

## ORIGINAL SCIENTIFIC PAPER

# Effective Teaching Methods in Physical Education Classes: A pilot study implementing a new survey for teachers

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Physical education (PE) classes for children play a crucial role in promoting physical activity and healthy lifestyle. The PE in the Kosovo primary schools, together with its teaching and organizational issues have long been a key topic of political, sport and scientific debate. However, the various actions carried out so far have not been enough to recognize contents and methods of PE correctly oriented in an educational way. The aim of the study is to highlight the latest method and strategies of the teachers, and the new curriculum used in the field of PE for better learning and developing health among children through physical activity. The research involved (n = 100) PE teachers from Kosovo public schools. All teachers are from Kosovo primary schools, classes VI-IX, with an average of 16 years of work experience. Data was collected using questionnaire by an online survey. The learning methods mostly applied are: practical learning method (96%), teaching through lectures (79%), interactive method (72%), effective teaching method (66%), learning through certain goals (47%). The factors that influence the effective use of teaching strategies are: infrastructure and equipment (94%), teacher skills (89%), competitive activities among children (57%), and children's desire for physical and sports activities (46%). The factors that can influence the increase in the effectiveness of teaching strategies are: the addition of teaching hours (92%) teacher trainings (84%) and curricular improvements (78%). Teaching methods help teachers to have an effective communication with students, clear instructions, demonstrations, and techniques being taught.

**Keywords:** *physical education (PE), teaching method, strategy*

**Introduction**

Education plays an important role in a society and national development (Poonsri, 2008). Education is the process of knowledge acquisition, skills, and habits of a group of people that are transferred from one generation to the next through teaching, training, or research (Arifin, 2017). The Education sector continues to remain one of the most criticized and sensitive sphere in Kosovo. This sector is characterized by continuous efforts to reform in all sub-sectors, which address the main challenges of increasing quality in education. During the last decade, numerous legal and by-law acts have been approved, schools have been built and new educational institutions have been established, but it has also started to be invested in sports infrastructure through

schools. This means linking the education system with current educational goals. The school is one of the most important educational institutions that achieves integrated growth to the individuals from all physical, psychological, mental, social and health aspects. Mainly because of the different and various cognitive and skillful programs provided by the school, so that the individual will be able to adapt to his surrounding environment to achieve the objectives of the family and the community (Oudat, 2016).

Physical education (PE) is part of the overall education system, which includes aspects of developing physical fitness, movement skills, critical thinking skills, emotional stability, social skills, reasoning, and moral action through physical activity. PE is one of the important aspects of the educational and teaching processes, espe-

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cially in the current era, in which high values are placed on physical activity, as it has many positive effects on the individuals. The PE curriculum offers the teacher a structured and balanced program of work. PE programs prepare children's and adolescents for lifelong active lifestyles and the good physical healthcare endorsed in public schools (Sallis, McKenzie, Beets, Beighle, Erwin, & Lee, 2012; Lohaphaiboonkun, 2011). This is because the implementation of PE prioritizes physical activities, especially sports and healthy living habits (Lengkana & Sofa, 2017). The study of teaching models used for PE has been the object of analysis over the last few years (Ferraz et al., 2023). Teaching models are characterized as long term development plans for teaching that convey a central idea and that must follow a unified theoretical structure (Casey & MacPhail, 2018). The PE teacher is the first one to be concerned about an effective PE program (Aboshkair, 2014). Good qualified teachers provide excellent leadership which can overcome lack of the equipment's and facilities in the schools. Teachers should establish clear rules and expectations for behavior during PE class, ensure that equipment and facilities are safe and well-maintained, and monitor students closely to prevent injuries. Moreover, promoting a positive attitude towards teaching PE is indispensable. Teachers should feel confident and competent in their ability to teach PE.

Teachers should have a high quality level of teaching skills that can be described as "the positive combination of the individual's knowledge, ability and willingness to deal effectively and responsibly with changing situations" (Weinert, 2015). By implementing these strategies and addressing the barriers, educators can effectively teach PE and promote healthy, active lifestyles among students. Over the last five years, the professional training of PE teachers has undergone changes (Ferry & Romar, 2020). The examination of teaching effectiveness, within educational domains such as sport pedagogy, remains an important focus (Aktop & Karahan, 2012). Examination of teachers regarding effective pedagogy and teaching models is necessary, considering that the global physical activity levels and participation in sport are decreasing amongst young people and needs to be reversed (Guthold et al., 2020; Vukelja et al., 2022). Classroom management is the most important for implementing appropriate methods of teaching. It is also a skill that

all effective teachers must master, because without the skill to manage a classroom, even well planned methods can fail. However, it seems that PE teachers have a central role realizing curricular goals, transforming sports science and pedagogical knowledge into practice, taking into account the developments of the sport movement and negotiating with local agents such as parents (Kougioumtzis, 2006; Kougioumtzis & Patriksson, 2009). During the recent years in Kosovo, few research has been done regarding the PE teacher skills, teaching methodology, strategies, sports infrastructure, sports equipment, curriculum, as well as the positive and negative factors affecting the methods of teaching in PE. Therefore, the aim of the study is to investigate the latest methods and strategies used by the teachers, and curriculum frames used in the field of PE program for better learning and healthy life among children through physical activity. The results of this research will provide important information on teaching methods in PE, and the guidelines for innovative teaching process can be suggested.

