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Enhancing Critical Thinking Skills through the Integration of Traditional Sports in Physical Education Teaching

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ABSTRACT

Utilizing games, movement education, and outdoor activities in physical education to stimulate students' critical thinking has been a focus. This study aims to investigate the impact of incorporating traditional sports games into physical education on the enhancement of students' critical thinking skills.This research adopts a quasi-experimental design with a one-group time series approach. Cluster random sampling is employed to select Class VI as the experimental group, comprising a total of 38 students. The assessment of critical thinking skills involves the use of instruments with five indicators.The study reveals that the integration of traditional sports into physical education effectively improves students' critical thinking skills.This research underscores the importance of a well-designed learning process aligned with specific objectives, simplifying the learning and developmental process for students. The findings highlight how incorporating traditional sports games into physical education can contribute to the development of children's critical thinking abilities.

Keywords: Physical education; Traditional game sports; Critical thinking

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INTRODUCTION

Critical thinking is often equated with positive forms of thinking, such as effective problem-solving (Johnson & Hamby, 2015; Pithers & Soden, 2016); successful solutions (Ünsar & Engin, 2013), crisis management (Schraagen & van de Ven, 2008); and other favorable phenomena (Indrašienė et al., 2021). Even future-oriented goals for a knowledge-based economy emphasize the significance of critical thinking abilities (Changwong et al., 2018; Jones & Pimdee, 2018). Discussions on critical thinking in education have become more prominent recently, acknowledging its crucial role in students' success (Bayu et al., 2022). In our increasingly challenging world, critical thinking is recognized as an essential skill (Khidhir, 2018). And is deemed necessary for individuals in the 21st century and the era of Industrial Revolution 4.0 (Linda & Lestari, 2019). Critical thinking consistently ranks high as a vital job preparedness competence, according to NACE, and projections by FYA suggest that by 2030, workers will dedicate 41% more time to honing their critical thinking and decision-making skills.

This underscores the importance of critical thinking as a twenty-first-century skill crucial for success in learning, living, and working (Calma & Davies, 2021). The three primary learning domains—cognitive tasks and problems, movement-based acquisition of psychomotor skills, and social and value-based supporting skills—all contribute to a holistic learning experience (Murray et al., 2018). Within this context, physical education, particularly through games, movement education, and outdoor education, emerges as a catalyst for enriching students' critical thinking experiences.

Physical education plays a crucial role in students' development, as emphasized (Toychievich, 2022). However, challenges often arise in the learning process, with one notable issue being the insufficient focus on cognitive aspects, particularly critical thinking skills, by teachers (Moy et al., 2019). Many students engage in physical activities without a clear understanding of the purpose or rationale behind them, often due to a lack of information provided by teachers. One effective method for cultivating critical thinking skills in students is through the incorporation of games (Kamarulzaman, 2015). Games, as popular forms of entertainment enjoyed by both children and adults (Gordon, 2010), possess both traditional and modern characteristics. Traditional games, passed down from ancestors, offer various benefits, including cultural preservation, fostering a critical mindset for problem-solving and decision-making, promoting psychological development, and enhancing creativity (Bayu et al., 2022). Game situations inherently compel students to engage in critical thinking processes, requiring them to strategize on scoring points, evading opponent control, and making informed decisions. According to Keeley & Fox (2009), the impact of physical activity on academic achievement is expected to manifest through its influence on cognitive abilities, such as enhancing decision-making skills, alertness, and quick thinking.

The most effective method for educating children involves utilizing games, which not only serve as a medium for imparting knowledge and skills acquired both before and during formal schooling (Gelisli & Yazici, 2015). But also constitute a fundamental element of school marketing and the sustainability of the teaching and learning process in classrooms, as per the widely employed classic progressive game learning model (Alpen et al., 2022). Traditional sports or games, rooted in the cultural heritage of each region, represent one form of physical activity (Maryuni & Nasrulloh, 2022). These games not only offer children a platform to learn about their own culture but also provide a context for a significant portion of their learning related to various aspects of life (Aypay, 2016). The captivating nature of children's play leaves a lasting impression, remaining memorable even as they transition into young adulthood (Chivandikwa et al., 2019). The relationships forged during play contribute to the formation of a close-knit and cohesive group, fostering shared feelings and perspectives (Costes et al., 2021; Treitler et al., 2018). Games contribute significantly to creating an enjoyable atmosphere (Chivandikwa et al., 2019). and in informal learning settings, traditional sports games emerge as a primary avenue for socialization (Costes et al., 2021). Moreover, teachers frequently employ traditional games as teaching materials in physical education, aiming to actively engage students in the teaching and learning process.

