



THE IMPACT OF IB PHYSICAL AND HEALTH EDUCATION CURRICULUM ON STUDENTS' PHYSICAL LITERACY AND SOCIAL SKILLS DEVELOPMENT FOR A HEALTHY LIFESTYLE

Oluwaseyi Olubunmi Sodiya¹,

Turkan Nabiyeva²ⁱ

¹Doctor of Philosophy in Organisation and Planning of Education,
Faculty of Natural Science, Arts and Technology of Higher Education,
Khazar University,
Baku, Azerbaijan

Web of Science Researcher ID: AFI-0829-2022

orcid.org/0000-0002-0152-723X

²MYP Coordinator,
Khazar University Dunya School,
Baku, Azerbaijan

orcid.org/0009-0006-0988-7041

Abstract:

The distinction between regular physical education and international baccalaureate physical and health education is significant. The IB Physical and Health Education curriculum promotes the holistic development of students, encompassing their mental and emotional well-being, physical fitness, and social skills. The IB curriculum focuses on the promotion of a healthy lifestyle, the cultivation of lifelong habits, and the development of physical literacy. The Department of Physical and Health encountered a number of challenges as it transitioned to the International Baccalaureate (IB) physical and health education curriculum. Examples include student participation, grasp of the subject's criteria, teachers' comprehension, and the development of unit topics. The purpose of this study is to investigate the influence that the International Baccalaureate (IB) curriculum has on the development of students' physical literacy and social skills in order to promote a healthy lifestyle. The research participants (students, n = 391) enrolled in the middle-year programme (MYP 1-4). We used an exploratory sequential mixed-methods research methodology for data collection. We collected data using a variety of methods, such as questionnaires, focus group interviews, student performance tracking systems, and observation. Descriptive and inferential statistical analyses were used to arrive at the results of the study. The findings indicated that, following the initial year of the transition, students exhibited a heightened comprehension of their personal physical fitness and well-being. There was a notable increase in student engagement, and students were also able to use the service as the action of their unit to implement action projects

ⁱ Correspondence: email oluwaseyi.sodiya@khazar.org, t.nabiyeva@dunyaschool.az

aimed at promoting physical activity within the school community. Increased physical fitness, increased self-assurance, and a better grasp of the importance of maintaining a healthy lifestyle are all components of students' development observed over the academic years 2022–2023. In conclusion, this research suggests that the IB MYP physical and health education curriculum provides an integrated approach to physical education. That goes beyond simple physical activity. It promotes comprehensive development and lifetime health.

Keywords: healthy lifestyle, physical literacy, physical activity, physical education, IB-curriculum, well-being

1. Introduction

The International Baccalaureate (IB) Physical and Health Education curriculum aims to enhance students' physical literacy by engaging them in a diverse range of activities and sports. Likewise, it emphasizes the importance of cultivating social skills to foster cooperation, effective communication, and collective effort in order to adopt a comprehensive approach to a wholesome way of life. According to Dever (2019), the International Baccalaureate represents a continuum that encompasses four distinct programmes that not only fulfil the overarching objectives of the IB but also cater to the specific and individual requirements of the students at each level. Studies have indicated that students who participate in the International Baccalaureate (IB) Physical and Health Education programme exhibit superior levels of physical literacy and social skills in comparison to their classmates. The IB Physical and Health Education curriculum provides chances for students to contemplate their learning and establish personal fitness objectives, promoting a feeling of accountability for their own well-being. It empowers students by fostering their sense of responsibility for their overall wellness and physical development, enabling them to make advantageous decisions that can significantly impact their lives in the long term. The study of Skrzypiec *et al.* (2014) states that IB MYP schools actively strive to foster the development of empathy, a global self-concept, peer relationships, school relationships, self-reflection, adaptability, and confidence in their students. Only a small percentage of IB MYP students demonstrated a low degree of well-being. The comprehensive nature of the IB Physical and Health Education course not only ensures that students are well-prepared for physical activities and sports but also provides them with essential life skills that will be advantageous in different areas of their lives. The third key component of the IB MYP programme, known as Creativity, Action, and Service (CAS), centres around the arts, innovative thinking, physical activity, and community service. This programme fosters students' curiosity to investigate their passions, cultivate aptitudes, and make constructive contributions to their communities, equipping them for triumph in both scholastic and personal endeavours (Saxton & Hill, 2014, p.46).

Physical literacy includes proficiency and self-assurance in a range of physical pursuits, whereas social skills encompass the ability to communicate effectively, cooperate with others, and demonstrate empathy. Both factors are critical for achieving optimal physical and mental health, as well as achieving one's goals and accomplishments. As individuals cultivate their physical literacy, they concurrently improve their social aptitude by engaging in collaboration, effective communication, and cooperative behaviour. Engaging in team sports cultivates leadership skills, promotes collaboration, and enhances dispute-resolution abilities. The integration of physical literacy and social skills nurtures individuals who possess a comprehensive set of abilities and are adept at excelling in all facets of life. For instance, we could instruct students to monitor their daily physical activity and eating decisions, and then consider the impact of these choices on their overall well-being. This process promotes a more profound understanding of the link between students' lifestyle choices and physical well-being, helping them make more judicious decisions in the future. However, a student who engages in the curriculum fails to see any enhancement in his or her physical well-being despite adhering to all the rules and monitoring their exercise and diet. This may result in feelings of disappointment and disillusionment, which might deter people from persisting in their efforts to prioritise their health and well-being. The proficiency of certified IB physical and health education instructors is crucial in assisting students in surmounting challenges and modifying their objectives in a pragmatic and attainable manner. The IB physical and health education teacher (IBPHET) should be able to provide individualised instruction and encouragement to help students overcome obstacles and maintain their drive to achieve their health and fitness objectives. The teacher should apply their experience to help students acquire the ability to modify their approaches and concentrate on the advancements towards achieving their goals rather than becoming dejected by temporary obstacles. This is one of the reasons IB School places more emphasis on having a certified IBPHET to assist students in developing resilience and a growth mentality, which will have long-lasting advantages even after their involvement in physical and health education lessons. In this current study, we identify several issues at the Department of Physical and Health before and during the transition to the International Baccalaureate Curriculum. Some of the problems include low student engagement, limited understanding of subjects due to a lack of unit clarity, teachers' skills, and the formulation of unit themes. Students frequently have difficulties with motivation, self-confidence, and establishing achievable goals.

