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Empowering Through Play: Leveraging Gamification for Discussing Sensitive Topics

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Abstract. In today's digital age, promoting youth's digital well-being is essential, especially when addressing sensitive issues like online grooming, cyberbullying, and gender-based violence. This paper introduces two gamified platforms: (i) StandByMe, focused on addressing gender-based violence among adolescents, and (ii) Cesagram, designed to combat online grooming and child sexual abuse in younger children. In developing the platforms, we prioritized digital well-being throughout the design process to provide a safe and supportive learning environment. This paper explores how gamification strategies were integrated to boost user engagement while safeguarding their well-being. We outline the challenges faced during the design of these platforms and explain how we addressed them by drawing on existing literature and engaging in dialogue with subject matter experts. Additionally, we identify novel aspects of gamifying educational content that emerged due to the sensitive nature of these topics.

Keywords: Gamification, Digital Well-being, Education, Sensitive Topics

1 Introduction

In recent years, there has been a rapid increase in the development of digital tools for educational purposes [1], [2]. This trend is largely driven by the fact that young people spend considerable time on smartphones and computers, making them familiar with and receptive to the digital infosphere [3]. However, designing these tools comes with a set of challenges, particularly in determining the most effective strategies to achieve educational goals. This complexity is further heightened when addressing sensitive topics, as it becomes crucial to ensure the emotional well-being of young users is safeguarded and supported throughout their engagement.

This paper presents the experience of designing two gamified digital platforms, *StandByMe* and *Cesagram*. The former was developed as part of a European Union

project focused on raising awareness among young people about gender-based violence (GBV). The latter was designed to support educational activities for preventing child sexual abuse (CSA). Both platforms share a common challenging approach: addressing sensitive issues through gamification as a means to promote awareness. This paper provides an overview of this approach by describing these platforms and their design. It explores the challenges encountered in applying gamification to sensitive subjects and offers guidelines for effectively using gamification in similar educational contexts.

Both platforms make use of gamification – the application of game elements in non-gaming contexts [4] – to engage and motivate young people to learn about the two sensitive topics, namely gender-based violence and online grooming. Gamification has proven effective in the fields of education and behavioral change [2], [5], [6]. Designing gamified platforms for the education of sensitive topics presents unique challenges but also great opportunities to better engage youth in facing difficult subjects. In developing these platforms, it becomes evident that engaging with experts is essential for ensuring that the content and interaction modalities are both age-appropriate and sensitive to the complex emotions involved. Our discussions with them shaped not only the content but also how it is delivered through interactive, game-based methods that foster learning in a safe and supportive environment.

In this paper, we focus on the design challenges we encountered because of the sensitive nature of the content, and the importance of integrating digital well-being as a core principle, rather than treating it as an outcome of the platform. Digital well-being involved creating a space where children could navigate these challenging topics without feeling overwhelmed or distressed, while also ensuring that they could engage with the platform in a healthy, balanced way.

In section 2 we present the related works. In section 3 we introduce the StandByMe and Cesagram platforms, detailing their design process. In section 4 we outline the challenges and design guidelines stemming from our work. Section 5 discusses how the existing literature informed our approach to these challenges and highlights new aspects specific to the design of gameful systems. Finally, in section 6 we present the conclusions of our work.

2 Background Literature

Gamifying educational material on sensitive topics introduces a distinct set of challenges, some of which overlap with those found in the broader field of educational gamification. Acknowledging these shared challenges allows designers to refine their focus and better address the specific complexities involved in creating effective gamified experiences. The field of education has been particularly prolific

in adopting gamification, due to its potential to engage and motivate students [2], [7]. Gamification is a promising solution to tackle issues like the lack of students' commitment, making it an attractive approach across all educational levels. Gamification has been applied to a wide range of educational settings, from primary and secondary education [8] to universities [9] and even informal learning environments, such as *Massive Open Online Courses* (MOOCs) [10]. In particular, it has been heavily used in subjects like coding and STEM, where interactive, gameful systems have successfully kept students engaged in learning [2], [11]. To assist designers in selecting the appropriate game elements for gamified systems, numerous frameworks have been developed over the years [12], [13], [14]. Some of these frameworks are specifically tailored for educational and learning contexts, guiding how to integrate gamification effectively into the educational process. In a literature review, Mora et al. [13] identified 6 key frameworks that support the design of gameful systems in education and learning – five of which are intended for general educational use, while one is more specific to software designers [15]. Among these frameworks, Klock and da Cunha [16] used the *Mechanics, Dynamics, and Aesthetics* framework by Hunicke and colleagues [17] and the *6D* framework by Egan and colleagues [18] – both frequently used in game design and gamification – as the base for developing a new framework specifically aimed at enhancing gamification in educational settings. Rauschenberger [19] identified 10 frameworks for online [20], [21], and in-presence [22] gamified learning. Also in this case some of the frameworks are derived from existing literature – such as the work from Lamprinou & Paraskeva [20], based on the *self-determination theory* [23] – while others are innovative approaches to the gamification of educational content. More recently, Palomino et al. [24] developed a framework for the use of narrative and storytelling in gamified education as opposed to the more classic use of *points, badges,* and *leaderboards* [5]. While these frameworks can be useful in designing gamified learning paths, creating a gameful system for educating on sensitive topics presents unique challenges that require careful consideration, other than the collaboration among experts on game design, psychology, and pedagogy to create a supportive, inclusive, and effective learning environment. An example of this challenge is seen in the work of Koo and Woo [25], who incorporated gamification into a sex education program that addressed gender equality and GBV prevention.

