

Opportunities, Issues and Best Practices in Online Education and Examination of University Students

BRAIN BREAKS AS A SOLUTION TO OVERCOME THE CONSEQUENCES OF SOCIAL ISOLATION DURING CORONAVIRUS PANDEMIC

Zornitza Mladenova

The Foundation for Global Community Health (Bulgaria)

Abstract. Distance learning became a big issue and challenge for the educational systems around the world during the coronavirus pandemic. For a while now, educators around the world have been talking about the need to rethink how we educate future generations and question what we need to teach and what we are preparing our students for. The aim of our study is how the digital platform of HOPSports Brain Breaks¹⁾ Physical Activity Solutions is implemented in the distance learning in terms of social isolation. In April 2015 starts the implementation of the system of HOPSports Brain Breaks Physical Activity Solutions in Bulgarian schools and communities. Before the crisis the system was in use mainly in the schools but in shape of the distance learning we are conducting the experiment in the framework of Whole School, Whole Community, Whole Child Model (WSCC) delivering the BB videos in the families with the purpose to practice the different kind of PA at home and to support the proses of education. According the Ministry of Education in Bulgaria the teachers have not only to present the educational content to their pupils but also to provide psychological support thru holistic approach in the area of arts, technologies and sport. After a three months of collaboration with the teachers, social workers, psychologists and parents we can summarized that the digital program is more relevant now than ever, particularly with providing different PA applicable at home, practicing healthy habits and connecting children around the world through sport, culture and arts. As a conclusion we have to point that the digital platform of HOPSports Brain Breaks® Physical Activity Solutions improves the physical as well the mental health of the children and adolescents.

Keywords: distance learning; physical education; obesity; holistic approach

Introduction

The globalization processes are one of the most important features of the twenty-first century. Globalization refers to the connection of ideas, concepts and thinking and it is greatly influenced by the rapid transfer of information that occurs in our society today (Chin & Edington, 2014). Our global society stands on the brink of

a technological revolution that will fundamentally alter the way we live, work, and relate to one another. Exactly here is the right place and the right time to put that question: Should we rethink the shape of education and why? In the book *The Fourth Industrial Revolution* Schwab, 2016 calls for leaders and citizens to, “together shape a future that works for all by putting people first, empowering them and constantly reminding ourselves that all of these new technologies are first and foremost tools made by people for people.” As Jack Ma in 2018 says: “We have to teach our kids something unique, so that a machine can never catch up with us: values, believing, independent thinking, teamwork, care for others – the soft skills – sports, music, painting, arts, to make sure humans are different from machines” (Whiting, 2018).

Distance learning became a big issue and challenge for the educational systems around the world during the coronavirus pandemic. For a while now, educators around the world have been talking about the need to rethink how we educate future generations and question what we need to teach and what we are preparing our students for (Luthra & Mackenzie, 2020). According UNESCO Institute for Statistics Database Globally, at least 1.5 billion students and 63 million primary and secondary teachers are affected by the unprecedented disruption caused by the COVID-19 pandemic. Homeschooling during the coronavirus pandemic could change education forever (Broom, 2020). Around the world, schools are using existing platforms from the likes of Microsoft and Google as well as conferencing apps like Zoom to deliver lessons for their pupils. The Organization for Economic Co-operation and Development is tracking how technology is replacing face-to-face teaching. “It is particularly inspiring to see entirely new ways of working emerging, ones that go beyond simply replacing physical schools with digital analogues,” says Tracey Burns, of the OECD Directorate for Education and Skills. According the results of the OECD’s global teaching survey TALIS technology should have a much greater role in the classroom. “Technology cannot just change methods of teaching and learning, it can also elevate the role of teachers from imparting received knowledge towards working as co-creators of knowledge”²⁾.

Regarding the social importance of PE classes during the Coronavirus Pandemic we have to point some statistical facts related with the health situation among the citizen in our globe. According the World Health Organization in 2016 41 million children under the age of 5 and over 340 million children and adolescents aged 5 – 19 were overweight or obese. According to the European Association for the Study of Obesity (EASO), approximately 1.5 million Bulgarians are overweight or obese. Bulgaria is one of the leading places in the frequency of childhood obesity among EU countries.

