

Evaluation of the effectiveness of the dynamic yard plan on the physical, mental and academic performance of elementary students with a public sports development approach

1. Abolfazl Ghanbari (0000-0003-4322-2570) PhD student of Sports Management, University of Tehran, Tehran, Iran
2. Somayeh Heidari (0000-0003-4322-2570) MSc of motor Behavior, University of Al-Zahra, Tehran, Iran
3. Amir Mohammad Khosravi Farsani (0000-0003-0632-1318) MSc student of Sports Management, University of Tehran, Tehran, Iran

Corresponding author: Abolfazl Ghanbari, PhD student of Sports Management, University of Tehran, Tehran, Iran 09127571864 ghanbari.abolfazl@ut.ac.ir

Number of tables: 4

Abstract

Education is a social process in which human beings reach social competence and individual growth. An institution that does this process is called the school. Among schools, primary schools are the most important environment for socialization and education of children, so physical education programs at this stage can provide conditions for the development of motor literacy and thus a healthy and active lifestyle. While refreshing the school yard and stimulating and encouraging the students' visual sense to engage in sports, the dynamic yard design provides a suitable ground for children to play spontaneously. This study aimed to evaluate the performance of the dynamic yard design on the physical, mental and academic performance of elementary school students. This research has been done by the library method to review related articles, take notes and infer from them. The results of the research indicate that between the implementation of the dynamic yard plan and the variables of physical activity, vitality, reduction of behavioral incompatibilities, academic performance, and physical self-concept (athletic fitness, fat burning, physical appearance, flexibility, health, and self-esteem) There is a positive and significant relationship. Therefore, enriching the schoolyard by drawing play shapes and purposeful plans and encouraging students to do physical activities in their spare time can positively affect behavioral patterns, enthusiasm, learning, institutionalizing exercise at an early age, and developing basic skills and have public sports.

Keywords:

Dynamic Yard Design, Effectiveness, Public Sports, Motor Literacy, Physical, Mental

Introduction

How to perceive the environment is one of the key topics and concepts in studying human-environment interactions on a large and micro scale. The environment, or in other words, the real world, as the sender, always sends information about itself in different dimensions and in different ways, and man as the receiver of this information needs the environment [1]. The educational environment is one of the most important spaces that play a significant role in human interaction from both physical and psychological perspectives [2]. The development of the body of education requires the creation of spaces that have suitable conditions for the physical, mental, emotional, and social development of children [3]. Education, as the most important social institution that emerges from the context of society, is not only its builder and developer but also has responsibilities to achieve individual and social goals and is considered as the best opportunity for the development of human talents, and is intended by education specialists [4]. Education is a social process in which the development of individual talents, the strengthening of the foundations of collective life, the expansion of democratic ideals, and the establishment of understanding between human beings occur. [5] Finally, human beings reach social and individual competence, which is done by the school's institution [6]. After the family, schools are the main environment for educating and encouraging students to do physical activities because students spend most of their time in school [7]. Among the students, elementary school students have a better position for role modeling, and education [8] as physical education programs in elementary school can provide the necessary conditions for developing motor literacy and, consequently, a healthy and active lifestyle [9]. It should be known that the purpose of education is well-training and edification and physical education is a suitable tool to go through this path faster and better [10]. Physical education is an educational process that has caused physical activity to be used to help students acquire the right skills, knowledge, and attitudes for optimal growth and health [11]. Achieving the goals of physical education concerning the general development of the learner is possible only through the design of strategic and purposeful programs [12]. One of the main missions of education is to create a favorable educational environment from the physical dimension, which can be effective in students' perception and, consequently, in their academic progress, intrinsic motivation, and vitality. In this regard, various sports projects have been designed and implemented under the title of national projects, including the dynamic yard project, to promote physical fitness, create vitality and enrich the physical education course. In the dynamic yard design, considering the available facilities and conditions, the school space and yard have been tried to use simple methods such as drawing shapes and tables, installing light and safe equipment and devices, and performing indigenous games. Local, in addition to refreshing, also provides the ground for students' activities during leisure and leisure time Formation [13]. In the dynamic yard design, considering the available facilities and conditions, the school space and yard have been tried to use simple methods such as drawing shapes and tables, installing light and safe equipment and devices, and play indigenous and local games, in addition to refreshing, provide the ground for students' activities in leisure [13]. due to the fact that the function of the schoolyard is to provide space for physical activity and leisure and expansion of students, the proper design of the schoolyard can play a significant role in creating vitality and happiness for students [1].