Pakhalchuk & Holyuk (2018) affirm that it is crucial for teachers to provide students with the necessary skills and tools to overcome these obstacles and maintain their enthusiasm. Teachers may encounter challenges in developing health-promoting and health-enhancing educational activities during physical education sessions due to their limited understanding of the overall environment for students and adolescents. By addressing these concerns, students may cultivate essential life skills, foster a constructive mindset, and attain triumph in physical and health education, thereby enhancing their physical and mental well-being. This study investigates the influence of

the International Baccalaureate (IB) curriculum on students' physical literacy and social skills, with the goal of fostering a healthy lifestyle and general well-being. The goal is to understand how educational programs can facilitate comprehensive student development, providing educators and policymakers with valuable perspectives on how to improve the quality of physical and health education in schools. In this study, we explore the correlation between the cultivation of a positive mindset through physical and health education in the IB programme and its impact on students' achievements in several domains, including academics and personal growth, and how it promotes students' physical literacy. It is crucial for teachers to provide students with the necessary skills and tools to overcome these obstacles and maintain their enthusiasm. Teachers may encounter challenges in developing health-promoting and health-enhancing educational activities during physical education sessions due to their limited understanding of the overall environment for students and adolescents. By addressing these concerns, students may cultivate essential life skills, foster a constructive mindset, and attain triumph in physical and health education, thereby enhancing their physical and mental well-being. This study investigates the influence of the International Baccalaureate (IB) curriculum on students' physical literacy and social skills, with the goal of fostering a healthy lifestyle and general well-being. The goal is to understand how educational programs can facilitate comprehensive student development, providing educators and policymakers with valuable perspectives on how to improve the quality of physical and health education in schools. In this study, we explore the correlation between the cultivation of a positive mindset through physical and health education in the IB programme and its impact on students' achievements in several domains, including academics and personal growth, and how it promotes students' physical literacy. Regular physical activity (PA) can contribute to the development of social skills and enhance self-esteem, which is often considered a significant factor in promoting overall positive well-being (Smedegaard *et al.*, 2016). To what degree does physical and health education in the IB curriculum promote the personal development and physical literacy of students? Are there any differences in students' Term 1 and Term 2 assessment criteria scores for physical and health education?

2. Literature Review

2.1 Theory of Change

According to Pollack (2015), the subject of dealing with change is gaining more importance in the field of project management study and application. The Theory of Change approach is a systematic framework that assists organizations in delineating the necessary stages to achieve their intended objectives. The institutions may enhance their ability to monitor progress and assess effects by precisely delineating long-term goals and objectives, as well as short-term plans and actions. This technique is particularly useful in complex situations where several factors have an impact, as it helps identify the primary catalysts of change and the necessary actions to achieve enduring

transformation. As stated in Vogel (2012, p.4), the Theory of Change approach ultimately enables organisations to be more strategic and deliberate in their endeavours to generate beneficial societal transformation. The theory of change is a continuous process of introspection aimed at understanding the nature of change and its implications for our role within a certain setting, sector, or group of individuals. A Theory of Change is a purposeful framework that explains how a certain commitment, such as a plan of action, policy, strategy, or project, attains its desired outcome through a sequence of initial and intermediate outcomes. Change theories facilitate the exploration of the complexity of social changes (Serrat, 2017). The incorporation of the Theory of Change into the school's physical and health education curriculum is essential to ensure that students have the requisite information and abilities to make well-informed decisions regarding their health and overall well-being.

3. Conceptual framework

The conceptual framework displayed the Theory of Change on the implementation of IB physical and health education's impact on the development of students' physical literacy and social skills. The goal of this framework is to provide a comprehensive understanding of how International Baccalaureate (IB) physical and health education can improve students' overall well-being. The framework emphasises the significance of combining physical education with health education to foster a comprehensive approach to student well-being. By prioritising the development of both physical literacy and social skills, students may enhance not only their physical well-being but also foster strong connections and effective communication abilities. This comprehensive approach ensures students have the necessary tools to navigate and sustain physical and mental well-being throughout their academic journey and beyond.

