

The Impact of Sport Activities on Young Critical Thinking

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Abstract

Starting from the premise that sports activities can positively impact young people's critical thinking development, our article aims to analyze the three-dimensional relationship between the skills of young people - their desire to carry out sports activities - the development of critical thinking. Based on a questionnaire distributed to young people who carry out sports activities, we observed that these activities contribute to developing young people's critical thinking. We used SEM-PLS and concluded that critical openness is an essential motivational factor both for the performance of sports activities and for developing critical thinking.

Key words: critical thinking, sport activities, critical openness.

J.E.L. classification: L83, M53, Z20.

1. Introduction

Critical thinking is a competence that young people develop through a training process and a range of sports activities. The link between sports activities and critical thinking has been analyzed by several specialists, especially in terms of the leadership of sports organizations (Arnold et al., 2012; Robinson et al., 2018), gender equality (Costa and Miragaia, 2022; Peachey et al., 2015) or of the learning process (Susanto and Sumaryanto, 2022).

The originality of our research is that we analyze the relationship between critical thinking and sports activities through the lens of young people who practice these activities not as performance activities but as recreational activities.

Since 1956, when Bloom, Englehart, Furst, Hill, and Krathwohl elaborated the work on the cognitive domain and established six successive levels of knowing (i.e., Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation), there have been continuous adjustments of these levels and, currently, it has been concluded that Synthesis and Evaluation are essential for research (Seddon, 1978), and knowledge, Comprehension, Application, and Analysis are relevant for knowing at the knowledge level. Therefore, the Evaluation can be considered a component of critical thinking which, if correctly carried out and based on deep analysis, can lead to a pertinent Synthesis of the facts.

The objective of our research is to evaluate how carrying out of sports activities by young people can contribute to the development of critical thinking. We mention that we are not referring to young people who carry out performance sports activities but those who carry out sports activities as a recreation instrument.

2. Literature review

Specialists in psychology, sociology, and management have yet to reach a consensus regarding the definition of critical thinking; therefore, specialized literature abounds in the definitions of this concept.

In 1986, Chance considered critical thinking an ability to analyze some facts and, based on reality, generate and organize ideas to defend his opinions, build arguments, and finally find efficient solutions to problems.

In 1990, Hickey also referred to analytical thinking as not for solving some problems but evaluating the reality presented as a text to be read.

Facione (1990) summarized the statement of experts' consensus related to critical thinking that considered this phenomenon relevant as self-regulatory judgment and as a tool of inquiry.

The experts did not use the equality sign between good thinking and critical thinking, considering that the information plays an essential role in making rational and prudent judgments.

Critical openness is considered one of the features of the cognitive dimension (Sosu, 2013) because it is strongly related to the individual and intellectual ability to employ cognitive skills to analyze facts, deductions, interpretations, and to provide solid arguments (Manassero-Mas et al., 2022).

In sports organizations, critical thinking is used by managers and leaders to analyze the information and facts to put into practice their ideas and to evaluate the implications of their decisions correctly.

Young people practice sports for recreation and to reduce fatigue. Moreover, as Guidotii et al. (2023) mentioned, sports activities determine the passions and emotions of young people.

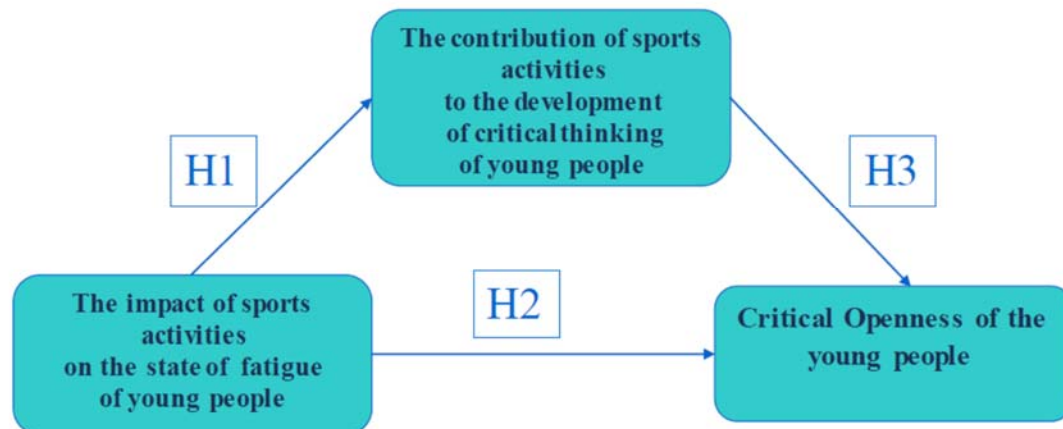
Considering the impact of sports activities on the state of fatigue of young people, the contribution of sports activities to the development of critical thinking of young people, and the Critical Openness of the young people that practice sports activities, we elaborated the following hypotheses:

H1: The impact of sports activities on the state of fatigue of young people directly influences the development of critical thinking of young people (ISF-SCT).