Through the setting of a physical education learning environment, students are encouraged to express their ideas, make decisions, and cultivate personal and social skills (Yessick & Haegele, 2019). The enhancement of this learning environment can be achieved by actively involving students in problem-solving, allowing them to

determine subject matter, and optimizing various learning opportunities (Opstoel et al., 2020). It is crucial that the learning process incorporates authentic learning environments, assessments, and feedback (Adcroft, 2011; Carless et al., 2011). Authentic learning experiences, which are personally relevant from the learner's perspective and situated in appropriate social contexts, are integral to the learning process (Eather et al., 2019; Iucu & Marin, 2014). Such an environment has the potential to foster the development of students' critical thinking abilities.

Scholars have directed their attention to the importance of cognition (Amina, 2022). Critical thinking holds significance for individuals in both academic environments and everyday situations (Turan & Koç, 2018). Described as essential traits, skills like critical thinking, curiosity, assertiveness, motivation, responsibility in learning, self-efficacy for learning, and reflection are emphasized (Gürlen, 2011). Critical thinking entails the capacity to analyze information logically and represents a personal and psychological approach to utilizing outcomes obtained through problem-based queries (Renatovna, 2019). It involves the ability to pose new questions, construct arguments, and make decisions through independent thinking (Qoriandini et al., 2022). as well as organised processes such as problem solving, decision making, and making assumptions (Bayu et al., 2022). The steps of the critical thinking process are: identifying the truth of the information, analysing the information, and applying the information (Pislae-ngam, 2018).

Incorporating traditional games into the physical education learning process is anticipated to contribute to the enhancement of students' cognitive domains, with a particular focus on critical thinking. Given this rationale, the aim of this study is to investigate whether the utilization of traditional sports games in physical education has an impact on the augmentation of students' critical thinking abilities.

METHOD

This study employs a one-group time series design in a quasi-experimental setting (Pursitasari et al., 2020). In this design, there is just one group—the experimental group—and no control group. The chosen experimental group underwent a pretest before receiving treatment, which included traditional game sports. Table 1 provides information about the study's research methodology, and the learning process using traditional games is presented in Table 2.

Table 1. Research Design

Class	Pre-test	Treatment	Post-test
Experimental	O	X_1	O′

Description: O = Pre-test; X1 = traditional game; O' = Post-test

Table 2. The steps of the learning process

Main Activity	Learning Steps
Step 1. Find the problem	Students find problems in groups and individually in traditional games.
Step 2. State the problem	Students write in their own words a problem statement based on the problem they are studying.
Step 3. Gather information	Students collect information from several relevant sources, individually and in groups.
Step 4. Identify solutions	Students formulate solutions to problems in the traditional games they learn.

Step 5. Choose a solution	Students discuss in class how to choose the best solution in traditional games.

A primary school in the Kuningan District served as the site of this experimental study. Cluster random sampling was the sampling method employed in this study. One class was randomly selected for the study's sample. The researcher uses existing groups as a sample in accordance with the quasi-experimental method, which is characterised by the absence of random assignment and the use of an existing group (intact group). As a result, the researcher does not collect samples from individuals within the population but rather from classes. Because taking individual samples raises concerns that the circumstances in the sample group will change unnaturally, this is the reason. With a total of 38 students, researchers have selected Class VI, one of the current classes, as an experimental class.

Formative class evaluation (FCE) was used to collect research data in this study to measure the critical thinking level of students aged 10-12 years, with a validity value of 0.511-1.000 and a reliability value of 0.719 (38). The FCE questionnaire was filled out by students immediately after the lesson was over, and the FCE component score categories can be seen in Table 3.

