



## Investigating the Role of Physical and Digital Environment on Creating Active School with Respect to the Mediating Role of Social Environment

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### ABSTRACT

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Reform Document of Education (FRDE), creating active schools by relying on environmental potentialities is the goal with utmost significance; therefore, the present study aimed to explore the role that physical and digital environments play in achieving this objective. To this end, a descriptive-correlational design was utilized to probe the perception of teachers and physical education experts (n=302) sampled from a population including 892 personnel of the Education Department of Guilan. Data were obtained using a 5-point Likert scale, and 30 experts judged the face and content validity. The reliability and construct validity of the scale was checked and confirmed by Cronbach's alpha ( $\alpha=.87$ ) and exploratory-confirmatory factor analysis. Using SPSS 22 and PLS3 for data analysis, researchers found that physical, social, and digital factors effectively created an active school environment .31, .23, and .29 percent of the variances. Moreover, Social context as the mediating variable was correlated with physical and digital environment .30 and .34, respectively. Relying on the findings of this research trend, policymakers and managers can enrich the physical and digital environments of the schools and move towards accomplishing principle 6.6 of FRDE, which highlights the role of the social environment in an effective educational system.

## INTRODUCTION

An active, capable, growing, and vibrant population is essential to maintaining national authority, part of which is achieved through participation in physical activity and sports. Still, today, with the increasing use of technology in family and work life, public welfare, the spread of urbanization, the outbreak of Covid 19, and home quarantine, a sedentary lifestyle has become prevalent in society. One of the appropriate social institutions for realizing a healthy and active society is the school. Schools are the most important social element influencing the formation of beliefs, personalities, and lifestyles, which deals with the most sensitive age group of any society and is the product of human culture's efforts to survive education (Mosadeghrad et al., 2020).

Educating youngsters and adolescents is the crucial responsibility of a good governorship that must be accomplished based on reliable theoretical, cultural, political, and practical plans. In recent years (2014-2021), Iran's Physical and Health Education Organization (PHEO) planned its policies by considering FRDE. Consequently, the health and the physical capabilities of students have become an important issue, the significance of which is traceable within the slogans, perspectives, and upcoming goals of the organization and educational system, where improving personal health and responsiveness to physical and mental needs of the students through sports and safe personal and social recreations have been emphasized and clarified (Ministry of Education, 2010).

One of the planned and followed projects in recent years (2014-2021) was the Active School Yard Project which attempted to increase the self-initiated activities of youngsters and adolescents, improve their physical literacy, and form efficient and healthy habits and lifestyles. Conforming the project to the student's interests and motivation received significant attention from all over the country, and trust for applying this project was guaranteed to not only move on in the future but also develop into the project Active School (Hajizadeh et al., 2020). Active School is the integration of three principles; namely, increasing the quality of physical education at schools and supplementary activities, creating opportunities for physical activities, and consolidating an active lifestyle throughout one's life by utilizing all the available spaces of school (i.e., classroom, corridors, yard, etc.) and the participation of factors within and without school environment (parents, school personnel, candidates, organizations, etc.) for helping the students prior, while, and after their presence at school (Hajizadeh et al., 2020). To this end, the Active School project was planned to increase the students' self-initiated activities and improve their physical literacy so that a safe and active lifestyle is introduced to

the students. The main goal of this project is to nurture active and lively students that participate in physical and educational activities and are armed with proper physical literacy and an active lifestyle and mindset (Hajizadeh et al., 2020). Attempting to apply the Active School project, schools use all possible resources and available environments to consolidate a healthy and active lifestyle for students so that, in the long run, a healthy and active society emerges (Ministry of Education, 2018).

The physical and social aspect of the Active School Project comes from Smith et al.'s (2020) Creating Active Schools (CAS) Framework and the content of the Active School Document (Hajizadeh et al., 2020). Additionally, the digital aspect of the project was adapted and adopted from Karhu et al. (2018). Finally, the conceptual model of the research introduced three underlying factors; namely, (1) physical environment, (2) digital environment, and (3) social environment. The available literature signals a fair number of studies regarding each model aspect. For instance, regarding the physical environment of the school and its effectiveness on the school activity and dynamism, Brittin et al. (2015) published the first series of guidelines, including ten principles to consider in the architecture of an active school in a way that fits the physical activities of the students. Fazelian and Azimi (2014) noted that considering the standards of the physical environment in designing the educational contexts and schools increases the participation of the students and teachers in sports and physical activities, and in contrast, ignoring such standards for designing schools decreases the liveliness and physical participation of teachers and students. According to Weng and Chiang (2014) and Hug et al. (2009), exercising in an open environment has more positive effects than practicing in a closed and limited-space environment such as a house.

