

Empowering Primary School Girls through Gamification in Physical Education

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Abstract

Worldwide, there are policies promoting gender equality and women's empowerment, with education, health, and sports being relevant intervention areas. Physical Education (PE) can play a fundamental role in empowering girls, reversing the historical androcentrism of the subject. The objective of this research was to analyze the impressions of female students regarding the use of female characters as protagonists and heroines in the narrative of a gamified PE program, aimed at promoting healthy habits and improving physical fitness. An interpretative study involved 299 5th and 6th-grade girls from a differentiated co-educational private school for a city in northeastern Spain. An ad hoc questionnaire with open-ended questions about the perception of the program was administered. The modified narrative of Harry Potter contextualized the gamification. The results showed that most of the students responded positively to the narrative, which activated key factors of empowerment in them. It allowed them to identify with the protagonists and recognize both the fundamental role of women in society and the persistent undervaluation derived from gender stereotypes. It contributed to their awareness of their ability to overcome limits, improve their physical condition and acquire habits to stay fit. In addition, they recognized an increase in their enjoyment, fun and sense of well-being. In conclusion, the findings indicate that the design of gamification strategies based on the principles of the activist approach favors the empowerment of girls and enhances their active and effective participation in PE classes.

Keywords: physical education, gamification, gender, women empowerment, healthy.

Key Points

- Through active narratives and cooperative roles, girls increased their self-esteem, enjoyment, and emotional well-being—key empowerment indicators that fostered stronger commitment, teamwork, and positive attitudes toward physical activity.
- The program's design aligned with the activist pedagogy, offering a personalized, student-centered approach that valued girls' voices, fostering identification, self-confidence, and the pursuit of a healthy, active lifestyle.

Introduction

The United Nations emphasizes the importance of developing educational programs aimed at promoting gender equality and women's empowerment. In the agenda for 2030, it is established as a sine qua non condition to ensure that the gender perspective is integrated into the plans and programs of each country (United Nations (UN), 2019). Rowlands (1995) defines empowerment as the increase in individuals' capacity to maximize opportunities for themselves, despite the limitations of the structure or the State. More specifically, the sports field defines women's empowerment as the process by which women acquire the confidence, strength, knowledge, and skills necessary to make strategic decisions that improve their lives (Right to

Play (RTP), 2008). To achieve this purpose, it is essential to improve the physical and mental health of girls and women; increase self-esteem, self-confidence, and the feeling of control over their bodies; and access information about health and healthy lifestyles (RTP, 2008). In this sense, empowerment acquires a double positive value for health. On the one hand, promoting an active lifestyle is necessary, and on the other hand, acquiring knowledge and healthy behaviors (Beutler, 2008; de Vries, 2008).

Throughout the world, various studies indicate the poor outcomes regarding physical activity (PA) engagement among adolescents, with a worsening situation observed particularly among girls (Bull, et al, 2020; Gasol Foundation, 2019; Moreno et al., 2019; Duffey et al., 2021; World Health Organization (WHO), 2021, 2022). Research such as the 2020 study by Guthold et al. reveals a higher prevalence of physical inactivity among girls in nearly all countries worldwide (84.7% compared to 77.6% in boys), with no significant changes observed in this trend for girls over the past decade. Another research reveals that girls and women tend to distance themselves from PA during certain stages of their lives (Duffey et al., 2021; Oliver & Kirk, 2015), and PE classes are not exempt from this trend. Many authors acknowledge that during both primary and secondary school, levels of PA are lower among girls (Kirkham-King et al., 2017; Mayorga-Vega et al., 2019).

The purpose of this subject is to impart and reinforce habits and healthy behaviors that enable students to adopt an active and healthy lifestyle for life (Organic Law 3/2022, of December 29 (LOMLOE), 2022). In this context, it is necessary to design learning situations that foster the commitment and participation of girls in classes (Kirk & Oliver, 2014; Oliver & Kirk, 2015). However, this objective has not been achieved in the past 40 years (Kirk, 2012). Duffey et al. (2021) argue that, to achieve this goal, educators must promote physical literacy from an early age, as it will help girls develop the confidence and skills necessary to maintain adequate levels of PA during adolescence.