Rejuvenation is one of the environmental factors that not only encourages students in education but also promotes health and, at the same time, reduces harms and social deviations [14]. This factor has also increased students' learning and peace of mind [3]. It should be noted that learning does not happen only in the classroom and behind the desk, and the fun bell is also part of each school's daily life and schedule, and for most students, it is the best time [15]. Students play yard and group games in a fun and dynamic environments and use this opportunity to develop basic skills. Basic skills that are important developmental and motor skills of elementary school are useful skills that a child needs to live and succeed and include transfer, non-transfer, and control skills [16]. Basic skills, because they are the basis for specialized motor skills and the secondary effect of the strength or weakness of these skills, on academic achievement and psychological skills play a prominent role in child development. weakness in basic skills and subsequent specialized motor skills will lead to the child's failure in sports activities. This failure reduces the child's sense of competence and reluctance to participate in sports activities [17]. The result of a reduced sense of competence and rejection by peers leads to depression in the child [18]. The depressed child can not pay enough attention and may drop out of school [19]. Learning and practicing basic motor skills are the basis for developing motor literacy [20], and motor literacy is the development of basic skills and enables the child to monitor the constant movements of the environment and thus make accurate decisions of the environment [9]. The age range of six to nine years for boys and six to eight years for girls is an important step in learning basic skills and developing motor literacy. since the high motor and physical abilities and the smooth and beautiful performance of complex skills in adolescence and youth are due to primary school games' correct and timely performance [21]. Therefore, schools should create a suitable environment so that students, in addition to being aware of the benefits of sports, are also encouraged to do so and achieve optimal motor development [8]. From the perspective of cognitive scientists, educational designers and teachers have an effective role in creating constructive learning environments [4]. Psychologists emphasize the physical environment of the school, along with factors such as family, teacher, teaching method, textbooks, educational management, etc. as effective factors in the educational process [3] in France and Germany, it has been observed that children will be very happy and active when allowed to move freely. If this need is not met, it will have a negative impact on their learning, which was implemented [22]. Many studies have shown that exercise and physical activity have significant positive effects on physical, mental, and academic performance. Arthur et al. (1989) in a study on the importance of the effect of the physical condition of schools and classrooms on students' behaviors and learning ability. According to them, the importance of the physical condition of schools stems from the fact that students and teachers spend most of their lives in schools, so schools must-have characteristics such as comfort, attractiveness, motivation, and the use of colors. Cheerful, bright, painted walls provide an attractive and desirable environment [23]. Asler (2011) points to the inadequacy of physical education in improving physical activity in primary schools [7]. Arroyo et al. (2014) have shown that the positive effect of physical education activity on students 'academic achievement increases students' motivation [24]. Lee et al. (2014) showed that changes in children's playgrounds at school, such as changes in

