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Reconnoitering advantages and challenges of integrating physical education into the curriculum

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Abstract

Physical education (PE) is an academic subject that aims to promote physical fitness, healthy lifestyle habits, and overall well-being through physical activity and exercise. It emphasizes the development and maintenance of physical fitness and skills through sports, exercise, and games. Curriculum is a structured framework that facilitates learners in accomplishing specific learning goals and objectives, encompassing planned activities, materials, assessments, topics, skills, methods of instruction, and expected outcomes. The primary aim of this article is to reconnoiter the advantages and challenges of integrating PE into the curriculum. Secondary qualitative data, extracted from relevant books and journal articles, have been collected to support the study. The article concludes that incorporating PE into the curriculum significantly contributes to students' holistic development. PE imparts students with a profound understanding of the significance of regular physical exercise in reducing the risk of obesity, diabetes, cardiovascular disease, stress, anxiety, and depression. Furthermore, PE has the potential to enhance academic performance by improving concentration, memory, and creativity. This article plays a crucial role in advocating for equal importance to be given to PE alongside other subjects in the curriculum, both by inspiring students and guiding curriculum designers.

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1. Introduction

For years, there has been a contentious debate regarding the inclusion of physical education (PE) into the curriculum. Some educators firmly believe that PE is a crucial aspect of education, while others contend that it detracts valuable time from academic subjects. Now it has been realized that quality physical education ought to provide pupils the opportunity for physical development and movement as well as a suitable milieu for personal and social development (Konstantinos Goran, and Owe, 2011). Physical education is taught as a major subject in the Faculty of Education under Tribhuvan University, Nepal. It hasn't been integrated into the curricula of other faculties. Government and private schools in Nepal are not found to include Physical Education as a separate subject. Advanced countries have integrated PE into the school curriculum. Physical education, today, in the United States is taught from at least three different perspectives: recreational, public health, or educational (Ennis, 2010) ^[15]. Moreover, including students with disabilities in general education classes is now standard education policy in schools across the United States (McCay & Keyes, 2001) ^[41]. Similarly, the majority of Swedish pupils participate in the school subject Physical Education and Health (Lundvall & Meckbach, 2008; Redelius, 2004) ^[38]. Physical activities are essential for the sound mind in the sound body. A regular physical activity seems to promote self-esteem (Steptoe & Butler, 1996) and perceived physical self-esteem can be increased by activity programs (Fox, 2000; Lindwall, 2004) ^[16, 36]. Physical activity also increases the blood flow and the metabolism in the brain, which could result in a higher grade of arousal and attention (Shephard, 1997) ^[54]. Recent studies have revealed the numerous benefits of regular physical activity for students, encompassing improved academic

performance, better mental health, and enhanced social skills. Physical education should be considered one of the most important parts of the school curriculum (Aboshkair, 2022) [1].

It goes beyond just improving physical health; it also has a positive impact on mental and emotional well-being, reducing stress and anxiety, uplifting mood, and boosting self-esteem. Moreover, it plays a vital role in developing gross motor skills, coordination, and balance, making it indispensable for both the physical and cognitive well-being of students. Given the significance of physical activity, educational institutions like schools, colleges, and universities have a crucial role to play in promoting and encouraging students to adopt healthy habits. Prioritizing physical exercise in the daily routine of students becomes essential in ensuring their overall physical and mental fitness, leading to an efficacious and vigorous life.

The implementation of an effective physical education (PE) program at schools and colleges poses several challenges. One significant obstacle is the scarcity of qualified PE teachers, as many educational institutions lack enthusiastic individuals to lead these classes. Consequently, classroom teachers may be assigned the responsibility of conducting PE sessions, leading to inconsistencies and variations in program quality. Additionally, budget constraints often hinder schools and colleges from providing sufficient resources and equipment for PE classes, further exacerbating the challenge of delivering comprehensive and engaging physical education. Despite these hurdles, this article emphasizes the importance of integrating PE into the curriculum. Not only does it promote physical well-being, but it also offers numerous advantages for academic performance and mental and emotional health.