Given the negative impact on girls due to the lack of specific consideration of PA in the realm of PE, it is essential to identify the limiting factors (Duffey et al., 2021). Although social and personal realities influence this trend in various ways, seven relevant aspects can be identified that perpetuate this adverse situation: 1) Girls receive less social and familial support to engage in PA (Metcalf, 2018); 2) Differences exist between mixed-gender and single-gender classes, with the latter generating more time spent in vigorous PA among girls (Wallace et al., 2020); 3) Upon entering adolescence, female students show less enjoyment of classes, feeling uncomfortable, with decreased satisfaction, motivation, fun, or enthusiasm, or not understanding the utility of the subject or the benefits of PA (Huhtiniemi et al., 2019; Martins et al., 2015; Saunders et al., 2022; Stankov et al., 2012); 4) Some traditionally male-dominated sports (e.g., football, basketball) do not encourage girls' participation, as they may feel intimidated or excluded (Eime et al., 2022; Griggs & Fleet, 2021; Martins et al., 2015; Standiford, 2013); 5) Society still dictates which PA is more appropriate for boys or girls and suitable for their body and/or sexuality, which alienates young women from certain sports or PA (Garrett, 2004; Martins et al., 2015; Oliver & Kirk, 2015; Scraton, 2018); 6) Similarly, some sports are associated with the defeminization of women and the masculinization of men (e.g., football, wrestling), potentially leading to a reluctance to participate and/or negative perceptions of motor skills (Butt et al., 2011); and 7) Consciously or unconsciously, teachers design and implement classes that reproduce actions and discourses around gender stereotypes, offering fewer sports opportunities to girls (Martins et al., 2015; Preece & Bullingham, 2022; Standiford, 2013).

In this case, girls' engagement in PA in PE remains conditioned by the perception of gender stereotypes, which, in the physical-sports context, Crawford & Unger (2004) classify into: a) instrumental or masculinity-related, where men are physically active and manipulate the world effectively, and b) affective-expressive or femininity-related, where women are physically passive with affective and caregiving roles. In this sense, Hickey (2008) acknowledges that the PE curriculum presents a hyper masculinized approach, whose design promotes formative experiences aligned with boys' expectations and demands, neglecting girls' interests and motivations. This creates a barrier to girls' participation (Flintoff & Scraton, 2001), which can affect factors promoting girls' empowerment in PE, such as motivation, perceived competence, and self-identification (Kirk, 2012). Consequently, this context compromises the acquisition of a healthy physical sense linked to their bodies, femininity, and physical experiences (Azzarito, et al., 2006; Garrett, 2004), jeopardizing the promotion of girls' empowerment in relation to physical factors such as motor competence and physical fitness (Kirk, 2012).

This context creates problems in the overall health of women (Corr et al., 2019), posing a challenge for the 21st century (WHO, 2020). From an educational standpoint, Oliver and Kirk (2014, p. 313) argue that it is necessary to "develop a pedagogical model for working with girls in PE," which could result in what they term "an activist approach to learning to value a physically active life" (Oliver & Kirk, 2015, p. 8). Proper implementation of this approach requires a pedagogy that is: 1) student-centered, 2) personalized, 3) based on research and action, and 4) developed through listening to girls' responses over time. They also suggest that to overcome the local limitations of studies and programs, the goal should be to promote understanding among girls of the value of living a physically active life. Thus, the participation of female students in PE classes will be influenced by the content taught, the methodological approach used, and the significance of the educational purpose. Facilitating aspects are defined in programs that provide positive experiences with PA, allow the recognition of the health benefits of PA critically and literately (i.e., having knowledge about sports, fitness, health, and leisure); foster fun and social interactions; and promote active participation that enables them to preserve and improve their motor competence through a diversity of activities (Corr et al., 2019; Martins et al., 2015; Standiford, 2013). Failure to do so will complicate the acquisition of knowledge about the impact of this aspect on health, gender, and the role of women in society (Oliver & Kirk, 2015; Whitehead, 2010).

Since PE integrates activities with a marked cultural gender burden, the transformation and change in trend highlights the need for teachers to assume an active commitment to gender equality (Soler, 2009). To do so, it is essential to implement effective coeducational practices, not only by reproducing pre-existing models, but also by adapting activities, discourses, interactions and behaviors that contribute to the elimination of gender stereotypes (Bascón et al., 2010; Piedra et al., 2013, 2014). In this context, educational centers must promote an alternative approach to the traditional one. PE based on pedagogical models could provide methodological programs adaptable to the needs of each community (Kirk, 2012).