equipment and the creation of specific markings, can increase the amount of student activity during inter-class breaks and take advantage of its benefits [25]. Bonnardell and Zenasni (2016), in a study entitled The Impact of Dynamic Yard on Creativity, showed that designing an environment using new technologies and increasing dynamism promotes students' creativity [26]. Al-Yasin (2001) believes that the school's physical space directly causes better sensory and motor traction and sometimes strengthens people's morale, and indirectly affects their effectiveness [1]. Habib Niyarami et al. (2016) in a study on the benefits of holding an in-school sports Olympiad (one of the national physical education projects) to identify teachers and physical education lessons, positive social behaviors, assistance and participation of colleagues and parents in holding These schemes motivate sports activities, sports talent and enhancement and development of student sports [27]. Parvin et al. (2015), in their research entitled The effect of children's physical games on improving the shyness of female elementary school students, stated that children's physical games lead to improving the level of shyness of students [28]. Akbari Sarsangi et al. (2016), in examining the role of a dynamic yard on the self-concept of fourth, fifth, and sixth-grade girls, stated that increasing sports participation by affecting perceived competence, self-confidence, and self-esteem could lead to self-concept growth [29]. Zargin and Rashid Clover (2017), in a study entitled Designing an educational space with an emphasis on promoting children's creativity, stated that increasing green space, building a sports space, and delegating responsibility for some matters to students, has a significant role in cultivating and flourishing their creativity and creating Creates a sense of ownership and belonging in children that creates this feeling creates peace of mind and security, which in itself will increase the power of learning and foster creativity [30]. Hosseinzadeh (2018), in a study entitled "Study of the implementation of the dynamic yard plan in the academic performance of elementary school students," found that this plan, using very simple shapes and lines, encourages students to be mobile and dynamic and creates its consequences. It is a vibrancy that brings about an improvement in academic performance [31]. Naimi Kia et al. (2021) The effect of dynamic yard activities on motor skills, social development, and happiness of female preschool students concluded that dynamic yard activities could be a good program for kindergartens and preschool Be [32]. Ghaffarian et al. (2020) examined the effect of a dynamic yard on seventh-grade female students' mental health and happiness. They stated that this project has a significant effect on students' mental health and happiness [33]. As it is clear, in modern life in the whole world, especially in Iran, we have faced the phenomenon of inactivity. We are moving towards low motor literacy [15]. As a result, one of the ways to deal with this issue and ensure health, especially in children, is to perform physical activities [34] Since effective interventions to increase physical activity to prevent disease and create a dynamic lifestyle seems necessary [35] And considering the current costs of national plans in schools and knowing that physical education programs in schools play a major role in the health of students and having the effectiveness of the national sports plan can be used as much as possible. And help improve its quality [27]. The researchers of this study tried to investigate the effectiveness of the dynamic yard plan in the physical, mental, and academic performance of elementary students.

materials and methods

This research has been done by the library method to review related articles, take notes and infer from them.

Results

The results obtained in Aghchghloo and Zamani Bakhsh dual research (2016), the relationship between dynamic yard with students' vitality and motivation, and also the relationship between freshness and students' learning are expressed as follows:

Table 1. Results of the correlation between the dynamic yard and student vivacity and motivation

Student motivation		Student vitality		Variable
Significance level	correlation coefficient	Significance level	correlation coefficient	Dynamic yard
0/05	0/85	0/05	0/75	

According to the above table results, there is a positive and significant relationship between the variables of the dynamic yard and students' vitality and motivation [36].

Table 2. Relationship results obtained from the relationship between students' vitality and learning

Student learning		Variable
Significance level	correlation coefficient	Lushness
0/05	0/68	

According to the above table results, there is a positive and significant relationship between the two variables of vitality and students' learning [36].

The results obtained from the research of Akbari Sarsangi et al. (2016) in investigating the effect of the dynamic yard on self-concept are as follows:

Table 3. Results of multivariate analysis of variance in examining the role of the dynamic yard on students' self-concept

Effect size	P Value	Degrees of freedom	F Value	Source of changes
0/28	*0/001	8	5/27	Dynamic yard effect

The results of Table 3 show that the effect of the dynamic yard is significant ($P = 0.001$). To investigate the effect of the dynamic yard on self-concept subscales, we examine post hoc tests

Table 4. Results of simple analysis of variance test to investigate the effect of the dynamic yard on self-concept subscale

Effect size	P Value	F Value	Degrees of freedom	Total squares	Source of changes	Dynamic yard
0/06	0/005	8/19	1	6/00	Sports merit	
0/04	0/02	5/28	1	5/44	Body fat	
0/05	0/009	7/03	1	6/53	Physical appearance	
0/12	0/001	16/50	1	14/81	flexibility	
0/08	0/002	10/47	1	8/15	Health	
0/13	0/001	16/42	1	19/00	Self-esteem	

The results of Table 4 show that out of the eight subscales of physical self-concept, in six subscales (fitness, body fat, physical appearance, flexibility, health, and self-esteem), students of schools with dynamic yards scored higher [29].