To ensure the success of PE programs, it becomes crucial to address the aforementioned challenges and offer the necessary support and resources to educational institutions. By doing so, we can foster the holistic development of students and instill lifelong healthy habits, contributing to their overall well-being.

2. Literature Review

The literature review delves into the current body of research and existing scholarly works that explore advantages and challenges of integrating physical education into the curriculum and its effects on students' overall development. It scrutinizes various studies and publications to gain insights into the subject matter.

2.1. Physical Education

Physical education (PE) focuses on nurturing physical fitness and skills through activities like games, exercise, and sports. The aim of PE is to enhance overall well-being, encompassing physical, mental, social, and emotional aspects, especially in children and young adults. PE programs encompass diverse activities to foster motor skills, coordination, flexibility, and endurance, while instilling knowledge of healthy lifestyle practices. In addition, PE plays a crucial role in fostering essential social and emotional competencies such as teamwork, communication, and self-assurance. Several studies have shown that PE can promote positive social interactions, teamwork, and communication skills (Lee & Kwon, 2019) [34], provide opportunities for students to cultivate leadership abilities and self-confidence (Gurney *et al.*, 2016), and serve as an outlet for releasing

energy and minimizing disruptive behavior in the classroom (Moore *et al.*, 2016) [40].

Students who engage in physical education classes exhibit fewer disciplinary issues compared to non-participating peers, as supported by research (Coe, Pivarnik, Womack, Reeves, & Malina, 2006) [81]. Physical education is an indispensable element of a comprehensive education, aiming to foster physical literacy and encourage lifelong physical activity (Whitehead, 2014) [63]. Notably, it has been linked to enhanced academic performance, cognitive function, and mental well-being (Sibley & Etnier, 2003) [55]. To be truly effective, inclusive physical education should cater to the diverse needs of all students, regardless of their abilities (Block & Burns, 1976) [4].

A successful physical education program should be evidence-based and aligned with national standards set by organizations like SHAPE America (2014) [52]. The curriculum should encompass a wide range of activities tailored to suit the interests and capabilities of students (Kahan, McKenzie, & Sallis, 2012) [49]. Physical education teachers play a pivotal role in promoting physical activity and healthy lifestyles (Lonsdale, Rosenkranz, & Sanders, 2013) [37]. Additionally, physical education can contribute to the prevention and management of chronic diseases such as obesity, diabetes, and heart disease (Caspersen, Powell, & Christenson, 1985) [5].

Regular participation in physical education has proven to yield benefits in multiple areas, including improved physical fitness, motor skills, and coordination (Sallis *et al.*, 2012) [49]. It also contributes to social and emotional development by fostering essential qualities such as teamwork, communication, and self-confidence (Lonsdale *et al.*, 2013) [37].

To be effective, physical education programs should include assessment and evaluation methods to monitor student progress and adapt instructional practices. This can promote cultural competence and understanding by exposing students to sports and activities from different cultures (Woods *et al.*, 2017). Moreover, physical education can play a role in preventing and addressing issues like bullying and substance abuse. By promoting positive social norms and healthy behaviors, it provides opportunities for students to learn about and practice healthy lifestyle habits, such as proper nutrition and stress management (Daley & Ryan, 2000). Furthermore, it encourages environmental awareness and stewardship through outdoor activities and sustainable practices (Kirk, 2013) [29].

PE programs typically encompass various activities, such as team sports, individual sports, fitness exercises, dance, and outdoor pursuits. The wide-ranging benefits of physical education include enhanced physical health, better academic performance, increased self-esteem and confidence, improved social skills, and reduced stress and anxiety.