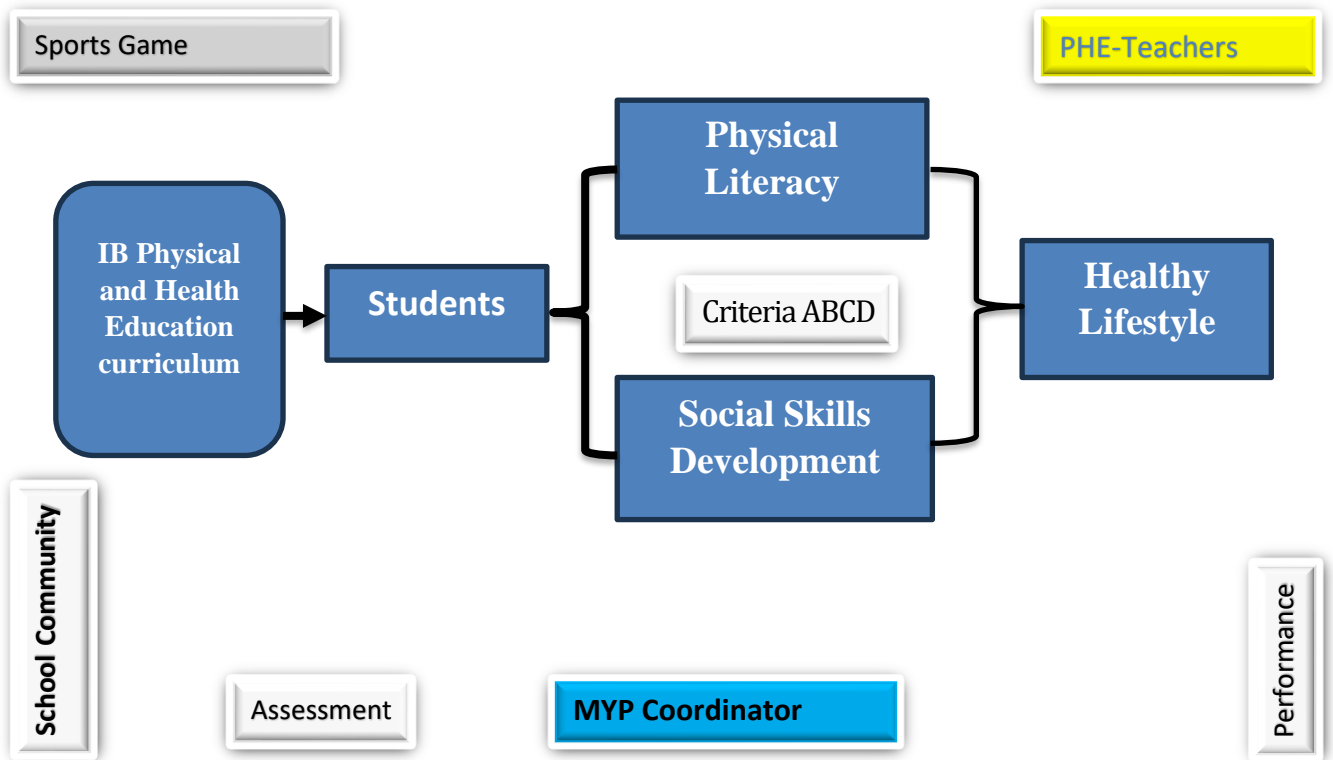


Figure 1: Conceptual framework impact of IB physical and health education curriculum on students' physical literacy and social skills development

4. The effects of physical education on physical literacy

The study by Pulimeno *et al.* (2020) The study found that the implementation of effective preventive measures within educational institutions should strive to increase students' inclination to internalize health knowledge and cultivate critical thinking skills among young people concerning the adverse consequences of common life-threatening behaviour. According to Harvey *et al.* (2014) holding the belief that sports education presents a potential avenue for the literacy development of young individuals. Recreational athletes and the cultivation of moral conduct can be promoted by educating and, when necessary, critiquing a specific form of ethical behaviour that has been established mainly by adults.

Packham & Street (2019) observed that certain middle school students often experience a decline in school-related motivation and engagement during adolescence, leading to inadequate academic performance. Students' perceived lack of self-determination may account for a portion of this. Several students feel obligated to adhere to external regulations, concentrate on external curricula, and consistently submit to external assessments throughout their academic careers. Physical literacy has been highlighted as a crucial quality that enables students of all capacities to develop an enduring commitment to physical activity (Behzadnia *et al.*, 2018). According to several

studies, students' motor abilities, coordination, and general health are all positively impacted by frequent physical exercise. Furthermore, exercise has been associated with enhanced cognitive function and concentration. Thus, it makes sense that physical education classes can help students succeed in the classroom. In addition, studies have shown that PE can lower the odds of developing chronic conditions, including diabetes, heart disease, and obesity. Incorporating physical education into the school curriculum is crucial for promoting a healthy and active lifestyle among children, as these studies demonstrate. Schools play an essential role in promoting physical activity and healthy lifestyle choices among students by highlighting the benefits of regular physical activity and offering students many opportunities to engage in such activities. Not only can exercise improve physical health, but it also has a favourable effect on mental health by lowering anxiety and stress levels. Students' physical health, academic performance, and mental health are all improved when PE classes are a regular part of the school day. Every school curriculum must include physical education classes because of the obvious impact they have on students' health and well-being.

4.1 The relationship between physical activity and social skills

Various studies have shown that students' proficiency in communication, collaboration, and conflict resolution improves when they engage in regular exercise. Reinders *et al.*, (2019) Research has established a correlation between social skills and physical activity in typically developing individuals. Physical education classes provide adolescents with a priceless opportunity to enhance their psychomotor, emotional, and social growth. (Primo *et al.*, 2023). Due to the increasing importance of personal and professional relationships in contemporary society, this is now more vital than ever before. Incorporating physical education (PE) into the school day allows instructors to help children develop a solid foundation for future achievement by addressing their physical and social well-being. Also stated by Kemel *et al.* (2022), the majority of research has identified a correlation between physical activity and positive outcomes pertaining to physical, mental, and social well-being. Also supported by Eather *et al.* (2023), sports comprise a subset of physical activity that has the potential to yield significant advantages for adults' physical, mental, and social well-being, both in the short and long term. Moreover, children who engage in regular physical activity typically have enhanced mental well-being, characterised by heightened feelings of self-esteem and confidence. Physical education is a crucial component of comprehensive education due to its benefits extending beyond physical health. Physical education not only teaches children how to engage in physical activities such as running laps and playing sports but also imparts important life skills such as leadership, resilience, and teamwork. In the current intricate context, where the value of collaboration and determination is high, possessing these skills is essential. On the other hand, Colombo-Dougovito & Lee's (2021) Study findings establish a fundamental basis for the development of efficacious physical activity-based interventions that could potentially enhance the social competencies of people with autism. The findings of the study by Valencia *et al.* (2023) support the idea

that allowing adolescents to engage in and benefit from leisure and recreation actively facilitates improved social skill management and coping, or, alternatively, functions as a containment mechanism during youth crises or social coexistence. Engaging in physical education and other physical activities is a commendable approach for schools to promote healthier lifestyles and cultivate essential skills that will have long-term advantages for children. PE is an essential component of a comprehensive education that prepares students for long-term success.

4.2 The impact of IB physical and health education curriculum

Studies have indicated that children who engage in these activities not only exhibit enhanced physical fitness but also exhibit elevated levels of academic accomplishment and general well-being. As seen in Lynch & Soukup (2017), physical education (PE) is characterised as *"the sole curriculum subject that integrates a values-driven learning and communication with physical competence and physical development."* According to Resnik, (2012), the aspiration of the IB curriculum is to equip students with the competencies deemed essential for success in the international labour market. This may account for the high enrollment of students from middle- and upper-class households in IB schools. This integration serves as an educational gateway to cultivate the necessary skills for achieving success in the twenty-first century. The emphasis on collaboration, effective communication, and critical thinking in physical education classrooms directly contributes to achievement in academic settings and beyond. Moreover, the focus on creating objectives and maintaining determination in the IB physical education curriculum enables students to cultivate the tenacity required to surmount obstacles in both their academic and personal spheres. Educators can ultimately respond actively to the two distinct education systems with regard to curriculum organisation, teaching approaches, assessment methods, and educational progression by employing innovative pedagogies through the implementation of the IBMYP (Hung & Liu, 2023).