According to Gibson's (1978) price theory, the school space and environment is a complex in which students' goals are fulfilled and supported. The supportive perspective of this theory sees the costs and investments as influential factors in individuals' development; therefore, the price theory has been used as a powerful framework by which psychologists and environmental designers analyze and justify the interplay between the environments and behaviors (Smith et al., 2016). Furthermore, the openness of contexts such as schools paves the way for emotional and psychological connections between individuals.

As far as the social aspect of schools and their role in activating the schools are concerned, Mousavi et al. (2020) asserted that sport is a social phenomenon and reflects the values, norms, and cultural characteristics of any society. Since the environment affects how people participate in actions, the social context can guarantee the participation of individuals in physical activities. Social support from family, friends, and others is effective in the

participation of individuals in physical activities. It is regarded as a factor that prevents inactivity and sedentary and encourages physical activity (Hashemi Motlagh et al., 2018). According to Keroack (2015), parents encouraging their children towards exercise and in-house physical homework can play a significant role in their youngsters' kinesthetic activities. Teachers can also play the role of counselors and game-changers. They can lead the students toward the available resources and facilities by increasing students' motivation (Fitria & Suminah, 2020).

The social environment is the integration of mesosystem-exosystem layers of Bronfenbrenner's (1999) ecological systems model. The quality of a passive environment does not provide the basis for effective responses of the individuals unless the social environment changes the situation through attention, exploration, and manipulation.

Sullivan (2019) reported on the role of digital space and environment on the activation of schools and indicated that lots of students' activities such as Active Travel to school and doing physical exercises had been hampered due to limitations in digital classrooms which again is narrowed down to the use of pictures, clips, and multimedia. Although the integration of innovations and technologies with education is new, many teachers are unfamiliar with how the technology can be used, and there is no argument on its role as the main or supplementary education channel (Casey et al., 2017). According to Franklin and Smith (2015), practical and effective solutions must be presented and utilized to increase the possibilities of achieving physical training goals. In this regard, educational technologies and innovations can provide the students to accomplish their goals through online lessons and practice. On the one hand, the nature of physical education in the school context is based upon activation and movement, and combining it with technology signals inactivity and limited physical involvement has received considerable criticism. Arguments in this regard are diverse; many see physical exercise as an antidote to the inactivity caused by technology and smartphones (Prohl & Wiemeyer, 2016).

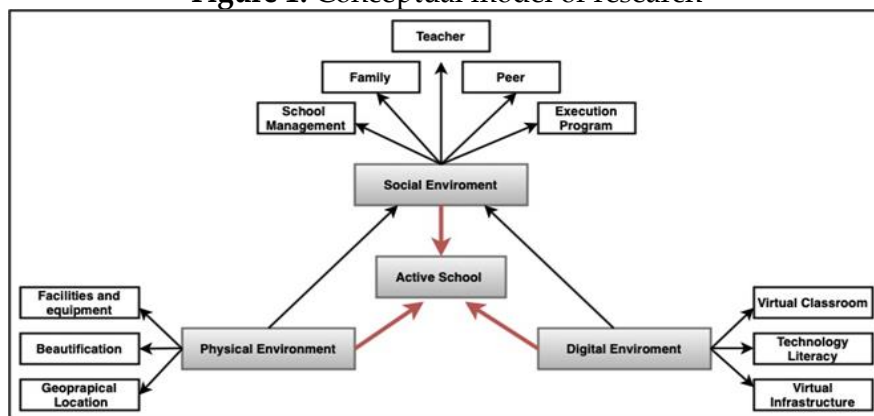
According to Russell and Wards's (1996) theory of environmental psychology, there is always a connection and link between the environment and the individuals' activation factors. Further, as noted by Ebrahimzadeh (2015), physical and social factors are significantly intertwined with the kinesthetic and psychological factors of the individuals. Additionally, as Hamburger and Artzi (2005) indicate, the digital environment and the internet can affect each student differently, and these effects differ based on the people's characteristics and properties of the environments. Therefore, the social environment can pave the way for utilizing these potentialities effectively.

