

Impact of Physical Education Programs on Emotional Intelligence, Teamwork, and Social Competence in Students

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Abstract: *The integration of social-emotional learning (SEL) within physical education (PE) programs represents a paradigm shift in educational practice, moving beyond traditional conceptions of PE as solely physical skill development toward a holistic model of student development. This paper presents a comprehensive examination of the impact of PE programs on emotional intelligence, teamwork, and social competence among students. Drawing upon theoretical frameworks including Goleman's emotional intelligence theory, Vygotsky's social development theory, Self-Determination Theory, and the Teaching Personal and Social Responsibility (TPSR) model, this analysis synthesizes recent empirical evidence from intervention studies conducted across multiple educational contexts. Findings indicate that intentionally designed PE programs incorporating explicit SEL components produce significant improvements in self-management, relationship skills, emotional regulation, and cooperative abilities, with effect sizes ranging from 0.34 to 0.72 depending on intervention duration and quality. The paper further examines pedagogical models including cooperative learning, the PREBULLPE program, and Smart-QPE interventions, evaluating their comparative effectiveness. Implications for educational policy, teacher preparation, and future research directions are discussed, with particular attention to the scalability of SEL-integrated PE programs and the need for longitudinal designs examining sustained developmental outcomes*

Keywords: physical education, social-emotional learning, emotional intelligence

I. INTRODUCTION

1.1 Background and Rationale

Contemporary education systems face an evolving mandate that extends beyond academic literacy to encompass the cultivation of social and emotional competencies essential for navigating an increasingly complex world. The Collaborative for Academic, Social, and Emotional Learning (CASEL) framework identifies five interrelated skill sets—self-awareness, self-management, social awareness, relationship skills, and responsible decision-making—as fundamental to student success and well-being. These competencies have been associated with improved academic achievement, reduced behavioral issues, enhanced mental health outcomes, and greater occupational success in adulthood.

Physical education occupies a unique position within the school curriculum, offering a context wherein social interaction is inherent and emotional experiences are intensified. PE activities are frequently structured around teamwork, competition, cooperation, and shared goal attainment, creating natural opportunities for the development of interpersonal skills. However, research suggests that these opportunities are often underutilized, with many PE programs emphasizing motor skill acquisition and physical activity while neglecting the substantial socio-emotional



dimensions of the learning environment . This gap between potential and practice underscores the need for intentional program design that explicitly integrates social-emotional learning objectives into PE curricula.

1.2 Theoretical Frameworks

The theoretical underpinnings of this investigation draw from multiple complementary perspectives. Goleman's emotional intelligence theory provides a framework for understanding how individuals recognize, understand, and regulate emotions—skills that are particularly salient in the emotionally charged context of physical activity and competition . Vygotsky's social development theory emphasizes the role of social interaction in cognitive and emotional development, positing that learning occurs through collaborative engagement within the zone of proximal development .

Self-Determination Theory (SDT) offers additional explanatory power, suggesting that the satisfaction of basic psychological needs—autonomy, competence, and relatedness—is essential for intrinsic motivation and psychological well-being . Within PE contexts, SDT research has demonstrated that autonomy-supportive teaching styles and cooperative learning structures enhance student motivation and engagement, which in turn facilitate the development of social and emotional competencies .

The Teaching Personal and Social Responsibility (TPSR) model, developed by Hellison, provides a structured pedagogical approach for promoting socio-emotional development through physical activity . This model progresses through developmental stages: (1) respect for the rights and feelings of others, (2) effort and cooperation, (3) self-direction, and (4) helping others and leadership . The TPSR framework has received empirical validation across diverse educational settings and age groups.

1.3 Research Objectives

This paper aims to:

1. Synthesize empirical evidence regarding the impact of PE programs on students' emotional intelligence, teamwork capacities, and social competence;
2. Evaluate the comparative effectiveness of various intervention models and pedagogical approaches;
3. Identify program characteristics associated with enhanced socio-emotional outcomes;
4. Examine theoretical mechanisms underlying observed effects; and
5. Provide evidence-based recommendations for educational practice and future research.

