



LET US Play: production and implementation of a MOOC on physical activity and health

LET US Play: produção e implementação de um MOOC sobre atividade física e saúde

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ABSTRACT

With the aim of presenting a tool for identifying and modifying traditional games and activities in Physical Education (PE) classes to maximize students' physical activity, a massive open online course (MOOC) for PE teachers, based on the LET US Play (LUP) strategy, was proposed. The course was made available in a virtual environment and tested by PE teachers from the Federal Institute of Mato Grosso do Sul (IFMS). Participants completed a questionnaire to evaluate the course's organization, content, and relevance, which was analyzed using the Content Validation Index (CVI), yielding a CVI of 0.94 for organization, 0.90 for content, and 0.83 for relevance. It was concluded that the MOOC can serve as an effective alternative for promoting continuing education for PE teachers, as participants demonstrated the ability to apply LUP principles in their classes. The course is available on the IFMS free courses portal.

Keywords: Physical education; Teacher training; Distance education.

RESUMO

Com intuito de apresentar uma ferramenta para identificação e modificação de jogos e brincadeiras tradicionais nas aulas de educação física (EF), para maximização da atividade física (AF) dos estudantes, foi proposta a produção e implementação de um curso on-line, aberto e massivo (MOOC) para docentes de EF, baseado na estratégia LET US Play (LUP). O curso foi disponibilizado em ambiente virtual e testado por professores de EF do Instituto Federal de Mato Grosso do Sul (IFMS). Os participantes responderam um questionário para avaliação da organização, do conteúdo e da relevância do curso, cuja análise foi realizada pelo índice de validação de conteúdo (IVC), com IVC de 0,94 para a organização, 0,90 para o conteúdo e 0,83 para a relevância. Concluiu-se que o MOOC pode ser uma alternativa para promover ações de formação continuada para docentes de EF, uma vez que os participantes demonstraram habilidade para aplicar os princípios LUP em suas aulas. O curso está depositado no portal de cursos livres do IFMS.

Palavras-chave: Educação física; Capacitação de professores; Educação a distância.

Introduction

Children and adolescents should accumulate at least 60 minutes of daily moderate-to-vigorous physical activity (MVPA), as regular physical activity (PA) practice results in numerous health benefits¹. However, the latest National Survey of School Health revealed that 71.7% of boys and 86.5% of girls are insufficiently active².

Schools play a crucial role in developing knowledge and habits related to PA practice, whether through physical education (PE) classes or cross-curricular content in other subjects. PE should be mandatory in Basic Education and offered for at least three 50-min-

ute classes per week.¹ Moreover, it is recommended that PE teachers keep students physically active and engaged for most of the class through appropriate pedagogical practices for this purpose.¹ In this context, it is suggested that at least 50% of PE class time be spent on MVPA³.

Therefore, there is a need to implement practices that can increase the level of PA and student engagement in PE classes, such as the LET US Play (LUP) strategy. Created in the United States for an after-school program, LUP proposes the identification and modification of primary barriers to PA practice

through the adaptation of traditional sports, games, and activities, aiming to maximize PA⁴.

Given that LUP has proven to be an economical and effective strategy for increasing students' MVPA and is therefore applicable to school PE, a MOOC-type course was developed and implemented in a virtual teaching and learning environment to disseminate LUP and train teachers in applying its principles.

In this report, the aim was to describe the production and implementation of the course "LET US Play: maximizing physical activity in school physical education," in partnership with the Federal Institute of Mato Grosso do Sul - Portuguese: Instituto Federal do Mato Grosso do Sul (IFMS).

Methodological Approach

The study employed a descriptive approach, specifically an experience report, adhering to the ethical guidelines established by the Research Ethics Committee of Anhanguera-Uniderp University (No. 3,383,474).

The methodological procedures encompassed the planning, production, delivery, development, and evaluation of the course⁵, as detailed in Table 1.

The analysis of the course evaluation questionnaire was carried out using the Content Validity Index per item (I-CVI) based on a Likert scale (1 - inadequate; 2 - partially adequate; 3 - adequate; 4 - completely adequate), whose calculation is made by the sum of answers 3 and 4 divided by the number of judges, with the minimum value for validation being 0.786. The suggestions were analyzed based on notions of Content Analysis⁷.

Results and discussion

Although we have listed two studies among Brazilian theses and dissertations⁹, none of them include a MOOC that deals with PA and health, especially aimed at the school environment. This modality presents itself as an alternative for continuing teacher training, given the lean format of the classes and the flexibility to carry out tasks.