On the one hand, the interaction between physical, digital, and social environments and social context can effectively balance this equation (Gubbels et al., 2011). Furthermore, the potential role of social context and environment (i.e., teachers, parents, authorities, etc.) has been emphasized within FRDE and is introduced as a leading factor in education. Stokols' (1992) model also presents the social environment as the factor that increases individuals' interaction with the surrounding contexts. As previously noted, according to Bronfenbrenner (1999), the quality of a passive environment does not provide the basis for effective responses of the individuals unless the social environment changes the situation through attention, exploration, and manipulation.

Bronfenbrenner (1999)'s bioecological model emphasizes the relationship of adolescents and youngsters with the environment. In this model, the environment in which everyone lives is divided into four layers which tap into different layers of individual, social, educational, and cultural life. According to Bronfenbrenner (1999), the quality of the environment itself is not a sufficient trigger for the individuals to respond accordingly unless other factors such as attention, exploration, manipulation, imagination, and interpretation are at work. In other words, the social environment provides the soul to the isolated and passive environments. In this vein, the present study attempts to unravel the effective factors of physical, social, and digital environments and interpret their outcomes in the so-called active school environment.

In this regard, the present study aims to determine the effective factors in the schools' physical, social, and digital environments. Since social context has been treated as an influential factor in the literature, the present study sees it as a mediating variable (Figure 1). This gives rise to the second question asking how physical and digital environments, directly and indirectly, influence schools' activation concerning the mediating role of the social context?

**Figure 1.** Conceptual model of research



## METHODS

### *Study Group*

The study population included physical education teachers and authorities of the Education Department of Guilan (n=892) in the academic year (2021-2022). The population consisted of 408 male and 445 female teachers and 39 physical education experts in the department. For modeling and answering the questions of the study, 302 individuals were sampled through the random-clustering method (female= %52, male=%48) and categorized in the sample based on their dispersion in different regions of Guilan. For modeling and answering the questions of the study, 302 individuals were sampled through the random-clustering method categorized in the sample based on their dispersion in different regions of Guilan. The descriptive statistics of the study describe the participants according to gender (female= %51, male=%49) with ages ranging from 31 to 40 with a frequency level of 41.4. The calculations show that %44 of the participants had experience below ten years. Furthermore, %56 of them had a Master's degree or above.

### *Data Collection Tools*

A scale including 18 items was designed to assess the participants' perceptions. The scale items were from the content analysis and based on the available literature concerning the factors involved in active schools. Additionally, 18 English articles and 10 Persian resources were studied thoroughly. Twelve experts in the physical management field, 13 experienced teachers of physical education, and five authorities in the area judged the face and content validity of the scale. The scale's reliability was checked using Cronbach's alpha method showing a reliability estimate of 0.87. The scale was constructed and validated by exploratory factor analysis based on Hair et al.'s (1995) suggestion. Finally, a 5-point Likert scale including 50 items that tap into 12 facets was at hand. Ten items in the questionnaire shed light on the physical aspect of the model, which encompasses three factors; namely, (1) geographical location, (2) beautification, and (3) facilities and equipment. Fifteen items tapped into layers of the digital environment which include (1) virtual classroom, (2) technology literacy, and (3) virtual infrastructure. The remaining 25 items were dedicated to different aspects of the social environment, which include (1) school management, (2) family, (3) teachers, (4) peers, and (5) execution program. Data were analyzed using SPSS22 and Smart PLS3 for Structural Equation Modeling using Partial Least Squares (PLS) approach. The status of convergent reliability and validity coefficients are depicted in Tables 1 and 2.



**Table 1.** Convergent Reliability and Validity Coefficients of Research Variables

AVE	Cronbach's alpha	Composite reliability	Dimensions	Factors			
0.805	0.762	0.892	Geographical location	Physical environment			
0.745	0.563	0.829	0.913		0.898	0.927	Beautification
0.680	0.882	0.914	Facilities and equipment				
0.697	0.855	0.902	Virtual infrastructure	Digital environment			
0.734	0.538	0.879	0.938		0.917	0.946	Technology literacy
0.658	0.913	0.931	Virtual teaching method				
0.775	0.927	0.945	Family	Social environment			
0.751	0.917	0.938	Teachers				
0.765	0.50	0.846	0.941		0.907	0.947	School management
0.867	0.846	0.929	Peers				
0.786	0.863	0.917	Execution program				
0.586	0.882	0.908	Active school				

