

## Digital Survey to Detect Factors That Determine Successful Implementation of Cooperative Learning in Physical Education

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**Abstract :** Characterized by a positive interdependence of learners, cooperative learning (CL) is one possibility of successfully dealing with the increasing heterogeneity of students. Various positive effects of CL on the mental, physical and social health of students have already been documented. However, this structure is still rarely used in physical education (PE). Moreover, there is a lack of information about factors that determine the successful implementation of CL in PE. Therefore, the objective of the current study was to find out factors that determine the successful implementation of CL in PE using a digital questionnaire that was conducted from November to December 2022. In addition to socio-demographic data (age, gender, teaching experience, and education level), frequency of using CL, implementation strategies (theory-led, student-centred), and positive and negative effects of CL were measured. Furthermore, teachers were asked to rate the success of implementation on a 6-point rating scale (1-very successful to 6-not successful at all). For statistical analysis, multiple linear regression was performed, setting the success of implementation as the dependent variable. A total of 224 teachers (mean age=44.81±10.60 years; 58% male) took part in the current study. Overall, 39% of participants stated that they never use CL in their PE classes. Main reasons against the implementations of CL in PE were no time for preparation (74%) or for implementation (61%) and high heterogeneity of students (55%). When using CL, most of the reported difficulties are related to uncertainties about the correct procedure (54%) and the heterogeneous performance of students (54%). The most frequently mentioned positive effect was increased motivation of students (42%) followed by an improvement of psychological abilities (e.g. self-esteem, self-concept; 36%) and improved class cohesion (31%). Reported negative effects were unpredictability (29%), restlessness (24%), confusion (24%), and conflicts between students (17%). The successful use of CL is related to a theory-based preparation (e.g., heterogeneous formation of groups, use of rules and rituals) and a flexible implementation tailored to the needs and conditions of students (e.g., the possibility of individual work, omission of CL phases). Compared to teachers who solely implemented CL theory-led or student-adapted, teachers who switched from theory-led preparation to student-centred implementation of CL reported more successful implementation ( $t=5.312$ ;  $p<.001$ ). Neither frequency of using CL in PE nor the gender, age, the teaching experience, or the education level of the teacher showed a significant connection with the successful use of CL. Corresponding to the results of the current study, it is advisable that teachers gather enough knowledge about CL during their education and to point out the need to adapt the learning structure according to the diversity of their students. In order to analyse implementation strategies of teachers more deeply, qualitative methods and guided interviews with teachers are needed.

**Keywords :** diversity, educational technology, physical education, teaching styles

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