## Materials and Methods

### Participants

This research involved (n = 100) PE teachers from public schools of different municipalities from all over Kosovo. All teachers are from the primary schools, with an average from 16 years of work experience. This research is the survey research type. The instrument applied is a recently developed questionnaire on the opinions of PE teachers. Moreover, it has been implemented for the first time at the present study. The questionnaire contained options to be selected, but also written opinions were required.

### Data Collection and Analysis

Data was collected using questionnaire by an online survey, which was sent to the PE teachers, with answers to be circled and also providing their opinions. Collected data were analyzed with Microsoft Excel and percentages have been calculated.

## Results

The research results and the opinions of PE Teachers for Effective Teaching Methods are as presented in Figure 1.

Which of these teaching methods you use, during the lesson of physical education

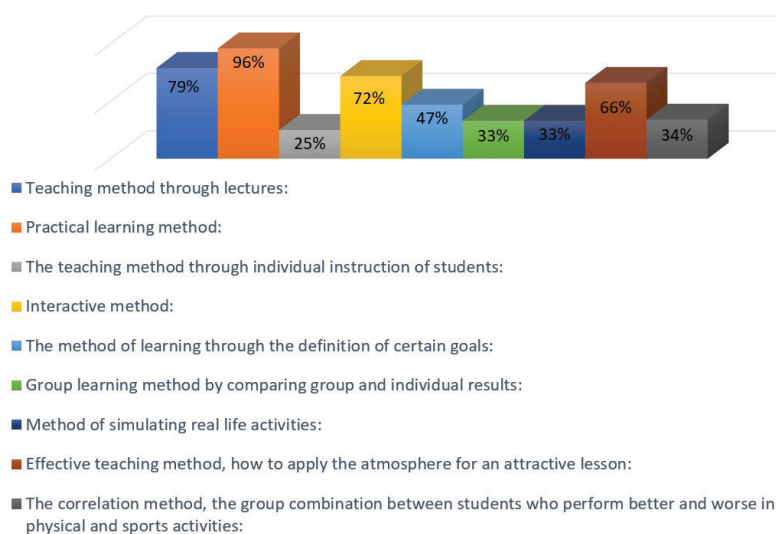


FIGURE 1. Teaching methods during PE lessons

Answers of the PE teachers for the question "Which of the teaching methods you use during the learning of the subject" are shown in Figure 1. Results revealed that the practical learning method is the most applicable, stated by 96% of respondents;

teaching method through lectures is stated by 79% of responders; interactive method is stated by 72% of responders; effective teaching method by applying the atmosphere for an attractive lesson is stated by 66% of respondents; the method of learning through

the definition of certain goals is stated by 47% of responders; the method group learning by comparing group and individual results is stated 33% of responders; method of simulating real life activities is stated by 33% of responders; the correlation method

- the group combination between students who perform better and worse in physical and sports activities is stated by 34% of responders; and the teaching method through individual instruction of students is stated by 25% of responders.

**Do you apply a questionnaire with students or parents about the child's health**

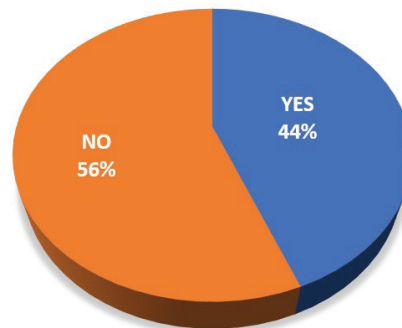


FIGURE 2. Application of the questionnaire for children's health by teachers

Answers of the PE teachers for the question “Do you apply a questionnaire with students or parents about the child’s health”, are shown in Figure 2. Results revealed that 56% of the teachers

does not apply respective questionnaire, and 44% of the teachers apply a questionnaire for the children’s health. Answers of the PE teachers for the question “What are the

**Which are the factors that influence the effective use of teaching strategies:**

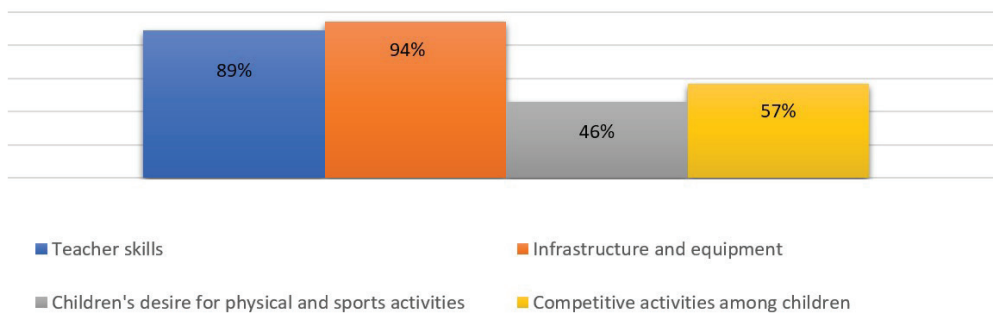


FIGURE 3. Factors that influence the effective use of teaching strategies

factors that influence the effective use of teaching strategies” are shown in Figure 3. Responders could select multiple answers. Ninety four % of the respondents stated that infrastructure and equipment is the factor with highest influence to the effective