**Table 2.** Comparison Matrix of Extracted Mean Variance of Correlation Coefficients of Structures (Divergent Validity)

Fornell and Larcker	Execution Program	Virtual Infrastructure	Technology Literacy	Virtual Teaching	Peers	Teachers	School Management	Geographical Location	Beautification	Facilities And Equipment	Active School	Family
Execution Program	0.886											
Virtual Infrastructure	0.373	0.835										
Technology Literacy	0.375	0.638	0.857									
Virtual Teaching Method	0.451	0.645	0.693	0.811								
Peers	0.507	0.356	0.384	0.402	0.936							
Teachers	0.537	0.398	0.522	0.437	0.444	0.866						
School Management	0.579	0.479	0.536	0.514	0.438	0.606	0.875					
Geographical Location	0.300	0.302	0.305	0.276	0.256	0.386	0.360	0.898				
Beautification	0.343	0.444	0.454	0.405	0.311	0.556	0.496	0.593	0.863			
Facilities and Equipment	0.371	0.460	0.454	0.383	0.287	0.546	0.498	0.574	0.717	0.824		
Active School	0.511	0.564	0.610	0.573	0.494	0.623	0.566	0.491	0.585	0.666	0.766	
Family	0.540	0.471	0.532	0.500	0.491	0.579	0.552	0.459	0.537	0.592	0.630	0.880

Based on the results and output of the programs, as shown in Tables 1 and 2, the scale demonstrated acceptable reliability and validity. Table 2 shows the degree of correlations between the constructs involved in the study. For instance, in the first column dedicated to the execution program, the construct correlates 0.89 with other related items. The same is true about other aspects as well; therefore, the divergent validity of the scale is also confirmed.

### *Data Analysis*

Data were analyzed using SPSS22 and Smart PLS3 for Structural Equation Modeling using Partial Least Squares (PLS) approach. After ensuring the face and content validity of the items by experts, an Exploratory and Confirmatory Factor Analysis was run to investigate the construct validity of the items using the answers of 100 individuals shown  $KMO=0.79$ , Kervit Bartlett's  $\chi^2=4087.373$  were statistically significant at  $p < 0.001$ , which indicates model fit indices of the data. According to Sarmad et al. (2015), 5 to 10 individuals are sufficient for running exploratory factor analysis; however, others argue differently on the exact number. For Sapnas and Zeller (2000), 50 is the least required number for the calculations, yet the number is reported to be above 300 for some other scholars (See e.g., Hajizade & Asghari, 2011). Since no robust number was at hand, the researchers selected 100 individuals for the exploratory phase of the analysis. Additionally, since we wanted to ensure that our data properly taps into all 12 dimensions of the structural model, we followed the suggestions provided by Davari and Rezazadeh (2017) and used 302 individuals as the adequate number of individuals for Confirmatory Factor Analysis.

Using the Varimax method in the Factor Analysis set for measures higher than 1, 12 facets were at hand including the %70 of the total variance. The status of convergent reliability and validity coefficients are depicted.

## **RESULTS**

Significant estimates along with the results of factor analysis were used for confirming the underlying hypotheses of the study where the amount of t.value exceeds 1.96, the statistically significance of the relations would be confirmed at a confidence level set to 0.95. According to Figure 2., all items enjoy a t.value > 1.96 which indicates the significant relationship in-between all the constructs involved in the study at the confidence level of 0.95. Table 3. Indicates that physical, social, and digital environments are 0.31, 0.32, and 0.29 effective respectively in the activation of schools and transforming them into Active Schools. Next, the direct and indirect effects of factors involved in school activation were probed by analyzing the variances. The results indicate that physical and digital environments are 0.31 and 0.34 effective in the liveliness and activation of schools.

Factor loads are calculated by calculating the correlation value of the characteristics of a structure with that structure and its appropriate value is equal to or greater than 0.4 (Hewland, 1999). According to Figure 3, within the social dimension, all 5 factors; namely, (1)



family, (2) teachers, (3) school management, (4) peers, and (5) executive programs were significantly effective in enriching the social contexts. Family is effective 0.846 of the time along with teachers (0.844), school management (0.789), executive programs (0.768), and peers (0.655). As far as the digital dimension is concerned, digital literacy (0.893), virtual classroom (0.880), and virtual infrastructure (0.848) were shown to be effective. For the physical environment, facilities and equipment, beautification, and geographical location scored 0.936, 0.884, and 0.752 respectively.