Table 3. Formative class evaluation (FCE) component value categories

Components	Item	Category				
		SB	B	C	K	SK
Result	Memorable experience	3.00-2.62	2.61-2.29	2.28-1.90	1.89-1.57	1.56-1.00
	Skills	3.00-2.82	2.81-2.54	2.53-2.21	2.20-1.93	1.92-1.00
	Knowledge	3.00-2.85	2.84-2.59	2.58-2.28	2.27-2.02	2.01-1.00
	Score	3.00-2.70	2.69-2.45	2.44-2.15	2.14-1.91	1.90-1.00
Motivation	Seriousness	3.00	2.99-2.80	279-2.56	2.55-2.37	2.36-1.00
	Enjoyment	3.00	2.99-2.85	2.84-2.60	2.59-2.39	2.38-1.00
	Score	3.00	2.99-2.81	2.80-2.59	2.58-2.41	2.40-1.00
Method	Direct learning	3.00-2.77	2.76-2.52	2.51-2.23	2.22-1.99	1.98-1.00
	Study effort	3.00-2.94	2.93-2.65	2.64-2.31	2.30-2.03	2.02-1.00
	Score	3.00-2.81	2.80-2.57	2.56-2.29	2.28-2.05	2.04-1.00
Teamwork	Attitude towards friends	3.00-2.91	2.91-2.71	2.70-2.46	2.45-2.25	2.24-1.00
	Learn to work together	3.00-2.85	2.84-2.55	2.54-2.24	2.23-1.97	1.96-1.00
	Score	3.00-2.85	2.84-2.62	2.61-2.36	2.35-2.13	2.12-1.00
Total Score		3.00-2.77	2.76-2.58	2.57-2.34	2.33-2.15	2.14-1.00

Description: SB = Very Good; B = Good; C = Enough; K = Less; SK = Very Less

Describe the data related to the number of research samples given the symbol N, then calculate the average data. In addition, the difference between the pretest and posttest data is calculated to determine the delta. Before testing the hypothesis, it is necessary to test the normal distribution model, which is used as a guide to determine whether the sample comes from a normally distributed population. In addition, the variance of the population needs to be identified, whether it is homogeneous (the same size) or not. These two things are commonly called the normality test and the data homogeneity test. Both are usually done to find out what statistics will be used

later (parametric and non-parametric statistics). If the data is normally distributed and homogeneous, the paired sample T-test will be used to see the effect of student learning outcomes before and after the implementation of traditional sports games. However, if the data is not normally distributed and/or homogeneous, then the Mann-Whitney U test is used to show the effect of traditional sports on student learning outcomes before and after their implementation. Data analysis was performed using IBM SPSS Statistics version 21.

RESULTS

Before testing the research hypothesis, a prerequisite test is carried out to obtain the statistics that will be used in testing the research data. Normality and homogeneity tests were carried out to determine which statistical test to use. The data to be tested are normally distributed and homogeneous (p-value > = 0.05) based on the normality and homogeneity tests, implying that parametric statistics and paired sample t-tests will be used. The results of the paired sample t-test in Table 4 show the ability to think critically before the application of traditional sports games.

Table 4. Results of the first paired sample T-test for critical thinking skills

	Class	T	p-value*	Conclussion
Critical Thinking Ability	Grade VI	5.881	0.000	Significant

The second phase of the trial was carried out, with the results in Table 5 showing a significant difference in critical thinking skills before and after the implementation of traditional sports games.

Table 5. Results of the second paired sample T-test for critical thinking skills

	Class	T	p-value*	Conclussion
Critical Thinking Ability	Grade VI	6.175	0.000	Significant

DISCUSSION

One of the most important contributions to the learning process is planning (Metzler & Colquitt, 2021). The planning is usually done before the learning process begins. The contents of the plan are the learning objectives to be achieved, the time allotted, the motion assignments to be given to students, class arrangements, and the evaluation of learning outcomes.

The main learning activities are giving motion assignments with traditional game sports, monitoring task performance, providing feedback, and making observations. First, the physical education teacher demonstrates the movements that students must do, and then the teacher gives movement assignments to students. Teachers are allowed to do demonstrations, ranging from simple and easy movements to more complex ones. Movement tasks must be explained briefly and clearly, and students can do them individually or in groups. Students are challenged to generate unique solutions to assertive motion and think about problems related to traditional game sports. Students tend to think critically, but only in an environment specifically designed to encourage critical thinking (McBride, 2016). When the cognitive domain is explored more systematically, many students will discover a new interest and curiosity for physical education (Woods & Book, 1995).