While there are not many gameful systems dedicated to the education of sensitive content, in the literature, it is possible to find many examples of serious games used to raise awareness of GBV and CSA [26], [27], [28]. Serious games are digital or physical games designed with the primary purpose of educating or training users, rather than simply providing entertainment [29]. Unlike gamification, which involves adding game elements to non-game contexts, serious games offer structured, interactive learning experiences where gameplay is integral to the educational process. In the context of GBV education, serious games have been used

as tools to teach individuals, primarily teenagers, about essential topics such as consent, teen dating violence, gender equality, and issues concerning the LGBTQ+ community. Reviews in the literature have highlighted numerous studies that propose serious games aimed at educating on GBV [26], [27]. One example is *NoStranger* [30], a conversational game where players make decisions based on messages received within the app, using tools like maps to navigate discussions and address different scenarios. Another game, *Green Acres High* [31], targets adolescents and educates them about dating violence through five interactive lessons. The game aims to challenge harmful attitudes, promote healthy relationships, and teach conflict resolution using evidence-based techniques, designed for use in a classroom setting. Serious games have also been applied in the prevention of CSA. For instance, *Orbit* [32], [33] encourages children to disclose abuse to trusted adults and fosters self-esteem and community responsibility. Evaluations showed that the game increased CSA awareness and response capabilities among students, though it also highlighted the need for better teacher training. Another game, *Hidden in the Park* [34], focuses on enhancing online safety and preventing grooming.

While serious games have offered valuable tools for addressing sensitive topics, there is still limited research on the application of gamification, which involves layering game-like elements onto existing educational content rather than building fully game-based experiences. Gamification may provide a flexible and adaptable way to enhance motivation and engagement without fundamentally altering the educational curriculum [35]. This paper aims to deliver an analysis of the design challenges and opportunities associated with applying gamification to sensitive educational content.

3 Gamified Educational Platforms

This section outlines the main steps taken in the design of StandByMe and Cesagram, which target the critical issues of GBV and online grooming, respectively. The design processes for both platforms began with extensive research to identify the specific needs and challenges faced by the target audience. That was followed by active stakeholder engagement, including interviews and focus groups, to ensure that the content was relevant and sensitive to the emotional and psychological needs of users. Iterative development was integral to the design process, incorporating multiple rounds of feedback and evaluation to refine the platforms continuously.

3.1 The StandByMe Platform

The StandByMe platform was developed as a comprehensive, gamified educational tool aimed at combating GBV and promoting gender equality (see Fig. 1) [36], [37]. GBV refers to any psychological, physical, and economic harm based solely on the victim's gender, and it disproportionately affects women and girls [38]. Addressing GBV through education is vital for fostering safer communities and reducing long-term psychological, physical, and economic impacts on victims. StandByMe's primary audience is young people aged 16 and older, as this age group possesses the maturity and critical thinking skills needed to engage deeply with issues related to gender, power, and violence. The design of the platform was informed by pre-design research and feedback from stakeholders, including educators, students, and GBV experts, to ensure that the educational objectives aligned with real-world needs and concerns. The platform features interactive activities, social learning spaces, and gamification techniques, providing users with a dynamic and engaging environment for addressing sensitive topics related to GBV.

Understanding the Context. The design process for the StandByMe platform began with a thorough assessment of the scientific literature on the cultural roots of GBV and specific needs and challenges in addressing issues related to raising young individuals' awareness and preventing GBV. A total of 42 participants were interviewed – 17 individually and 25 in focus group discussions – across four countries: Italy, Poland, Slovenia, and Hungary. The study involved educational experts in GBV, policymakers, school teachers, university professors, and undergraduate students. Key requirements were identified, emphasizing user engagement, accessibility, and educational value. The goal was to create a platform that tackles the cultural roots of GBV and empowers young people, providing them with the tools and knowledge needed to navigate the complexities of GBV. In addition, the design team analyzed existing educational resources and digital platforms to identify gaps and opportunities for innovation. The insights gained from this analysis helped shape the core features of StandByMe, emphasizing the importance of gamification in fostering active learning and engagement. It became clear that a user-friendly interface, intuitive navigation, and interactive elements were crucial in appealing to the target audience. By defining these pre-design requirements, the team established a clear foundation for the platform's development, ensuring that it would effectively address the challenges identified during the research phase.