**Table 3.** Results of Fitting the Structural Model of the Research

Test result	Effect size criterion <sup>a</sup>	Significance coefficients (1.96) <sup>b</sup>	Path coefficient	Sub and main-hypotheses
Accept	0.102	6.172	0.310	Active school ← physical environment
Accept	0.090	5.955	0.329	Active school ← Social environment
Accept	0.050	6.398	0.288	Active school ← Digital environment
Test result	VAf <sup>c</sup>	Sobel test <sup>d</sup>	Mediator Hypothesis	
Accept	0.30	4.676	← Social environment ← physical environment Active school	
Accept	0.34	5.062	← Social environment ← Digital environment Active school	

a: Cohen's d, b: t-value, c=variance accounted for d=the outcome of interest

Furthermore, Standardized Root Mean Residual estimate (SRMR) equal to 0.05 and less than 0.08 is acceptable. A normal Fit Index equal to 0.93 and higher than 0.90 is also acceptable as shown in Table 4.

**Table 4.** Results of Overall Model Fit

AVE <sup>a</sup>	R <sup>2</sup>	Dimensions	AVE <sup>a</sup>	R <sup>2</sup>	Factors
0.805	0.563	geographical location	0.563	Second order variable	physical environment
0.745	0.717	Beautification			
0.680	0.876	Facilities and equipment			
0.697	0.876	Virtual infrastructure	0.538	Second order variable	Digital environment
0.734	0.797	Technology literacy			
0.658	0.773	Virtual teaching method		Second order variable	Social environment
0.775	0.714	Family	0.500		
0.751	0.711	teachers			
0.765	0.622	school management			
0.867	0.427	peers			
0.786	0.588	execution program			
0.586	0.646	Active school			
SRMR <sup>b</sup> = 0.05 ≤ 0.08				Good model fit	
NFI <sup>c</sup> = 0.93 ≥ 0.90					

a= average variance extracted, b=Standardized Root Mean Square Residual, c=Normed Fit Index

