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Cooperative learning promoting cultural diversity and individual accountability: a systematic review

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Zhou, T; Colomer, J.

Corresponding author:

Jordi Colomer

jordi.colomer@udg.edu

Author Affiliation:

University of Girona.

ADMINISTRATIVE INFORMATION

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Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 20 May 2024 and was last updated on 20 May 2024.

INTRODUCTION

Review question / Objective Previous systematic reviews have found that more studies have addressed social skills, teacher-student relationships and motivation to learn [15,16]. Nevertheless, the majority of reviews did not quantitatively examine the impact of CL on students' multiple learning outcomes (motor skills, social skills, motivation for self-directed learning, affective experiences, etc.), nor did they analyze how the CL was applied in diverse age groups and multicultural contexts. Also, we can argue that most reviews did not explore the role of the CL in developing global awareness and civic responsibility in the context of the current global goals of education for sustainable development. Therefore, there is a need to conduct a systematic review of research on CL in PE, that focuses on examining the physical, social, effective, and

cognitive areas of student PE outcomes along with the promotion of cultural diversity within CL dimensions.

Condition being studied Previous systematic reviews have found that more studies have addressed social skills, teacher-student relationships and motivation to learn [15,16]. Nevertheless, the majority of reviews did not quantitatively examine the impact of CL on students' multiple learning outcomes (motor skills, social skills, motivation for self-directed learning, affective experiences, etc.), nor did they analyze how the CL was applied in diverse age groups and multicultural contexts. Also, we can argue that most reviews did not explore the role of the CL in developing global awareness and civic responsibility in the context of the current global goals of education for sustainable development.

METHODS

Search strategy Based on systematic review and meta-analysis guidelines, PICO strategies were included: participants (e.g., adolescents, high school students, college students, children, kids), interventions (e.g., curricula, training, physical education, cooperative), type of study (quantitative, mixed studies that included quantitative studies), comparative subjects (e.g., 'physical education,' 'cooperative learning'), and outcomes (e.g., cognitive, social, affective, motor). The study set the time span of database search from January 2000 to December 31, 2023 to better fit the continuity and completeness of the study made in the last 20 years.

Participant or population Adolescents, high school students, college students, children, kids.

Intervention Curricula, training, physical education, cooperative.

Comparator 'physical education,' 'cooperative learning'.

Study designs to be included Quantitative, mixed studies that included quantitative studies.

Eligibility criteria Inclusion criteria

1. Research primarily focused on CL.
2. Studies must report on research involving CL in PE.
3. These studies should be published in peer-reviewed journals.
4. Research articles must be in English (Due to language constraints, English is the main language of choice.).
5. Quantitative studies and mixed studies that include quantitative studies on CL.
6. Full-text availability is required.

Exclusion criteria

1. Research sourced from conference proceedings, books, magazines, news, and posters.
2. Research unrelated to learning outcomes (including duplicate articles).
3. The results of the experiment did not report the impact of CL on learning outcomes (any of the four domains)

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2. Research unrelated to learning outcomes (including duplicate articles).

Information sources Relevant literature was retrieved by searching the core databases of Web of Science (WOS). Both databases are widely

recognized as the most authoritative and reputable publishers' databases [43,44]. To avoid any omissions, a snowballing strategy was carried out at the same time.

Main outcome(s) The results of this study, by analyzing 50 literatures, showed that the main focus of research differs for students of different ages. This is mainly related to the growth characteristics and cognitive development of the students. There is a relative lack of research on children, with most research focusing on secondary schools and universities.

Data management The following supporting information can be downloaded at: https://docs.google.com/spreadsheets/d/1hHYa7fZHeqEIOH_wLTh3GesWiLzII6ch/edit#gid=359874687, Table S1.

Quality assessment / Risk of bias analysis

Agreement between the two reviewers was assessed using inter-rater reliability calculations widely used in educational statistics and measurement. The results showed perfect agreement, with both reviewers selecting the same 47 articles from a total of 241 through independent screening and including three through discussion, with the final 50 documents included in the analysis, as shown in Figure 1. The inter-rater reliability (agreement) was calculated as follows: $K = M/N * 100\%$ Reliability (R) $R = (n*k)/(1+(n-1)*k)$ The K value is 94%, and the reliability (R) is 0.9987, which is greater than 0.9. This indicates that the agreement between the two reviewers is excellent, as a reliability value above 0.9 is considered highly reliable.

Strategy of data synthesis Based on systematic review and meta-analysis guidelines [42], PICO strategies were included: participants (e.g., adolescents, high school students, college students, children, kids), interventions (e.g., curricula, training, physical education, cooperative), type of study (quantitative, mixed studies that included quantitative studies), comparative subjects (e.g., 'physical education,' 'cooperative learning'), and outcomes (e.g., cognitive, social, affective, motor). The study set the time span of database search from January 2000 to December 31, 2023 to better fit the continuity and completeness of the study made in the last 20 years.

Subgroup analysis Not reported.

Sensitivity analysis Not reported.

Language restriction English.

Country(ies) involved Tong Zhou/Republic of Korea; Jordi Colomer/Spain.

Keywords cooperative learning; motor skills; cultural diversity; individual accountability; physical education.

Contributions of each author

Author 1 - Tong Zhou - Department of Physical Education, Korea University, Seoul 02841, Republic of Korea.

Email: zhou941002@korea.ac.kr

Author 2 - Jordi Colomer - Department of Physics, University of Girona, Girona 17003, Spain; jordi.colomer@udg.edu Teaching Innovation Network on Reflective and Cooperative Learning, Institute of Sciences Education, University of Girona, Girona 17003, Spain.

Email: jordi.colomer@udg.edu