

INPLASY

Effect of different learning strategies on academic performance in physical education: A systematic review

INPLASY202460048

doi: 10.37766/inplasy2024.6.0048

Received: 13 June 2024

Published: 13 June 2024

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ADMINISTRATIVE INFORMATION

Support - 2023 Shanxi Provincial Higher Education General Teaching Reform and Innovation Project (Fund No.: J20231172).

Review Stage at time of this submission - Preliminary searches.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202460048

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 13 June 2024 and was last updated on 13 June 2024.

INTRODUCTION

Review question / Objective What is the impact of Learning strategies on college students' academic performance in physical education.

Condition being studied Learning strategies are learning styles and approaches aimed at improving students' learning outcomes, which are essential elements for students to excel in physical education. Therefore, the condition under studying can be described as an analytical study of different learning strategies of students in physical education in order to find out the impact of learning strategies on students' learning performance.

METHODS

Participant or population College students in physical education.

Intervention Different learning strategies.

Comparator Learning strategy.

Study designs to be included Randomized controlled trials.

Eligibility criteria Additional inclusion criteria: studies published in peer-reviewed language. Studies available in English language. Studies with clearly defined different learning strategies and outcomemeasures related to academic performance in physical education. Studies conducted on human participants. Additional exclusion criteria: Studies that do not focus specifically on different learning strategies or its effects on academic performance. Studies with inadequate reporting of methodology or results. Studies lacking sufficient detail to assess the quality and validity of the findings. Studies with overlapping or duplicate data. Review articles, editorials, conference abstracts, and other non-primary research sources. Studies involving

participants with pre-existing medical conditions that may significantly affect performance outcomes. Studies with interventions that include additional components beyond learning strategies, making it difficult to isolate the effects of different learning strategies alone.

Information sources PubMed, SPORTDiscus, Web of Science, Scopus Google Scholar, Hand searching: Reviewing reference lists of relevant articles and systematic reviews, as well as conducting forward citation tracking, can help identify additional studies that may not be captured through database searches.

Main outcome(s) Reported one or more learning strategy and academic performance.

Quality assessment / Risk of bias analysis The Cochrane Collaboration's Risk of Bias tool for RCTs. Publication bias assessment: Evaluate the potential for publication bias, including checking publication bias plots and conducting statistical tests using Egger's regression test. Reporting guidelines: Adhere to appropriate reporting guidelines in the PRISMA statement, clearly documenting and reporting the assessment process and results in the literature.

Strategy of data synthesis Data extraction: Extract relevant data from each included study, including study characteristics (e.g., author, year of publication, study design), participant characteristics (e.g., sample size, demographics), intervention details (e.g., different learning strategies), outcome measures (e.g., academic performance), and results (e.g., mean differences, effect sizes, confidence intervals).

Subgroup analysis Explore sources of heterogeneity through subgroup analyses based on predefined study characteristics (e.g., age, gender, study quality) or intervention characteristics (e.g., different learning strategies).

Sensitivity analysis Conduct sensitivity analyses to assess the robustness of analysis results by excluding studies with high risk of bias or extreme effect sizes.

Country(ies) involved Malaysia and China.

Keywords learning strategies; academic performance; physical education.

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