II. CONCEPTUAL FOUNDATIONS: DEFINING KEY CONSTRUCTS

2.1 Emotional Intelligence in Educational Contexts

Emotional intelligence encompasses the capacity to recognize, understand, manage, and effectively utilize emotions in oneself and others. Within the PE context, emotional intelligence manifests through students' ability to regulate frustration during competition, maintain composure following defeat, demonstrate empathy toward less skilled peers, and harness positive emotions to enhance performance . Goleman's model identifies five components: self-awareness, self-regulation, motivation, empathy, and social skills—all of which are activated and potentially developed through structured physical activities .

2.2 Teamwork as a Multidimensional Competence

Teamwork in educational PE settings extends beyond cooperative game participation to encompass communication, conflict resolution, shared decision-making, role acceptance, and collective problem-solving. Effective teamwork requires students to balance individual contributions with group objectives, negotiate differing perspectives, and maintain positive interpersonal relationships despite competitive pressures . Research indicates that team sports participation significantly enhances communication abilities, leadership qualities, adaptability, and emotional intelligence among university students .

2.3 Social Competence: Components and Measurement

Social competence refers to the ability to establish and maintain positive relationships, navigate social situations effectively, and demonstrate prosocial behaviors including cooperation, empathy, and conflict resolution. Within PE



environments, social competence is expressed through adherence to rules, respectful interaction with peers and teachers, inclusive behavior toward diverse classmates, and constructive response to both success and failure. The Social and Emotional Competencies Questionnaire (SEC-Q) and similar instruments have been validated for assessing these dimensions in educational research.

III. EMPIRICAL EVIDENCE: IMPACT OF PE PROGRAMS

3.1 Meta-Analytic and Systematic Review Findings

A rapid systematic review of seven peer-reviewed studies encompassing 68,553 participants identified consistent positive effects of structured sports and PE programs on socio-emotional learning outcomes. Key findings include:

- **Self-management and emotion regulation:** Effect sizes ranging from 0.38 to 0.72 standard deviations, with larger effects observed for interventions conducted by trained facilitators employing explicit SEL strategies;
- **Relationship skills:** Improvements of 0.34 to 0.61 standard deviations, reflecting enhanced cooperation, communication, and peer relationship quality;
- **Self-awareness and responsible decision-making:** More modest but still significant improvements (≈ 0.30 – 0.50), particularly when programs incorporated structured reflection tasks.

The review further demonstrated that interventions lasting a minimum of 12 weeks and delivered by autonomy-supportive, competent instructors exhibited effect sizes up to 50% greater than shorter or unintentional programs. Notably, an eight-month TPSR-based curriculum was associated with measurable reductions in school violence.

3.2 Controlled Intervention Studies

3.2.1 Social-Emotional Learning Integration in Elementary PE

A mixed-methods intervention study conducted across 260 elementary students (grades 4–6) in northern Israel examined the impact of a 45-minute SEL program integrated into PE classes over three sessions. The experimental group, which participated in SEL-infused PE activities, demonstrated significant improvements across all evaluated skills compared to the control group receiving standard PE instruction. Notable findings included:

- Enhanced teamwork capacities and cooperative behaviors;
- Improved self-awareness and emotional recognition;
- Development of creative thinking skills previously unobserved in similar interventions;
- Benefits extended to students who had previously avoided PE participation, suggesting the intervention's inclusive potential.

Qualitative data from teacher interviews provided additional insights, emphasizing the importance of creating emotionally supportive learning environments and establishing clear expectations for social behavior.

3.2.2 The PREBULLPE Program

Murillo-Moraño and colleagues conducted a quasi-experimental study with 330 students (ages 11–16) comparing the effects of the PREBULLPE bullying prevention program, cooperative learning pedagogy, and standard instruction. The PREBULLPE program, which incorporates psychosocial strategies specifically designed to enhance socio-emotional development and prevent bullying, produced significant improvements in social and emotional competencies that were not observed in the cooperative learning group. Both intervention groups demonstrated improved autonomous motivation, but only PREBULLPE yielded substantial gains in socio-emotional outcomes.

