MIA – Digital University

MSc Instructional Design and Educational Technology

Final Project

The use of digital collaborative learning to address the negative impacts of the pandemic crisis in Physical Education
such as lack of socialisation and high levels of obesity.

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Abstract

The pandemic crisis started in Europe around March 2020; people spent long periods at home in lock-down, during which time parents were tele-working and children were home schooling. This situation created significant problems for many families.

This situation is lasting longer than initially expected. In addition to this, the use of the masks and social distancing requirements have also changed the way people interact with each other.

As a consequence of that there are several issues we can expect in children: lack of communication that affects their socialisation and less predisposition to move and to do physical activity. The absence of a "normal" physical education programme in schools may originate inactivity and consequently, provoke serious health problems. One of the biggest health issues linked with inactivity is obesity.

It is then a perfect moment to identify solutions to solve the aforementioned problems.

In my perspective one of the ways teachers could reduce these problems is the inclusion of collaborative learning in PE classes, using digital tools. At the same time this could motivate students to socialize and increase the frequency and quality of their physical activity.

I have set a complementary plan of the PE subject with the aim of developing the digital tools expressing how collaborative learning could be included to facilitate the socialization of the students while respecting their differences (differentiation) and focusing on their learning progression.

There are some studies on the pandemic but not enough to measure the impact on students' health and well-being. With this work I'm giving a little contribution with some research and ideas about how we could act to promote more physical activity in schools during this time, motivating students via new technology. There are probably several ways to do it, I have designed one and I would appreciate if some of my colleagues could implement it with their students. In any case please do not forget to contact to communicate your results.

Table of Contents

Introduction

COVID-19

The world has been suffering an unexpected crisis since end of 2019.

All countries have been affected and since the beginning of the pandemic more than 200 million have been people infected and up to 4.5 million people have died of COVID-19 to date. (WHO - World Health Organization).

To limit the spread of the disease the WHO created a guideline of a Public Health and Social Measures containing advice on: facial covering/ mask wearing, limits and restrictions on public and private gatherings, restrictions on people's movements and adaptations of services including schools. Those measures resulted in local lockdowns where people were not forbidden to leave their house.

Zhu,S. et al. (2021) mentioned in their study that more than 1.2 billion students were sent home to contain the transmission. This situation was problematic for many families as the start of home-schooling coincided with parents starting to tele-work from home. At home people modified their lifestyles and spent more time sitting down (Romero-Blanco, C. et al, 2020).

Although the oldest adults were more vulnerable to COVID-19 many youths were negatively affected by the restrictions in several areas of their lives (Gobbi, E. et al., 2020). Schwartz et al. (2021) confirmed that students have been multiply impacted by the pandemic, and this situation is going to impact them profoundly and long-term (Pedrosa AL, et al., 2020; Zhu,S. et al., 2021).

The lifestyle habits regarding children's and adolescent's health changed and Guo, Yang-Feng et al. (2021) noted (as a consequence of school closures in China) a decreased engagement in physical activity, longer screen exposure and irregular sleeping duration. Gobbi, E. et al. (2020) in a study run in Italy, France and Turkey reported a reduced health-related quality of life as well as increased negative psychological and emotional outcomes. They recorded behavioral difficulties, a rise in poor nutritional regimen and also mentioned (like the previous study) an increases of sedentariness and screen-time. Less activity and poorer alimentation is probably going to increase levels of obesity everywhere.

The COVID-19 pandemic is bringing novel and complex challenges to human beings. It started out being danger to vulnerable groups but quickly had an emotional, behavioural and psychological impact risk to the whole population (Pedrosa AL, et al., 2020).

Impact on Physical Activity

The pandemic crisis affected not only physical education lessons at school but also attendance of sport facility sessions and presence in public parks. That is to say, participation in physical activity among young people in general declined; (Gobbi, E. et al., 2020) the pandemic decreased the time spent on exercise (Zhu, S. et al, 2021).