What are the preconditions for obesity? There is not one single reason for childhood obesity; rather it is a complex interaction of many variables. Contributing factors include genetics, behavior (nutrition, physical activity, sedentary activities) and environment. Many kids are spending less time exercising and more time in front of the TV or computer. From fast food to electronics, quick and easy is the reality for many families today.

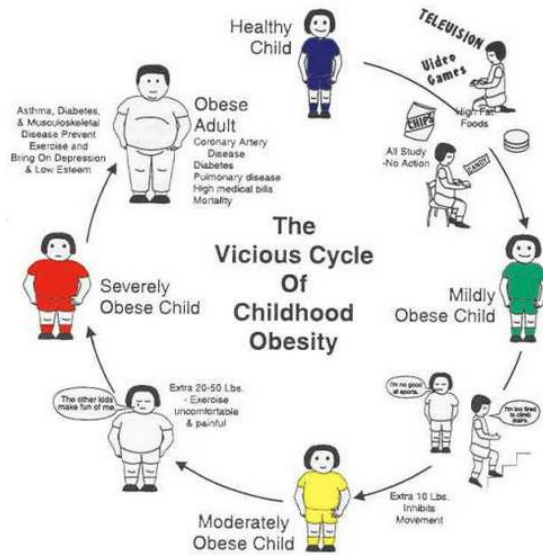


Figure 1. The Vicious Cycle of Childhood Obesity

Source: Childhood Obesity WorldPress.com, 2015

Obesity during childhood can harm the body in a variety of ways. According to Centers for Disease Control and Prevention CDC, 2020 children who have obesity are more likely to have:

- High blood pressure and high cholesterol, which are risk factors for cardiovascular disease.
- Increased risk of impaired glucose tolerance, insulin resistance, and type 2 diabetes.
- Breathing problems, such as asthma and sleep apnea.
- Joint problems and musculoskeletal discomfort.
- Fatty liver disease, gallstones, and gastro-esophageal reflux (i.e., heartburn).

But on the other hand obesity also affects the emotional and intellectual development of children:

- Psychological problems such as anxiety and depression.
- Low self-esteem and lower self-reported quality of life.
- Social problems such as bullying and stigma.

Now the big question in front of the PE system is how to use the new technologies to support the physical and mental health of the pupils? According Chin (2016) we can use the digital platform of HOPSports Brain Breaks Physical Activity Solutions “to draw the linkage and application of a holistic health and physical education

model and interactive technology as one of the positive means of combating global epidemic of overweight and obesity.”

Aim of the study

The aim of our study is how the digital platform of HOPSports Brain Breaks Physical Activity Solutions is implemented in the distance learning in terms of social isolation. HOPSports Brain Breaks Physical Activity Solutions are web-based 2 – 5 minute activity breaks designed for the individual classroom setting which we implemented in Bulgarian schools and communities since 2015. We conducted a real experiment during the distance learning period using this digital platform in physical education classes as a tool applicable for home. The aim of our experiment is to integrate and analyze the holistic approach in physical education classes with the purpose to overcome the social isolation and to enhance the physical activity and healthy habits among the pupils.

Methodology

The first task of our research is to explore the attitudes of the pupils regarding their habits related with PA and health orientation. For this purpose, we are using a self-report survey instrument entitled “Attitudes toward Physical Activity Scale (APAS)” The survey includes Bulgarian primary school students from 1st to 7th grades – 117 pupils.

We analyzed the results of the test using the software program SPSS 22. We used the descriptive statistic, comparative statistic and the cluster analysis as a tool of direct marketing. We analyzed also the BMI of the pupils as criteria about their health situation. Using BMI-for-age percentile based on Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion.

Results & analysis

We used the cross tabs to present the distribution of BMI regarding the gender of the pupils. As you see at the diagram there era no significant variations in the group of underweight but in the other groups we noted significant variations. And we have to point that in the second two groups ”overweight” and “obesity” the girls are leading with 7.2%.