Figure 2. Significant Coefficients of the Main Research Hypotheses

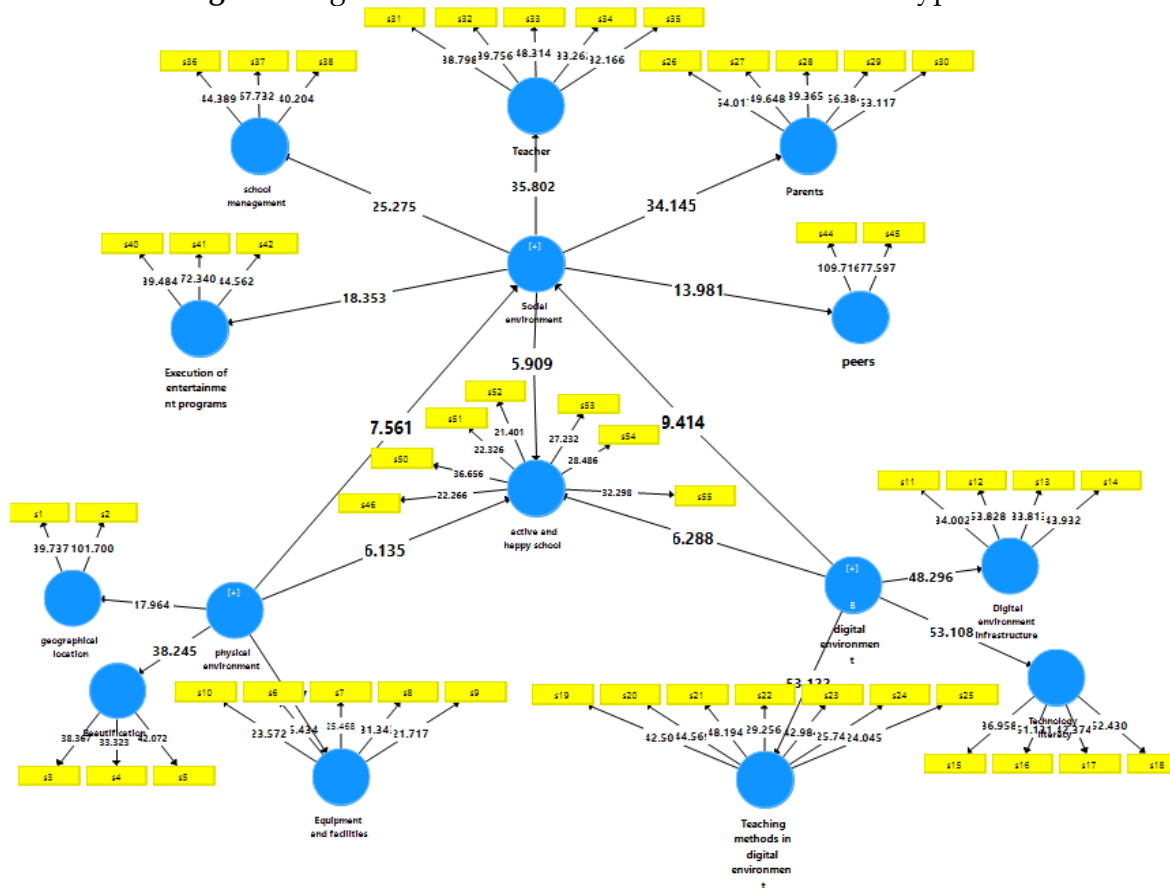
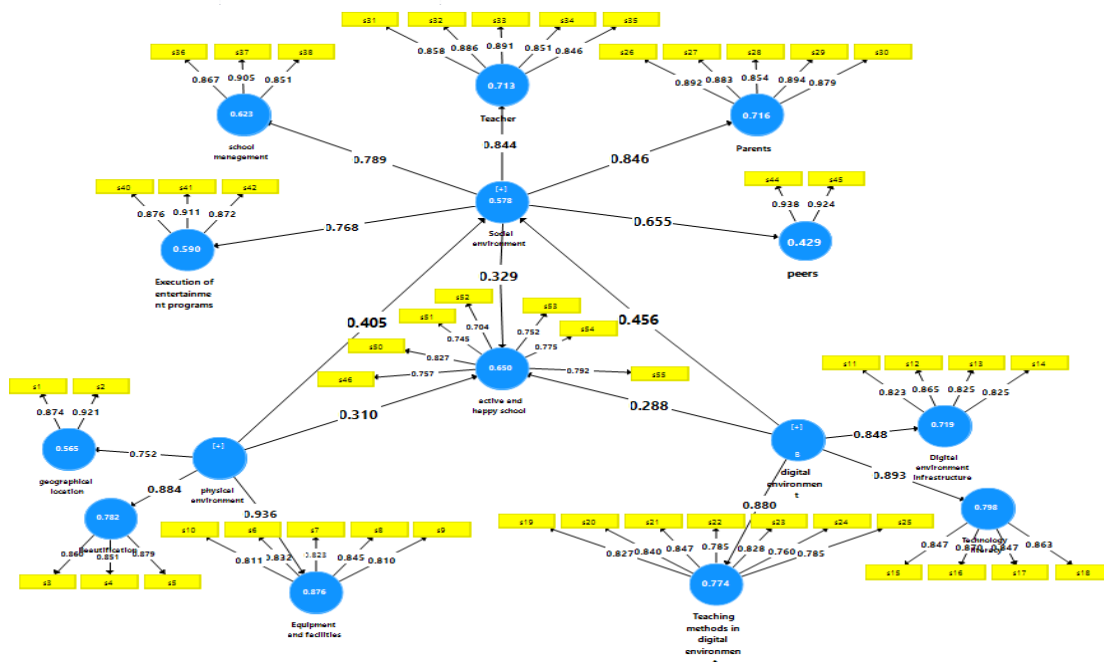


Figure 3. Standard Coefficients of the Research Model



DISCUSSION

This study aimed to investigate the role of physical and digital environments on creating an active school situation concerning the mediating role of the social environment.

The analyses revealed that the social environment is the most salient factor and has the maximum effects. Further, the physical and digital environments were identified as the most influential factors. Looking at the literature and the theoretical interpretations, one can realize the significance of social environment on the activation of school situations which is in line with studies conducted by other scholars. (e.g., Bay & Esfahani Nia, 2019; Mohammadi, 2019; Hejazi et al., 2015; Mehdizadeh et al., 2014; Prince et al., 2012; Cradock et al., 2009; Davison, 2009; Chelbi et al., 2009). The replete number of studies in this regard signals the fact that the social environment of the Iranian context has the pre-requisites for creating active schools. Therefore, the sociality of school environments can be an effective factor in school activation and the enhancement of the educational activities and pave the way for improving the physical health and education of students and teachers. According to some scholars (e.g., Huppke, 2001), human beings are social, and the more social life they experience, the more happiness comes into their way.