Gamification is considered an innovative approach that uses game elements to achieve educational objectives, including activities in the game dynamics and narrative (Fernández-Río & Flores-Aguilar, 2019). Most research highlights that, in the school context, the benefits of gamification impact on motivational and behavioral aspects (Llopis & Balaguer, 2016). Its potential is linked to the positive affective and emotional components it generates, such as satisfaction, excitement, surprise, curiosity, happiness, joy, confidence, etc. (Segura et al., 2020). In all cases, it promotes the consolidation of learning and academic performance (Flores-Aguilar et al., 2021). Additionally, gamified experiences for working on PA and health with

students recognize the model as a motivator for healthy behaviors and for improving PA practice at all educational levels (Gasol Foundation, 2019; Flores-Aguilar et al., 2023).

On the other hand, research demonstrating the positive effects of gamified programs on female students is limited. Two examples are those of Rodríguez-Martín et al. (2022) and Martín-Moya et al. (2018), which perceived that the implementation of a gamified program reduced the level of anxiety and overwhelm in girls when faced with failure. However, references have not been found that use women as the sole protagonists and heroines of the story in their narratives, nor studies that assess their impact on female students.

In response to the need for increased research on the effects of educational gamification and activist pedagogy (Duffey et al., 2021; Kirk & Oliver, 2014), this study aimed to analyze students' perceptions of how the presence of female protagonists in the narrative of a gamified PE program, designed to improve physical fitness and health, influences key factors of empowerment in Primary Education. Based on the findings, the potential of the program will be assessed as a strategy to encourage girls' active participation in PE classes and its relevance as a didactic resource within the activist approach.

Methodology

Participants

A total of 299 primary school girls from a differentiated charter school in a city in northeastern Spain participated over two consecutive academic years. In the 2020-21 academic year: 74 students from 5th grade (9.69 ± 0.46 years) and 76 students from 6th grade (10.79 ± 0.46 years); and in the 2021-2022 academic year: 70 students from 5th grade (9.69 ± 0.47 years) and 79 students from 6th grade (10.81 ± 0.53 years). Students returned from confinement with significant changes in their physical activity habits, showing a tendency towards sedentary lifestyle and passive attitudes. This situation highlighted the need for a motivating and effective educational intervention to encourage the recovery of active and healthy habits.

The participants were selected based on convenience and accessibility criteria. The school administration assigned students to each group, as well as the teacher. The aim was to conduct research in natural, intact groups. All classes had experienced gamified programs in previous years. Additionally, the teacher-researcher had theoretical and practical experience with this methodological approach.

Method

The study is framed within the socio-critical paradigm, which aims to understand and transform reality through participation and reflection (Carr & Kemmis, 1986). Since the objective was to recognize students' impressions within an intervention designed to promote health and engagement, a qualitative methodology was used. This aligns with the socio-critical tradition, which encourages active participation and critical reflection (Freire, 1970). Following the methodological principles outlined by Denzin and Lincoln (2018), we designed the study, collected data, and interpreted the results using a narrative content analysis approach. The data collection instrument was an open-ended questionnaire, allowing participants to express their perspectives in depth. The study began with obtaining permission from the ethics committee of the first author's university. Subsequently, the program was explained to the administration of the school where the research would be implemented. Following this, families were informed,

and their consent was obtained. Upon completion of the intervention, the information was gathered, and the results were analyzed.

Intervention Program

The gamified program was titled: "Physical Education Moves to Hogwarts." It contextualized the teaching of PA and health content within a narrative set in Hogwarts School. The narrative portrayed the female students of Hogwarts as the protagonists and heroines of the story. Hermione, Ginny, Luna, and several other girls found themselves in the position of saving the magical world from the villain "VoldePetríficus." The male protagonists of the saga had been "petrified." With this perspective, we adopted what Welch (1990) calls a "feminist ethics of risk," transforming the stereotypical view of the male hero by giving women a central, heroic role.

The gamification lasted for 30 sessions (2 per week). The following table outlines the learning objectives and contents of the program, which have been aligned with the state curriculum framework.

Table 1. Learning objectives and contents of the program

Objectives	Contents
1. To learn and acquire hygiene, nutrition, and health habits related to PA	-Proper and safe use of sports clothing (appropriate attire) -Autonomous personal hygiene habits. -Healthy lunch with fruit in the school breakfast. -Physical, psychological and social benefits of physical activity. -Adoption of an active lifestyle. -Identification and management of emotions in motor situations. -Knowledge and application of warm-up: objectives, parts and exercises. -Planning and self-regulation of warm-up and running technique. -Development of social skills: teamwork, empathy and respect.
2. To perceive and improve personal motor skills and physical fitness levels	-Improvement of conditional abilities: basic and resultant physical abilities: general dynamic coordination, balance and agility. -Knowledge and mastery of running technique. -Knowledge and mastery of warm-up exercises (activation, joint mobility and stretching).