		Gender		Total
		girl	boy	
BMI	obesity	9	7	16
	overweight	14	12	26
	normal	32	37	69
	underweight	3	3	6
Total		58	59	117

Figure 2. Body Mass Index * Gender Crosstabulation

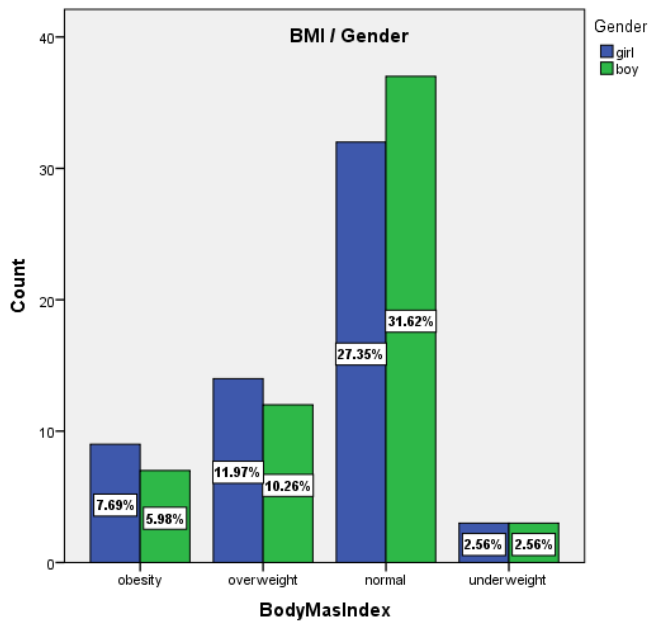


Figure 3. Percent distribution of BMI by Gender

We made a cluster analysis using three variables: gender, BMI and the answer of the question “Being physically active helps to give me good health.”

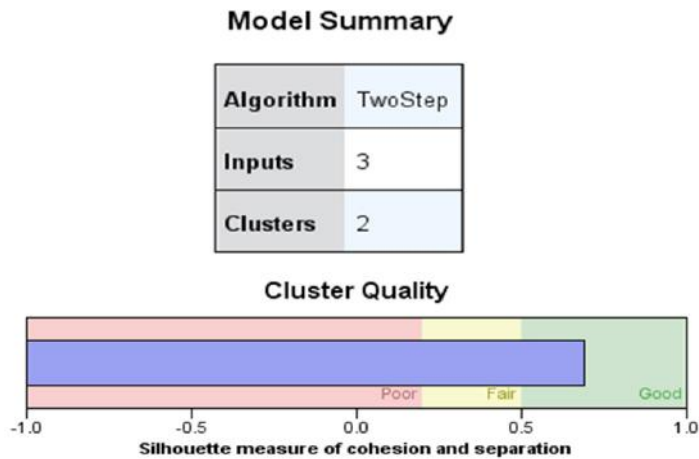
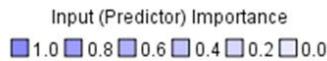


Figure 4. Model Summary of Cluster Decision

The summary information (Model Summary), which represents the cluster solution, shows that a two-stage clustering has been performed, in three variables, with 2 clusters. For the quality of the implemented clustering we have visually presented the coefficient of the profile in the case over 0.5, which statistically represents a relatively good formation of the profile of the students in the realized research. As you see the most importance by clustering took exactly the third variable.

Clusters



Cluster	2	1
Label		
Description		
Size	67.5% (79)	32.5% (38)
Inputs	Being physically active helps to make me fit. Agree (100.0%)	Being physically active helps to make me fit. Disagree (94.7%)
	BodyMasIndex normal (78.5%)	BodyMasIndex obesity (42.1%)
	Gender boy (55.7%)	Gender girl (60.5%)

Figure 5. Cluster description

We have to summarize that the first group of pupils include the positive answer among the boys with lower degrees of BMI, in the second group the pupils answered negative to the question are mostly girls in with the higher BMI.