Table 1 – Phases of course development

Phase	Description
Planning	Literature Review: Physical Activity, Health, and Teacher Training Definition of Objectives: a) Foster critical reflection on the discipline of physical education in professional and technological education; b) Encourage critical thinking about the importance of PA in adolescence, as well as practice recommendations; c) Train participants to use the principles of LUP; d) Collaboratively develop a guide with proposals for modifying games and activities according to LUP principles.
Production	Production of text and video materials (using Canva, Atube, PowerPoint, and Pixton software): Organization of the virtual environment: a) Block 1: Welcome video; b) Block 2: Learner's manual (hours, educational resources, activities, evaluation criteria, organization of topics, and references); c) Block 3: 'Physical education in professional and technological education' (textual material, CONIF video celebrating the 111 years of the Federal Network of Vocational, Scientific and Technological Education) – 4 hours; d) Block 4: 'Physical activity and health' (text material on benefits, recommendations, concepts, definitions, categorization, and evaluation of physical activity; and video lessons on topics such as benefits of physical activity in childhood and adolescence, physical inactivity in children and adolescents, and pedometer use) – 8 hours; e) Block 5: 'LET US Play – Principles and strategies' (text material on LUP principles and strategy, use of LUP in a North American study, and ideas for modified activities; video lessons on the history and application of LUP principles, and a video demonstrating the technique during a physical education class at the IFMS Campo Grande Campus) – 8 hours; f) Block 6: Forum (collaborative activity for developing a guide with activities modified according to LUP principles); g) Block 7: Supplementary readings and references; h) Block 8: Final assessment (ten questions on the topics covered); i) Block 9: Course evaluation; j) Block 10: Instructions for certificate issuance
Offer	The invitation to the 19 physical education teachers from the 10 campuses of IFMS was sent via institutional email and through the WhatsApp group.
Development	The maximum deadline for completion of the activities was 30 days.
Evaluation	After completing the course, the teachers evaluated: a) Organization: structure, logical sequence of content, workload, and presentation of objectives; b) Content: appropriateness to the target audience and course purpose, coherence between modules, writing quality, and audiovisual resources; c) Relevance: concerning professional and technological education, physical education, and physical activity practice in adolescence.

PA = physical activity; LUP = LET US Play; CONIF = National Council for the Federal Network of Vocational, Scientific and Technological Education Institutions; IFMS = Instituto Federal do Mato Grosso do Sul.

The course content was produced based on a literature review, consisting of textual material and videos, and published in electronic book format¹⁰, available at <https://educapes.capes.gov.br/handle/capes/582243>.

A total of 14 IFMS professors were enrolled in the course. Of these, nine completed the course, indicating a dropout rate of 35.7%, which is considered low for distance learning courses^{8,9}. The teachers who graduated from the course were then designated as judges, as shown in Table 2.

Table 2 – Characterization of judges (Physical education teachers from Instituto Federal Mato Grosso do Sul, participants in the course)

Characteristics	n (%)
Personal	
Gender	
Female	5 (35.7%)
Male	9 (64.3%)
Age	
Up to 29 years old	2 (14.3%)
30 to 39 years old	7 (50.0%)
40 to 49 years old	4 (28.6%)
50 years old or older	1 (7.1%)
Initial education	
Full teaching degree	9 (64.3%)
Only teaching degree	2 (14.3%)
Teaching degree with bachelor's degree supplementation	2 (14.3%)
Bachelor's degree with teaching degree supplementation	1 (7.1%)
Academic	
Year of completion of initial formation	
Up to 2004	6 (42.8%)
After 2004	8 (57.1%)
Degree	
Lato sensu postgraduate	2 (14.3%)
Stricto sensu postgraduate (master's)	6 (42.8%)
Stricto sensu postgraduate (doctorate)	6 (42.8%)
Quadrennial of completion of highest degree	
Quadrennial 2005-2008	1 (7.1%)
Quadrennial 2009-2012	2 (14.3%)
Quadrennial 2013-2016	3 (21.4%)
Quadrennial 2017-2020	4 (28.6%)
Professional	
Teaching experience	
Up to 4 years	3 (21.4%)
5 to 9 years	3 (21.4%)
10 to 19 years	4 (28.6%)
20 to 27 years	4 (28.6%)
Teaching experience in professional and technological education	
Up to 4 years	7 (50.0%)
5 a 9 years	4 (28.6%)
10 a 19 years	3 (21.4%)
Institution of professional practice	