The methodological model hybridized gamification with cooperative learning. Following the principles of Cooperative Learning of Johnson et al. (2013), four roles with specific responsibilities were assigned to each member. During the missions, each participant developed specific activities that promoted positive interdependence, which contributed to improving the running technique and warm-up. The sessions had a fixed structure of two parts. In the first part, a warm-up was conducted with chase games, Tabata workouts or continuous running, joint mobility exercises, stretches, and a game related to the content being worked on. In the second part, students were required to overcome an individual physical-motor challenge or engage in activities to complete a group mission. Both grades were presented with the same narrative. The difference was in the achievement levels of the physical-motor challenges (lower difficulty for 5th grade) and the activities of the missions. Table 2 describes the main elements of the program, following the framework proposed by Werbach and Hunter (2012).

204 Table 2. Program “Physical Education Moves to Hogwarts”

Elements and Description	Images
Narrative: Hogwarts is threatened by "VoldePetríficus." To counter this, the heroines, Hermione and her fellow witches, seek the help of the students. To defeat the "Petrifying Army," they must prepare physically and mentally and become "Professors of Advanced Magic."	
Aim of the Game: To defeat "VoldePetríficus and his army" by acquiring powers in 6 "Arts" (contents): 1."Divination": experiencing lived emotions; 2."Spells": individual physical-motor challenges; 3."Potions": working on endurance; 4. "Personal Magic": habits, equipment, punctuality, hygiene, healthy breakfast, cooperative work; 5. "Magical Missions": 3 projects on health and PA; 6."Active Magic": demonstrating an active lifestyle.	
Levels: Apprentice, Master, and Professor of Advanced Magic. To reach these levels, they accumulate points (p) / badges (i) for their work, progress, and correct completion of the "Arts" (contents) in their individual passport.	
Players and teams: Teams of 4 participants with roles/responsibilities: 1. Secretary: responsible for group records; 2. Material Manager: handles the equipment; 3. Trainer: organizes participation and helps overcome physical-motor challenges; 4. Fair-Play Coordinator: ensures rules are followed, mediates conflicts, and promotes a positive atmosphere.	
Rewards: Each day, they record/accumulate in their individual passport the results of: "Divination": 1 point (p) for identifying and recording emotions experienced during the session; "Spells": 1 badge (i) for overcoming a physical-motor challenge; "Potions": 1 badge (i) for recording endurance work; "Personal Magic": 1 point (p) for following rules: equipment, hygiene habits, and health habits; "Level medals acquired"	
Optional experience points: Active Magic: They earn 1 power pearl by presenting evidence of an active lifestyle: a photo engaging in PA/sport, an explanation of the activity, and the emotions experienced. By obtaining 2 or more pearls, they reach the level of Professor.	
Social Area: Overcoming group missions: Apprentice (0-24p), Master (25-27p), or Professor (28-30p). Escape: Enter the "enchanted forest" (track and field) and obtain "Unicorn Hair" (demonstrate running technique). Activities: watch a video and take notes (5p), create a poster (10p), train by taking on the role of trainers (5p), demonstrate the technique and conduct peer evaluations (10p). Wisdom: Show mastery of the "De-petrifying" potion (warm-up). Activities: 5th grade, create a poster with photos of themselves warming up (10p); 6th grade, design a Tabata workout (10p); act as trainers and independently conduct warm-ups in 3 sessions (10p), and fill out a record sheet (10p). Teamwork: Cooperatively defeat the "VoldePetríficus" army (marks, time, or distance). They complete the physical-motor challenges and add up the results of the entire class to compare with the "army." Three levels: Apprentices: 2 victories; Masters: 3 victories; or Professors: 4, 5, 6 victories.	
Special Events: 1. On the first day, they completed a Breakout EDU with cooperative challenges to find the "passports" to Hogwarts and the "team tickets" for Hogwarts Express. 2. Midway through, a game was introduced to challenge other pairs to surpass each other in physical-motor challenges. 3. In the final session, emotions were analyzed. "Riddle of the Sorting Hat: How many emotions and what types did the class experience?"	
Feedback: Each day, they record their results in their passport. In the final sessions, they tallied and evaluated the levels reached in each "art."	