Participating in regular physical activity can also have a positive impact on mental health, helping to reduce stress, anxiety, and depression, while enhancing mood and self-esteem (Singh & Dhamija, 2020) [56]. Research has also linked physical education to improved academic performance, particularly in math and science subjects (Castelli, Hillman, Buck, & Erwin, 2007; Donnelly & Lambourne, 2011) [6, 13]. Additionally, physical education provides ample opportunities for the development of gross motor skills, coordination, and balance, contributing to overall physical competence (Moore, Davis, & Newton,

2016)^[40].

2.2. Physical Exercise

Physical exercise involves engaging in activities that require the body to move and use energy. This includes walking, running, swimming, weight-lifting, cycling, and playing sports. There are three main types of physical exercise: aerobic exercise, strength training, and flexibility exercises. Aerobic exercise consists of activities that raise the heart rate and breathing, like running or cycling, which can enhance cardiovascular health and endurance. Strength training uses resistance, such as weightlifting, to build muscle strength and mass. Flexibility exercises focus on stretching to improve joint range of motion, leading to better balance and injury prevention. Regular physical exercise has been linked to a decreased risk of chronic illnesses like heart disease, diabetes, and certain cancers (Warburton, Nicol, & Bredin, 2006)^[62]. It can lower blood pressure, improve circulation and heart function (Lavie *et al.*, 2019)^[35], and increase bone density, reducing the risk of osteoporosis and fractures (Kohrt, Bloomfield, & Little, 2004)^[30].

Additionally, exercise can have positive effects on mental health, such as reducing symptoms of depression and anxiety (Craft & Perna, 2004)^[10]. It also improves sleep quality and reduces the risk of sleep disorders (Passos *et al.*, 2012)^[46] and enhances cognitive function, potentially lowering the risk of cognitive decline in older adults (Kramer & Erickson, 2007)^[33].

Furthermore, physical exercise enhances muscle strength, endurance, and flexibility, resulting in improved overall physical function. It supports healthy weight management by increasing energy expenditure and promoting fat loss (Swift, Johannsen, & Lavie, 2014)^[57]. Exercise also boosts immune function, reducing the risk of infectious diseases (Nieman, 1999)^[42], and contributes to an overall higher quality of life and increased longevity (Blair *et al.*, 1995)^[3].

Engaging in regular exercise has proven to be beneficial for overall health and can lower the risk of chronic illnesses like heart disease, diabetes, and obesity (Paffenbarger *et al.*, 1993)^[3]. It has positive effects on cardiovascular health by improving heart and lung function while reducing blood pressure and cholesterol levels (Kokkinos *et al.*, 2008)^[31]. Exercise also contributes to improved mental health (Dunn *et al.*, 2005)^[14] and cognitive function (Hillman *et al.*, 2008)^[21], enhances bone density (Wolff *et al.*, 1999)^[66], flexibility (Papa *et al.*, 2017)^[45], and sleep quality (Reid *et al.*, 2010)^[48]. Furthermore, it supports weight management (Swift *et al.*, 2014)^[57], elevates quality of life, and extends longevity (Blair *et al.*, 1995)^[3], while also reducing the risk of infectious diseases (Nieman, 1999)^[42].

For students, physical exercise holds great importance as it provides numerous benefits crucial for their physical and mental well-being. These aspects of well-being are essential for achieving better academic performances. Regular exercise can boost students' academic performance by enhancing their attention, memory recall, and creativity. This article explores the significance of physical exercise for students and discusses how educational institutions can promote physical activity to improve both the overall health and academic success of their students.

2.3. Activities Included in Physical Education

Physical Education (PE) is a field of education that aims to promote physical fitness, skill development, and overall

health through various physical activities. Physical activity is defined as any bodily movement produced by skeletal muscles that result in energy expenditure (Caspersen *et al.*, 1985)^[5]. Play is now considered part of the total learning experience rather than a diversion from academically respected experiences (Hoffman *et al.* 1981). The activities included in Physical Education can vary depending on the educational institution, grade level, and local curriculum standards. Some common activities often included in PE programs are:

Sports: Traditional team sports such as soccer, basketball, volleyball, football, baseball, and others are commonly taught in PE classes. These sports help develop teamwork, coordination, and strategic thinking.