Closing activities in the learning process include cooling down, reflecting on student experiences, evaluating learning processes and outcomes with authentic assessment techniques and self-assessment, as well as giving appreciation and following up. Regarding authentic assessment, one of its characteristics, as identified by Lund (ent experiences, evaluating learning processes and outcomes with authentic assessment techniques and self-assessment, as well as giving appreciation and following up. Regarding authentic assessment, one of its characteristics, as identified by Lund (Lund, 1997), is that authentic assessment is required by students to be able to demonstrate critical thinking skills. Authentic assessment provides an opportunity for students to apply the concepts they have learned. After assessing students' knowledge of rules and strategies, authentic assessment can help students understand how to apply them in everyday situations. There are six characteristics of authentic assessment: it is carried out during and after the learning process, is used for formative and summative purposes, is measured in skills and performance, not in remembering facts, is continuous, integrated, and used for feedback.

Children's ability to make different movement patterns increases significantly when they use critical thinking learning strategies (Cleland & Roberts, 2016). As stated McBride (McBride, 2016), there is a substantial increase in critical thinking scores after children participate in activities that require cooperation and critical thinking. Learning that supports critical thinking is learning that uses questioning techniques that require students not only to repeat information but also to analyze, synthesize, and evaluate information to solve problems and make decisions. Because critical thinking is a mental habit that requires students to think about their thinking and improve their processes, higher-order thinking skills are needed, not to memorise data or do what they read or are told without thinking critically.

Critical thinking has a place in the psychomotor domain, so physical education learning can provide a supportive environment for students to think critically. Physical education incorporates student choice, challenging, and meaningful activities in the student development zone, maximising opportunities for creative thinking, problem solving, and critical thinking.

A quality physical education programme has the potential for developing four competencies: daily physical activity, level of physical fitness, development of physical skill competencies, and knowledge necessary for an active and healthy lifestyle (Cvejić et al., 2013). In the physical education learning process, the most important thing is to maximise student participation. This can happen if the learning environment supports students to feel safe, comfortable, not tense and anxious, and respected by the teacher.

CONCLUSION

This research shows that a learning process that is well designed and pays attention to learning objectives will make it easier for students to learn and develop well. The results of the study show that learning physical education, which is packaged in traditional sports games, is proven to be able to improve students' critical thinking skills. The best place to practise thinking skills is school. The school is a miniature of social life, and the learning process becomes a miniature laboratory for solving real-life problems. Physical education, apart from facilitating cognitive and psychomotor skills, also facilitates students in the affective domain.

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In writing this review, the author declared that there were no conflicts of interest.

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REFERENCES

Adcroft, A. (2011). The mythology of feedback. *Higher Education Research and Development*, *30*(4), 405–419. https://doi.org/10.1080/07294360.2010.526096

Alpen, J., Dlis, F., Hernawan, Widiastuti, Apriani, L., Kurniawan, E., & Sofyan, D. (2022). Trends in scientific publication of traditional game learning models in physical education and sports in Indonesia: A bibliometric analysis. *Journal Sport Area*, *7*(2), 214–226. https://doi.org/10.25299/sportarea.2022.vol7(2).9072

Amina, C. (2022). Level Of Creative Thinking Among Teachers Of Sport And Physical Education In Middle Schools. *Jurnal Pendidikan IPA Indonesia*, *11*(2), 296–302. https://doi.org/10.15294/jpii.v11i2.34572

Aypay, A. (2016). Investigating The Role of Traditional Children's Games in Teaching Ten Universal Values in Turkey. *Eurasian Journal of Educational Research*, *16*(62), 283–300. https://doi.org/10.14689/ejer.2016.62.14

Bayu, W. I., Nurhasan, Suroto, & Solahuddin, S. (2022). Peer observation, self-assessment, and circuit learning: Improving critical thinking and physical fitness in physical education. *Cakrawala Pendidikan*, *41*(2), 308–320. https://doi.org/10.21831/cp.v41i2.38654

Calma, A., & Davies, M. (2021). Critical thinking in business education: current outlook and future prospects. *Studies in Higher Education*, *46*(11), 2279–2295. https://doi.org/10.1080/03075079.2020.1716324

Carless, D., Salter, D., Yang, M., & Lam, J. (2011). Developing sustainable feedback practices. *Studies in Higher Education*, *36*(4), 395–407. https://doi.org/10.1080/03075071003642449

Changwong, K., Sukkamart, A., & Sisan, B. (2018). Critical thinking skill development: Analysis of a new learning management model for Thai high schools. *Journal of International Studies*, *11*(2), 37–48. https://doi.org/10.14254/2071-8330.2018/11-2/3