Characteristics	n (%)
Only IFMS	12 (85.7%)
IFMS and UFMS	1 (7.1%)
IFMS and Municipal School	1 (7.1%)
Teaching workload	
Up to 20 hours	2 (14.3%)
20 to 40 hours	11 (78.6%)
Over 40 hours	1 (7.1%)
Development of activities beyond teaching	
Yes	13 (92.9%)
No	1 (7.1%)
Activities developed beyond teaching	
Management/coordination position	2 (14.3%)
Teaching, research, or extension project	11 (78.6%)
Supervision of final papers	1 (7.1%)
Workload dedicated to research/management activities	
No specific workload	9 (64.3%)
Up to 10 hours	2 (14.3%)
11 to 15 hours	1 (7.1%)
16 to 20 hours	1 (7.1%)
21 to 30 hours	1 (7.1%)

IFMS = Instituto Federal do Mato Grosso do Sul; UFMS = Universidade Federal do Mato Grosso do Sul.

Table 3 presents the CVI regarding the items analyzed.

The course organization was validated (CVI 0.94). It is noteworthy that the availability of course planning and structure, the defined and objective pedagogical proposal, the sequential schedule, the systematization of time and space, and the clear presentation of learning objectives are fundamental for a better environment and organization for the course participants who needs to have very clear learning goals so they can self-organize^{11,12}. These elements were presented both in the 'Welcome' section and in the 'Student Manual'.

One suggestion for this issue was 'to have a greater workload, allowing the principles of the method and other application activities to be deepened.' The insertion of the forum was intended to contribute to the sharing of experiential knowledge among teachers by indicating different activities according to the possibilities on campus. However, there was no student-student interaction. The solution adopted was the inclusion of a practical guide for adapted games, expanding the suggestions for modified activities. The compiled and illustrated guide¹³ was developed with the participation of course participants who responded to the forum, indicating a traditional and modified activity in accordance with the LUP strategy. Suggestions from course participants for modified activities expanded the possibilities for applying LUP, diversifying according to the real context of PE classes experienced by IFMS professors.

Table 3 – Evaluation of the organization, content, and relevance of the MOOC.

Criteria	Items	Course evaluation				CVI
		1*	2**	3***	4****	
Organization	The structure is adequate	0	1	3	5	0.89
	The content is presented in a logical sequence	0	0	4	5	1
	The workload is adequate	0	1	4	4	0.89
	The educational objectives are clearly presented	0	0	4	5	1
	Total group					0.94
Content	The content demonstrates the purpose of the course	0	0	4	5	1
	The content is appropriated for the target audience	0	2	2	5	0.78
	The content is clear and objective	0	1	3	5	0.89
	The content of the modules is coherent	0	0	4	5	1
	The writing of the material is well-structured in terms of grammar and spelling	0	0	4	5	1
	The audiovisual resources are sufficient and satisfactory	0	2	3	4	0.78
	Total group					0.90
Relevance	The topics covered are relevant in PTE	1	0	3	5	0.89
	The course promotes reflection on the role of PE in PTE	1	1	3	4	0.78
	The course promotes reflection on the importance of PA in childhood and adolescence	0	2	1	6	0.78
	The course promotes reflection on a new way of thinking about traditional games and activities	0	1	4	4	0.89
	Group total					0.83

1* = Inadequate; 2** = partially adequate; 3*** = adequate; 4**** = completely adequate; MOOC = online massive open course; CVI = content validation index; PTE = professional and technological education; PE = physical education; PA = physical activity.

Compliments such as “completely adequate course, well structured and organized”, “congratulations on the beautiful work”, “very well designed and organized course according to what it proposes, I learned a lot from the teaching material that was prepared and made available, both the videos and the reading material and deepening in relation to LET US PLAY”, allowed us to infer that the course met the organization’s needs.

The course content was validated with a CVI of 0.90. Considering that, in relation to the course content, it is important to use more than two different resources and tools in this modality¹, we used texts, videos, and the forum. Additionally, making reference to the course objectives¹ — an item evaluated with an CVI of 1 and considered adequate — allows the development of skills and abilities¹, which was demonstrated in the forum responses. We can conclude that the content of the course is satisfactory. However, some items were assessed as partially adequate: suitability for the target audience, satisfactory audiovisual resources, and clarity and objectivity of the content.