Discussion

The results of this study on the positive effect of the dynamic yard on the physical dimension with the results of Meybodi et al. (2014), Ardooy et al. (2014), Habib Niyarami et al. (2015), Akbari Sarsangi et al. (2015), Nodoshan et al. (2015) And Naimi Kia et al. (2021) are in agreement. Studies show that students' body type is overweight and obese, and their mobility at home is very low. To deal with the phenomenon of obesity, various motor activities have been predicted in schools, among which the dynamic yard design, due to the type of performance and encouraging students with sports shapes and designs in the schoolyard, not only encourages them to do the activity. Sports also develop students' talents in one of the games, and sports have become a logical, short, and cost-effective introduction to their successful presence in serious sports arenas [14]. Dynamic yard design takes school space out of simplicity and causes entertainment, performing purposeful activities, creating a sense of competition, encouraging to achieve a better record, institutionalizing sports at an early age, compensating for physical disorders such as obesity, compensating for lack of exercise hours in a short time, the fun ring, discovering talent and directing physical interest students and will have a positive effect on the development of children's

movements. The results showed that the subscales of athletic fitness, body fat, body appearance, flexibility, health, and self-esteem were better displayed in students who had dynamic backyard schools, which is consistent with the research of Arthur et al. (1989), Parvin et al. (2015), Ghaffarian (2020) and Akbari Sarsangi et al. (2015). Therefore, it can be said that schools have a dynamic yard because of the physical benefits that physical activity creates in students' bodies. In addition to being able to provide a good environment for the development of physical image in children, by implementing children's games organized in this project improve shyness and improve students' social skills and behaviors also, the educational space is out of the formal mode for a few minutes due to the cheerful presence of students in the class [15]. Finally, in the study of findings, we concluded that according to the above table results, there is a positive and significant relationship between the two variables of vitality and student learning. This is consistent with the researches of Hosseinzadeh (2018), Zargin and Rashid Clover (2017), Lee et al. (2016), and Bonardell and Zinaseni (2016). One of the main missions of education is to create a favorable educational environment in terms of physical dimension that can be effective in students' perception and, consequently, their academic achievement, intrinsic motivation, and vitality [23]. Motor skills play a very important role in children's learning and provide the basis for developing other important learning such as academic and social skills [37]. Among the different strata of society, children and adolescents enjoy the beauty of appearance more than others. In education, with the understanding of the need to pay attention to this emotional and psychological need of students, much emphasis has been placed on the development of beauty. Understand that beauty creates peace and freshness and that relaxation is the basis of learning makes it more convenient; it can be achieved that schools equipped with dynamic yards will bring more attractiveness and desirability to students, and thus provide the ground for the active and lively presence of children and adolescents in the education environment. Finally, they will indirectly have a positive effect on students' learning [2]. On the other hand, elementary students are in the age of objectivity, which means that they must first see something and then understand it. Children at this age receive more impact from the environment. Suppose educational concepts want to have a good impact. In that case, They must first stimulate his visual sense [38] the dynamic yard with educational murals, and combining games with different lessons and ethical concepts can create this advantage in facilitating learning for students.

Conclusion

Naturally, students who experience physical activity and vitality in the fun bell will be more mentally and better prepared to learn in the classroom. In addition, a better and healthier life for his future can be depicted mentally and psychologically. One of the most important tasks of those involved in education is to provide a suitable environment for children to play [40]. Because play is the first movement behavior that children like because it effectively shapes their personality. In Iran, this is in the form of dynamic yards, a transformation plan to promote motor literacy in elementary students and strengthen sports centers within schools, et cetera. Education planners have given it serious attention. In the dynamic yard design, creating images of simple childhood

games or replicas of public sports, stimuli, and incentives for children and adolescents to exercise and exercise in fun tones has been created, which can increase activities. Exercise and promotion of public sports for students, especially girls, prevention of weight gain and obesity in children and adolescents, the development of spontaneous sports activities without the need for a coach, creating the ground for creativity and innovation in the development of motor activities without the need for equipment, increasing student social interaction through activities and games. According to the findings, it can be concluded that this project, by using the opportunities, facilities, and space available in the country's schools and organizing and optimizing physical activities in leisure time, leads to improvement and transformation. Rejuvenate schoolyards, improve the effectiveness and efficiency of physical education in schools, use active methods creative, using scientific, educational, and indigenous experiences of different provinces of the country, reforming, promoting and changing attitudes towards physical education as a comprehensive and effective tool in achieving cultural and educational goals, creating legal facilities and incentive mechanisms for the development of culture Sports among students to improve and reduce the level of physical health Complications due to students' mobility poverty and explaining the position of the school as the main center of education and groundwork to include the aspects of biological and physical education and has implemented the goals of the project. Therefore, due to the inactivity and overweight of students and the cheapness and numerous benefits of the plan, the authorities recommend implementing it in all primary schools in the country. The project can also be implemented in parks, residential complexes, kindergartens, and special schools. Also, in the comprehensive implementation of this plan, in addition to using sports marketing techniques and financial support, the help and support of the cultural-sports organization of municipalities in designing shapes and installing equipment and benefiting from green space as well as technical skills of parents, The potential of technical and vocational students and the assistance of aid workers in jihadi knowledge camps education and students benefited from the migration plan for the deprived areas of the country.