These findings highlight the importance of explicit program design: while cooperative learning enhances motivation, the development of socio-emotional competencies requires intentional pedagogical strategies that directly target these skills. The study further demonstrated that age and gender moderate intervention effects, with girls exhibiting higher levels of social competence and lower involvement in aggressive behaviors.

3.2.3 Smart-QPE Intervention

A 12-week Smart-Quality Physical Education (Smart-QPE) intervention involving 259 fourth- and sixth-grade students examined effects on SEL and physical activity behaviors. Paired-sample t-tests revealed significant improvements in self-management and relationship skills ($p = 0.048$ for both dimensions), suggesting that quality PE programming can



enhance specific SEL competencies even without explicit psychoeducational components. However, no significant changes were observed in self-awareness, social awareness, or responsible decision-making, indicating the potential limitations of non-targeted interventions .

3.3 Team Sports and Social Competence Development

Survey-based research at Samara State University of Economics examined the impact of team sports participation on social competencies among student-athletes . Findings revealed significant positive effects on:

- **Communication abilities:** Enhanced capacity for both expressive and receptive communication;
- **Emotional intelligence:** Improved recognition and regulation of emotions in team contexts;
- **Leadership qualities:** Development of initiative, responsibility, and ability to influence peers;
- **Adaptability:** Greater flexibility in responding to changing game situations and team dynamics .

The study further differentiated effects across sport types, suggesting that specific sports may differentially develop particular competencies—a finding with implications for program design and student placement .

3.4 Theoretical Mechanisms

3.4.1 Social Interaction and Peer Learning

PE provides a structured environment for social interaction wherein students must negotiate rules, coordinate actions, and manage interpersonal tensions. Vygotsky's framework suggests that such collaborative engagement facilitates learning through guided participation and scaffolding, processes applicable to both cognitive and socio-emotional development . When PE teachers intentionally structure activities to promote cooperation and mutual support, students internalize these social skills through repeated practice.

3.4.2 Emotional Regulation in Contextualized Settings

The emotionally charged nature of physical activity—particularly competitive games—provides authentic opportunities for emotional regulation practice. Students experience frustration, excitement, disappointment, and joy within a relatively safe environment, with teachers able to provide immediate guidance on emotional management strategies . This contextualized learning promotes transferability of emotional regulation skills to academic and social settings outside PE.

3.4.3 Basic Psychological Needs Satisfaction

According to Self-Determination Theory, interventions that support students' autonomy, competence, and relatedness facilitate internalization of values and self-determined motivation . PE programs emphasizing choice, skill development appropriate to individual ability levels, and positive peer relationships thereby create conditions conducive to sustained engagement and developmental outcomes.

IV. PROGRAM CHARACTERISTICS ASSOCIATED WITH POSITIVE OUTCOMES

4.1 Explicit SEL Integration

Research consistently demonstrates that PE programs with explicit SEL objectives produce stronger socio-emotional outcomes than those relying on implicit learning. The SAFE framework provides guiding principles for program design :

- **Sequenced:** Activities are organized in a logical, developmental progression;
- **Active:** Students actively practice skills through engaging activities;
- **Focused:** Dedicated time is allocated to developing each SEL component;
- **Explicit:** Targeted skills are clearly defined and communicated to students.

Interventions meeting SAFE criteria have demonstrated superior effectiveness in promoting socio-emotional development .

4.2 Teacher Competence and Instructional Quality

The competence of PE teachers in delivering SEL-focused programs emerges as a critical moderating factor. Studies indicate that effective interventions require:

- Minimum of eight hours of SEL-specific training for program facilitators ;



- Autonomy-supportive teaching styles that encourage student initiative and ownership ;
- Capacity to create emotionally supportive learning environments ;
- Skills in facilitating structured reflection on emotional experiences and social interactions .