The suggestions to ‘diversify media’ and ‘improve the quality, especially of the audio in video classes; perhaps using isolated capture and subsequent editing,’ indicat-

ed the need to implement other media, record more dynamic and edited video classes, and capture the audio in a studio. This finding aligns with what Fontana & Leffa¹² state, emphasizing the need for the teacher to interact with the camera as if conversing with the viewer, and to avoid long texts and videos. The authors also suggest that the videos include transcriptions in PDF format to facilitate searching for specific points and the availability of subtitles in different languages. However, these procedures were hindered by the context of social isolation imposed by the COVID-19 pandemic at the time of the course.

Still on the content of the course, comments such as “the content is interesting and I will use it in my methodological strategies”, “the content presented in the course is adequate for its proposed objective”, “rich and illustrated content” and “great”, show that it is possible to keep the content as it is laid out.

In terms of relevance, “working on interdisciplinarity” was a suggestion received. However, this is not possible as it would require the participation of other areas. Therefore, this is a limitation and a proposition for new versions of the course. The comment “extremely relevant, especially in the work of participatory and

inclusive sports at school” demonstrates that LUP can be an inclusive tool for PA, since its principles are focused on increasing participation, regardless of students’ prior aptitude.

Comments such as ‘The course presents the possibilities of including bodily practices and is intended to promote reflection on different approaches – for example, renewed health and the relationship between physical activity and its health gains’ and ‘important for increasing students’ body movement’ allow us to conclude that the course achieved its objective. The last comment testifies that the objective was achieved and expresses the desire for this MOOC: “Congratulations on the initiative. May this course reach other education networks and provide reflection and changes in pedagogical practice in school PE, leading to improvements in the health and quality of life of children and adolescents”.

Final considerations

LUP is very simple to apply and fits into any PA practice context. It involves identifying primary barriers, such as queues, elimination, team size, teacher and student involvement, space, equipment, and the rules of play, and then modifying them to promote inclusion and participation of less involved students, providing more time and intensity for the practice of PA. The evaluation results from course participants indicate that it is feasible to use this MOOC continuing education course for PE teachers regarding the application of the LUP strategy in PE classes. The strategy’s applicability in different contexts contributes to promoting health by increasing the PA levels of schoolchildren.

The participation of the IFMS Reference Center for Distance Education in the pedagogical and organizational issues of virtual teaching and learning environment demonstrates the need to work together, with professionals from different areas, in the various stages of planning and preparing a distance learning course.

The study has some limitations, such as the small number of participants and the fact that it focuses on the PE discipline, without proposing any interdisciplinary action. Furthermore, it must be considered that the body of judges/teachers in this proposal have, in general terms, better working conditions compared to teachers from many other public schools, being able to benefit from good infrastructure to teach PE classes, in addition to having time to carry out in-service training courses. These conditions may have positively

influenced the evaluations of this course.

It is worth highlighting that our proposal, while emphasizing the improved organization of activities, whether games or sports, in PE classes, must transcend the procedural dimension. It should also encompass attitudinal aspects involving cooperation, respect, etc., and conceptual dimensions such as understanding social determinants of health. In practice, these dimensions¹⁴ are interconnected, and it is essential to integrate them seamlessly in teaching. Therefore, we must consider the role of PE in preparing students to navigate social conditions, exercise citizenship, and advocate for improvements in living conditions.

We consider distance learning as a viable alternative to promote continuing education for PE teachers, as it has the potential to reach individuals from various locations. Therefore, we hope that offering this course in an extensionist, open, and free manner will enable it to reach other professionals. This initiative aims to encourage teachers to reflect on their practices, fostering greater involvement of students and teachers in traditional and recreational games, thereby contributing to improvements in community health.

Conflict of interest

The authors declare no conflict of interest.

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Author Contributions

Reis CR: Conceptualization; Methodology; Development, implementation, and testing of software; Data validation and experiments; Data analysis; Research; Provision of tools; Data curation; Project administration; Design of data presentation; Writing the original manuscript; Approval of the final version of the manuscript. Coelho-Ravagnani CF: Supervision; Design of data presentation; Writing - review and editing; Approval of the final version of the manuscript. Ravagnani FCP: Conceptualization; Methodology; Development, implementation, and testing of software; Research; Supervision; Project administration; Design of data presentation; Securing funding; Writing - review and editing; Approval of the final version of the manuscript.

Declaration regarding the use of artificial intelligence tools in the article writing process

The manuscript did not use artificial intelligence tools for its preparation.

Availability of research data and other materials

The contents underlying the research text are contained in the manuscript.

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