Issues and diseases such as overweight, type 2 diabetes, coronary heart disease, strokes, high blood pressure, breathlessness, flabby body, stiff joints, osteoporosis and poor posture may be going to increase in the coming years if there is no investment to have people moving.

Psychological Impacts

Several studies have shown that lockdown also created negative impacts on children's and adolescents' mental health. Zhu, S. et al (2021) presented anxiety, depression and post-traumatic symptoms as the most common consequences of the pandemic.

Schwartz et al. (2021) identified in their study different reactions to the disease linked with age and gender. In their opinion, communication at schools should be differentiated when encouraging students. They found females and older youth are the targets that require the most continued support.

At the same time Forte A. et al (2021) verified that in rural areas people were more protected from experiencing anger, sadness, and boredom/emptiness.

Social Impacts

New technologies and social media have become an important resource to maintain social interaction and to keep adults and children continuing their activities. This idea was confirmed from Pedrosa AL. et al. (2020),

also citing others mentioned, that social media reduced the impact of isolation, but it would be essential to analyze the negative impact in children and adolescents' health.

At the same time this situation is lasting longer than initially expected, the use of the masks and social distancing has also changed the way people communicate with each other. Pedrosa AL, et al. (2020) confirm this by mentioning that social isolation and distancing have been affecting the population's behaviour and may lead to psychological disorders.

The same authors citing Loades et al, mentioned that data from previous epidemics demonstrate that it is five times more probable for children who experience isolation measures to experience mental problems. It is therefore essential to create projects to avoid this huge problem.

Technology in Schools

During the pandemic the didactic use of technology was enhanced. All members of the community (school principals, pedagogical leaders, teachers, students and parents) cooperated to increase a smart use of ICTs to support the teaching and learning process (Álvarez-Arregui,E. et al, 2021).

Common sense says that use of ICTs increase inactivity however Stephenson, Aoife et al (2017) concluded (with some caution) that sedentary behaviours can be reduced in a short-term if people make good use of them. In order to do that, Anugerahwati, M. (2019) reinforced the idea that students should be able to connect with their friends and other people around them to build a better world, and in the process, a teacher's role is to foster them to become "responsible, caring, and contributing" citizens.

Although we do not have enough information regarding the quality of learning students reported during this period, we know that physical activity of the students should be increased, alimentation might be healthier, and socialization needs to be fostered.

Outcomes of Physical Education in Schools

In their study, Gobbi, E. et al. (2020) found that the best PE results during the pandemic were achieved by teachers who encouraged students to be autonomous and responsible for their practical activity. This constatation links us to Romero- Blanco, C. et al's (2020) reflection where they mentioned that more efforts should be made to create strategies that motivate students to lead a healthy lifestyle specially engaging in physical activity and reducing time seated.

Pedrosa AL. et al (2020) citing others also concluded that keeping oneself committed to an activity one likes is going to engage them more. Charania, A. et al. (2021) mentioned that demonstrating and supporting students through the use of constructive pedagogies like project-based learning and inquiry-based learning give students the possibility to research, create and share their knowledge that helps them to be more motivated.

Vives-Cases, C. et al. (2019) also mentioned that young people become more involved in active projects where they can have a critical participation. This allows them to engage in dialogue through group work activities and raises their ability to solve conflicts.

With the context of the pandemic, now looks like the perfect moment to design solutions to solve the problems of inactivity and lack of socialization.

Implementation

Relevant literature I have previously read and my experience as teacher has shown me that to have students working collaboratively it is essential to:

1- consider the individuality of all participants, when creating small groups, being aware of their diversity and including all students (inclusion) respecting their differences (differentiation).
2- design the program: establish goals, consider strategies and types of learning in order to have all students progress.
3- Frequently implement inquiry based challenges in order to motivate all participants.
4- promote open communication and foster socialization, showing presence with constructive feedback.

When collaborating, students brainstorm ideas and more productivity and creativity is expected, faster problem solving and execution of ideas and at the same time it increases the socialization of the participants.