According to Ip *et al.* (2017), the school environment may have an impact on childhood obesity, but previous research has frequently concentrated solely on the dietary environment. Schools must acknowledge the importance of physical education and maintain comprehensive programmes that promote the overall development of their pupils. By doing this, teachers may assist in equipping kids for success in both academic and non-academic settings. According to Dickson (2019), in addition to providing the curriculum, IB programmes facilitate the development of a variety of skills in students by fostering an understanding of global contexts and conceptual teaching and learning. Saxton & Hill (2014) affirm that IB students exemplify community diversity not only in their academic pursuits but also in their international travels and online interactions. They recognise the significance of diverse viewpoints in their engagement with the expanding cultural leadership, individual development, and empathy fostered by community service. In summary, the advantages of implementing a robust physical education curriculum are evident, and educational institutions should maintain their focus on this crucial component of student growth. By integrating physical education into

the school curriculum, children not only enhance their physical well-being but also cultivate crucial life skills that will be beneficial to them eventually. The knowledge acquired in physical education classes extends beyond mere physical activity and may contribute to students' success in other aspects of their lives.

5. Methodology

The research study employed an exploratory sequential mixed-methods approach during the data collection phase. We used the students' summative assessment criteria (ABCD) to gather both quantitative and qualitative data on their self-ratings, experiences, and perceptions. The integration of quantitative and qualitative data enabled a more comprehensive understanding of the impact of the IB Physical and Health Education Curriculum on students' physical literacy and social skills development for a healthy lifestyle. By incorporating mixed methods into a single study, one can strengthen and expand the scope of the investigation (Creswell *et al.*, 2006). A total of 391 middle-year programme students of (MYP 1-4) number of (boy $n = 43$, girls = 37) total MYP 4 students ($n = 81$) as seen in Table 2 MYP 4 students participants frequency. The participants were chosen for this research due to their successful completion of the two-academic year transition period for IB physical and health education.

5.1 Data Analysis and Findings

Observational results suggested that in order to increase female participation in PHE classes, more compelling activities might be required. We could implement potential activities such as meditation sessions, team-building exercises, or dance classes, which cater to a more diverse array of interests. We can help ensure that every student has the chance to gain knowledge and develop skills that are beneficial to them through physical and health education by offering a greater variety of inclusive and diverse options. All individuals will benefit from a more balanced and rewarding educational experience, so it is crucial to create an environment where every student feels comfortable and encouraged to participate. See Table 1 below for the Pre-IB Physical and Health Education Transition observation and need assessment.

Table 1: Pre-IB Physical and Health Education Transition observation for need assessment

Observation Checklist	Findings
Teachers' teaching approach	The pedagogical approach employed by teachers significantly influences students' perspectives on the development of social skills and physical literacy. Educators have the ability to cultivate favourable student outcomes and instil constructive conduct by integrating interactive and thought-provoking pedagogical approaches. According to Syrmpas & Digelidis (2014), the study's results validated the beliefs held by student teachers regarding the learning process of their pupils, which were shaped by their own experiences as pupils. This study emphasizes the need for ongoing professional development for teachers to effectively implement the IB physical and health education curriculum and support students in achieving their health and wellness goals.
School environment	The influence of the school environment on the attitudes and behaviours of students with regard to health and wellness is significant. Motivated and engaged students are more likely to participate in physical and health education when educators place an emphasis on fostering a positive and supportive school environment. This results in improved academic achievement and the general welfare of the students. The school environment was conducive; however, the teachers needed to manage the space and improvise to provide the students access to quality PHE lessons. Students' intention to participate in physical and health education is associated with the environment and equipment (Prins <i>et al.</i> , 2010; Ip <i>et al.</i> , 2017).
Students' attendance	The attendance of students in health and physical education classes is critical to their development and success as a whole. Teachers can assist students in comprehending the significance of adopting a healthy lifestyle and making constructive decisions by delivering lessons that are both thought-provoking and appropriate. Throughout the observation period, it was determined that there has been a decrease in student participation in Physical and Health Education (PHE) classes, with a majority of the participants being male students. Girls had much lower participation rates. The boys engaged in football, while the girls passively occupied themselves by remaining sedentary or wandering inside the school premises.
Students understanding of PHE	Student PHE is limited to playing football for the class; they only participate if teachers allow it. They frequently sustain injuries from kicking the ball around without a warm-up or following proper PHE lesson protocol. There was no implementation of the fundamental understanding of game or sports terminology prerequisite, and there was no assessment in place for tracking the student's progress.

Table 2: MYP 4 Students Participants Frequency

Participants		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	43	53.1	53.8	53.8
	Female	37	45.7	46.3	100.0
	Total	80	98.8	100.0	
Missing	System	1	1.2		
Total		81	100.0		

The Students Physical Literacy Assessment Criteria Term 1 Criterion A (M = 2.00, SD = 3.20). Criterion B (M = 1.71, SD = 3.05), Criterion C (M = 5.75, SD = 2.88) and Criterion D (M = 1.81, SD = 3.057). The Students Physical Literacy Assessment Criteria Term 2 Criterion A (M = 5.33, SD = 2.115). Criterion B (M = 5.41, SD = 2.254), Criterion C (M = 6.59, SD = 1.867) and Criterion D (M = 5.61, SD = 2.047) as seen in Table 3 and Table 4 below.

A. Term 1

Table 3: Mean and Std. Deviation Statistics for
 Students Physical Literacy Assessment Criteria Term 1

	N	Sum	Mean	Std. Deviation
MYP 4 students	80	116	1.45	.501
Criterion A	80	160	2.00	3.202
Criterion B	80	137	1.71	3.053
Criterion C	80	460	5.75	2.884
Criterion D	80	145	1.81	3.057
Valid N (listwise)	80			

B. Term 2

Table 4: Mean and Std. Deviation Statistics for
 Students Physical Literacy Assessment Criteria Term 2

		MYP 4 students	A-Knowledge and Understanding	B-Planning for Performance	C-Applying and Performing	D-Reflecting and Improving Performance
N	Valid	80	80	80	80	80
	Missing	1	1	1	1	1
Mean		1.46	5.33	5.41	6.59	5.61
Std. Deviation		.502	2.115	2.254	1.867	2.047

A mean comparison analysis was performed to assess whether there were any notable differences in the test scores of students with different criteria in terms of their physical literacy level between Term 1 and Term 2 in 2022/2023 academic year. The analysis revealed a statistically significant improvement in test scores from Term 1 to Term 2 across all criteria (ABCD) as presented below in Figure 2 Mean Comparison 'Term 1', 'Term 2' by 'Assessment Criteria'.