use of teaching strategies; while 89% of respondents stated that teacher skills is the second factor to the effective use of teaching strategies; competitive activities among children with 57%; and the children’s desire for physical and sports activities with 46%.

**What are the factors that have a negative impact on the effective use of teaching strategies:**

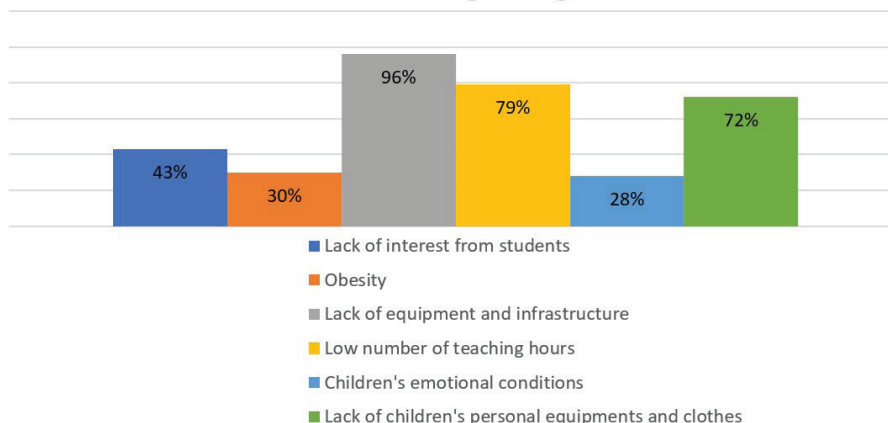


FIGURE 4. Factors that have a negative impact on the effective use of teaching strategies

Answers of the PE teachers for the question “What are the factors that have a negative impact on the effective use of teaching strategies” are shown in Figure 4. Responders could select multiple answers. Results revealed that: lack of equipment and infrastructure is the most stated factor from 96% of the respondents; low

number of teaching hours is stated by 79% of the responders; lack of children’s personal equipment’s and clothes is stated by 72% of the responders; lack of interest from students is stated by 43% of the responders; obesity factor is stated by 30% of the respondents; children’s emotional condition is stated by 28% of responders.

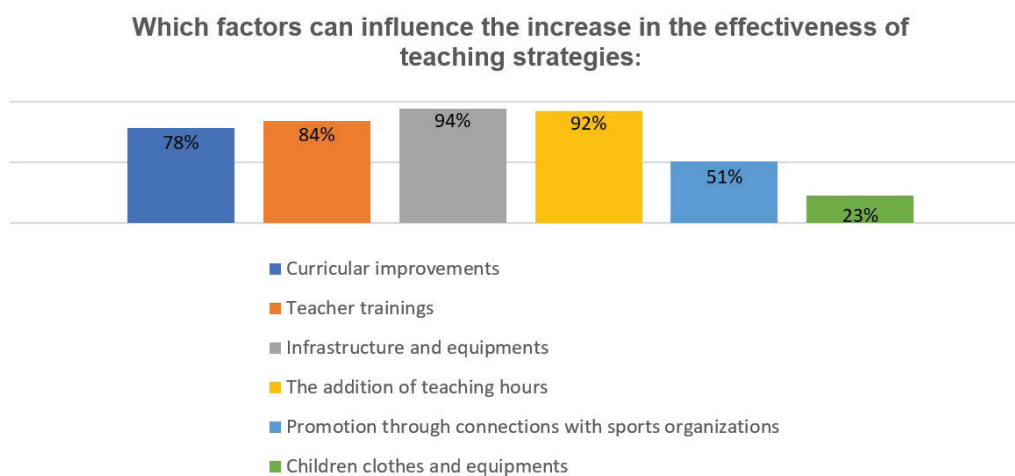


FIGURE 5. Factors with influence in the increase in the effectiveness of teaching strategies

Answers of the PE teachers for the question “What factors can influence the increase in the effectiveness of teaching strategies” are shown in Figure 5. Responders could select multiple answers. Results revealed that infrastructure and equipment’s is the main factor stated by 94% of the responders; the addition of teaching hours is the second factor as stated by 92% of the responders; curricular improvements is stated by 78% of the responders; teachers trainings is stated by 84% of the responders; promotion through connections with sports organizations is stated by 51% of the responders; children clothes and equipment is last factor stated by 23% of the respondents.