4.3 Duration and Intensity

Intervention duration significantly influences outcomes, with programs of 12 weeks or longer producing substantially larger effects . This finding suggests that socio-emotional development requires sustained practice and reinforcement rather than brief intervention, consistent with theories of skill acquisition and habit formation.

4.4 Structured Reflection Components

Programs incorporating structured reflection—such as journaling, group discussion, and self-assessment—have demonstrated enhanced effectiveness, particularly for self-awareness and responsible decision-making outcomes . Reflection enables students to consolidate learning, recognize patterns in their emotional responses, and develop strategies for future situations.

V. COMPARATIVE ANALYSIS OF PEDAGOGICAL APPROACHES

5.1 Cooperative Learning

Cooperative learning structures, wherein students work together toward shared goals, have demonstrated significant benefits for motivation and engagement in PE . However, evidence regarding socio-emotional competency development is mixed, with some studies finding limited effects on these dimensions . This suggests that while cooperative learning creates conditions conducive to social interaction, it may not sufficiently address the explicit skill instruction necessary for comprehensive socio-emotional development.

5.2 TPSR Model

The Teaching Personal and Social Responsibility model has received extensive empirical validation, with studies demonstrating its effectiveness in promoting respect, effort, cooperation, and leadership . The model's developmental progression—moving from egocentric behavior to helping and leadership—provides a structured pathway for socio-emotional growth. Interventions incorporating TPSR have been associated with reduced school violence and improved classroom climate .

5.3 PREBULLPE Program

The PREBULLPE program represents a targeted approach combining socio-emotional development with bullying prevention. Evidence indicates its effectiveness in improving both social-emotional competencies and autonomous motivation, with specific strategies addressing:

- Prosocial behavior development;
- Cognitive reappraisal of social situations;
- Social adjustment and normative compliance;
- Self-efficacy in interpersonal contexts .

5.4 Smart-QPE Approach

The Smart-Quality PE intervention demonstrated significant improvements in self-management and relationship skills, even without explicit SEL training components . This finding suggests that high-quality PE programming with supportive instructional practices may yield socio-emotional benefits through incidental learning processes, although effects on other SEL dimensions were limited.

VI. IMPLICATIONS FOR EDUCATIONAL PRACTICE AND POLICY

6.1 Curriculum Design

Evidence supports the integration of explicit SEL objectives into PE curricula, with particular attention to:

- Developmentally appropriate programming aligned with students' cognitive and emotional maturity;
- Incorporation of structured reflection activities;
- Balance between competitive and cooperative activities;



- Explicit instruction in emotional regulation strategies .

6.2 Teacher Preparation

Teacher education programs should incorporate SEL-focused content and pedagogical strategies, including:

- Understanding of socio-emotional development theories;
- Skills in creating emotionally supportive learning environments;
- Competence in facilitating structured reflection;
- Capacity to implement evidence-based programs such as TPSR .

6.3 Assessment and Evaluation

Valid and reliable assessment of socio-emotional outcomes in PE requires:

- Multiple measures including observation, self-report, and teacher rating;
- Assessment of both process (engagement, effort) and outcome (skill acquisition, behavioral change) variables;
- Longitudinal designs to examine sustained effects;
- Consideration of student, teacher, and contextual factors in interpretation .

VII. CONCLUSION

This comprehensive analysis demonstrates that physical education programs, when intentionally designed to incorporate social-emotional learning objectives, significantly enhance students' emotional intelligence, teamwork capacities, and social competence. Theoretical frameworks including Goleman's emotional intelligence model, Vygotsky's social development theory, Self-Determination Theory, and the TPSR model provide complementary explanations for observed effects, emphasizing the roles of social interaction, emotional regulation practice, need satisfaction, and structured developmental progression.

Empirical evidence from controlled interventions indicates that programs with explicit SEL components, sustained duration, competent instruction, and structured reflection produce substantial improvements across multiple socio-emotional dimensions, with effect sizes comparable to those observed in classroom-based SEL interventions. The benefits extend beyond students with pre-existing interest in sports, suggesting the inclusive potential of PE-based SEL programming.

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