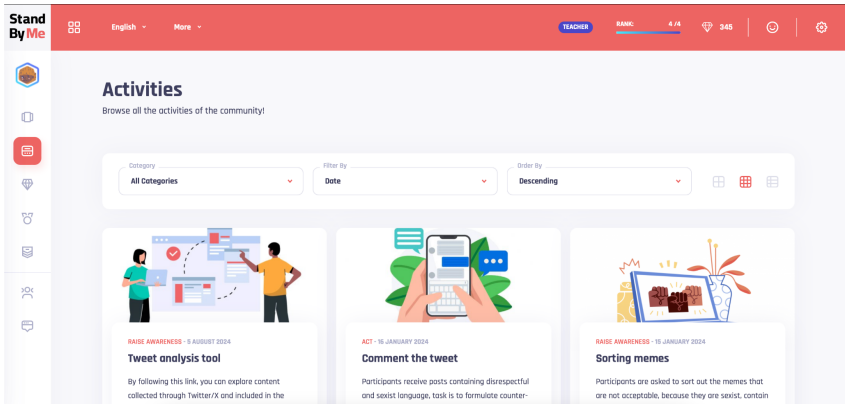

Fig. 1.. The StandByMe Platform

Design. The StandByMe platform was designed with over 20 interactive activities aimed at raising awareness about GBV, promoting empathy, and encouraging young people to take action. The platform's activities focused on deconstructing gender stereotypes and bystander behavior. The design of the activities included role-playing scenarios, sorting exercises, and self-reflection prompts to engage students in learning and understanding their roles in preventing GBV. The platform is designed to be flexible, offering both guided and independent learning experiences. Its use can be moderated by an educator, fostering discussions and providing contextual insights. This moderated use is particularly beneficial when exploring more complex or sensitive topics, allowing for expert-led reflection and support. However, some activities are designed to be accessed individually by users, without the need for direct supervision. These independent activities encourage personal reflection and self-paced learning, allowing young people to engage with the material in a safe, autonomous manner.

In designing the platform, the Octalysis framework [39] served as the main reference for selecting game elements. This framework categorizes elements based on motivational affordance into eight cores.

Users and Experts Evaluation. Following the development of the StandByMe platform, pilot workshops were conducted in informal educational settings across Italy, Poland, Slovenia, and Hungary. A total of 293 people aged 16-21 participated in the workshops, facilitated by educators. Their experiences were assessed through questionnaires and focus groups, to evaluate changes in awareness, attitudes, and emotional responses to GBV and gender stereotypes. In parallel, feedback was collected from 5 teachers, 4 youth activists, and 11 GBV educators.

3.2 The Cesagram Platform

The Cesagram platform tackles the critical issue of CSA and online grooming by empowering children aged 11-14, along with their parents, to navigate the digital world safely (see Fig. 2). CSA refers to any sexual activity involving a minor, where legal consent cannot be given. This includes both direct acts like physical abuse and indirect forms such as exposing minors to explicit material, voyeurism, and grooming [40]. Grooming is a deliberate process where offenders manipulate and build trust with a child to sexually exploit them, often using flattery, deception, or online communication [41]. Unlike StandByMe, Cesagram targets a younger and more vulnerable population, which requires careful adaptation of both educational content and gamification elements to be age-appropriate, accessible, and sensitive to children's developmental needs. The platform's design and development were guided by a detailed process to meet specific educational and psychological needs.

Understanding the Context. The design of Cesagram was informed by a combination of insights from existing literature and a survey conducted with 74 professionals specializing in CSA prevention across Italy, Greece, and Lithuania [42]. The literature revealed that most educational interventions aimed at preventing child abuse either adopt serious games or traditional educational platforms without gamified elements. This gap highlighted the need for an innovative approach that could blend the engaging aspects of games with the flexibility and depth often found in non-gamified platforms. The platform's key requirements emerged from the survey and the literature review. They included the need for clearly defined learning objectives focused on equipping children with practical skills to recognize and respond to grooming behaviors. Professionals emphasized the importance of creating interactive, gamified activities that simulate real-life online interactions, allowing children to practice identifying red flags and learning how to seek help. Additionally, the content needed to address specific risks related to CSA, moving beyond general online safety. The activities were designed to encourage collaboration among children while ensuring user safety through privacy protection and safe communication features. The survey results also highlighted the necessity of involving parents and guardians in the educational process. The platform would need to include resources for parents, equipping them with knowledge about CSA indicators and strategies for engaging in open conversations with their children about online safety. These requirements helped ensure that the Cesagram platform was grounded in expert knowledge and designed to effectively meet the needs of both children and adults involved in CSA prevention.