## Discussion

Teaching methods are essential in the PE class as they facilitate learning, skills development, physical fitness, inclusivity and character building. By using a variety of effective methods, teachers can create a positive learning environment that promotes a culture for lifelong participation in physical activity and healthy living. The purpose of this study was to analyze which teaching methods are most applicable in the PE classroom, the positive and negative factors that influence the development of effective strategies for a better teaching in the subject of PE. The main findings of this study revealed that the teaching methods that are mostly applied by PE teachers during the lesson are: 1. Practical learning method is the most applicable one, followed by 2. Teaching method through lectures, 3. Interactive method, 4. Effective teaching method, by applying the atmosphere for an attractive lesson.

Practical learning method is the application of the practical exercise during the learning process in PE and aims to enable the student to independently use these activities in practical life. By applying them professionally and working independently, individually or in groups, it is possible to form, acquire and stabilize the knowledge and motor skills. In order for children to learn a certain exercise, it is not enough to just give a description of it and ask the children to do it, but it is also necessary to show or demonstrate it (Aksović et al., 2021). Our results showed that the most used teaching method is the practical learning method, which corresponds with authors (Constantinides, Montalvo & Silverman, 2013). The traditional method focuses on lecture-based teaching as the center of instruction, emphasizing delivery of program and concept (Johnson, 2010; Ilkiw et al., 2017; Dickinson et al., 2018).

Teaching method through the lectures pays attention to the essential value in PE classes (Goodyear & Dudley, 2015). Teachers use teaching aids to enhance classroom instruction, extract learners’ attention and create a motivation to learn (Bel-Ann Ordu, 2021). Therefore, PE teachers must have a good knowledge of these theoretical contents, which is one of the prerequisites for being competent, effective and confident in their intervention (Herold & Waring, 2017). The teaching model chosen by each teacher needs to be based on the specific characteristics, stage of development and needs of individuals, as this is most likely to increase learning and achievement of PE curriculum outcomes (Ferraz et al., 2023).

Teacher-children interactions help teachers to understand student’s details closely and design measures for supporting the learners (Siayi, Pangani, Mabagala, 2023). Furthermore, Hofman et al. (2014) affirmed that interactive engagement and teaching revealed significant results and effects on student’s academic achievement. For the teaching method to be effective, teaching should consist of an ongoing process of making desirable changes among learners using appropriate methods (Ayeni, 2011). Effective teaching method, how to apply the atmosphere for an attractive lesson, is the method applied by our PE teachers during the teaching of PE. This method means application of the different games that motivate children and at the same time effectively apply the lessons. Students take part in full or modified games applying all acquired knowledge and skills (Ningthoujam et al., 2017). According to previous evidence (Hidayat et al., 2023; Bellaera et al., 2021), the motivation for active learning; use of dialogue-based exercises; interaction between students and teachers, positively influenced the development of students critical thinking skills in the PE field.

The application of the questionnaire from the PE teachers with childrens and parents for the childrens health is very important to be carried out every year. In this research, the largest number of PE teachers responded that they did not apply the questionnaire on the children’s health conditions. Various authors have described that: Questioning strategy is one of the most important dimensions of teaching and learning processes (Astrid et al., 2019). Guest (1985) argues that questioning strategy is one of the most important tools to extend students learning which can help teachers to develop their own strategies to enhance students work



and thinking. According to the study of Wells (2001) questioning is a core function of both learning and teaching. Questionnaire is very useful for teaching and learning processes. It is a designer of curricular and instructional activities that facilitate interactions (Gumbo et al., 2019). Also, teaching strategies are significant in supplementing the needs of a variety of learners in carrying out PE classes (Sangco, 2017). Teaching strategy is a generalized plan for a lesson which includes structure, instructional objectives and an outline of planned tactics, necessary to implement the strategies (Issac, 2010). Lumanog (2016) stated that the teaching strategy of a teacher should match the students learning style and needs. A teaching strategy is therefore an educational technique, method or plan of classroom actions or interactions intended to accomplish specific teaching and learning goals (Ada, 2006).

Our responders have stated that the most important factors that influence the effective use of teaching strategies in PE are: Infrastructure and equipment's and teacher skills, followed by competitive activities among children and children's desire for physical and sports activities. Infrastructure and equipment's are necessary to realize the curriculum of PE subject. In PE learning, infrastructure is defined as something that facilitates or speeds up the process. The scope of PE subjects includes aspects of sports games, development activities, gymnastics activities, rhythmic activities, and health (Almusawi et al., 2021; Phelps et al., 2021). Education facilities and infrastructure are very beneficial for teachers and students so that learning can run smoothly and learning objectives can be adequately achieved (Beusker et al., 2012; Lau et al., 2021). The equipment is one of the backbones of PE classes. In PE classes, equipments should be age-appropriate and safe to use for the children (Bevans et al., 2010). PE teachers must manage students, equipment's, environment, and time for efficient learning, because children and adolescents spend almost half of their day at school, and PE is a subject where knowledge and physical activity are important (Sluijs, et al, 2021). Thereby, teachers should equip themselves with knowledge and specific skills to accomplish their job and responsibility in the classroom (Husain et al., 2015).