1. Al-Yasin M. Happiness in the school environment. Tarbiat Magazine. 2001
2. Sirus Sabri R, Ahmadi Z. The effect of school outdoor design on students' vitality. National Conference on Humanistic Architecture and Urbanism (Islamic Azad University). 2013
3. Lotf Atta, A. The Impact of Environmental Factors on Learning and Behavior in Educational Environments (Elementary). Urban Management. 2008; 21: 73-90
4. Biabangard Is. Educational Psychology (Educational and Learning Psychology). Editing Publications: Tehran 2013.
5. Shariatmadari A. Principles and Philosophy of Education. Tehran: Amirkabir Publications ; 2001.
6. Safavid, A. Generalities of teaching methods and techniques. Tehran: Contemporary Publishing; 1999.

7. Meiboudi H, Shabbrii S M, Arjmandi R, Babaei Semiromi F. A New Approach to Environmental Education for Kids in Mahshhad. Journal of Teof Education 2015;9(1):77-87

8. Meybodi H, Shabbiri S M, Arjomandi R, Babaei Samirmi F. A New Approach in Environmental Education for Children. Education Technology. 2014;8(4):307-297

9. Vahdani M, Hamidi M, Khabiri M, Alidoust Ghahfarrokh E. Codification a strategy map of physical education and sports activities in Ministry of Education of Iran. Research on Education Sport 2017;5(12):17-36

10. Planning Council of Educational Research and Planning Organization. Sixth grade health and physical education teacher textbook. Ministry of Education; 2012

11. Vazini Taher A, Hayati A, Pakzamir F. The relationship between the level of physical activity and the development of basic motor skills in primary school children. Journal of Motor Behavior (Research in Sports Science) 2013;14:178-163

12. Khavari L, Yousefian J. (2008). "Study of the executive status of physical education courses in middle and high schools of Yazd province" Research in Sports Science 2008;18(6):87-100

13. Draft Dynamic Yard Design Instructions. Office of the Deputy Minister of Physical Education and Health, Ministry of Education; 2013

14. Dashti M, Azarbayjani Mohammad A. Journal of Management and Organizational Behavior in Sports 2012;2:51-60

15. Nodoshan FS, Mousavi H, Yazdi NS, Dashti, L. Study of the effect of dynamic yard on physical activity of elementary students. 7th National Conference on Sustainable Development in Educational Sciences and Psychology, Social and Cultural Studies 2017

16. Mazlumi Sadat T, Dabaghian, A. A review of physical education courses in the preparatory and first elementary school. (guide for physical education teachers). Deputy Minister of Education of the Ministry of Education; 2004

17. Sigmundsson H, Rostof M. 2003 Motor development: Exploring the motor competence of 4-year-old Norwegian children. Scandinavian Journal of Educational Research 2003; 47(4):451-459

18. Miller LT, Polatajko HJ, Missiuna C, Mandich AD, Macnabe JJ. A pilot trial of cognitive treatment for children with developmental coordination disorder. Human Movement Science 2001; 20:183-210