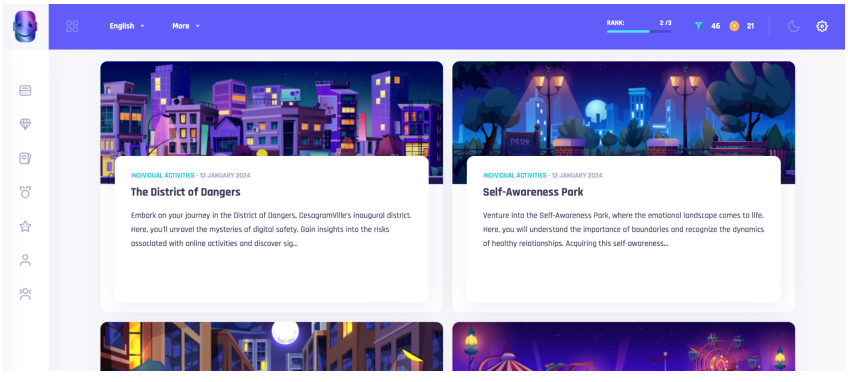

Fig. 2.. The Cesagram Platform

Design. The Cesagram platform was developed with a user-centered approach, combining gamification elements to boost engagement while keeping a strong focus on educational outcomes (see details in [42]). It addresses three key topics related to CSA, i.e. it guides learners to identify potential risks, to develop self-awareness around personal boundaries and consent, and to learn effective strategies for preventing and responding to grooming. To facilitate user navigation and engagement, the platform is structured as a virtual village called "SafeVille" comprising four districts: the *District of Safeguarding*, *Self-Awareness Park, Prevent and Respond Alley,* and *Unity Square*. Each of the first three districts corresponds to one of the core educational topics, offering activities that users can complete individually. These individual activities are designed to promote personal reflection and self-paced learning, making it possible for students to engage with the content independently. In contrast, Unity Square serves as the hub for group activities, which are ideally conducted under the guidance of a moderator, such as a teacher or an expert in CSA. This structured, group-based approach fosters discussions and collaborative learning. The platform's design was informed by the Octalysis framework [39], which guided the choice of gamification elements to ensure they foster positive emotional responses and intrinsic motivation. Features like customizable avatars, missions, and points were integrated to enhance user motivation. However, to maintain a supportive and non-competitive environment, potentially harmful elements like leaderboards were intentionally excluded, minimizing the risk of negative emotional experiences.

A distinctive feature of Cesagram is the active involvement of parents, who receive dedicated educational materials and activities tailored specifically for them. These components aim to boost parental awareness and digital literacy, providing knowledge and strategies to support their children's safe online behavior. By incorporating game mechanics such as shared group points between children and parents and collaborative challenges, Cesagram fosters parent-child collaboration

and peer learning, encouraging joint reflection and family discussions around online safety.

Users and Experts Evaluation. The Cesagram platform was evaluated through pilot workshops conducted in informal educational settings. A total of 195 students aged 10-18 participated across Lithuania and Greece, engaging with the platform through guided sessions facilitated by educators. Additionally, 52 parents took part in parallel workshops in Lithuania designed to foster intergenerational dialogue and promote collaborative learning. Participants' experiences were assessed through structured questionnaires and facilitated reflections, capturing insights into shifts in knowledge, emotional engagement, and perceived usefulness of the platform. A complementary survey was administered to seven experts in CSA education, prevention, and response. Feedback from all participant groups was systematically analyzed and used to refine both the platform's educational content and its gamification strategy.

4 Design Challenges in Gamifying Sensitive Topics

Gamifying sensitive topics presents unique challenges that span the entire design process, from feedback collection to evaluation and refinement. As the design of StandByMe and Cesagram progressed, it became clear that addressing sensitive issues such as GBV and online grooming required careful consideration of both educational content and emotional impact, posing specific challenges to the design (see Table 1). Although the two platforms focus on different topics and target distinct age groups, both required tailoring of educational materials and game mechanics accordingly. Despite these differences, a number of common challenges arose that are relevant for gamifying sensitive topics in general.

These challenges required a comprehensive approach to design, ensuring that game mechanics supported rather than overshadowed the serious nature of the topics being discussed. It was crucial to involve a multidisciplinary team of experts in both gamification and the subject matter from the beginning of the design process. Initially, gamification experts provided input on the potential applications, possibilities, and limitations of gamified solutions for digital tools. Then, subject matter experts identified the educational goals, designed the activities, and created the necessary materials. Once the framework for activities was established, both sets of experts collaborated to determine the most suitable gamification design for each platform, ensuring the educational message remained central. In Table 1, we present the list of challenges and whether they apply to gamification in general, gamification applied to education, gamification for sensitive topics, or to considerations for students' digital well-being.

Table 1. In the table, we present the challenges and whether they apply to gamification in general, gamification in education, gamification for sensitive topics, or users' digital well-being.

Challenge	General	Education	Sensitive topics	Well-being
1. Integrating gamification in the educational content		•		
2. Avoiding gamification overshadowing learning		•	•	
3. Avoiding complexity	•	•		
4. Leveraging narrative and storytelling to support learning		•	•	
5. Balancing moderated and unmoderated activities			•	•
6. Bringing technology for sensitive topics into class		•	•	•
7. Avoiding victim blaming			•	•
8. Addressing emotional triggers and psychological safety			•	•
9. Balancing social interaction	•	•	•	•
10. Ensuring personalization and flexibility	•	•		
11. Tailoring Gamification Design to Age Group	•	•	•	•

4.1 Challenge #1 *Integrating gamification in the educational content*

There is common agreement in the literature on the use of gamification in education that simply adding game elements to the educational material is not sufficient for providing motivating and engaging experiences [2], [43], [44]. While a basic gameful design can still have positive outcomes in the short term – due to phenomena such as the *novelty effect* [42] – they might not be as effective in the long term (e.g., *overjustification effect* [43] due to the massive use of extrinsic rewards or a decrease of motivation due to the lack of *novelty* [43]). Several gamification frameworks can guide designers and researchers in this task [12], [13], [14], [19].