Chivandikwa, N., Makumbirofa, R., & Muwati, I. (2019). Traditional games and child-centred development: affirming disabled and female bodies in applied theatre projects in Zimbabwe. *South African Theatre Journal*, *32*(3), 272–284. https://doi.org/10.1080/10137548.2018.1552190

Cleland, J., & Roberts, T. (2016). Through the looking glass: a different lens on medical education. *Medical Education*, *50*(12), 1184–1185. https://doi.org/10.1111/medu.13153

Costes, A., March-Llanes, J., Muñoz-Arroyave, V., Damian-Silva, S., Luchoro-Parrilla, R., Salas-Santandreu, C., Pic, M., & Lavega-Burgués, P. (2021). Traditional Sporting Games as Emotional Communities: The Case of Alcover and Moll's Catalan–Valencian–Balearic Dictionary. *Frontiers in Psychology*, *11*(January), 1–9. https://doi.org/10.3389/fpsyg.2020.582783

Cvejić, D., Pejović, T., & Ostojić, S. (2013). Assessment of Physical Fitness in Children and Adolescents. *Physical Education and Sport*, *11*(2), 135–145.

Eather, N., Riley, N., Miller, D., & Imig, S. (2019). Evaluating the Impact of Two Dialogical Feedback Methods for Improving Pre-Service Teacher's Perceived Confidence and Competence to Teach Physical Education Within Authentic Learning Environments. *Journal of Education and Training Studies*, *7*(8), 32. https://doi.org/10.11114/jets.v7i8.4053

Gelisli, Y., & Yazici, E. (2015). A Study into Traditional Child Games Played in Konya Region in Terms of Development Fields of Children. *Procedia - Social and Behavioral Sciences*, *197*(February), 1859–1865. https://doi.org/10.1016/j.sbspro.2015.07.247

Gordon, G. (2010). What is play? In search of a universal definition. *Play and Culture*, 1–21. http://www.gwengordonplay.com/pdf/what_is_play.pdf

Gürlen, E. (2011). Probleme Dayalı Öğrenmenin Öğrenme Ürünlerine, Problem Çözme Becerisine, Öz-Yeterlik Algı Düzeyine Etkisi. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, *40*(40), 221–232.

Indrašienė, V., Jegelevičienė, V., Merfeldaitė, O., Penkauskienė, D., Pivorienė, J., Railienė, A., Sadauskas, J., & Valavičienė, N. (2021). Linking critical thinking and knowledge management: A conceptual analysis. *Sustainability (Switzerland)*, *13*(3), 1–17. https://doi.org/10.3390/su13031476

Iucu, R. B., & Marin, E. (2014). Authentic Learning in Adult Education. *Procedia - Social and Behavioral Sciences*, *142*, 410–415. https://doi.org/10.1016/j.sbspro.2014.07.702

Johnson, R. H., & Hamby, B. (2015). A Meta-Level Approach to the Problem of Defining 'Critical Thinking.' *Argumentation*, *29*(4), 417–430. https://doi.org/10.1007/s10503-015-9356-4

Jones, C., & Pimdee, P. (2018). Innovative Ideas: Thailand 4.0 and the Fourth Industrial Revolution. *Tạp Chí Nghiên Cứu Dân Tộc*, *17*(22), 4–32. https://doi.org/10.25073/0866-773x/124

Kamarulzaman, W. binti. (2015). Affect of Play on Critical Thinking: What are the Perceptions of Preservice Teachers. *International Journal of Social Science and Humanity*, *5*(12), 1024–1029. https://doi.org/10.7763/ijssh.2015.v5.598

Keeley, T. J. H., & Fox, K. R. (2009). The impact of physical activity and fitness on academic achievement and cognitive performance in children. *International Review of Sport and Exercise Psychology*, *2*(2), 198–214.

https://doi.org/10.1080/17509840903233822

Khidhir, S. (2018). *Critical thinking needed to upgrade skills*. THE ASEAN POST.

Linda, Z., & Lestari, I. (2019). Berpikir Kritis Dalam Konteks Pembelajaran. In *Erzatama Karya Abadi* (Issue August).