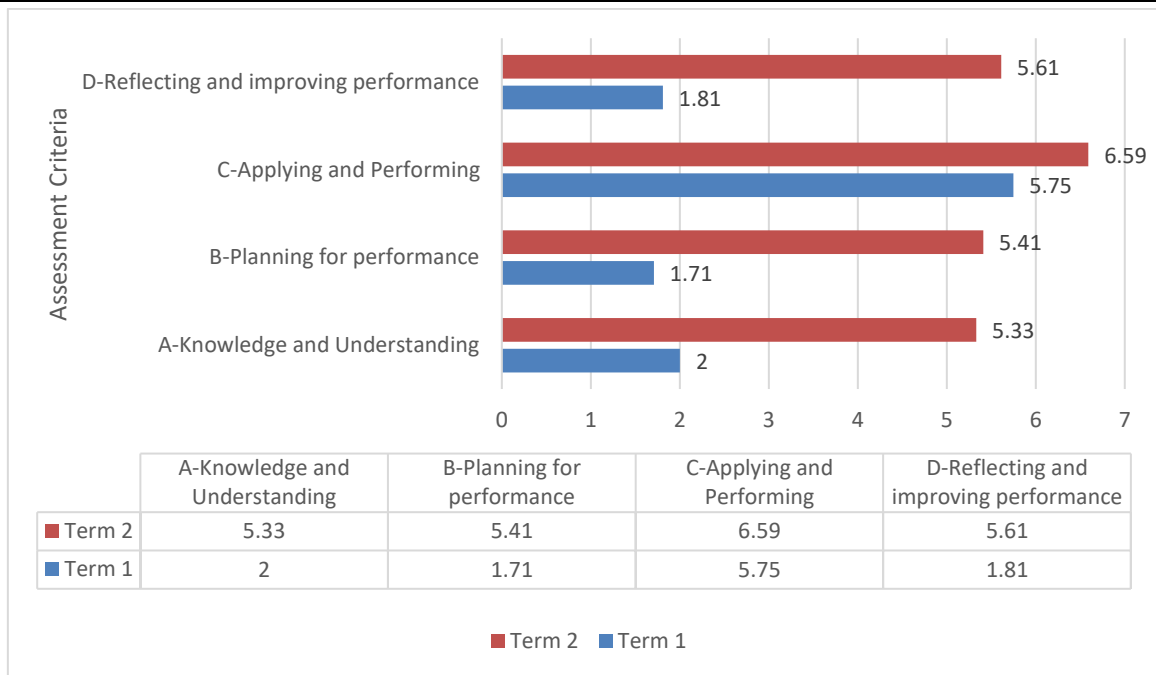


Figure 2: Mean Comparison 'Term 1', 'Term 2' by 'Assessment Criteria'

We performed a Pearson correlation analysis on term two criteria ABD. The results demonstrate a strong positive connection among criteria A, B, and D, suggesting that students who demonstrate exceptional performance in one area are very likely to achieve success in other areas as well. This implies that the wide range of choices available in physical and health education have a positive impact on the holistic growth of students. The two variables were strongly correlated, $r = .858$, $N = 80$. Correlation is significant at $p < .01$. All the results are shown below in Table 5.

Table 5: Pearson Correlation Term 2 Criterion ABD

		Criterion B	Criterion D	Criterion A
Criterion B	Pearson Correlation	1	.894**	.858**
	Sig. (2-tailed)		.000	.000
	Sum of Squares and Cross-products	401.388	325.787	323.275
	Covariance	5.081	4.124	4.092
	N	80	80	80
Criterion D	Pearson Correlation	.894**	1	.825**
	Sig. (2-tailed)	.000		.000
	Sum of Squares and Cross-products	325.787	330.987	282.075
	Covariance	4.124	4.190	3.571
	N	80	80	80
Criterion A	Pearson Correlation	.858**	.825**	1
	Sig. (2-tailed)	.000	.000	
	Sum of Squares and Cross-products	323.275	282.075	353.550
	Covariance	4.092	3.571	4.475
	N	80	80	80

** . Correlation is significant at the 0.01 level (2-tailed).

6. Discussion and Conclusion

The goal of the International Baccalaureate's Physical and Health Education curriculum is to improve students' physical literacy through active participation in a wide range of sports and activities. Similarly, it emphasizes the importance of developing interpersonal abilities to promote collaboration, efficient idea exchange, and group endeavour with the intention of embracing a comprehensive approach to a healthy lifestyle. This inquiry concerns the strategies employed by educational administrators to overcome obstacles during the implementation of cutting-edge international curricula, specifically International Baccalaureate (IB) programmes (Walker & Lee, 2018).

6.1 To what degree does physical and health education in the IB curriculum promote the personal development and physical literacy of students?

Physical activity devoid of supervision and structure may expose students to a greater risk of injury. Adhering to PHE lesson protocols and incorporating appropriate warm-up routines can prevent these injuries. Furthermore, integrating game terminology and implementing assessments can significantly improve students' comprehension and advancement in physical education. The IB curriculum's emphasis on health and physical education is pivotal in fostering students' personal growth and physical literacy. The findings of this study suggest that the implemented educational initiatives and support systems were successful in facilitating the improvement of student's physical literacy abilities during the transition to the IB curriculum, as seen in Table 1. It is critical to maintain a steadfast commitment to monitoring and analysing student performance in order to guarantee that teachers and students are provided with the essential academic support and motivation required to flourish. Consistently prioritising the establishment of an inclusive and supportive educational setting will ensure that all students continue to experience favourable progress and development supported by the study of Hung & Liu (2023).