Applied strategy: We added game elements that were connected to the educational objectives, as suggested in [24]. In both platforms, users generally received points or levels when the activity was completed. We used two main types of activities: closed-ended items with predefined correct answers, and open-ended questions requiring free-text responses. In closed-ended tasks – such as asking whether someone is "inside or outside the gender stereotypes' box" in short scenarios – users received points and immediate feedback indicating whether their response was correct. These were framed not as "right or wrong," but in terms of the activity's learning objective, using non-judgmental feedback that supported critical thinking (e.g., "Think again, XXX"). In contrast, open-ended activities were designed to promote self-reflection, expression, or perspective-taking. Here, users were awarded points solely for completing the task, not for the content of their response, in order to scaffold participation without fear of judgment. These responses were often followed by educational prompts rather than evaluative feedback, maintaining the platform's supportive and inclusive tone. In this way, gamification can be integrated into an activity relying on a quiz-like format while being aligned with its educational goals.

4.2 Challenge #2 *Avoiding Gamification Overshadowing Learning*

Game elements can distract from the core educational content if not carefully integrated, potentially shifting the focus of learners toward rewards rather than the educational objectives [47], [48], [49]. In the case of education on sensitive topics, this aspect is especially relevant, as the use of gamification might hinder the seriousness of the subject matter. Indeed, gamification can inadvertently introduce a sense of fun and lightheartedness that might overshadow the seriousness of the topics we aim to address.

Applied strategy: We employed the *Octalysis Framework* [39] to select game elements that complement the educational goals without overshadowing the content. We prioritized motivational drivers like *Epic Meaning & Calling* and *Social Influence & Relatedness*, choosing specific game elements such as *narrative, visual storytelling, and social prod* to engage learners while keeping them focused on the educational message. These game elements, integrated with the activities of the platform, allowed us to create branching narratives, problem-solving activities, and collaborative challenges aimed at promoting students' motivation. By using the *Octalysis Tool*[1], we assessed the balance between intrinsic and extrinsic motivators, to foster engagement with the learning content rather than distracting from it. To maintain the seriousness of the topics, we designed activities that make users reflect on the societal importance as well as the personal relevance of the subject matter

[1] See also https://www.yukaichou.com/octalysis-tool/

and incorporated opportunities for reflection and self-assessment, urging users to engage in introspection and critically analyze their online behavior and decision-making processes.

4.3 Challenge #3 *Avoiding complexity*

Complex gamification logic and interaction among game elements can distract learners by demanding cognitive resources that should be directed toward educational goals. According to the *fuse theory* [51] – an evolution of the more common *flow theory* [52] – the complexity of the system plays a central role in maintaining students' focus on the activities. While *sensory stimuli* and *motor execution* complexity were easier to control, a careful gamification design and integration with the activities were needed to avoid excessive *system* complexity [51].

Applied strategy: Gamified mechanics in both platforms were intentionally kept simple, such as awarding points for task completion instead of relying on complex leveling systems. This approach minimizes distractions and maintains user engagement with the platform. We deliberately chose not to use audio or soundtracks and designed interactive activities with straightforward interaction mechanisms, including drag-and-drop and point-and-click actions. Overall, we aimed to prevent users from needing to learn new terminology related to the point systems, thereby minimizing the effort required to understand unfamiliar terms and concepts. Feedback was embedded within the activities themselves to further reduce the cognitive load associated with understanding the gamification metalevel.

4.4 Challenge #4 *Leveraging narrative and storytelling to support learning*

Narrative and storytelling[2] are essential game elements in educational gamification [24], [54], offering valuable alternatives to the common PBL – *points, badges, leaderboard* – triad. Narrative refers to "the process through which users build their own experience by following a sequence of events", guiding them toward a specific goal [24], [54]. Storytelling, on the other hand, represents "how the narrative is conveyed" and plays a crucial role in supporting the overall narrative structure of the game [54]. The *Narrative Gamification Framework for Education* uses narrative and storytelling to provide students with meaningful experiences [54]. Integrating them into gamified educational experiences can be challenging, to support engagement without distracting from the learning objectives.

[2] In the literature, the terms narrative and storytelling are often used with different meanings and occasionally overlap (e.g., embedded vs. emergent narrative [53]). For the purposes of this paper, we adopt Palomino's distinction between the two concepts (see [54]).