Lund, J. (1997). Authentic Assessment: Its Development & Applications. *Journal of Physical Education, Recreation & Dance*, *68*(7), 25–28. https://doi.org/10.1080/07303084.1997.10604979

Maryuni, M., & Nasrulloh, A. (2022). Research Study on Traditional Game Sports. *Proceedings of the Conference on Interdisciplinary Approach in Sports in Conjunction with the 4th Yogyakarta International Seminar on Health, Physical Education, and Sport Science (COIS-YISHPESS 2021)*, *43*, 261–265. https://doi.org/10.2991/ahsr.k.220106.050

McBride, R. E. (2016). Critical Thinking—An Overview with Implications for Physical Education. *Journal of Teaching in Physical Education*, *11*(2), 112–125. https://doi.org/10.1123/jtpe.11.2.112

Metzler, M., & Colquitt, G. T. (2021). *Instructional Models for Physical Education*. Routledge.

Moy, B., Renshaw, I., Davids, K., & Brymer, E. (2019). Preservice teachers implementing a nonlinear physical education pedagogy. *Physical Education and Sport Pedagogy*, *24*(6), 565–581. https://doi.org/10.1080/17408989.2019.1628934

Murray, A., Shaughnessy, J., & Kaitell, E. (2018). *Using learning domains to complement primary teacher education in primary school settings*. *September*, 0–13. https://www.researchgate.net/publication/327574181

Opstoel, K., Chapelle, L., Prins, F. J., De Meester, A., Haerens, L., van Tartwijk, J., & De Martelaer, K. (2020). Personal and social development in physical education and sports: A review study. *European Physical Education Review*, *26*(4), 797–813. https://doi.org/10.1177/1356336X19882054

Pislae-ngam, K. (2018). An Analysis of Critical Thinking skills in General Education Course. *Advances in Social Sciences Research Journal*, *5*(6), 54–61. https://doi.org/10.14738/assrj.56.4615

Pithers, R. T., & Soden, R. (2016). *Critical thinking in education : a review Critical thinking in education : a review*. *1881*(October), 37–41.

Pursitasari, I. D., Suhardi, E., Putra, A. P., & Rachman, I. (2020). Enhancement of student's critical thinking skill through science context-based inquiry learning. *Jurnal Pendidikan IPA Indonesia*, *9*(1), 97–105. https://doi.org/10.15294/jpii.v9i1.21884

Qoriandini, M., Pramono, D., & Hastini, W. (2022). Upaya Peningkatan Critical Thinking Melalui Model Problem Based Learning (PBL) Pada Pembelajaran Tematik Kelas 4 Di SD Negeri Balirejo. *Jurnal Pendidikan Dan Konseling*, *4*(4), 2335–2339.

Renatovna, A. G. (2019). Modern Approaches To the Development of Critical Thinking of Students. *European Journal of Research and Reflection in Educational Sciences*,

7(10), 65–67.

Schraagen, J. M., & van de Ven, J. G. M. (2008). Improving Decision Making in Crisis Response through Critical Thinking Support. *Journal of Cognitive Engineering and Decision Making*, *2*(4), 311–327. https://doi.org/10.1518/155534308x377801

Toychievich, K. I. (2022). Historical Characteristics, General Content and Stages of Development of Physical Education. *Journal of Pedagogical Inventions and Practices*, *5*, 18–21. https://www.zienjournals.com/index.php/jpip/article/view/751%0Ahttps://www.zienjournals.com/index.php/jpip/article/download/751/610

Treitler, P. C., Peterson, N. A., Howell, T. H., & Powell, K. G. (2018). Measuring sense of community responsibility in community-based prevention coalitions: An item response theory analysis. *American Journal of Community Psychology*, *62*(1–2), 110–120. https://doi.org/10.1002/ajcp.12269

Turan, M. B., & Koç, K. (2018). The impact of self-directed learning readiness on critical thinking and self-efficacy among the students of the school of physical education and sports. *International Journal of Higher Education*, *7*(6), 98–105. https://doi.org/10.5430/ijhe.v7n6p98

Ünsar, A. S., & Engin, E. (2013). A Case Study to Determine Critical Thinking Skills of University Students. *Procedia - Social and Behavioral Sciences*, *75*, 563–569. https://doi.org/10.1016/j.sbspro.2013.04.061

Woods, A. M., & Book, C. (1995). Critical Thinking in Middle School Physical Education. *Journal of Physical Education, Recreation & Dance*, *66*(6), 39–43. https://doi.org/10.1080/07303084.1995.10607096

Yessick, A., & Haegele, J. A. (2019). "Missed opportunities": Adults with visual impairments' reflections on the impact of physical education on current physical activity. *British Journal of Visual Impairment*, *37*(1), 40–49. https://doi.org/10.1177/0264619618814070