All reflections already presented show the importance of the development of the six global competencies, 6C's tools of engagement, that are going to help students diving into a deep learning: Critical thinking, Communication, Collaboration, Culture, Creativity and Connectivity (Fullan, M. et al.).

Image 1 - 6C´s Global Competencies for Deep Learning

These competencies can also be developed digitally, incorporating them with the latest technology. In order to share my knowledge, I listed tools that can be used in the classroom. I selected some and I linked them to a competency but most of them can be used to develop several competencies, it just depends on the way that are presented and the type of design teachers would like to do.

Character education/ connectivity - the skills teachers should foster in students.

- Mind Mapping/ Organizer (Evernote, Popplet, Mindmeister, SimpleMind, Milanote, Mindomo, Lucidchart,…)
- Feedback (Plickers, Miro, Flipgrid,…)
- Assessments (Quizlet, Proprofs, Google Forms)
- Gamification (Mentimeter, Kahoot, Classdojo, Classcraft,…)
- Response System (Socrative, Pool Everywhere, Plickers, Survey Monkey,….)

Citizenship/ culture - involves the ability of students to be in touch with everything that surrounds them, to know and appreciate where they come from, and the values and beliefs that people in their society hold, and their history as a society.

- Podcasting and Vodcasting (Periscope, This American Life, Work in Progress, The BeanCast, Audacity, Podbean)
- Sharing videos (Live, Vimeo, Dailymotion, Youtube,,…)
- Sharing photos (Instangram, Snapchat, Pinterest, Flickr,…)
- Q&A sites: Wikipedia, Encyclopedia Britannica, American Heritage Dictionary, Ask.com, Answers.com, Yahoo.com, Quora, JustAnswer,…

Collaboration - the way students use various characteristics, talents, and knowledge to work together and produce something new.

- Google drive
- Padlet
- Wiki (Media Wiki, Slim Wiki, Wikidot, Tiki Wiki)

Communication - the ability to put forward ideas and information in a clear, meaningful way: inform, instruct, motivate, and persuade. The information should be clear, concise, correct, and coherent, to have readers/listeners comprehend the intended meaning.

- Blogging and Websites (Wordpress, Wix, Blogger, Weebly,…)
- Microblogging (Twitter, Tumblr)
- Live Streaming/ Webinars (Facebook, Youtube, Google Hangouts, Microsoft, Zoom, Webex, Skype, Adobe Connect Pro, GoToWebinar,…)
- Private Messaging (Whatsapp)

Creativity - refers to the ability of students to make use of their knowledge and/or talents to create something new, or to produce something in a new way.

- Multimedia Presentation (Powerpoint, Prezi, Keynote, Canva, Emaze, Nearpod, Voicethread, Glogster,…)
- Virtual Classrooms (Edpuzzle, Thinglink, Pear Deck,…)
- Video Creation, Editing & Sharing (Adobe Spark, Animoto, Screencast-O-matic, Snagit, Photopeach, Imovie, Movie Maker, Instangram, Educreations, Book Creator, Edmodo, Ted, Schoology)

- Drawing and painting Applications (Makes empire, Aggie.io, Draw.chat, Smart draw)

- Animation (Powtoon, Adobe Animate)

Critical thinking - the ways that students filter, analyze, and question any information that they might find and then synthesize it to fit their understanding.

- Flipped Classroom – instructional strategy to problem-solve before, during and after a class

- Webquest – inquiry-oriented lesson, includes links to websites – Zunal, Bookwidget, Interactive webquests tutorial

- Subject Sampler – interactive web activity

Examples of educational websites: Khan Academy, Itunes & Itunes U, Udemy, Ted Ex, edX, Coursera, Google Scholar,…

As I'm not expecting schools to have the conditions to digitalize PE, I decided to design a project that can be used as a complement to the regular lessons.

The project was designed by me, it can be applied where all students can access the internet. It can be applied as it is designed or adapted to the age and competencies of the students.

It was designed for a school year in Europe and the main goal is to motivate students to become more active and increase socialization.