Applied strategy: Successfully integrating narrative and storytelling into gamified platforms for sensitive topics requires balancing engagement, educational depth, and emotional sensitivity. Both StandByMe and Cesagram use Digital Educational Paths (DEPs) – structured sequences of activities embedded within a coherent story framework – to guide learners through key concepts while allowing some flexibility. In StandByMe, each DEP is paired with a storytelling narrative that unfolds in episodes as users progress through activities. This episodic structure links complex topics like gender stereotypes and gender-based violence to relatable scenarios, encouraging reflection and critical thinking while keeping learners focused on the educational goals. In Cesagram, DEPs are represented as distinct districts within a virtual city that children explore. Each district addresses specific themes related to online safety and grooming prevention. As children navigate these districts, they collect virtual equipment for their avatars, symbolizing protective knowledge. Personalized avatars further engage children, making abstract safety concepts tangible and empowering. Overall, the use of DEPs and storytelling must be carefully adapted to the audience's developmental stage and the sensitivity of the subject matter. When done well, they boost motivation, contextualize learning, and support meaningful engagement without compromising the seriousness of the issues.

4.5 Challenge #5 *Balancing Moderated and Unmoderated Activities*

Interactions with experts highlighted the importance of distinguishing between moderated and unmoderated activities when addressing sensitive topics. Moderated activities, which involve oversight from trained individuals or teams, are crucial in sensitive contexts. Moderators can nurture sensitive discussions while ensuring the safety and well-being of participants, particularly those who have experienced trauma. However, it can be resource-intensive and may restrict self-expression, especially in group settings such as classrooms. In contrast, unmoderated activities promote independent engagement by allowing users to interact at their own pace and pursue self-directed learning. However, the lack of synchronous oversight in sensitive discussions raises safety concerns, as participants may encounter triggering content or uncomfortable interactions. Finding a balance between moderated and unmoderated activities in sensitive contexts is a complex challenge that necessitates careful consideration of both safety and engagement.

Applied strategy: We recommend incorporating both types of activities into the digital platform to leverage the benefits of each while providing professionals with the control and flexibility necessary for different types of activities. For instance, group activities in StandByMe and Cesagram were designed for guided moderation from educators or experts in settings like classrooms. These activities can be initiated only by professionals, ensuring that oversight and feedback are provided.

In contrast, individual activities accessible without supervision would allow users to engage autonomously and at their own pace, enabling them to explore topics in their own time and context. However, only predefined feedback is provided for unmoderated activities, while the most sensitive topics – such as reporting physical abuse in cases of CSA and exposing users to content related to sexual violence in GBV – are addressed exclusively in moderated activities with the support of professionals. This balance ensured a safer learning environment while providing flexibility in how users engaged with the platforms.

4.6 Challenge #6 *Bringing Technology for Sensitive Topics into Class*

The challenge of integrating gamified technologies into educational environments lies in the need to meaningfully engage educators. It is essential to ensure that these new tools not only complement existing educational practices but also handle delicate subject matter with care and precision. Many educators may hesitate to adopt technology due to concerns about its effectiveness, its sensitivity in addressing such issues, or its potential to disrupt the controlled learning environment needed for such content [55], [56]. Moreover, the technology used traditionally in classrooms often focuses on individual learning, which can limit opportunities for critical reflection, peer support, and collaborative discussions – especially vital when handling sensitive material.

Applied strategy: We adopted a collaborative and inclusive approach to ensure the technology aligns with educators' needs. We actively involved educators throughout the design process, allowing them to provide feedback on how the platform could best support existing educational methods while also addressing the complexities of teaching these sensitive subjects. We designed the platform with flexibility in mind, enabling educators to control the pace and delivery of content and to adapt activities to the classroom context. In this regard, it was crucial to design the platform to support classroom and group settings rather than focusing solely on individual activities. To achieve this, we integrated features that facilitate shared learning experiences, such as shared boards or polls, encouraging small group interactions and discussions. These tools foster collaborative learning, critical thinking, and peer support, allowing students to reflect together and engage in meaningful, guided conversations under the supervision of educators.

4.7 Challenge #7 *Avoiding Victim Blaming*

When designing educational platforms that address sensitive topics such as GBV and CSA, it is crucial to avoid content that might inadvertently shift blame onto victims. This risk was highlighted by experts during the design process of the platforms and is well-recognized in the literature [57], [58], as poorly constructed

content or scenarios may reinforce harmful stereotypes and foster misunderstandings regarding accountability. Victim blaming can diminish the educational effectiveness of the platform and undermine its objective to promote safety and awareness. Of course, in adding gamification elements, these aspects can be exacerbated, requiring specific attention.

Applied strategy: We carefully constructed activities that focus on the perpetrator's responsibility, and foster empathy toward the target of the behavior. In addition, In *StandByMe*, the activities emphasized empowerment, encouraging users to take proactive action against GBV, while also stressing the role of bystanders and allies in fostering change. The narrative in *Cesagram* made it explicitly clear that perpetrators are solely responsible for harmful actions, which reinforced the idea that victims are never at fault. This approach aimed at creating a safe and respectful educational environment.

4.8 Challenge #8 *Addressing Emotional Triggers and Psychological Safety*

When engaging users with sensitive topics, there is a risk of exposing them to content that can trigger negative emotions and exposure to distressing content. In addition, for individuals who may have prior experiences with these issues, there is the additional risk of retraumatization [59].