In the present study, the social environment was divided into five aspects; namely, (1) family, (2) teachers, (3) school administrators, (4) school programs, and (5) classmates. What emerged from the data analyses was that teachers and family play the most significant roles in socializing the life of the students and factors (5), (3), and (4) come respectively after them. Fitria and Suminah (2020) and Safari et al., (2018) have also emphasized this issue and mentioned that teachers are the game-changing factors and motivators in this domino. According to the scholars, the appearance and ethics of teachers enhance the students' willingness to participation and involvement in physical activities. It is noteworthy that during COVID Pandemic, the role of teachers and families are somehow equated, which means that families play many similar roles to those of the teachers. The studies conducted by Asefi and Ghanbarpour (2018), McDavid et al. (2012), and other existing literature suggest that the involvement of families in sports and physical activities is essential for students' personal and social growth.

On the other hand, the school administration's commitment and support facilitate the activation of all school environment elements. Furthermore, the application of national curricular programs such as the Kooch Program, The Champion School, and other related scholastic plans have helped the schools' administration to tread even further towards the collective physical and mental health of the educational system and active schools. These findings bold the crucial roles of teachers within society since the facilitative interaction and collaboration of teachers with their students can positively affect the students' well-being and happiness. The same can be argued about the role of school and families. Since moving

towards educational goals such as active schools and societies is complicated, the simultaneous collaboration of all elements and environments seems essential. Care must be considered when discussing the relation between physical and digital environments. As we previously put, neglecting the potentialities of society and social life would hamper the effectiveness of other dimensions, and the personal and social growth that is addressed throughout the present study and the existing literature would not emerge. This again is in line with Bronfenbrenner (1999)'s bioecological model, where the role of social setting is emphasized and is treated as one of the key elements in maximizing the participation of students in physical activities and group work. This again is in line with principles 4-2, 4-3, and 8-7 of Iran's FRDE where in points 4 and 8 of this document one can fully reflect on the role of teachers and families in fulfilling the long-term goals of the educational system; therefore, the Ministry of Education can properly utilize the properties of the social settings to maximize the participation of teachers, students, authorities, neighborhoods, people, and the whole society and help them to expand the horizons of active schools into other aspects of the students' lives.

As far as the physical dimension is concerned, the study showed that it is the second most important factor in creating active schools. This factor has been among the most effective elements within all educational systems throughout history. Most of the models in active school literature have identified it as one of the critical elements. In the Iranian context, the significance of the physical environment has been emphasized in different educational documents. For instance, before the FRDE document, within the 6-Dimensional Document of Education and in principle number 14.3, one can find the importance of such contexts for the educational goals of any school and system. The argumentation about the significance of the physical environment is not only limited to sports management domains other fields and disciplines related to management and organizations have listed this factor among the important factors which influence the interactions and the outcomes of all social environments. Also, the studies of Hyndman and Wyver (2020), Chu et al. (2020), and Laboy (2019) reminds us about the role that this factor plays in the activation of schools; therefore, another implication of the present findings would be that more care must be taken into considerations when preparing and designing the physical environments of the schools.

The physical dimension in our study was divided into three facets, namely, (1) facilities and equipment, (2) beautification, and (3) geographical location, where all of the most significant factors is the facilities, and the least one is the geographical location. This implies that facilities and types of equipment within the school environment play a major role in the

enthusiasm and motivation of the students and the activation of schools. The findings of our study are in line with Chu et al. (2020) and Hyndman and Wyver (2020), who listed this dimension as one of the key aspects that authorities must beware of when deciding on creating active schools. Additionally, the importance of school beautification cannot be neglected. Cleanness, proper lighting, and colorful walls and spaces are some points that can be considered. Regarding the status of geographical location as the least important one within the physical dimension, we can discuss that this variable cannot be treated as a fixed and never-changing element. It depends on the weather and seasonal situations within every region and province. In one season, it may be the most important factor and in the other, it might not be that effective. According to psychologists, the physical situation affects the students' sense of belonging and helps them to make stronger mental connections to the school and other social environments. Therefore, another implication of the present study would be the advice to the authorities and policymakers for considering the proper design and structure of schools since it is, as we saw, one of the main aspects of active schools.