Instruments

Upon completion of the intervention, an ad hoc questionnaire (Table 3) was administered via Google Forms, featuring open-ended questions to gather information about the gamified experience. The objective of the study was explained to the students, their anonymity was assured, and they were encouraged to respond honestly, as their answers would not affect their grades. They completed the questionnaire in the classroom using their personal computers within 15-20 minutes.

Table 3. Ad Hoc Questionnaire

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1. What do you think about using the Hogwarts's history to present the topic "Getting Fit and Learning about Health"? Explain why.
 2. What do you think about the fact that the protagonists and heroines of the story were girls? Explain why.
 3. What motivated you to do the activities well? Why?
 4. What do you think you have improved with this project?
 5. What do you think you have learned in this project?
 6. How do you feel after assessing and acknowledging your physical improvement (endurance, strength, speed, and flexibility), balance, and agility?
 7. What are the things you liked the most about the experience? Why?
 8. What things would you change or add? Why?
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Data Analysis

Data analysis followed a structured process based on thematic analysis (Braun & Clarke, 2006), employing a deductive-inductive approach (Denzin & Lincoln, 2018). NVivo® software (version 1.7.1) was used to facilitate coding and organization of the data. Initially, all responses to the questionnaire were collected without exception. In the first phase, a preliminary coding framework was developed based on theoretical concepts drawn from the literature review (deductive phase). Specifically, the initial categories were based on Rowlands' (1995) definition of women's empowerment in sport and strategic life decision-making skills (Right to Play [RTP], 2008). Furthermore, dimensions related to physical and mental health, self-esteem, self-confidence and the feeling of control over one's body are considered essential indicators of empowerment (Beutler, 2008; de Vries, 2008; RTP, 2008).

In the second phase, data were examined for emerging themes, and categories were refined accordingly. For instance, responses to question 2 were classified based on positive, critical, indifferent or negative evaluations, while emerging ideas from questions 3 and 8 were identified and categorized. In the third phase, subcategories were defined to capture the underlying reasons behind participants' evaluations and motivations for engagement. At a fourth level, coding matrices were used to cross-reference data, identifying relationships across three dimensions: (1) evaluations and stereotypes, (2) evaluations and psychological empowerment factors, and (3) program and narrative changes. Finally, results were synthesized, and qualitative reports were generated to interpret the findings within the established theoretical framework.

Results

The analysis of the results on the use of heroines in the gamified narrative presents three thematic axes: positive, critical, indifferent or negative impressions; promoting motivation towards work; and proposed changes. They are described along with the number of collected

texts and the most significant excerpts, as well as the course and year of reference response. When no reference is specified, it is because the response is repeated in all courses and both years.

Female students' impressions on the use of female characters as heroines and protagonists in the gamified narrative