H2: The impact of sports activities on the state of fatigue of young people directly influences their Critical Openness (ISF-COPY).

H3: The critical thinking of young people improved by sports activities directly influence their Critical Openness (SCT-COPY).

Figure no. 1 Theoretical model



Source: Authors' contribution

3. Research methodology

The questionnaire consisted of three variables (i.e., the impact of sports activities on the state of fatigue of young people (ISF) with two items, the contribution of sports activities to the development of critical thinking of young people (SCT) with five items, and the Critical Openness of the young people that practice sports activities (COPY) with four items) and 11 multiple choice items including

two demographic ones (gender and age). The answers were measured on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

The sample consists of 272 young people who practiced sports activities over 18 years (90.8% were between 21 and 25 years of age, and 9.2% were between 26 and 28 years of age). The gender composition was (56.6% female, 43.4% male).

4. Results and discussion

The descriptive statistics, outer loadings, and Variance Inflation Factor (VIF) are presented in Table 1.

Table no. 1 The Descriptive statistics, outer loadings and Variance Inflation Factor (VIF) of the items of the three variables

	Cronbach Alpha	Mean	Std. Deviation	Outer Loadings	VIF
COPY	.909				
COPY1		4.05	.647	0.881	2.682
COPY2		3.94	.631	0.873	2.794
COPY3		3.92	.786	0.861	2.619
COPY4		4.04	.712	0.929	2.004
ISF	.719				
ISF1		3.86	.694	0.858	1.458
ISF2		3.84	.719	0.907	1.455
SCT	.893				
SCT1		4.04	.641	0.844	2.321
SCT2		3.88	.620	0.860	2.541
SCT3		3.87	.794	0.867	2.820
SCT4		4.00	.668	0.725	1.677
SCT5		3.99	.693	0.882	2.110

Source: SPSS20 and SMART-PLS4 software

We observe that all mean scores are above 3.80, which suggests the agreement of the respondents with the survey's statements.

The highest mean scores were reported for COPY1 (M = 4.05), COPY4 and SCT1 (M = 4.04) and SCT4 (M = 4.00). The lowest mean score was reported for ISF2 (M = 3.86). The values of the standard deviation (SD) varied from 0.620 (for SCT2) to 0.794 (for SCT3).

The SEM-PLS confirmatory composite analysis (CCA) was used to assess this research model (Hair et al., 2020). Therefore, the composite reliability values were between 0.738 and 0.91, and it is confirmed that the values for AVE were higher than 0.5.

Henseler et al. (2015) consider that if HTMT values are lower than the 0.9 thresholds and our values are under this threshold, in this case, the values of heterotrait-monotrait (HTMT) ratio of the correlations re-confirmed the presence of discriminant validity.

Table 2 and Figure 2 present details related to the status of the three hypotheses.

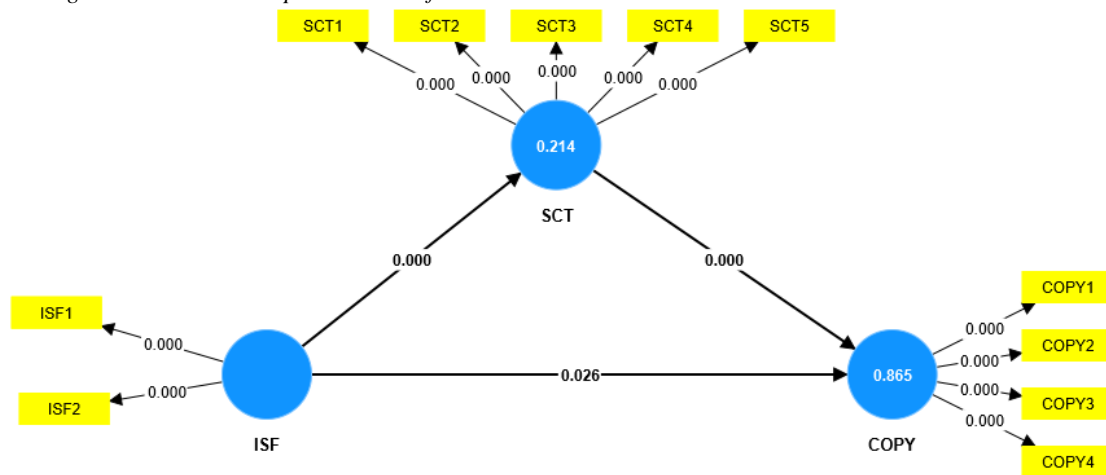
Table no. 2 The status of the three hypotheses

Hypotheses	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	P values
ISF -> COPY	0.061	0.060	0.028	0.026
ISF -> SCT	0.462	0.463	0.051	0.000
SCT -> COPY	0.900	0.900	0.024	0.000

Source: SMART-PLS4 software

All three hypotheses were validated that underline the positive impact of sports activities on developing critical thinking and the critical openness of young people. In some cases, young people's fatigue is accentuated by sports activities; in others, these activities reduce cases.