The teacher's ability to bring subject matters to the students in an imaginative way can also affect the success of the students in PE. Students' success can be credited to the teacher's application of different PE teaching techniques. Taking this into account, it may be assumed that the PE teachers need to be prepared more carefully through effective professional preparation programs. It could be assumed that good professional preparation would create good teachers, and competent teachers could provide more advanced PE programs (Aboshkair, 2014). Children motivation level and the usage of appropriate learning strategies in proper situation plays a key role in succeeding throughout their academic lives (Garcia & Pintrich, 1996). According to the study of Rink & Hall (2018), PE classes are best delivered in ways that are within the competency level of the learners. While regarding the "factors which can influence the increase in the effectiveness of teaching strategies", the infrastructure and equipment's also results to be the main factor, followed by "the addition of teaching hours" and "teacher trainings", while low number of responses is provided for factors such as "promotion through connections with sports organizations" and "children clothes and equipment".

Okebukola (2010) suggests that the activity and method of teaching and learning includes input factors – teachers, facilities, instructional materials, students, and curriculum. In the Republic of Kosovo, the PE class continues to be applied only two times a week, 45 minutes each time. We must point out that in other countries the PE lesson is held three times a week, and additionally including the swimming lesson and the Olympic Education lessons. Therefore, here we have to make a change in order to increase the number of teaching hours for the subject of PE. The

effectiveness of teaching and the achievement of the objectives of the subject of PE is closely related to the number of teaching hours. Our findings also correspond with the findings of authors such as (COLEF Council, 2018; Heras et al., 2017; Pérez-Pueyo et al., 2021).

The training of PE teachers is necessary for the development of the teaching according to the newest and most innovative methods. In-service training is a professional and personal educational activity for teachers to improve their efficiency, ability, knowledge and motivation in their professional work (Che Mohd, 2014). This may lead us to consider that teachers with more trainings consolidate their learning better and are more able to identify the desired knowledge (Santiago & Morales, 2012; Kern, Bellar, & Clemons, 2021). Teachers also should possess and master the skills to convey the subject content with the aim to ensure the teaching process can be conducted in harmony and effective way (Husain et al, 2015). With experience, teachers know the content in more detail, can better link content to broader objectives, and can better sequence content across units (Pissanos & Allison, 1996; Rovegno, 1992, 1993, 1998; Sebran, 1995). The findings from this study are aligned with those of other studies PE (Morgan & Bourke, 2005; Xiang, Lowly & McBride, 2002). The continuous development and improvement of the teaching methods, enrich the content of the PE class, is essential to realize the goals of PE, and complete the task of teaching PE. By employing a variety of engaging and effective methods, teachers can create a positive and enriching learning environment that promotes lifelong participation in physical activity and healthy living.

Finally, the findings of the present study must be considered in light of its limitations. The major limitation of the present study is the use of a non-validated and non-standardized questionnaire. However, we believe that the present findings should encourage it's validation and standardization in the future.

## Conclusions

With the aim to achieve the education to be in coordination with scientific, technological, sports and social developments, it must be continuously updated with new methods that affect teaching and learning as effectively as possible. Each country should build different policies that must be adapted to their own conditions and circumstances. According to the findings of the present study, we can conclude that the achievement of the goals of the PE subject is linked with the combination of the teaching methods, teacher's professional ability and knowledge, infrastructure, equipment, and number of the PE classes per week. PE teachers are required to choose the right method to create an effective learning process. The scientific contribution and obtained results from this study is suggested to be used in practice, for potential improvements and enrichment of the effective teaching methods in PE classes. Based on the results of this study, a new opportunity is opened for other studies of this nature, with the aim of enriching the scientific knowledge of the treated topics.

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## References

- Ada, A. (2006). Planning instruction. In N.A. Ada (Ed), Curriculum and instruction: *An introduction to general methods and principles of teaching* (P 101 - 107). Makurdi: Aboki Publishers.
- Aboshkair, K. (2014). The Role of Physical Education at School. *Journal of Emerging Technologies and Innovative Research*. Volume 9, issue 10. ISSN-2349-5162.
- Aktop, A., Karahan, N. (2012). Physical education teachers views of effective teaching methods in physical education. *Social and Behavioral Sciences* 46, 1910 – 1913.
- Astrid, A., Amirina, R., Desvitasari, D., Fitriani, U., Shahab, A. (2021). The Power of Questioning: Teacher's Questioning Strategies in the EFL Classrooms. *International Research Journal in Education*. Vol. 3 | No. 1, ISSN: 2580-5711.

