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DEVELOPING RESILIENCE AND STRESS-COPING SKILLS THROUGH PHYSICAL EDUCATION

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Abstract: This narrative review explores how appropriately structured physical challenges and guided reflection can be used in contemporary physical education to strengthen students' adaptive responses to difficulty. The topic has become increasingly relevant because learners need safe opportunities to encounter setbacks, respond to pressure, and recover from mistakes without experiencing humiliation, exclusion, or unnecessary psychological harm. The review examines several central mechanisms, including progressively structured challenge, mastery-oriented experiences, physiological self-regulation through movement, and the reinterpretation of mistakes as useful information for improvement. It also considers practical applications such as gradual endurance activities, adventure-based movement tasks, obstacle challenges, personal goal setting, and recovery-focused reflection. The analysis suggests that these practices may improve students' confidence when dealing with demanding situations, strengthen their awareness of personal stress reactions, and increase their willingness to continue after errors or unsuccessful attempts. However, these possible benefits must be considered alongside significant ethical and pedagogical risks. Resilience should not be confused with tolerating unsafe conditions, excessive fatigue, humiliation, or emotional discomfort. Particular care is also required to prevent vulnerable students from being overloaded and to avoid using public comparison or visible ranking as motivational strategies.

Keywords: Psychological resilience, stress regulation, physical education, coping strategies, student well-being

Introduction

The main position of this review is that the educational value of resilience-oriented physical education depends on the alignment between purpose, learner needs, instructional design, and institutional conditions. Any approach based on physical challenge and reflection should contribute to a clearly defined learning outcome, correspond to students' developmental readiness, and remain realistic within the available time, facilities, staffing, and resources. At the same time, the approach must preserve the interpersonal and human dimensions of physical education. Encouragement, cooperation, sensitivity to individual differences, supportive feedback, and professional judgment remain essential. Physical challenges should not be treated as isolated techniques. Their value emerges from the way teachers introduce, adapt, supervise, and interpret them within a broader educational process.

Physical education is increasingly shaped by developments that extend beyond the traditional gymnasium. Greater attention is now being given to student well-being, emotional regulation, psychological safety, and the development of coping abilities through movement. Within this context, the use of manageable physical challenge and structured reflection has become an important area of pedagogical discussion. The issue is educational rather than simply technical. Students need opportunities to encounter difficulty, make mistakes, and experience temporary failure without being embarrassed or publicly judged. They also need practical strategies for recovering, adapting, and attempting the task again. For this reason, the evaluation of resilience-oriented practice must include

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motor learning, participation, emotional safety, inclusion, physical literacy, and the quality of the learning environment [1].

An activity may appear modern or innovative while making only a limited contribution to learning. In contrast, a relatively simple intervention may have substantial educational value when it addresses a specific instructional problem. A short reflection following an endurance task, for example, may help students identify changes in breathing, recognize emotional responses, and consider which strategies supported recovery. The contemporary importance of the topic is shaped by a continuing tension between educational opportunity and professional responsibility. On the one hand, carefully designed challenges may help students recognize stress responses, strengthen self-confidence, and become more persistent after errors. On the other hand, poorly planned challenges may overload students who already experience anxiety, low confidence, disability, previous trauma, or negative memories of physical education.

This tension is especially significant in PE because learning takes place through visible bodily performance, shared physical spaces, direct peer interaction, and immediate comparison. A teaching decision that may appear relatively minor in another subject can influence dignity, movement time, physical safety, confidence, and willingness to participate in physical education. Students may feel particularly exposed when they are asked to perform in front of others, complete endurance tasks, or demonstrate physical competence. Teachers must therefore distinguish between productive challenge and harmful pressure. A useful challenge invites effort, adaptation, and reflection while maintaining safety and respect. Harmful pressure creates fear, humiliation, excessive discomfort, or the belief that failure reflects personal weakness [2].

Resilience-oriented learning: conceptual and psychological basis

The use of manageable physical challenge and structured reflection to improve students' responses to difficulty should not be understood as a single instructional technique. Instead, it represents a broader group of pedagogical practices shaped by progressive challenge, mastery experiences, curriculum goals, student characteristics, and the resources available within a particular school context. This distinction is important because different studies may use similar terminology while describing interventions that vary considerably in duration, intensity, teacher involvement, task structure, and student autonomy. One program may consist of a short reflective activity following an endurance task, while another may involve a complete unit based on obstacle challenges, personal goals, and recovery strategies. Detailed descriptions are therefore necessary for comparing research findings and applying successful practices in real physical education settings.

One useful theoretical perspective focuses on the process through which information is converted into action. During physical education, students must recognize relevant environmental and bodily cues, select an appropriate response, organize their movement, carry out the action, and evaluate the result. Mastery experiences may strengthen confidence and decision-making, while physiological regulation through movement may improve the learner's ability to manage stress, fatigue, and emotional arousal. However, providing more information does not always improve learning. Students may become cognitively or emotionally overloaded when instructions, cues, corrections, or performance demands are too frequent, complicated, or unrelated to their current competence. Effective teaching therefore requires teachers to select only the information that is most relevant at a particular moment. Guidance should be clear, limited, and directly connected to the task students are attempting to complete [3].

Motivation forms another important theoretical foundation. Successfully continuing after a mistake can strengthen students' perceptions of competence and autonomy. Learners may begin to see themselves as capable of managing challenge, adjusting their strategies, and trying again after unsuccessful attempts.

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Nevertheless, these benefits can be weakened when public ranking, visible comparison, or fear of embarrassment is used as a motivational tool. The social and emotional climate established by the teacher remains decisive. Choice should provide students with genuine control over meaningful aspects of the task rather than offering only superficial alternatives. Feedback should focus on progress, strategy, and personal development. Comparisons should not publicly rank bodies, fitness levels, movement abilities, or stress tolerance. Resilience-oriented learning should therefore operate as part of thoughtful pedagogy rather than as an independent method added to the lesson.