Positive Impressions

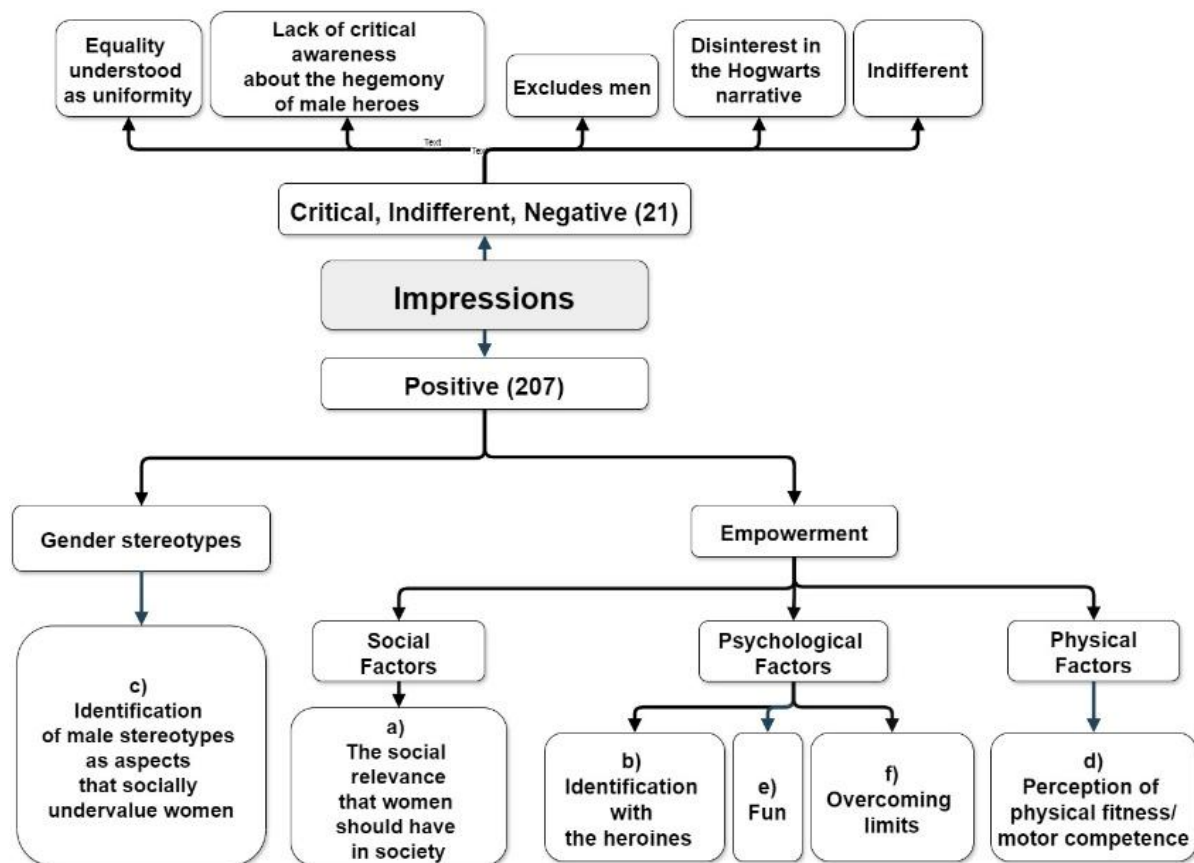
Most of the group (278 responses) positively valued the fact of presenting women as heroines and protagonists of the story. However, the reasons vary with greater or lesser presence: a) Social relevance that women should have in society (70): "I thought it was great because many times boys are the heroes and it was time for girls to show what we can do" (6th grade, 2020), "because sometimes women are undervalued" (6th grade, 2020), "this story expresses and teaches that women can do everything that men do" (6th grade, 2020), "we can also be heroines" (5th grade, 2021), "save the world" (5th grade, 2020), "we promote feminine power" (6th grade, 2020); b) As girls, they identified with the protagonists (69): "since we are girls, I think if the protagonists are of the same sex it will be more fun" (5th grade, 2020), "it helps to feel identified" (6th grade, 2020), "being of the same gender you can better get into the character" (5th grade, 2020), "it's like if we had more prominence in the story" (6th grade, 2021), "they show us how to do things and not give up" (6th grade, 2020); c) They valued male stereotypes as aspects that socially undervalue women (44): "a very good idea because most superheroes are always boys" (5th grade, 2021), "in almost all comics or stories boys have to be the ones who save the world, and so, girls, have prominence" (6th grade, 2020), "girls are also strong and brave, and we can do the same things that boys do, and we are not weak for being girls" (5th grade, 2020); d) Physical aptitude/motor competence (31): "very cool and fun that we were athlete heroines" (5th grade, 2021), "it's a way to be more motivated when doing sports" (6th grade, 2021); e) Fun (19): "we had a great time" (5th grade, 2020), "I found it very fun"; and f) Overcoming limits (9): "I think it has encouraged us a lot and thanks to them we have overcome ourselves" (5th grade, 2021), "I loved helping the girls because I have improved my endurance and my running technique" (5th grade, 2020), "we have gotten in shape with Hermione" (6th grade, 2020).

Critical, Indifferent or Negative Impressions

In contrast, a small group of female students viewed the use of heroines in the narrative critically (14). Some of them perceived equality as uniformity (5), as reflected in statements such as "it doesn't matter if it's a boy or a girl" (5th grade, 2021). Others demonstrated a lack of critical awareness regarding the hegemony of male heroes (9), exemplified by comments like "I didn't like it because it's not typical for girls to have to save boys" and "everyone has the same importance" (5th grade, 2021).

Additionally, some students expressed negative opinions, arguing that "we exclude men too much" (6th grade, 2020), or simply stating don't like the Hogwarts story (2), "I don't like Harry Potter" (6th grade, 2021). Lastly, a group of students showed no particular interest (6), stating "I don't care" or "I have no opinion" (5th grade, 2021). Figure 1 shows the results of the students' impressions.