Finally, through the implementation of the IBMYP, teachers are able to actively respond to the two distinct education systems in terms of curriculum organisation, teaching approaches, assessment methods, and educational progression by using innovative pedagogies. The observational report identified a number of issues, including classroom disruptions, teachers' teaching approach, students' lack of knowledge regarding physical and health education, female students' participation, and students' physical fitness development. However, there was a notable surge in the student's engagement in physical activities and physical fitness levels following terms one and two of the academic year after the implementation of the IB physical and health curriculum. As an example of the strategies implemented by the school administration to resolve these issues, workshops were organised for teachers to improve their teaching methods and classroom management skills. Furthermore, in an endeavour to improve the learning environment, the institution updated its facilities and resources. As a result of teachers' professional learning community interventions, the students demonstrated a significant

improvement in their physical fitness levels and increased participation in physical activities both inside and outside of school (Lin *et al.*, 2018).

6.2 Are there any differences in students' Term 1 and Term 2 assessment criteria scores for physical and health education?

To address this question, it is critical to conduct a comprehensive analysis of the evaluation criteria for both Term 1 and Term 2 in order to detect differences in the scoring process. When comparing assessment results between terms, it is essential to consider characteristics such as student participation, progress over time, and adherence to instructional procedures. Teachers may offer specific comments and assistance during a thorough assessment to improve students' performance in physical and health education over the course of the academic year. The data analysis reveals that students' term two grades indicate that they have demonstrated progress in their motor skills and comprehension of health concepts across the criterion ABCD throughout the academic year 2022-2023. See (Figure 2) Mean Comparison 'Term 1', 'Term 2' by 'Assessment Criteria'. The progress may be attributed to the IB physical and health education curriculum implemented, teachers' professional development in developing lesson plans and units that allow the students to explore the key concepts, factual, procedural, and conceptual knowledge of each unit, students' effort in their classes, as well as the teachers' successful teaching tactics. We also performed a correlation analysis to find out how the International Baccalaureate Physical and Health Education Curriculum affected students' physical literacy and the development of social skills for a healthy lifestyle and reinforced their progress in physical literacy for students' growth (Pulimeno *et al.*, 2020).

6.3 Is there a correlation between student criteria (ABD scores) in term 2 of the academic year 2022-2023?

We conducted a correlation analysis to determine how the International Baccalaureate Physical and Health Education Curriculum affected students' physical literacy and the development of social skills for a healthy lifestyle by analysing students' ABD assessment scores. The correlation analysis result was significant at the $p < .01$ across all the variables, as seen in Table 5. Pearson Correlation Term 2 Criterion ABD it will be crucial for instructors to persist in evaluating students' progress and offering focused assistance to guarantee ongoing development and achievement in physical and health education. The efficiency of physical education classes, as well as the physical literacy and involvement of students in physical activities, are heavily influenced by the self-efficacy and physical literacy of teachers (Sum *et al.*, 2018). Through fostering collaboration with students and providing tailored feedback and assistance, educators may facilitate the realisation of each individual's maximum potential and attainment of academic achievement in these crucial areas of study.

6.4 Focus group interview

During the focus group interview, students articulated their comprehension of the four criteria in IB physical and health education, as well as the interconnectedness of these criteria within the context of their personal learning experiences. The programme not only enhanced their athletic ability but also imparted vital social skills such as teamwork, communication, and empathy. The students expressed how engaging in physical activities and acquiring knowledge about health and wellness have had a beneficial effect on their general well-being and outlook. The aim is to enhance students' well-being, knowledge, academic achievement, and motivation to continue engaging in physical activity outside of physical education classes (Behzadnia *et al.*, 2018). In summary, the focus group interview emphasised the significance of a comprehensive approach to education that prioritizes both physical and mental well-being. They discussed the service learning projects they engaged in and how they facilitated the growth of their empathy and a sense of belonging to a community. They initiated a school community initiative focused on promoting awareness about the significance of participating in physical activities within the school community. This endeavour resulted in a notable rise in student involvement and general well-being. According to Skrzypiec *et al.* (2014), IB MYP schools are actively working towards fostering the following attributes in IB MYP students: introspection, perseverance, interpersonal connections, institutional connections, and self-assurance. In addition, only a small proportion of IB MYP students had below-average levels of well-being.

7. Implication of study

The International Baccalaureate Physical and Health Education Curriculum affected students' physical literacy and the development of social skills for a healthy lifestyle by emphasising the importance of regular physical activity and promoting positive behaviour choices. Students were able to explore each unit through a variety of engaging and interactive activities designed to enhance their understanding and encourage participation.

The IB physical and health education curriculum's four assessment criteria provided students with a comprehensive evaluation of their progress and achievement in the subject. They were able to use the knowledge they acquired in criterion (A) to demonstrate their understanding of health concepts and their skills in a variety of physical activities; they designed a plan in criterion (B) to prepare themselves for performance in criterion (C); and they were able to reflect on their performance for future improvement in criterion (D) to enhance their overall physical fitness and well-being.

8. Conclusion

In conclusion, this study emphasises the significance of student well-being in attaining academic achievement and the overall beneficial influence of the International

Baccalaureate Physical and Health Education Curriculum on students' physical literacy and the cultivation of social skills for a healthy way of life. Through the integration of diverse physical activities and mindfulness techniques, students saw improvements in both their physical well-being and cognitive capacities. This all-encompassing method of teaching not only enhances students' academic performance but also equips them with the necessary skills and knowledge for a prosperous and fulfilling life. In the future, it is important for schools to maintain a focus on the holistic welfare of students in order to guarantee their maximum development academically and personally.

8.1 Recommendation

This study reaffirms that the implementation of IB physical and health education in schools is essential for the holistic development of students because the curriculum focuses on both the acquisition of knowledge and practical skills, and students are better prepared to manage their own health and well-being. It is crucial for educators to offer chances for self-reflection and goal setting to guarantee that students remain consistently motivated to enhance and sustain their physical fitness levels. In conclusion, allocating resources towards high-quality physical and health education programmes can result in kids who are both physically and mentally better, leading to increased happiness and preparedness for future endeavours.

Conflict of Interest Statement

The authors declare no conflicts of interest. We affirm that we do not have any personal or financial affiliations with any organisations or groups that may potentially be seen as having an impact on the results of our study. This research was done in an objective and neutral manner, with diligent efforts taken to guarantee that the findings are unbiased and free from any conflicts of interest. We are committed to advancing educational excellence through our research and professional development initiatives. To better assist our students and colleagues, we endeavour to keep up to date on the most recent advances in educational methods.