After a three months of collaboration with the teachers, social workers, psychologists and parents we can summarized that the digital program is more relevant now than ever, particularly with providing different physical activities applicable at home, practicing healthy habits and connecting children around the world through sport, culture and arts. The other important feature of the internationally created

Brain Breaks videos is that they are the messenger of the global culture connecting children thru sport, games, dances and arts. As a conclusion we have to point that the digital platform of HOPSports Brain Breaks Physical Activity Solutions improves the physical as well the mental health of the children and adolescents.

Discussion

The coronavirus disease 2019 (COVID-19) pandemic is having a profound effect on all aspects of society, including mental health and physical health. In the midst of this COVID-19 crisis the educators are discussing what we need to be preparing our students for in the future, educating pupils as citizens in an interconnected world and using the potential of new technologies. Regarding this perspective we have summarized the following tendencies in implementation of HOPSports Brain Breaks® in the shape of distance learning:

- Brain Breaks videos should be used not only during the lessons in the classroom, but also be included in the distance form in PE lessons and in the free time of the pupils;
- We can use this digital platform as a tool of informal education in our communities;
- The essence of the BB system helps us not only to improve the physical activity during the social isolation but also to moderate the attitudes among the pupils orientated to healthy habits.

NOTES

1. HOPSports Brain Breaks® Physical Activity Solutions
2. TALIS 2018 Results (Volume II) (2020). *Teachers and School Leaders as Valued Professionals*. <https://www.oecd.org/publications/talis-2018-results-volume-ii-19cf08df-en.htm>
3. Childhood Obesity Causes & Consequences (2020). *Centers for Disease Control and Prevention*. Retrieved from <https://www.cdc.gov/obesity/childhood/causes.html>
4. European Association for the Study of Obesity (2018). Retrieved from <https://easo.org/member/bulgaria/>
5. HOPSports Brain Breaks Physical Activity Solutions. (2015). Retrieved from <http://hopsports.com/what-is-brain-breaks>
6. The Foundation for Global Community Health. (2017). Retrieved from <https://gchfoundation.org/>
7. The Vicious Cycle of Obesity. (2015). Retrieved July 10, 2020, from <https://pediatricobesityepidemic.wordpress.com/2015/04/24/the-vicious-cycle-of-obesity/>
8. UIS COVID-19 Response: Data to Inform Policies that Mitigate Setbacks in Education Gains (2020). Retrieved from <http://uis.unesco.org/en/news/uis-covid-19-response-data-inform-policies-mitigate-setbacks-education-gains>.

9. Obesity and overweight (2020). World Health Organization. from <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>

REFERENCES

- Broom, D. (2020). *Homeschooling during the coronavirus pandemic could change education forever, says the OECD*. <https://www.weforum.org/agenda/2020/04/coronavirus-homeschooling-technology-oecd/>
- Chin, M.K. & Edington, C.R. (2014). *Physical Education & Health*. UK: Sagamore Publishing. ISBN-13: 978-1571677020
- Chin, M.K. (2016). *Global “Changes” of Physical Education and Health: The Way Forward*. Diliman: College of Human Kinetics, University of the Philippines. <http://sportphil.com/wp-content/uploads/2017/02/ICSPHW-ISBN.pdf>
- Luthra, P. & Mackenzie, S. (2020). *4 ways COVID-19 could change how we educate future generations*. Retrieved from <https://www.weforum.org/agenda/2020/03/4-ways-covid-19-education-future-generations>
- Schwab, K. (2016). *The Fourth Industrial Revolution*, The World Economic Forum
- Whiting, K. S. (2018). *Jack Ma wants to go back to teaching*. Retrieved July 10, 2020, from <https://www.weforum.org/agenda/2018/09/jack-ma-wants-to-go-back-to-teaching/>

✉ **Zornitza Mladenova**

ORCID ID: 0000-0002-1776-4600

The Foundation for Global Community Health

USA, Las Vegas

10, Ivan Peichev St.

Sofia, Bulgaria

E-mail: z.mladenovaz@gmail.com