Project : Become more active when playing and socializing

	Digital tools
September	Webinar – to present the project and rules of participation to all students, explain the importance of respect for each other's opinions and prevent uncontrolled situations. It is also important to make students aware of good behaviour/practices in advance: online professionalism and digital footprint.
October	**Presentation of the tools:** Facebook group – where students can post their tasks Blog – where students can publish information about their meetings Fitnessgram – testing guide to be applied in the PE class
November – December	**Challenge 1 -** Students perform a fun activity where all elements need to be moving. The activity can be recorded or presented with photos and is going to be shared on the facebook group. Online survey – to assess individual and group participation, collaboration, motivation and levels/intensity of physical activity
January-February	**Challenge 2 -** Students perform a challenge activity where all elements need to be moving. The activity can be recorded or presented with photos and is going to be shared on the facebook group.
March	Online survey - to assess individual and group participation, collaboration, motivation and levels/intensity of physical activity
April-May	**Challenge 3 -** Students perform a collaborative activity where all elements need to be moving. The activity can be recorded or presented with photos and is going to be shared on the facebook group.
June	Final fitnessgram - test done in the PE class Wiki – is going to be done during the PE class - Become more active when playing and socializing Final survey – to assess individual and group participation, collaboration, motivation and levels/intensity of physical activity
July	**Presentation of awards** – there are three different awards: Performance – the group which gets the best result in the fitnessgram Evolution – the group that presented better results, from the first to the last test of fitnessgram Communication/ Motivation – the group better presented in the online tools

Webinar

The PE teacher is going to schedule a webinar at the beginning of the school year. The presence of the students is mandatory and will be 1 hour long.

The teacher presents the project as a part the PE program. Students' participation is going to be considered in the students' assessments.

Students are going to work in groups of 3 or 4, decided by the teacher who is going to keep inclusion, diversity and differentiation in mind

This project has three main goals: to increase the frequency of physical activity done by students, learning development and improve collaborative skills. It starts and it finishes with a fitnessgram test to evaluate the level of the students.

To achieve the main goals students are going to work in groups and are going to perform several activities. They are going to train together to enhance their physical activity level and their cooperation. At the same time they are going to use some digital tools to increase their motivation.

Some of the activities are going to be presented in the webinar, others during the year when the teacher feels it be most appropriate.

At the end of the webinar the PE teacher is going to answer questions.

Facebook

The PE teacher creates a private group to share ideas and post information. When necessary the teacher can suggest dialogue, exchange ideas and boost student interaction. Students can share posts, videos and photos of the activities they are running.

The teacher ensures previously that all students can use facebook and e-mail the direct link of the group to students and parents.

Blog

Each group is going to create a blog where they are going to publish their activity. The meetings they organise and the physical activity they perform can be written or can be recorded in picture form. If students are under 18 years old parents need to give written permission to post their photos or personal data.

The blog might motivate them, promote discussion and foster digital learning.

Challenge

There are 3 challenges during the project and students need to cooperate and show evidence of their physical activity. In the first challenge they must show a fun activity, in the second one a challenge and in the last one a collaborative activity. Not only must they discuss and think about the activity they also need to act and show evidence recording or taking photos of themselves. This methodology may help them interact with each other.

Surveys

Surveys can be applied through facebook and can be built in several platforms as mentioned in the table. They are easy to design and for the most part, results are presented in an excel sheet that is convenient to handle.

Surveys during this project are going to help teachers assess the project and the participation of the students.

Wiki

All groups are going to reflect on the project: “Become more active when playing and socializing” and give suggestions for other teachers that would like to develop the same project in future.

Conclusions and Recommendations

I am equally passionate and worried about the health and well-being of children and adolescents. The levels of physical activity are lower now than than during the pre-pandemic period and I suspect we are soon going to see severe consequences.

I invite all my colleagues to try to develop a project like this one, in order to positively impact our students.

Please feel free to use any of the research I did and please, if you do so, let me know your results and give me feedback about the project.

Together, let’s minimize the consequences of this pandemic.

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