Figure no. 2 A detailed presentation of the results



Source: SMART-PLS4 software

The respondents perceive sports activities as a possibility to improve the communication process by helping people to understand other people's viewpoints on an issue and to use more than one source to find information for themselves.

During sports activities, young people look for new ideas and use them to shape (modify) how they do things.

5. Conclusions

The objective of our research was to evaluate how young people's sports activities can contribute to the development of critical thinking, and we concluded that these activities are more beneficial for young people.

First, carrying out sports activities contributes to reducing the state of mental fatigue and, to a certain extent, the state of physical fatigue.

Second, carrying out sports activities allows young people to meet other people, change ideas and improve their knowledge.

Third, carrying out sports activities positively influences young people's analysis and synthesis capacity and develops the ability to ask and answer critical questions at appropriate times.

The limits of our research consist of the two-dimensional approach of the relationship between the performance of sports activities by you and the development of their critical thinking, without analyzing the factors that contribute to improving the decision-making process.

Therefore, future research will be oriented toward the leadership of sports organizations and the impact of this leadership on the performance of these organizations.

6. References

- Arnold, R., Fletcher, D., Molyneux, L., 2012. Performance leadership and management in elite sport: Recommendations, advice and suggestions from national performance directors. *European Sport Management Quarterly*, 12, 317–336. <https://doi.org/10.1080/16184742.2012.693115>
- Bloom, B., Englehart, M., Furst, E., Hill, W., Krathwohl, D., 1956. *Taxonomy of educational objectives: The classification of educational goals. Handbook I: Cognitive Domain*. New York: Longmans Green.

- Chance, P., 1986. *Thinking in the classroom: A survey of programs*. New York: Teachers College, Columbia University.
- Costa, C., Miragaia, D. A. M., 2022. A Systematic Review of Women's Entrepreneurship in the Sports Industry. *Gender in Management. An International Journal*. 37, 988–1008. DOI: 10.1002/tie.22045
- Ennis, R. H., 1996. Critical thinking dispositions: Their nature and assessability. *Informal Logic*, 18, 165–182. <https://doi.org/10.22329/il.v18i2.2378>
- Facione, P. A., 1990. *The delphi report. critical thinking: A statement of expert consensus for purposes of educational assessment and instruction; executive summary*. California Academic Press.
- Facione, P. A., Facione, N. C., 1992. *CCTDI: A disposition inventory*. The California Academic Press.
- Guidotti, F., Demarie, S., Ciaccioni, S., Capranica, L., 2023. Relevant Sport Management Knowledge, Competencies, and Skills: An Umbrella Review. *Sustainability*, 15, 9515. <https://doi.org/10.3390/su15129515>
- Hair, J. F., Jr., Howard, M. C., Nitzl, C., 2020. Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research*, 109, 101–110. <https://doi.org/10.1016/j.jbusres.2019.11.069>
- Henseler, J., Ringle, C. M., Sarstedt, M., 2015. A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
- Hickey, M., 1990. Reading and social studies: The critical connection. *Social Education*, 54, 175-179.
- Manassero-Mas, M. A., Moreno-Salvo, A., Vázquez-Alonso, A., 2022. Development of an instrument to assess young people's attitudes toward critical thinking, Thinking Skills and Creativity, Volume 45, 101100, <https://doi.org/10.1016/j.tsc.2022.101100>
- Peachey, J.W., Damon, Z., Zhou, Y., Burton, L.J., 2015. Forty Years of Leadership Research in Sport Management: A Review, Synthesis, and Conceptual Framework. *Journal of Sport Management*. 29, 570–587. <http://dx.doi.org/10.1123/jsm.2014-0126>
- Robinson, G.M., Neubert, M.J., Miller, G., 2018. Servant Leadership in Sport: A Review, Synthesis, and Applications for Sport Management Classrooms. *Sport Management Education Journal*, 12, 39–56. <https://doi.org/10.1123/smej.2016-0023>
- Seddon, G., 1978. The properties of Bloom's taxonomy of educational objectives for the cognitive domain. *Review of Educational Research*, 48(2), 303-323. <https://doi.org/10.2307/1170087>
- Sosu, E. M., 2013. The development and psychometric validation of a Critical Thinking Disposition Scale. In *Thinking Skills and Creativity*, 9, 107–119. <https://doi.org/10.1016/J.TSC.2012.09.002>
- Susanto, S., Sumaryanto, S., 2022. Traditional Sport-Based Physical Education Learning Model in Character Improvement and Critical Thinking of Elementary School Students. *Sport, Science and Health*. 24(2), 165-172. <https://doi.org/10.7251/SSH2202165S>