- Arifin, S. (2017). Peran Guru Pendidikan Jasmani Dalam Pembentukan Pendidikan Karakter Peserta Didik. *Multilateral Jurnal Pendidikan Jasmani dan Olahraga*, 16 (1), 78–92. <https://doi.org/10.20527/multilateral.v16i1.3666>.
- Aksović, N., Bjelica, B., Jovanović, L., Milanović, L., Zelenović, M. (2021). Teaching methods in teaching physical education. *Italian Journal of Sports Rehabilitation and Posturology*, 10(24):2452 – 2464.
- Almusawi, H. A., Durugbo, C. M., & Bugawa, A. M. (2021). Innovation in physical education: Teachers' perspectives on readiness for wearable technology integration. *Computers & Education*, 167. <https://doi.org/10.1016/j.compedu.2021.104185>.
- Ayeni, A. J. (2011). Teachers' professional development and quality assurance in Nigerian secondary schools. *World J. Educ.* 1, 143. doi: 10.5430/wje.v1n2p143.
- Bevans, K. B., Fitzpatrick, L.-A., Sanchez, B. M., Riley, A. W., & Forrest, C. (2010). Physical Education Resources, Class Management, and Student Physical Activity Levels: A Structure- Process-Outcome Approach to Evaluating Physical Education Effectiveness. *The Journal of School Health*, 80(12), 573–580. <http://doi.org/10.1111/j.1746-1561.2010.00544.x>.
- Beusker, E., Stoy, C., & Pollalis, S. N. Estimation model and benchmarks for heating energy consumption of schools and sport facilities in Germany. *Building and Environment*. 2012; 49. <https://doi.org/10.1016/j.buildenv.2011.08.006>
- Bellaera L, Weinstein-Jones Y, Ilie S, Baker ST (2021). Critical thinking in practice: The priorities and practices of instructors teaching in higher education. *Thinking Skills and Creativity*. 41: 100856. <https://doi.org/10.1016/j.tsc.2021.100856>.
- Consejo General de la Educación Física y Deportiva (COLEF). (2018). *Proyecto para una Educación Física de calidad en España: aumento de horas de Educación Física en el currículo de Secundaria, Bachillerato y FP*. Posibilidades del reparto horario. Comité de expertos de EF del Consejo COLEF. [https://drive.google.com/file/d/1zyuvttVL0NiHv\\_veLnlxk-sc5fPoC7tB/view..](https://drive.google.com/file/d/1zyuvttVL0NiHv_veLnlxk-sc5fPoC7tB/view..)
- Casey, A., & MacPhail, A. (2018). Adopting a modelsbased approach to teaching physical education. *Physical Education and Sport Pedagogy*, 23(3), 294–310. <https://doi.org/10.1080/17408989.2018.1429588>.
- Constantinides, P., Montalvo, R, Silverman, S. (2013). Teaching processes in elementary physical education classes taught by specialists and nonspecialists. *Teaching and Teacher Education* 36:68–76. DOI:10.1016/j.tate.2013.07.004.
- Constantinides, P (2022). Teaching Efficiency or Inefficiency in Elementary Physical Education. *European Journal of Sport Sciences*, 1(4),6–12. <https://doi.org/10.24018/ejsport.2022.1.4.23>
- Dickinson, B. L., Lackey, W., Sheakley, M., Miller, L., Jevett, S., and Shattuck, B. (2018). Involving a real patient in the design and implementation of case-based learning to engage learners. *Adv. Physiol. Educ.* 42, 118–122. doi: 10.1152/advan.00174.2017.
- Che Mohd. (2014). Need for In-Service Training for Teachers and It's Effectiveness In School. *International Journal for Innovation Education and Research*. 2(11):1-9. DOI:10.31686/ijer.vol2.iss11.261.
- Heras, C., Pérez-Pueyo, Á., Hortigüela-Alcalá, D., & Hernando-Garijo, A. (2017). ¿Es posible la ampliación del horario de Educación Física sin perjudicar a las demás materias? Ejemplo de organización de un Proyecto Deportivo de Centro tras cuatro años de implantación. In *XII Congreso Internacional sobre la Enseñanza de la Educación Física y Deporte Escolar*, Alto Rendimiento Servicios Editoriales y Formación Deportiva S. L. (Ed.).
- Ferraz, R., Branquinho, L., Sortwell, A., Teixeira, E., Forte, P., Marinho, A (2023). Teaching models in physical education: current and future perspectives. *Montenegrin Journal of Sports Science and Medicine*. 12(1), 53-60 | DOI: 10.26773/mjssm.230307.
- Guthold, R., Stevens, G. A., Riley, L. M., Bull, F. C. (2020). Global trends in insufficient physical activity among adolescents: a pooled analysis of 298 population-based surveys with 1.6 million participants. *The Lancet Child and Adolescent Health*, 4(1), 23–35. [https://doi.org/10.1016/S2352-4642\(19\)30323-2](https://doi.org/10.1016/S2352-4642(19)30323-2).
- García, T., & Pintrich, P.R. (1996). *Assessing Students' Motivation and Learning Strategies in the Classroom Context: the Motivated Strategies for Learning Questionnaire*. Alternatives in assessment of achievements, learning processes and prior knowledge. Edited by Menuch. Brenbaum, Filip JRC Dochy. Kluwer Academic Publishers. Boston/Dordrecht/London. 9-12. [https://doi.org/10.1007/978-94-011-0657-3\\_12](https://doi.org/10.1007/978-94-011-0657-3_12).
- Goodyear, V., Dudley, D. (2015). "I'm a Facilitator of Learning!" Understanding What Teachers and Students Do Within Student-Centered Physical Education Models. *Quest*, 67(3), 274–289. <https://doi.org/10.1080/00336297>.