Yoga and Stretching: Yoga and stretching exercises are included to enhance flexibility, balance, and relaxation.

Aerobics and Cardio Exercises: Activities that promote cardiovascular fitness, such as running, jogging, cycling, jumping rope, and aerobic exercises, are often included.

Gymnastics: PE classes may include basic gymnastic movements, tumbling, and floor exercises, which help improve flexibility, balance, and body control.

Strength Training: PE classes might include basic strength training exercises using bodyweight or lightweight equipment to improve muscular strength and endurance.

Physical Challenges: PE classes may incorporate fitness tests and challenges to track students' progress and motivate them to improve their physical fitness levels.

Adapted PE: Some PE programs cater to students with disabilities, providing modified activities to ensure inclusive participation.

Dance: Dance activities can involve different styles like folk dances, contemporary, hip-hop, or ballroom. Dance improves coordination, rhythm, and creativity.

Swimming: Some schools have access to pools and offer swimming as part of their PE curriculum, promoting water safety and overall fitness.

Outdoor Activities: Activities like hiking, orienteering, or obstacle courses can be used to promote outdoor skills and appreciation for nature.

Recreational Games: Various fun and recreational games may be included to engage students and encourage participation.

Health Education: Alongside physical activities, PE often includes lessons on nutrition, anatomy, physiology, and other health-related topics.

PE curricula may vary from one school or educational system to another. The activities included may be adapted based on factors like available facilities, student interests, and the overall goals of the PE program. The main objective is to foster a love for physical activity, promote a healthy lifestyle, and develop physical skills and fitness in students.

2.4. Mental Well-being

According to Keyes (2005) ^[28], physical exercise has the potential to boost mental well-being, which refers to a positive mental state characterized by happiness, contentment, and a sense of purpose. Aside from physical exercise, there are other factors that contribute to mental well-being. Creating supportive environments that foster positive mental health and resilience is essential for promoting mental well-being.

Mindfulness practices like meditation and yoga have been proven to be effective in enhancing mental well-being and reducing stress and anxiety (Kabat-Zinn, 2013) ^[27]. Positive psychology interventions, such as gratitude exercises and strengths-based approaches, can also improve mental well-being and increase resilience (Seligman & Csikszentmihalyi, 2000) ^[51]. Social support plays a significant role in predicting mental well-being; individuals with strong social networks are less likely to experience depression and anxiety (Cohen & Wills, 1985) ^[9]. Physical activity has been demonstrated to improve mental well-being by reducing symptoms of depression and anxiety while enhancing overall mood (Craft & Perna, 2004) ^[10, 11].

Cognitive-behavioral therapy (CBT), an evidence-based treatment for various mental health conditions, addresses maladaptive thought patterns and behaviors, leading to improved mental well-being (Beck, 1979) ^[2].

In the workplace, promoting mental well-being is vital in employee wellness programs and can lead to enhanced job satisfaction, productivity, and retention (CIPD, 2016). Resilience, the ability to adapt to adversity and recover from stress and trauma, is a crucial aspect of mental well-being and can be strengthened through various interventions and practices (Masten & Obradović, 2006) ^[39].

2.5. Physical Well-being

The World Health Organization (1948) ^[68] defines physical well-being as a state of optimal health and vitality characterized by the absence of disease, pain, or disability and the presence of positive physical health indicators. Engaging in regular physical activity has been proven to enhance physical well-being by reducing the risk of chronic diseases such as heart disease, diabetes, and obesity while improving cardiovascular and muscular fitness (U.S. Department of Health and Human Services, 2018) ^[61].

There are several factors that contribute to physical well-being, including adequate sleep, which supports the immune system, regulates metabolism, and improves cognitive function (Hirshkowitz, M. *et al.*, 2015) ^[22]. Nutrition also plays a crucial role in physical well-being, as a balanced diet can provide essential nutrients and energy necessary for optimal health and functioning. Maintaining a healthy weight is vital for physical well-being, as excess weight can increase the risk of chronic diseases and reduce overall quality of life (World Health Organization, 2016) ^[69]. Schools and colleges can promote students' physical well-being by incorporating physical education into their regular routines.