About the Author(s)

Oluwaseyi Olubunmi Sodiya is presently the Head of the Department of IB Physical and Health Education at Khazar University Dunya School. He also teaches bachelor's students at Khazar University's Department of English Language and Literature. Additionally, he has published studies in other scientific journals. He possesses extensive education and expertise in physical and health education, English language teaching, school leadership, teacher development, curriculum design, assessments, research, and data analysis. He holds a bachelor's degree in teaching English as a second language from the University of Malaya and a master's degree in physical and health education from the same Malaysian university. He also has a master's degree in educational management from ADA University in Azerbaijan. He is currently pursuing a PhD in Doctor of Philosophy in Educational Organisation and Planning at the Faculty of Natural Science,

Arts, and Technology of Higher Education, Khazar University Baku, Azerbaijan. He is dedicated to developing the next generation of well-rounded individuals by encouraging students to lead active and healthy lifestyles. Through his research and teaching, he hopes to inspire and educate others on the importance of both physical and mental health. His extensive engagement in community outreach activities and seminars demonstrates his commitment to education and the betterment of society. He is a firm believer in the power of education to transform lives, and he is constantly working to innovate and improve his teaching skills. In addition to his academic pursuits, he enjoys participating in a variety of sports and outdoor activities, setting a good example by living a well-rounded and health-conscious lifestyle. His strong dedication to his students and enthusiasm for his job make him a valued asset to the academic community. Sodiya's research interests focus on teacher development, workplace professional development for teachers, and the implementation of effective teaching approaches. Implementing the IB curriculum, implementing instructional leadership methods, promoting youth and sports development, and researching educational policy analysis.

Google Scholar: <https://scholar.google.com/citations?hl=en&user=F5ZCjoAAAAAJ>

ORCID: <https://orcid.org/0000-0002-0152-723X>

Web of Science ID: <https://www.webofscience.com/wos/author/record/AFI-0829-2022>

ResearchGate: <https://www.researchgate.net/profile/Oluwaseyi-Sodiya>

Turkan Nabiyeva holds the position of International Baccalaureate Middle Years Programme (IB MYP) coordinator at Khazar University Dunya School. She possesses a strong enthusiasm for teaching and strives to provide a dynamic and captivating learning atmosphere for students. Aside from her position as MYP coordinator, she also teaches IB language acquisition classes, fostering critical thinking and creativity. Her unwavering devotion to her students and her steadfast determination to ensure their achievements make her an invaluable asset to the school community. Turkan holds a bachelor's degree in linguistics from Azerbaijan State Pedagogical University and a master's degree in linguistics from Azerbaijan University of Languages. Thanks to her robust educational foundation and extensive expertise in teacher development, teaching, and school administration, she is capable of equipping students with the necessary information and abilities to achieve academic excellence. Her groundbreaking pedagogical approaches and aptitude for establishing deep connections with students distinguish her as an undeniably remarkable educator. She consistently pursues professional development opportunities to further develop her teaching skills and remain current with the newest educational trends. In general, she is a committed and enthusiastic educator who is having a beneficial influence on the lives of students and teachers under her leadership. Turkan's research interests are in the areas of IB curriculum, professional development of teachers at the workplace, and the integration of technology in the classroom to enhance student learning.

ORCID: <https://orcid.org/0009-0006-0988-7041>

Web of Science ID: <https://www.webofscience.com/wos/author/record/KXR-0031-2024>

References

- Behzadnia, B., Adachi, P. J. C., Deci, E. L., & Mohammadzadeh, H. (2018). Associations between students' perceptions of physical education teachers' interpersonal styles and students' wellness, knowledge, performance, and intentions to persist at physical activity: A self-determination theory approach. *Psychology of Sport and Exercise, 39*, 10–19. <https://doi.org/10.1016/j.psychsport.2018.07.003>
- Colombo-Dougovito, A. M., & Lee, J. (2021). Social skill outcomes following physical activity-based interventions for individuals on the autism spectrum: A scoping review spanning young childhood through young adulthood. *Adapted Physical Activity Quarterly, 38*(1), 138–169. <https://doi.org/10.1123/APAQ.2019-0080>
- Creswell, J., Shope, R., Clark, V. L. P., & Green, D. O. (2006). How interpretive qualitative research extends mixed methods research. *Research in the Schools, 13*(1), 1–11. <http://www.msera.org/docs/rits-v13n1-complete.pdf#page=55>
- Dever, R. (2019). The international baccalaureate middle years programme (myp) in us middle level schools. *International Handbook of Middle Level Education Theory, Research, and Policy, 31–40*. <https://doi.org/10.4324/9781351122115-3>
- Dickson, A. (2019). *International Baccalaureate's Middle Years Programme: Liberation or suffocation?* [Murdoch University]. <https://researchportal.murdoch.edu.au/esploro/outputs/doctoral/International-Baccalaureates-Middle-Years-Programme-Liberation/991005543023707891>
- Eather, N., Wade, L., Pankowiak, A., & Eime, R. (2023). The impact of sports participation on mental health and social outcomes in adults: a systematic review and the 'Mental Health through Sport' conceptual model. In *Systematic Reviews* (Vol. 12, Number 1). <https://doi.org/10.1186/s13643-023-02264-8>
- Harvey, S., Kirk, D., & O'Donovan, T. M. (2014). Sport Education as a pedagogical application for ethical development in physical education and youth sport. *Sport, Education and Society, 19*(1), 41–62. <https://doi.org/10.1080/13573322.2011.624594>
- Hung, L. C., & Liu, M. H. (2023). From a public school to an IB school: experiences and challenges for curriculum transformation in a junior high school in Taiwan. *Asia Pacific Education Review*. <https://doi.org/10.1007/s12564-023-09884-8>
- Ip, P., Ho, F. K. W., Louie, L. H. T., Chung, T. W. H., Cheung, Y. F., Lee, S. L., Hui, S. S. C., Ho, W. K. Y., Ho, D. S. Y., Wong, W. H. S., & Jiang, F. (2017). Childhood Obesity and Physical Activity-Friendly School Environments. *Journal of Pediatrics, 191*, 110–116. <https://doi.org/10.1016/j.jpeds.2017.08.017>
- Kemel, P. N., Porter, J. E., & Coombs, N. (2022). Improving youth physical, mental and social health through physical activity: A Systematic literature review. In *Health Promotion Journal of Australia* (Vol. 33, Number 3, pp. 590–601). <https://doi.org/10.1002/hpja.553>
- Lin, W., Lee, M., & Riordan, G. (2018). The Role of Teacher Leadership in Professional Learning Community (PLC) in International Baccalaureate (IB) Schools: A Social