Applied strategy: We implemented a variety of safety measures across both the *StandByMe* and *Cesagram* platforms. Trigger warnings were placed ahead of potentially distressing content in *StandByMe*, allowing users to proceed with caution and make informed choices. Both platforms provided flexible engagement options, giving users the ability to pause or skip activities if the content became overwhelming. Additionally, users were given access to supportive resources, such as hotlines and guidance, to seek assistance if needed. All content underwent a thorough review by educators or trauma and child protection experts to ensure that it adhered to guidelines for psychological safety. By doing this, we prioritized emotional safety, allowing users to engage meaningfully with the educational material lowering the risks of re-traumatization.

4.9 Challenge #9 *Balancing Social Interaction*

Incorporating social interaction in gameful systems presents unique challenges. While cooperation is a powerful tool for enhancing learning outcomes [60], simply bringing users together does not guarantee success, especially when dealing with sensitive topics. Existing frameworks have addressed the role of social learning in various contexts [61], including e-learning environments [62], to help educators integrate game elements in social settings. However, in the design of the platforms,

the nature of the sensitive topics created additional complexity. It was crucial to introduce social interaction without exposing students to social comparison or judgment from their peers. Game elements of competition (e.g., leaderboards and ranks) can undermine the focus on empathy, reflection, and inclusivity, which are critical in addressing such topics. While social features like sharing experiences or discussing opinions can build a sense of community, they also pose risks, potentially exposing vulnerable users to emotional harm or peer judgment.

Applied strategy: While both platforms incorporate individual activities, they also include collaborative elements designed to foster teamwork and shared learning experiences. We intentionally avoided leaderboards and competitive mechanics, prioritizing the creation of a safe and supportive environment where users can engage with sensitive topics with empathy and understanding. Additionally, the activities were crafted to stimulate critical thinking through debates and collaborative problem-solving exercises. While forums and group reflection prompts were incorporated, their use was limited to minimize the risk of intentional or unintentional comparison and peer judgment. The platforms place a strong emphasis on self-reflection over social sharing. Structured reflection prompts and thought-provoking scenarios allow users to process their emotions and behaviors related to the topics at their own pace, without the pressure of public disclosure, enabling more thoughtful and personal engagement.

4.10 Challenge #10 *Ensuring Personalization and Flexibility*

In the design of gameful systems, it became clear that the simple introduction of game elements was not sufficient to guarantee an improvement in motivation and engagement [7]. While it is important to identify which game elements can be more effective in promoting learning and behavioral change, the tailoring of the design plays a central role in the effectiveness of gamification [16], [63]. Tailored gamification can be reached using multiple strategies: *user modeling* allows the design of gameful systems tailored to the target audience's characteristics, such as their demographics; similarly *personalization* refers to a system tailoring its content to individual users' preferences and tastes; *adaptation* tailors interaction not only to the individual user but also considers the context in which the user operates, modifying aspects of the system to fit both the user's needs and the task or environment; and *recommendation* involves the system suggesting content or elements tailored to the user [64]. Another issue derived from the gamification of sensitive educational content arises from the fact that some gamified activities may not be suitable or accepted in different cultural contexts or environments. In this case, the gameful system needs to provide personalization and flexibility not only in the gamification design but also in the delivery of the DEPs (see also section 4.6).

Applied strategy: We adopted personalization and user modeling to tailor the platform to our target demographic. Conversations with the experts on the subject matter and pilot testing of the platforms allowed us to tailor the gamification design and the content to our users' preferences and needs. Furthermore, to allow the needed flexibility in the delivery, both platforms allowed for the adaptation of activities to meet the diverse needs of different audiences. Content could be modified by professionals to suit specific educational settings, ensuring that it remained relevant and respectful across various contexts. For example, in both platforms, not all activities were included in every language, as experts from different countries opted to exclude or adapt certain activities that did not align with local norms or sensitivities. The careful consideration of the activities and topics included in each country promoted the creation of a safe space within the platform to deal with such sensitive topics.

4.11 Challenge #11 *Tailoring Gamification Design to Age Group*

The literature on gamification seems to agree that the target users' demographics impact the appreciation and effectiveness of game elements [65]. For example, the social elements seem to be more appreciated by females, while competitive game elements such as the leaderboard tend to be more effective in the younger population [66]. In the design of StandByMe and Cesagram, we targeted different age groups (11-14 and 16+, respectively), needing to tailor the gamification design according to our users' age. Furthermore, dealing with the education of sensitive topics presents additional challenges to the tailoring of the gameful system: the content needs to be adequate for their age, and contemporary vocabulary must be carefully simplified to avoid unnecessary fear, but also without losing critical information. In short, we had to design the platforms to resonate with the specific developmental needs, cognitive abilities, and interests of each audience.

