez, Francisco José Borrego Balsalobre Y Arturo Díaz Suárez. (2018). Job satisfaction of sports instructors of tennis, padel and swimming. *Journal of Physical Education and Sport*, 18(supplement issue 3), Art 212, pp. 1435 - 1438, DOI: <https://doi.org/10.7752/jpes.2018.s3212>
- Holt, N. L., Neely, K. C., Slater, L. G., Camire, M., Cote, J., Fraser-Thomas, J., Donald, D., Strachan, L., & Tamminen, K. A. (2017). A grounded theory of positive youth development through sport based on results from a qualitative metastudy. *Int Rev Sport Exerc Psychol*, 10(1), 1-49. DOI: <https://doi.org/10.1080/1750984X.2016.1180704>
- Kovalenko, L.A. Yakovlev, B.P. & Kovalenko, A.I. (2014). Integrated assessment of professional competency of teachers-trainers of children's sport school. *J. Theory and practice of physical culture*, 7, 83-86 (in Russian)
- Kursanova, E. V., & Anfilatova, O. V. (2020). The development of strength abilities of swimmers aged 14-16 years using the method of special exercises. *Health, Physical Culture and Sports*, 19(3), 76-85. DOI: [https://doi.org/10.14258/zosh\(2020\)3.7](https://doi.org/10.14258/zosh(2020)3.7)
- Luguetti, C., Oliver, K. L., Dantas, L. E., & Kirk, D. (2017a). An Activist Approach to Sport Meets Youth From Socially Vulnerable Backgrounds: Possible Learning Aspirations. *Res Q Exerc Sport*, 88(1), 60-71. DOI: <https://doi.org/10.1080/02701367.2016.1263719>
- Madonna, G., & Belfiore, P. (2020). Pedagogical culture and Motor Activity. *Journal of Physical Education and Sport*, Vol 20 (Supplement issue 4), Art 322, pp 2371 – 2373, DOI: <https://doi.org/10.7752/jpes.2020.s4322>
- Meier, S. (2020). Development and validation of a testing instrument to assess pedagogical content knowledge of German preservice physical education teachers. *Journal of Physical Education and Sport*, Vol 20 (Supplement issue 5), Art 409, pp. 3010 – 3016, DOI: <https://doi.org/10.7752/jpes.2020.s5409>
- Monteiro, Gabriella Nelli, Araújo, Nayanne Dias, Mazzardo, Tatiane, Francisco, Paula Soares, Ribas, Schelyne, Aburachid, Layla Maria Campos. (2021). Practice schedule analysis and pedagogical feedback in swimming classes. *Journal of Physical Education and Sport*, Vol 21 (Suppl. issue 3), Art 248, pp. 1950 – 1957, DOI: <https://doi.org/10.7752/jpes.2021.s3248>
- Prado-Gascó, V., Calabuig, F., Crespo, J., & Nuñez-Pomar, J. (2018). Satisfaction of users of aquatic activities: Free swimming vs. guided activities. *Journal of Physical Education and Sport*, 18(supplement issue 3), Art 211, pp. 1427 – 1434. DOI: <https://doi.org/10.7752/jpes.2018.s3211>
- Prystupa, Y., Kryshchanovych, S., Danylevych, M., Lapychak, I., Kryshchanovych, M., Sikorskyi, P., Podolyak, Z., & Basarab, V. (2020). Features of formation the professional competence of future managers of physical culture and sports. *Journal of Physical Education and Sport*, Vol 20 (Supplement issue 1), Art 64, pp. 441 – 446, DOI: <https://doi.org/10.7752/jpes.2020.s1064>
- Reverdito, R.S. Galatti, L.R., Strachan, L., Scaglia, A.J., & Paes, R.R. (2020). Coaching and continuity make a difference: competence effects in a youth sport program. *Journal of Physical Education and Sport*, Vol.20 (4), Art 266, pp. 1964 - 1971, DOI: <https://doi.org/10.7752/jpes.2020.04266>
- Sgambelluri, R., Ambretti, A., Pallonetto, L., & Palumbo, C. (2021). Special Needs teacher training in Italian universities: a didactic proposal for the development of PE-related skills. *Journal of Physical Education and Sport*, Vol 21 (Suppl. issue 3), Art 263, pp. 2064 – 2073. DOI: <https://doi.org/10.7752/jpes.2021.s3263>
- Sigmundsson, H. (2021). Specificity of learning, skill development and baby swimming in Iceland. *Journal of Physical Education and Sport*, Vol 21 (Supplement issue 1), Art 61, pp. 549-552, DOI: <https://doi.org/10.7752/jpes.2021.s1061>
- Soltyk, O., Pavlyuk, Y., Vynogradskyi, B., Pavlyuk, O., Chopyk, T., & Antoniuk, O. (2017). Improvement of professional competence of future specialists in physical education and sports during the process of vocational training. *Journal of Physical Education and Sport*, 17 Supplement issue 3, Art 148, pp. 964-969. DOI: <https://doi.org/10.7752/jpes.2017.s3148>
- Vogt, T., & Staub, I. (2020). Assessment of basic aquatic skills in children: inter-rater reliability of coaches, teachers, students and parents. *Journal of Physical Education and Sport*, Vol.20 (2), Art 85, pp. 577 - 583, DOI: <https://doi.org/10.7752/jpes.2020.02085>
- Wulfovich E.V. (2017). Organization of independent work on a foreign language based on the inverted class model. *Higher education in Russia*, 4, 88-95 (in Russian)
- Yapıcı-Öksüzöğlü, A. (2020). The effects of theraband training on respiratory parameters, upper extremity muscle strength and swimming performance. *Pedagogy of Physical Culture and Sports*, 24(6), 316-322. DOI: <https://doi.org/10.15561/26649837.2020.0607>