- Network Approach. *Peabody Journal of Education*, 93(5), 534–550. <https://doi.org/10.1080/0161956X.2018.1515833>
- Lynch, T., & Soukup, G. J. (2017). Primary physical education (PE): School leader perceptions about classroom teacher quality implementation. *Cogent Education*, 4(1). <https://doi.org/10.1080/2331186X.2017.1348925>
- Packham, A., & Street, B. (2019). The effects of physical education on student fitness, achievement, and behavior. *Economics of Education Review*, 72, 1–18. <https://doi.org/10.1016/j.econedurev.2019.04.003>
- Pakhalchuk, N. O., & Holyuk, O. A. (2018). Problems of physical activity in vocational training of future teachers. *Physical Education of Students*, 22(1), 45. <https://doi.org/10.15561/20755279.2018.0107>
- Pollack, J. (2015). Understanding the divide between the theory and practice of organisational change. *Organisational Project Management*, 2(1), 35. <https://doi.org/10.5130/opm.v2i1.4401>
- Primo, L., González-Hernández, J., Yang, Y., & López de Subijana, C. (2023). Predicting social skills in disadvantaged Chinese high school students through physical education. *Frontiers in Psychology*, 14. <https://doi.org/10.3389/fpsyg.2023.1149223>
- Prins, R. G., Van Empelen, P., Te Velde, S. J., Timperio, A., Van Lenthe, F. J., Tak, N. I., Crawford, D., Brug, J., & Oenema, A. (2010). Availability of sports facilities as moderator of the intention-sports participation relationship among adolescents. *Health Education Research*, 25(3), 489–497. <https://doi.org/10.1093/her/cyq024>
- Pulimeno, M., Piscitelli, P., Colazzo, S., Colao, A., & Miani, A. (2020). School as ideal setting to promote health and well-being among young people. In *Health Promotion Perspectives* (Vol. 10, Number 4, pp. 316–334). Tabriz University of Medical Sciences. <https://doi.org/10.34172/hpp.2020.50>
- Reinders, N. J., Branco, A., Wright, K., Fletcher, P. C., & Bryden, P. J. (2019). Scoping review: Physical activity and social functioning in young people with autism spectrum disorder. In *Frontiers in Psychology* (Vol. 10, Number FEB). <https://doi.org/10.3389/fpsyg.2019.00120>
- Resnik, J. (2012). The denationalization of education and the expansion of the international baccalaureate. *Comparative Education Review*, 56(2), 248–269. <https://doi.org/10.1086/661770>
- Saxton, S. E., & Hill, I. (2014). The International Baccalaureate (IB) Programme: An International Gateway to Higher Education and Beyond. *Higher Learning Research Communications*, 4(3), 42. <https://doi.org/10.18870/hlrc.v4i3.123>
- Serrat, O. (2017). Theories of Change. In *Knowledge Solutions* (pp. 237–243). Springer Singapore. https://doi.org/10.1007/978-981-10-0983-9_24
- Skrzypiec, G., Askill-Williams, H., Slee, P., & ... (2014). IB Middle Years Programme (MYP): Student social-emotional well-being and school success practices. *Adelaide, Australia* <https://ibo.org/globalassets/new-structure/research/pdfs/socialemotionalfinalreport.pdf%0Ahttps://www.ibo.org/globalassets/publications/ib-research/myp/socialemotionalfinalreport.pdf>

- Smedegaard, S., Christiansen, L. B., Lund-Cramer, P., Bredahl, T., & Skovgaard, T. (2016). Improving the well-being of children and youths: a randomized multicomponent, school-based, physical activity intervention. *BMC Public Health*, *16*(1), 1–11. <https://doi.org/10.1186/s12889-016-3794-2>
- Sum, K. W. R., Wallhead, T., Ha, S. C. A., & Sit, H. P. C. (2018). Effects of physical education continuing professional development on teachers' physical literacy and self-efficacy and students' learning outcomes. *International Journal of Educational Research*, *88*, 1–8. <https://doi.org/10.1016/j.ijer.2018.01.001>
- Syrmpas, I., & Digelidis, N. (2014). Physical education student teachers' experiences with and perceptions of teaching styles. *Journal of Physical Education and Sport*, *14*(1), 52–59. <https://doi.org/10.7752/jpes.2014.01009>
- Valencia, R. T. M., Salazar, C. M., Sánchez, A. I. A., Ramos-Carranza, I. G., & Sánchez, L. F. R. (2023). Recreation, social skills and coping strategies during the first stage of COVID-19 confinement in Mexican adolescents. *E-Balonmano.Com: Revista de Ciencias Del Deporte*, *19*(2), 65–178. <https://doi.org/10.17398/1885-7019.19.165>
- Vogel, I. (2012). guide to working with Theory of Change for projects. *Ecosystem Services for Poverty Alleviation*, 1–42.
- Walker, A., & Lee, M. (2018). Weaving Curriculum Connections in International Baccalaureate (IB) Schools. *Peabody Journal of Education*, *93*(5), 468–485. <https://doi.org/10.1080/0161956X.2018.1515837>

Creative Commons licensing terms

Author(s) will retain the copyright of their published articles agreeing that a Creative Commons Attribution 4.0 International License (CC BY 4.0) terms will be applied to their work. Under the terms of this license, no permission is required from the author(s) or publisher for members of the community to copy, distribute, transmit or adapt the article content, providing a proper, prominent and unambiguous attribution to the authors in a manner that makes clear that the materials are being reused under permission of a Creative Commons License. Views, opinions and conclusions expressed in this research article are views, opinions and conclusions of the author(s). Open Access Publishing Group and European Journal of Education Studies shall not be responsible or answerable for any loss, damage or liability caused in relation to/arising out of conflicts of interest, copyright violations and inappropriate or inaccurate use of any kind content related or integrated into the research work. All the published works are meeting the Open Access Publishing requirements and can be freely accessed, shared, modified, distributed and used in educational, commercial and non-commercial purposes under a [Creative Commons Attribution 4.0 International License \(CC BY 4.0\)](https://creativecommons.org/licenses/by/4.0/).