INPLASY

Effects of Exergames on Students' Intrinsic Motivation, Basic Psychological Needs, and Enjoyment in the Artificial Intelligence Era: A Systematic Review and Meta-Analysis

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Zhang, JL; Bai, XR; Soh, KG; Xiao, WS; Mohd Ashraff, MA.

Corresponding author:
Junlong Zhang

zhangjunlong2413@gmail.com

Author Affiliation:
Department of Sports Studies, Faculty of Education Studies, University Putra Malaysia.

ADMINISTRATIVE INFORMATION

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Review Stage at time of this submission - Piloting of the study selection process.

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 2 February 2025 and was last updated on 2 February 2025.

INTRODUCTION

Review question / Objective This review aims to elucidate the effects of exergames on students' intrinsic motivation, basic psychological needs, and enjoyment.

Condition being studied In recent years, the mental health challenges faced by students have received unprecedented attention across the globe according to the World Health Organization (WHO), more than 10% of adolescents worldwide experience mental health problems.

METHODS

Participant or population All students.

Intervention Exergames are a novel type of video game that emerged in the era of Artificial Intelligence.

Comparator Standard teaching: Refers to the teaching activities carried out according to certain teaching standards and norms.

Study designs to be included RCT and quasi-experiment.

Eligibility criteria (P) School students; (I) Exergames as the intervention; (c) Traditional teaching methods. (O) At least one reported outcome related to this study; (S) RCTs or quasi-experimental.

Information sources Web of Science, Scopus, PubMed, EBSCOhost, and ProQuest.

Main outcome(s) Seventeen articles were identified from 1,206 articles, and the results of each study were observed using valid scales or questionnaires.

Quality assessment / Risk of bias analysis Quality assessment: checklist developed by Downs and Black (1998); Risk of bias analysis: RCTs: ROB2; Quasi-experiment: ROBINS-I.

Strategy of data synthesis All analyses were performed using Comprehensive Meta-Analysis software. Effect sizes (Hedges' g) for both the exergames and control groups were computed based on the means and standard deviations before and after the intervention, with the post-intervention standard deviation used to standardize the data. ($P<0.05$).

Subgroup analysis Not applicable.

Sensitivity analysis Not applicable.

Language restriction Only English.

Country(ies) involved Malaysia; China.

Keywords Exergames, Intrinsic Motivation, Basic Psychological Needs, Enjoyment, Artificial Intelligence Era.

Contributions of each author

Author 1 - Junlong Zhang.
Email: zhangjunlong2413@gmail.com
Author 2 - Xiaorong Bai.
Email: 03219@zjhu.edu.cn
Author 3 - Kim Geok Soh.
Email: kims@upm.edu.my
Author 4 - Wensheng Xiao.
Email: 03218@zjhu.edu.cn
Author 5 - Mohd Ashraff Mohd Anuar.
Email: mohdashraff@upm.edu.my