- Gumbo, S., Magonde, S., Nhamo, E. (2017). Teaching Strategies Employed by Physical Education Teachers in Gokwe North Primary Schools. *International Journal of Sport, Exercise and Health Research*. 1(2): 61-65. Guest. (1985). The case study method: Critical thinking enhanced by effective teacher questioning skills. *The 18th Annual International Conference of the World Association for Case Method Research & Application*. Retrieved from <https://files.eric.ed.gov/fulltext/ED455221.pdf>.
- Gustiana, A. D., & Puspita, R. D. (2020). The Effect of Educative Games on the Physical Fitness of Kindergarten Children. *Journal Pendidikan Jasmani Dan Olahraga*, 5(2). <https://doi.org/10.17509/jppo.v5i2.24518>.
- Guthold, R., Stevens, G. A., Riley, L. M., Bull, F. C. (2020). Global trends in insufficient physical activity among adolescents: a pooled analysis of 298 population-based surveys with 1.6 million participants. *The Lancet Child and Adolescent Health*, 4(1), 23–35. [https://doi.org/10.1016/S2352-4642\(19\)30323-2](https://doi.org/10.1016/S2352-4642(19)30323-2).
- Herold, F. & Waring, M. (2017). Is practical subject matter knowledge still important? Examining the Siedentopian perspective on the role of content knowledge in physical education teacher education. *Phys. Educ. Sport Pedagog.* 22, 2245. <https://doi.org/10.1080/17408989.2016.1192592>
- Hofman, et al, (2014). The impact of interactive engagement methods on students' academic achievement.
- Husain, Z., Hasan, A., Wahab, Julia Jantan, J. (2015). Determining Teaching Effectiveness for Physical Education Teacher. *Procedia - Social and Behavioral Sciences* 172, 733 – 74.
- Hidayat C, Setia A, Rohyana A, Purwanto D, Razali R, Rosalina M. (2023). Motivating Active Learning in Physical Education: Critical Thinking. *European Journal of Educational Research*, 12(2): 1137–1151. <https://doi.org/10.12973/eu-jer.12.2.1137>,
- Issac, Jerin C. (2010). *Methods and Strategies of Teaching: an overview*. Pondicherry University Press.
- Ilkiw, J. E., Nelson, R. W., Watson, J. L., Conley, A. J., Raybould, H. E., Chigerwe, M., et al. (2017). Curricular revision and reform: The process, what was important, and lessons learned. *J. Vet. Med. Educ.* 44, 480–489. doi: 10.3138/jvme.0316-068R.
- Johnson, A. P. (2010). *Making Connections in Elementary and Middle School Social Studies*. 2nd Edn. London: SAGE.
- Kougioumtzis K. (2006) *Teacher Cultures and Professional Codes. A Comparative Study of PE Teachers in Sweden and Greece*. Gothenburg: ACTA.
- Kougioumtzis K, Patriksson G (2007) *Framing physical education in Greek and Swedish schools*.(3): 106–116.
- Lengkana, A. S., & Sofa, N. S. N. (2017). Kebijakan Pendidikan Jasmani dalam Pendidikan. *Jurnal Olahraga*, 3(1), 1–12. <https://doi.org/10.37742/jo.v3i1.67>.
- Lohaphaiboonkun, P. (2011). Survey on the opinions of the use for physical education curriculum. *Journal of Human and Social Sciences*, 2(1), 100–110.
- Lumanog, J. T. (2016). Students' Learning Styles and Preferred Teaching Styles of College Freshmen. *LAMDAG*, 7(1).
- Lau, E., Hou, H. (Cynthia), Lai, J. H. K., Edwards, D., & Chileshe, N. User-centric analytic approach to evaluate the performance of sports facilities: A study of swimming pools. *Journal of Building Engineering*. 2021; 44. <https://doi.org/10.1016/j.jobe.2021.102951>
- Morgan P, Bourke S. (2005), 'An investigation of pre-service and primary school teachers' perspective on PE teaching confidence and PE teacher education', *Health and Lifestyles Journal (ACHPER)* 52, 7–13.
- Ningthoujam, R., Nongthombam, B., Sunderchand, M. (2017). Innovative Teaching Methods in Physical Education for Better Learning. *Journal IJCRR*. Vol 9. DOI: 10.7324/IJCRR.2017.9162.
- Nur, L., & Malik, A. A. (2021). Basketball Skill Achievements: Comparison between Technical Approach and Tactical Approach based on Physical Fitness Level. *Jurnal Pendidikan Jasmani Dan Olahraga*, 6(2). <https://doi.org/10.17509/jppo.v6i1.31610>.
- Okebukola, P. (2010): *Five years of higher education in Nigeria: Trends in quality assurance*. <http://www.unilorin.edu.ng>.
- Parra-González, M. E., López-Belmonte, J., Segura-Robles, A., & Moreno-Guerrero, A. J. (2021). Gamification and flipped learning and their influence on aspects related to the teaching-learning process. *Heliyon*, 7(2), e06254. <https://doi.org/10.1016/j.heliyon.2021.e06254>.
- Pissanos, B.W., & Allison, P.C. (1996). Continued professional learning: A topical life history. *Journal of Teaching in Physical Education*, 16, 2-19.
- Pérez-Farínos, N., López-Sobaler, A. M., Dal Re, M. Á., Villar, C., Labrado, E., Robledo, T., & Ortega, R. M. (2013). The ALADINO study: A national study of prevalence of overweight and obesity in Spanish children in 2011. *BioMed Research International*, 2013, 163687. <https://doi.org/10.1155/2013/163687>.
- Phelps, A., Colburn, J., Hodges, M., & Hodges, M. (2021). A qualitative exploration of technology use among preservice physical education