Translating resilience principles into lesson practice

Breathing and recovery routines represent one practical application of resilience-oriented physical education. These activities can help students recognize changes in breathing, heart rate, muscular tension, and emotional state following physical effort. They also demonstrate how mastery experiences can be connected with active learning and self-regulation. Such routines should not dominate the entire lesson. Instead, they should be integrated into a sequence that includes preparation, meaningful physical practice, recovery, and reflection. Brief and focused episodes are often more effective because they protect active movement time and allow students to apply the information immediately within an authentic physical task. For example, after completing a short running or circuit activity, students may be asked to regulate their breathing, identify bodily signs of stress, and compare different recovery strategies. The teacher may then guide a brief discussion about which strategies helped students regain control. In this way, the recovery activity becomes directly connected to movement experience rather than being treated as an abstract classroom exercise. Differentiation is another essential component of lesson design. Teachers can vary task complexity, movement speed, duration, equipment, group roles, environmental conditions, or the amount of feedback while maintaining a shared learning objective. These adjustments can support students who need more repetition, clearer representation, additional time, or reduced task complexity [4].

However, differentiation should not permanently separate students from their classmates. The most effective adaptations preserve participation within a shared lesson structure while adjusting individual support. Expectations should not be lowered unnecessarily. Instead, the route toward achieving the learning goal should be made more accessible. Assessment should also be incorporated into the learning process. Depending on the objective, evidence may include physical performance, decision-making, verbal explanation, reflection, cooperation, or the use of a recovery strategy. A single score or numerical result rarely represents the full complexity of resilience-oriented learning.

Educational contributions to confidence and coping

For teachers, resilience-oriented physical education can broaden the range of explanation, observation, and feedback strategies used before, during, and after lessons. Teachers may become more attentive to how students respond to mistakes, manage physical effort, request support, and recover after demanding tasks. This information can improve future planning and help teachers design more appropriate progressions. However, these benefits should not be interpreted as automatic reductions in teac r workload. Initial planning, adaptation, classroom management, observation, and evaluation may require considerable time. Sustainable implementation therefore depends on selecting a limited number of high-value practices rather than attempting to redesign every lesson or introduce too many new activities at once [5].

At the program level, the approach can encourage discussion about the wider aims of quality physical education. It invites schools to consider inclusion, student voice, meaningful evidence of learning, psychological safety, and continuity beyond individual lessons. It can also support a broader understanding of success in PE. When thoughtfully implemented, resilience-oriented learning can

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contribute to a curriculum that values movement competence, knowledge, confidence, reflection, and long-term participation. This is particularly important in programs that traditionally reward only students who are naturally athletic, physically confident, or experienced in sport [6].

One of the most plausible educational benefits is increased confidence in dealing with difficulty. This may be particularly valuable in conventional PE settings where students have limited opportunities for repeated attempts, individual feedback, or gradual progression. Structured challenge can allow learners to experience difficulty without interpreting it as permanent failure. Nevertheless, effectiveness depends strongly on task quality. Repetition without clear feedback may reinforce poor movement patterns or ineffective strategies. Similarly, participation without sufficient cognitive or motor challenge may produce activity but little meaningful learning. The approach becomes valuable when it strengthens the connection among practice, information, correction, and renewed effort.

Conclusion

Schools play a central role in supporting the effective implementation of resilience- and stress-coping practices in physical education. This support should include suitable facilities, access to necessary resources, continuous professional development, and clearly defined institutional policies. Teachers should not be expected to manage complex emotional, pedagogical, and safety-related demands without sufficient preparation and organizational support. Evaluation should extend beyond immediate student enthusiasm or the amount of information collected during lessons. A comprehensive assessment should consider student learning, patterns of participation, teacher workload, practical feasibility, and any unintended consequences. Particular attention should be given to students who are less active, less confident, socially marginalized, or frequently underrepresented in physical education. Their experiences provide an important indication of whether the approach is genuinely inclusive and educationally valuable. The use of resilience-oriented practice should broaden rather than restrict the meaning of physical education. Its purpose should not be limited to testing how much discomfort students can tolerate or how long they can persist under pressure. Instead, it should help learners understand their responses to physical challenge, experience competence, cooperate with others, regulate effort, and develop the confidence to remain active in different settings. Innovation is educationally justified only when it contributes clearly to these outcomes. New practices should be introduced transparently, applied equitably, and maintained only when they are sustainable within the real conditions of the school. An activity should not be retained merely because it appears modern, demanding, or motivational. Its value depends on whether it strengthens learning, participation, safety, and positive relationships.

Manageable physical challenges combined with structured reflection can make a meaningful contribution to physical education when they address a clearly identified instructional need and remain secondary to broader educational aims. Such practices may improve students' confidence in handling difficulty, increase awareness of personal stress responses, and strengthen persistence after mistakes or unsuccessful attempts. At the same time, these opportunities must be considered alongside possible risks. Resilience should never be confused with enduring unsafe conditions, excessive fatigue, humiliation, or psychological distress. Similarly, public ranking and comparison should not be used to pressure students into participation. Educational challenge must remain developmentally appropriate, respectful, and adaptable to individual differences. Teachers should provide students with meaningful choices and predictable progression. Tasks should move gradually from familiar and manageable demands toward more complex challenges. This structure can reduce anxiety and help learners understand that progress is possible through practice, reflection, and appropriate support. Physical challenge should also be clearly separated from punishment. Running, repeated exercise, or demanding physical tasks should not be used

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as consequences for poor behavior or failure. When movement is connected with punishment, students may associate physical activity with embarrassment, control, or fear rather than learning and well-being.

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