Figure 1. Results of the students' impressions.



Promoting Motivation

The female students, in a generalized manner, acknowledged that the history of gamification and its elements had motivated them for different reasons (from strongest to weakest): a) Health (78): "so I would be healthier and stronger" (6th grade, 2020), "for health, which is the most important thing" (6th grade, 2020), "improve my motor and physical level" (6th grade, 2021); b) Activating their imagination (75): "I could be like a wizard" (5th grade, 2020), "it was as if I were someone from there for real, fighting" (6th grade, 2020), "it motivated me to think that we could de-petrify the boys from Hogwarts with our physical actions" (5th grade, 2020); c) Doing well (49): "you feel good, proud" (6th grade, 2020), "satisfied" (6th grade, 2021); d) Achieving rewards (46): "getting the de-petrification potion" (6th grade, 2021), "points to save Hogwarts" (6th grade, 2020), "passport goals" (6th grade, 2021), "the badges and awards we won" (5th grade, 2021), "ending up being a professor of advanced magic" (5th grade, 2020); e) Getting a good grade (44): "so I can improve the subject" (5th grade, 2021); f) Working in a team (36): "it motivated me: my classmates" (5th grade, 2020), "I love to collaborate" (5th grade, 2021), and g) Engaging in PA (26): "it motivated me to know that I do sports" (6th grade, 2021), "doing exercise" (6th grade, 2020).

Proposals for Changes

Although a significant number of students agree that they would not change anything (116) because it is "quite complete" (6th grade, 2020), a small group expressed dissatisfaction with the narrative (16): "it is childish" (6th grade, 2020), "we could exercise, but without the Harry Potter part" (6th grade, 2021), "it is repetitive" (6th grade, 2021), "it is tiring" (6th grade, 2021). In addition, they also pointed out that, in the storytelling, male characters could have been

included as heroes (5): “but I would like there to be boys to have more diversity and inclusion” (6th grade, 2021).

Discussion and Conclusions

The empowerment of girls is a fundamental aspect in the field of health and should be considered a priority in PE classes (Kirk, 2012; RTP, 2008). The study's findings showed that the gamified program, with girls as protagonists in the storyline, allowed female students to perceive the three fundamental aspects of their empowerment in the field of PA.

Firstly, as girls, it allowed them to identify with the protagonists, with their roles as heroines, and their characteristics, brave, fighters, and active in seeking solutions to problems. Characteristics opposed to those attributed to the female gender by Crawford & Unger (2004). This activated their imagination and motivated them to overcome limits, achieve rewards, do well, and improve their grades. In other words, it prompted an orientation of their achievement goals towards the task, or the formative objective, which was reflected in positive consequences such as having fun and engaging in PA while being aware of the impact on their health. In this sense, we understand that the psychological factors promoting women's empowerment in PE were stimulated, such as motivation, self-identification, or giving value and physical and healthy meaning to their physical experiences (Azzarito et al., 2006; Garrett, 2004; Kirk, 2012; Oliver & Kirk, 2015; RTP, 2008; Whitehead, 2010).

Secondly, when students identify and value male stereotypes as aspects that socially undervalue women, it makes us think that our female students perceive socially recognized stereotypes (Crawford & Unger, 2004) and behaviors and activities appropriate for boys or girls (Oliver & Kirk, 2015; Martins et al., 2015; Scraton, 2018) as socially conditioning them to perceive themselves as active, strong, or capable of solving problems. In this sense, teachers must strive to reverse this perception; otherwise, they would be perpetuating educational procedures contrary to the promotion of empowerment of female students in PE, such as self-identification (Kirk, 2012), self-esteem, and/or self-confidence (RTP, 2008).

Finally, by highlighting the relevance that women should have in society, the students attributed positive personal value to the fact of presenting a narrative where the protagonist was a woman with heroine roles and characteristics. Therefore, we understand that this gamified proposal promoted non-discrimination against girls/women in PE. In this sense, the program could fulfill three critical aspects of the activist model: designing a student-centered, personalized pedagogy based on listening to and responding to girls (Oliver & Kirk, 2015). Additionally, by giving visibility to women, avoiding reproducing identities and characteristics related to traditional gender stereotypes (Crawford & Unger, 2004), we propose an educational program that aligns with the current educational needs and demands of girls for their empowerment (Duffey et al., 2021; LOMLOE, 2022; UN, 2019; RTP, 2008; WHO, 2020, 2022).