- teachers in a secondary methods course. *Teaching and Teacher Education*, 105. <https://doi.org/10.1016/j.tate.2021.103400>
- Poonsri, V.(2008). Mobile learning: Major challenges for engineering education. *Frontiers in Education*. DOI:10.1109/FIE.2008.4720385.
- Rovegno, I. (1994). Teaching within a curricular zone of safety: School culture and the situated nature of student teachers' pedagogical content knowledge. *Research Quarterly for Exercise and Sport*, 65, 269-279.
- Rovegno, I. (1998). The development of in-service teachers' knowledge of a constructivist approach to physical education: Teaching beyond activities. *Research Quarterly for Exercise and Sport*, 69, 147-162.
- Rovegno, I.C. (1992b). Learning to teach in a field-based methods course: The development of pedagogical content knowledge. *Teaching and Teacher Education*, 8, 69-82.
- Rink, J. E., & Hall, T. J. (2018). Research on effective teaching in elementary school physical education. *The Elementary School Journal*, 108 (3), 207-218.
- Santiago, J., Disch, J. & Morales, J.(2021). Elementary physical education teachers' content knowledge of physical activity and health-related fitness. *Phys. Educator* 69, 395-412 .
- Sangco, A. (2017) Emerging Physical Education Teaching Strategies and Students' Academic Performance: Basis for a Development Program. *Journal of Psychical Education*. doi: 10.5281/zenodo.7031217\.
- Sallis, J. F., McKenzie, T. L., Beets, M. W., Beighle, A., Erwin, H., & Lee, S. (2012). Physical education's role in public health: Steps forward and backward over 20 years and HOPE for the future. *Research quarterly for exercise and sport*, 83(2), 125-35. <https://doi.org/10.1080/02701367.2012.10599842>.
- Sebran, A. (1995). Preservice teachers' reflections and knowledge development in a field-based elementary physical education methods course. *Journal of Teaching in Physical Education*, 14, 262-283.
- Siayi, J., Pangani, I., Mabagala, S. (2023). Teachers' Pedagogical Beliefs about Teaching Physical Education in Tanzanian Secondary Schools. *Papers in Education and Development*. Volume 41.
- Uchechi, Bel-Ann Ordu. (2021). The Role of Teaching and Learning Aids/Methods in a Changing World. *Bulgarian Comparative Education Society*. Volume 19. ISSN 2534-8426.
- Vukelja, M., Milanovic, D., & Salaj, S. (2022). Physical Activity and Sedentary Behaviour in Croatian Preschool Children: A Population-Based Study. *Montenegrin Journal of Sports Science and Medicine*, 11(1), 37-42. <https://doi.org/10.26773/mjssm.220304>.
- Xiang P., Lowly S., McBride R. (2002), 'The impact of a field-based elementary physical education methods course on pre-service classroom teachers' beliefs', *Journal of Teaching Physical Education* 21, 145-61.
- Zhan, Z., Mei, H., Liang, T., Huo, L., Bonk, C., & Hu, Q. (2021). A longitudinal study into the effects of material incentives on knowledge-sharing networks and information lifecycles in an online forum. *Interactive Learning Environments*. <https://doi.org/10.1080/10494820.2021.1897844>.
- Wang, N., Chen, J., Tai, M., and Zhang, J. (2021). Blended learning for Chinese university EFL learners: learning environment and learner perceptions. *Comp. Assisted Lang. Learn.* 34, 297-323. doi: 10.1080/09588221.2019.1607881.
- Weinert, F. E. (2001). *Concept of competence: A conceptual clarification*. In Rychen, D. and Salganik, L. (eds): *Defining and Selecting Key Competencies*, Seattle.
- Wells, M (2021). *The Allan Well Book of Sprinting*, London: England Publishing Limited.