After the COVID-19 Pandemic, the digital environment, and its properties became the main venue of education, and physical education was no exception in this regard. A plethora of studies are at hand concerning the significance of the digital environment (See, e.g., Kasey et al., 2017, Barahoyi et al., 2015, Javanbakht et al., 2015, Farahani & Keshavarz, 2003). Although the integration of traditional and modern venues of education is new, many educationalists, such as teachers, may lack adequate literacy and knowledge and argue against the use of technology within classroom and school contexts. However, the spread of technology makes it inevitable for educational systems to neglect their role and importance. In this study, we divided this environment into three layers; namely, (1) virtual infrastructures, (2) virtual teaching methods, and (3) technology literacy, and the analyses revealed that among these factors, technology literacy is the most important aspect and teaching methods and infrastructures were listed as the 2nd and 3rd in the overall importance. As far as digital literacy is concerned, the ability to create digital content was the essential part. Within the virtual teaching method, the teachers' capabilities to run sports festivals and document them via films and pictures are of utmost importance. However, one must not forget that maintaining motivation in all students within a digital education is not an easy task. Teachers must apply the methods by which the students sustain their commitment to learning and participating in the activities. The fact that digital infrastructure has been listed as the least important one is that within the Iranian context, there may be many places, such as rural regions, where the technology is yet to enter the educational environments. Another reason

may be that the speed of the net and its accessibility are not equal within all provinces. The students and teachers have problems accessing the so-called digital environments. Additionally, one can argue that the inclusion of digital environments and technology within the educational system contradicts the active nature of physical education; however, the COVID pandemic proved that there are potentialities for such settings to be applied within all contexts with proper care and pre-requisites.

Utilizing all aspects of the school environment (physical, digital, and social) effectively and simultaneously is a complex endeavor. It is worth mentioning that considering physical and digital environments without paying enough attention to the social aspect does not guarantee the creation of an active school as a result. The results of the present study manifested that digital and physical environments are indirectly linked to the social aspects and were effective in achieving active schools, which reminds us of the interpretations that Bronfenbrenner (1999) had about the role of social context and environment. In Bronfenbrenner's (1999) bioecological model, adolescents' and youngsters' growth is dependent on the environment where they live. In the model, the living environment is divided into four layers. The microsystem is the core aspect of one's personal, physical, and psychological properties. The next layer, i.e., mesosystem, signals the role of connections such as family and friends. The exosystem is the third layer where particular social organizations such as schools are listed. Finally, at the macrosystem, the cultural and ideological values are addressed and it is in this layer that ideas for involvement and participation in activities are rooted. As we previously put forward, according to this model, one's eagerness to involve in an activity would not trigger unless factors such as exploration, manipulation, imagination, and interpretation are present within a social environment.

In justifying the indirect relations that the digital environment had with the social dimension, it can be claimed that within virtual education, the underlying social factors; namely, teachers, families, school management, and peers are the main actors, and the most essential role of the digital environment is to provide the basis for maintaining the interaction between the social factors in an online manner (Fabian & MacLean, 2014). As a result, if the prerequisites of utilizing digital and physical environments are fulfilled, the educational system can move towards its goals and standards more efficiently.

The designed model in this research is based on Smith et al.'s (2020) CAS model and Active School Document published by the Ministry of Education in 2019 in which all types of environments are linked and affect each other. According to Bronfenbrenner (1999), the individuals who are members of a complete system respond to the environmental triggers and



attempt to be effective and try to reconstruct the system and environment surrounding them. Therefore, in line with operationalizing the principle 6.6 of FRDE for creating networks of learning environments and effective interactions of schools with such networks, authorities, and policymakers of the Iranian context would follow the suggestions of FRDE so that the active school environments are enriched with countless opportunities for students and other stakeholders to move towards personal and social health and growth. In this vein, the Ministry of Education in Iran and elsewhere must beware of the potentialities that physical, digital, and social environments provide. The fact is in line with principles 3.8, 1.7, 2.14, 8.14, 14.3, and 4.17 of the FRDE. It is suggested that future studies use a qualitative approach to provide the existing knowledge with more depth and quality. Furthermore, the situation of physical activities within the apartment environment and how this somehow limited environment can benefit the students and other family members can be the topic of future studies.

### **Authors' Contributions**

Authors were involved in all sections of the present research; including the stages of writing, data collection and analyses, discussion, and revision.

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### **Declaration of Conflict Interest**

The authors declare that they have no competing interests.

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