Applied strategy: During the definition of the activities, working with the experts on the subject matter allowed us to adjust the type and content of the activities to our users' demographics. Both platforms tailored the language used to fit their age groups. This approach allowed older adolescents to engage with the material using more current terminology, while younger users were introduced to critical concepts in an age-appropriate manner. Once the activities were roughly defined, we selected the game elements and declined them in such a way that could be appropriate for the users' age (see also sections 4.2 and 4.4). In the StandByMe platform, for example, storytelling allowed us to provide students with an example of how GBV can manifest in a real-life scenario. This game element did not solely serve as a way to engage students with the educational content, but also to help their understanding of GBV with a concrete example and a vocabulary closer to their everyday life.

5 Discussion

Gamifying sensitive topics introduces significant challenges throughout the design process. The development of StandByMe and Cesagram highlighted the need to balance educational content with emotional impact. Engaging multidisciplinary teams was crucial to maintaining the focus on the relevance of these topics, while ensuring that the gamified elements enhanced, rather than detracted from, the learning objectives. Several key challenges emerged, including the integration of gamification to keep the focus on learning, the use of appropriate narratives, and the balancing of game mechanics. To address these, game elements were directly aligned with educational goals. Strategies, including the use of non-judgmental feedback, narrative, and storytelling, were implemented to encourage deeper reflection. Additionally, efforts were made to avoid excessive complexity in-game mechanics, balance moderated and unmoderated activities, and incorporate educators into classroom integration. Emotional triggers and the risk of victim-blaming were carefully considered, prioritizing psychological safety by including expert-reviewed content. Customization for different age groups and flexibility in content adaptation were also key considerations, allowing the platforms to be tailored to diverse audiences, and making them promising tools for addressing sensitive educational topics. Challenges such as integrating gamified design with educational content, considering users' social interactions, and tailoring gamification to target demographics are established issues within the field of gamification design [64], and numerous frameworks and literature reviews have addressed these aspects (e.g., [5], [12]). These frameworks, along with the existing literature (e.g., [5], [12], [63]), informed several design decisions during the development process. However, new challenges arose, such as balancing moderated and unmoderated activities, avoiding victim-blaming, and addressing emotional triggers and psychological safety. Overcoming these issues requires inputs from subject matter experts and the integration of insights from both gamification research and experts familiar with the sensitive topics. For example, while existing literature on game modalities in gamification [67] and educational settings [44] often report cooperative-competitive modalities (e.g., team competitions) as the most effective, competition, was deliberately excluded in these platforms to allow more space for individual activities and reflection, given the sensitive nature of the topics. Although our work is preliminary in the field of gamification for sensitive topics, we believe it can guide future applications of gameful systems in similar contexts. Our contribution is intended not as a standalone framework, but rather as an enhancement to existing ones. As noted by [14], [68], the literature is replete with gamification frameworks, and it may be more beneficial to merge and adapt them than to create new ones for each specific context of an application.

6 Conclusions

The ever-expanding digital landscape offers both opportunities and challenges for young users. While social media platforms allow adolescents to connect and explore, they also expose them to significant risks. Educating adolescents about these dangers equips them with the skills to navigate the online world safely and responsibly, helping them recognize threats, protect themselves, and seek help when necessary. While serious games have been widely used to address sensitive topics, the use of gamification remains relatively underexplored. In this paper, we introduced Cesagram and StandByMe, two gamified platforms designed to raise awareness of online grooming and gender-based violence. We also outlined the challenges encountered during the development process, focusing on promoting education on these sensitive topics while ensuring users' digital well-being. Designing gamified platforms to tackle sensitive issues like GBV and online grooming involves navigating distinct challenges that demand a careful balance between engagement, education, and emotional safety. However, one limitation to the generalization of our lessons learned was the focus on informal learning environments. The data presented in this paper primarily originate from implementations conducted in out-of-school contexts – i.e., educational activities carried out in facilities other than traditional schools. Future work will be necessary to evaluate the effectiveness and adaptability of the gamification approach within formal educational settings. Implementing the platform in such contexts may require additional features or modifications. For instance, integration with the official curriculum to ensure pedagogical alignment, and there may be a need to support the use of classroom-specific devices or infrastructure. Furthermore, the nature of in-school activities might call for different interaction models or time management functionalities compared to the more flexible, informal environments in which the platform has been tested so far. Another obstacle stems from the international context in which these platforms were developed. Cultural differences across regions influenced both the implementation and reception of the platforms [64], [65], necessitating a flexible and adaptable design that could accommodate the specific needs and sensitivities of different users. Additionally, while StandByMe and Cesagram address gender-based violence and online grooming, other sensitive topics – such as racial discrimination, homophobia, or cyberbullying – may present unique challenges and require further adaptation of gamification strategies.

In conclusion, gamifying sensitive topics is a complex task that requires a user-centered, reflective approach. By integrating educational objectives, maintaining sensitivity to the content, and prioritizing emotional safety, StandByMe and Cesagram illustrate how gamification can effectively address complex social issues engagingly and responsibly. While this work lays important groundwork, future research is needed to develop more comprehensive guidelines that can be applied

transversally to the design of gamified educational tools for a broader range of sensitive topics.

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