- 19.Rosblad B, Gard L. The assessment of children with developmental coordination disorder in Sweden: A preliminary investigation of the suitability of the movement ABC. Human Movement Science 1998; 17:711-719
- 20.Vahdani M, Soltani N. Development of students' motor literacy. Eighth Congress of Pioneers of Progress;2015
21. Najmzadeh Baghadi M, Pouraghaei Ardakani, Z. The effect of porcelain glass on perceptual-motor skills of primary school children aged eight to nine years. Motor Behavior 2017;29:84-71
- 22.Kurti J B. active learning. Tan saz translation. Tehran: Madrasa Publications; 1999
- 23.Arthur L,Beecher B, Docket S, Furner S, Beached B.(1989).
24. Arroyo DN, Fernandez-Rodriguez J, Pavon D, Castillon R, Ruiz JR, Ortega FB. A physical education trial improves adolescents' cognitive performance and academic achievement: the EDUFIT study. Scandinavian Journal of Medicine &Sports 2014;1:52-61
- 25.Lee C,Jim M, Jon S,Catherine T,Donna E,Daniel B.The effects of playground markings on the physical self-perception of 10-11-year-old school children. Physical Education and Sport Pedagogy 2014;19(2):179-90
- 26.Bonnardel N, Zenasni F.The Impact of Technology on Creativity in Design:An Enhancement?IMPACT OF TECHNOLOGY ON CREATIVITY IN DESIGN 2016;19(2):180-192.
- 27.Habib niyarami S, Dosti M, Darvishi A.Identifying the problems and benefits of implementing the in-school olympiad plan. Case study: Mazandaran province". New Approaches in Sports Management 2016; 4(13): 49-59
28. Parvin M,Movahedi, A R,Faramarzi, S.The effect of childlike physical bases on improving the shyness of female primary school students.Journal of Development and Motor-Sports Learning 2015; 7(2):187-201
- 29.Akbari Sarsangi S, Khatampour M, Zeidabadi R. Study of the role of dynamic yard in schools on the self-concept of fourth, fifth and sixth grade girls. The first national conference on sports science developments in the field of health, prevention and championship 2016;1-4

30. Zargin,Rashid Clover. Designing an educational space with an emphasis on promoting children's creativity. International Conference on Architecture, Urban Planning, Civil Engineering, Art, Environment 2017;1-8
- 31.Hosseinzadeh M.Investigating the implementation of a dynamic yard plan in the academic performance of elementary school students. 2nd International Conference on Innovation and Research in Educational Sciences, Management and Psychology 2018; 1-8
- 32.Naimi Kia M, Nikkho Koraim K, Qasemi A. The Impact of Dynamic Yard Activities on the Development of Motor Skills, Social Development, and Happiness of Preschool Female Students Journal of Growth and Motor-Learning 2021 Forthcoming 2021
- 33.Ghaffarian Panahi A, Ebadian Yas,Zeini P.The Impact of Dynamic Yard Project on Mental Health and Happiness of Seventh Grade Female Students. 7th International Conference on Psychology, Counseling and Educational Sciences 2020
- 34.Izadi S,Abedini Blatterk M,Mansouri S.Analysis of physical education content in elementary textbooks. Sport Sciences Journal 2011;7-13
- 35.Marcus BH,Williams DM,Dubbert PM.,Sallis JF,King AC,Yancey AK, et al. Whatwe know and what we need to know:Ascientific statement from the American health association council B2006on nutrition,physical activity and metabolism council on cardiovascular disease in the young and the interdisciolinarityworking group on quality of care and outcomes research. Circulation 2006; 114(27):39-52
- 36.Dugani Aghchghloo M,Zamani Bakhsh R.Investigating the effect of dynamic yard on the vitality of students of Navab Safavid elementary school in Bandar Abbas in the academic year of 1995-96. Studies in Psychology and Educational Sciences 2017; 22:107-120
- 37.Sosaraei S. The comparative study of motor skills in student with and without Learning disability.Tehran University;1997. 28p

38. Yousefi S,Badri Azarin Y. Determining the conceptual and qualitative components of murals and writings of primary schools in educating and encouraging students to physical activity and sports. Sports Management Studies 2018; 49:95-114
39. Ahmadi R,Shahabi S,Olivia PF. Educational Supervision and Guidance in Today's Schools. Isfahan: Islamic Azad UniversityKhavarsgan Branch; 2000
- 40.Mahgor SR. Game Psychology, Rahgsha Publishing, Shiraz:Virayesh; 1995



A large, light blue, stylized word "impress" is written diagonally across the page. The letters are thick and have a wavy, organic shape. It starts at the bottom left and curves upwards towards the top right.