2.6. Advantages and Challenges of Integrating Physical Education (PE) into the Curriculum

Integrating Physical Education (PE) into the curriculum can offer numerous benefits for students, including improved physical health, enhanced cognitive function, and social development. Some of them are:

1. Engaging in regular PE classes leads to improved physical health, as students develop and maintain good physical fitness, resulting in enhanced cardiovascular health, muscular strength, flexibility, and overall well-being.
2. Research indicates that physical activity positively influences cognitive function and academic performance, with regular exercise being associated with improved memory, attention, and problem-solving skills, thus benefiting learning in other subjects.
3. Social development is nurtured in PE classes through teamwork, cooperation, and communication, which foster essential social skills and interpersonal relationships among students, providing opportunities for interactions with peers from diverse backgrounds.
4. Integrating PE into the curriculum offers an effective means of reducing stress and anxiety for students, enabling them to manage academic pressure and improve their mental well-being.
5. Encouraging physical activity from an early age establishes healthy habits for life, instilling a lifelong commitment to staying active and maintaining a healthy lifestyle, thereby decreasing the risk of chronic diseases in later life.
6. PE activities aid students in developing fundamental motor skills like running, jumping, throwing, and catching, which play a crucial role in their physical development.
7. Goal-setting in PE, where students set fitness objectives and work towards accomplishing them, instills discipline, self-motivation, and a sense of achievement.
8. Incorporating physical activity has been shown to enhance students' focus and attention in the classroom, leading to improved academic performance.
9. Engaging in physical activities during PE can reduce disruptive behavior in the classroom, as it provides an outlet for excess energy and helps students channel their emotions positively.
10. PE classes can promote inclusivity and body positivity by encouraging all students, regardless of their physical abilities or body types, to participate in various activities and feel comfortable and confident in their own bodies.
11. Team sports and group activities in PE provide students with opportunities to develop team building and leadership skills, enhancing their ability to work effectively in a team setting.
12. PE classes offer an enjoyable break from the routine of academic subjects, making school a more engaging and exciting place for students to learn and have fun.

There are several challenges associated with this integration. Some of the key challenges include:

1. Balancing the packed school curricula, including various subjects and standardized testing requirements, makes it challenging to allocate enough time for physical education (PE) when academic subjects take precedence.
2. Insufficient facilities, equipment, and qualified PE teachers pose obstacles to establishing a comprehensive PE program, highlighting the significance of resources in ensuring effective physical education activities.
3. The emphasis on academic performance and standardized test scores in education systems often results in the deprioritization of non-academic subjects, including PE.

4. Disparities in the quality of PE programs arise from unequal access to resources and funding among schools in different regions, impacting their ability to provide adequate opportunities for physical education.
5. The prevalence of sedentary lifestyles and technology usage diminishes students' interest in physical activities, leading to challenges in engaging them during PE classes.
6. Safety concerns in PE classes, which involve physical activities with inherent risks, necessitate schools to implement appropriate measures to protect students during these sessions.
7. Designing inclusive PE programs that cater to the diverse needs and abilities of students can be a complex task, requiring efforts to ensure every student feels comfortable and included in physical education.
8. The attitudes of parents and communities towards PE might not prioritize its importance in the curriculum, resulting in reduced support and advocacy for its integration.
9. The lack of adequate training and expertise among teachers in delivering effective PE lessons can significantly impact the quality of physical education and hinder students' progress.
10. Assessing the effectiveness of PE programs in terms of physical and cognitive outcomes proves challenging, particularly when compared to standardized academic evaluations.