On the other hand, the program allowed students to recognize their ability to surpass their limits and improve their physical and motor skills. These aspects helped visualize the improvement of their physical health (Corr et al. 2019; Martins et al., 2015; RTP, 2008; Standiford, 2013), integrating the essential physical factors that drive girls' empowerment (Kirk, 2012; RTP, 2008). Likewise, they acknowledged that it motivated them to work to learn how to train or get in shape. This idea highlights how students gained access to health-related information, being able to give meaning to the link between health, PA, and the body, an essential aspect in the process of women's empowerment (Azzarito et al., 2006; Corr et al. 2019; Garrett, 2004; Martins et al., 2015; Oliver & Kirk, 2015; RTP, 2008; Standiford, 2013; Whitehead, 2010).

In conclusion, the fact that students do not enjoy or feel dissatisfied in PE classes (Huhtiniemi et al., 2019; Martins et al., 2015; Saunders et al., 2022; Scraton, 2018) is a trend to reverse. In this sense, the results lead us to think that the conception of the gamified program promoted enjoyment, fun, feeling good, or being satisfied and proud of themselves or their work. These emotions, along with the positive assessment of teamwork, allow us to value that we have been able to influence the participants' emotional well-being, a fundamental objective to achieve their empowerment (RTP, 2008).

Importantly, presenting a gamification with a media-driven, attractive, and popular narrative, whose protagonists and heroines are girls, favored the promotion of factors that drive the empowerment of our students in PE, also allowing them to assimilate aspects related to health. In this sense, we can say that the teacher's task when choosing the story of their gamified program is not trivial, as it could perpetuate established gender stereotypes and, consequently, entrench the problem of low participation of girls in PE.

Although the issue of girls' participation in PE is complex, the pedagogical model employed could favor a change in trend. As a starting point, our approach would fulfill three critical elements of the activist approach (Oliver & Kirk, 2015).

First, by recognizing the differences, a specific and personalized program was designed for the girls, developing a story based on their interests and potential (Corr et al., 2019; Duffey et al., 2021). Second, the repetition of the program in subsequent courses allowed students' opinions to be heard, analyzed, and considered over time, leading to modifications in the second and third years of implementation (e.g., more active and engaging games or Tabatas were introduced to enhance warm-ups and build stamina) (Corr et al., 2019; Duffey et al., 2021; Standiford, 2013). Finally, more visually appealing and meaningful passports, cards, and rewards were designed to better align with their preferences (Flintoff & Scraton, 2006; Oliver & Kirk, 2015, 2016). Additionally, the program specifically encouraged the perception of the value of leading a physically active life (Oliver & Kirk, 2015; Whitehead, 2010). The results of the study could inspire stories and gamified programs of other teachers who seek, with this methodological model and the activist approach, to enhance the empowerment of girls, involving and motivating them to participate in PE classes actively and vigorously.

Certainly, this research presented difficulties related to the implementation of the gamified proposal. We highlight three general aspects. The first was the complexity of creatively but credibly and logically connecting the story with the activities and with the curricular approach. The second arose during class organization, as the progression of the narrative required an orderly and linked presentation of the activities and the specific mobilization of materials and students. The third difficulty was monitoring the teaching-learning process of the students, as it requires meticulous recording of many aspects, both by students and the teacher.

Since including only female characters could raise controversy about equality, we believe that future replications of the program should incorporate both male and female characters to achieve balanced representation. It would also be interesting to add a female villain, which would enrich the narrative. Furthermore, we suggest including activities that encourage reflection on gender stereotypes in PA and sport, which would offer pedagogical value by allowing students to question traditional gender norms both in the subject and in society.

Regarding the limitations of the study, it is important to acknowledge that the situational reality of the program and its adaptations to the characteristics of the teacher, students, school, and resources must be considered. Furthermore, the uniqueness of the school as a differentiated

center represents another limitation, which may vary in different contexts. Future studies could examine how this experience unfolds in mixed-group settings, including an analysis of boys' perceptions and their potential effects.

This research demonstrates how gamified pedagogy can be a key tool in transforming Physical Education from a gender perspective, fostering the empowerment of girls through narratives that position them as active and heroic protagonists. By challenging gender stereotypes and promoting self-identification, motivation, and the perception of the value of an active lifestyle, this approach contributes to the construction of a more inclusive and equitable pedagogical model, aligned with the needs and aspirations of female students today.

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