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Effect of self-regulated learning on academic performance in physical education:A systematic review and meta-analysis

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ADMINISTRATIVE INFORMATION

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Review Stage at time of this submission - Preliminary searches.

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 9 December 2025 and was last updated on 9 December 2025.

INTRODUCTION

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

Condition being studied Self-regulated learning is a sophisticated form of metacognitive learning. It is a learner-centered approach that emphasizes students' ability to actively plan, monitor, regulate and evaluate their own learning process. It helps cultivate students' autonomous learning ability and enhances their independence in the learning process. Therefore, the conditions of this study can be described as an analytical research on self-regulated learning strategies in physical education, to explore the impact of self-regulated learning on the learning performance of physical education students.

METHODS

Participant or population College students in physical eduation.

Intervention Self-regulated learning.

Comparator Academic performance.

Study designs to be included Randomized controlled trials.

Eligibility criteria Additional inclusion criteria: Studies published in peer-reviewed journals. Studies with English versions. Studies that clearly distinguish the outcome measures related to self-regulated learning strategies and academic performance of physical education students. Studies with human subjects.
Additional exclusion criteria: Studies not specifically focused on self-regulated learning

strategies or their impact on academic performance. Studies with insufficiently reported methods or results. Studies lacking sufficient details to assess the quality and validity of the research outcomes.Studies with overlapping or duplicated data. Review articles, editorials, conference abstracts, and other non-primary research sources. Studies involving subjects with pre-existing conditions that may significantly affect performance outcomes. Studies where the intervention includes components other than learning strategies, making it difficult to assess the effect of self-regulated 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 self-regulated learning 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 accessment process and results in the literature.

Strategy of data synthesis The included studies, including study characteristics (e.g., authors, publication year, study design), participant characteristics (e.g., sample size, demographic characteristics), details of the intervention measures (self-regulated 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., self-regulated learning).

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 self-regulated learning; academic performance; physical education.

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