Despite the challenges, integrating PE in the curriculum is crucial for promoting holistic student development, and overcoming these obstacles may necessitate collaborative efforts among school administrators, policymakers, parents, and communities to acknowledge the significance of PE and allocate the requisite resources and support for its successful implementation.

2.5. Curriculum

Curriculum, which is a well-organized set of educational activities intended to assist learners achieve specific learning goals and objectives, comprises the planned activities, materials, and assessments that make up a particular course. The curriculum normally outlines the topics and skills that will be covered, the methods of instruction and assessment that will be used, and the goals and outcomes that learners are anticipated to achieve. Curricula can vary widely across educational settings, reflecting differences in institutional goals, student needs, and available resources. Effective curriculum strategy takes into account the developmental stage of the learners, their prior knowledge and skills, and the context in which the learning will take place, in order to provide an engaging, meaningful, and relevant educational experience.

Curriculum development involves the design and implementation of educational programs that align with specific learning objectives and outcomes (Posner, 2004) ^[47]. Curriculum frameworks provide a structure for organizing educational content and resources to ensure that students are able to meet specific learning standards (Wiggins & McTighe, 2005) ^[65]. Curriculum mapping is a process used to align instructional practices with the intended learning outcomes of a curriculum (Jacobs, 1989) ^[24]. The development of a comprehensive curriculum requires collaboration among educators, administrators, and

stakeholders to ensure that learning objectives are met (Tyler, 1949) ^[60]. The development of an effective curriculum requires ongoing assessment and evaluation to ensure that learning objectives are being met (Scriven, 1991) ^[50]. The selection of instructional materials is an important aspect of curriculum development, as it directly impacts the learning experiences of students (Shavelson, *et al.*, 1976) ^[53].

Apart from organized physical activity programs, educational institutions like schools and colleges can encourage physical activity by establishing a supportive environment that fosters healthy habits. For instance, they can offer nutritious food choices in the school cafeteria, advocate for walking or biking to school, and motivate students to have active breaks throughout the school day. Collaborating with parents and community organizations can further enhance efforts to promote physical activity and healthy lifestyles beyond the regular school hours.

3. Method and Materials

This article endeavors to assess and consolidate existing research and literature regarding the significance of incorporating physical education into the curriculum and its impact on students' overall development. The authors conducted an analysis and synthesis of previously published studies and reports related to this subject. To achieve this, the authors utilized secondary qualitative data in the form of words and sentences. Various academic databases, including PubMed, Google Scholar, and Google search, were explored to find relevant studies and literature published in books and journal articles. The article comprises a critical analysis and synthesis of materials such as curriculum, mental well-being, physical well-being, physical education, and academic performance, aiming to inform future research and practices in the field.

4. Conclusion

Extensive research and literature support the compelling case for incorporating physical education into the curriculum. It offers a multitude of benefits, encompassing physical health, mental well-being, academic performance, social and cultural awareness, injury prevention, and lifelong healthy habits. By being part of the curriculum, physical education can contribute to improved overall physical fitness, reduced risk of chronic health conditions, the promotion of healthy lifestyle habits, and the alleviation of stress, anxiety, and depression. Additionally, it enhances mental well-being, boosts academic performance through improved concentration, memory, and cognitive function, and fosters social skills and teamwork through cooperative play and group activities. Moreover, it introduces students to diverse physical activities and sports from various cultures, teaching proper techniques and safety precautions while reducing the risk of injury. Nonetheless, challenges exist in effectively implementing physical education programs in schools, such as a shortage of qualified PE teachers and financial limitations. To address these hurdles, potential solutions include incorporating technology and innovation in PE programs and ensuring a well-trained and qualified teaching staff. The literature review underscores the vital role of physical education in fostering students' holistic development and advocates its integration into the curriculum. Future research should concentrate on identifying best practices and effective strategies to implement and enhance physical education programs, particularly in underserved

communities. Policymakers must prioritize funding and resources to support high-quality physical education in schools. By prioritizing and investing in physical education, we equip students with the skills and knowledge needed to lead healthy and fulfilling lives.

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