

Case Report

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VIDEO GAMES TO COUNTER DISCRIMINATION AND DISINFORMATION: AN EDUCATIONAL APPROACH TO MEDIA LITERACY

Videojogos para Combater a Discriminação e a Desinformação: Uma Abordagem Educativa para a Literacia Mediática



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ABSTRACT

In recent years, discriminatory narratives linked to disinformation have fuelled hatred and prejudice, undermining social cohesion and increasing distrust in democratic institutions. These phenomena also affect young people, who are often ill-equipped to address them. As a result, educational policies on media literacy have been implemented, incorporating video games as a strategic tool to develop critical media competencies.

Within this framework, this paper analyses the potential of video games as innovative tools in media literacy education and in countering discrimination and disinformation. The research examines 18 video games through four analytical dimensions: educational objectives, game mechanics, narrative strategies, and visual language. The findings reveal innovative patterns in educational game design and increasing sophistication in synthesising ludic and pedagogical elements, whilst also identifying critical issues such as technological obsolescence, the need for mediators, and the lack of systematic user feedback data, which limits comprehensive impact assessment.

RESUMO

Nos últimos anos, as narrativas discriminatórias ligadas à desinformação têm alimentado o ódio e o preconceito, minando a coesão social e aumentando a desconfiança nas instituições democráticas. Estes fenómenos afetam também os jovens, frequentemente mal preparados para os enfrentar. Como resultado, foram implementadas políticas educativas de literacia mediática que incluem os videjogos como ferramenta estratégica para desenvolver competências críticas na utilização dos média. Neste enquadramento, este artigo analisa o potencial dos videjogos como ferramentas inovadoras no âmbito da literacia mediática e no combate à discriminação e à desinformação. A investigação examina 18 videjogos através de quatro dimensões analíticas: objetivos educacionais, mecânicas de jogo, estratégias narrativas e linguagem visual. Os resultados revelam padrões inovadores no design de jogos educativos e uma crescente sofisticação na síntese entre elementos lúdicos e pedagógicos, identificando também questões críticas como a obsolescência tecnológica, a necessidade de mediadores e a falta de dados sistemáticos sobre o feedback dos utilizadores, o que limita a avaliação abrangente do seu impacto.

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KEYWORDS

Discrimination; Disinformation; Media Literacy; Serious Games; Game Design.

PALAVRAS-CHAVE

Discriminação; Desinformação; Literacia Mediática; Jogos Sérios; Design de Jogos.

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1. INTRODUCTION, OBJECTIVES AND METHODOLOGICAL APPROACH

The proliferation of discriminatory and disinformative content poses a significant challenge to democratic societies, particularly affecting younger generations. In response to this critical issue, the educational sector is exploring innovative approaches leveraging the potential of digital media. Within this context, video games - traditionally regarded as entertainment tools - are emerging as valuable pedagogical resources, enabling experiential learning approaches. This research examines the innovative potential of video games in enhancing media literacy among young people. Specifically, it investigates their role in developing critical competencies essential for identifying and countering disinformation and discrimination within the contemporary media ecosystem, whilst exploring the factors that enhance youth engagement with these educational tools.

The methodology adopts a dual approach, combining systematic literature review with an empirical examination of 18 case studies. The cases were selected based on two primary criteria: their implementation in anti-discrimination programmes and their presence on collaborative platforms developing socially-oriented video games, with particular emphasis on projects endorsed by established institutions. The analysis spans from 2016 to 2023, strategically aligning with the implementation and evolution of the EU Code of Conduct – from its initial adoption through its sequential expansion to various digital platforms (Instagram, Snapchat and Dailymotion in 2018, TikTok in 2020, LinkedIn in 2021, Rakuten Viber and Twitch in 2022). This temporal framework enables the examination of parallel developments in educational tools and counter-policies through four analytical dimensions, illuminating how the evolution of the EU Code of Conduct has shaped approaches to educational game design.

2. STATE OF THE ART

2.1. Hate, Discrimination and Disinformation: Destabilising Factors for Democracies

Hate speech, discrimination and disinformation represent fundamental threats to democratic societies, undermining social cohesion, eroding trust in institutions and polarising public discourse (Farkas & Schou, 2019; Udupa et al., 2020).

As articulated in the UN Action Plan, hate speech encompasses ‘any form of communication that attacks or employs pejorative or discriminatory language targeting an individual or group based on their identity’. The EU Code of Conduct (European Commission, 2016) embodies a practical implementation of this vision, establishing an operational framework that has systematically engaged major digital platforms in combating online hate speech. This synergy between global vision (UN) and regional implementation (EU) has fostered an ecosystem conducive to developing innovative educational tools.

Notwithstanding the implementation of numerous international counter-initiatives (European Commission, 2020; United Nations, 2019), these phenomena continue to proliferate throughout the contemporary media ecosystem, disproportionately affecting younger generations. This demographic proves particularly vulnerable to both discriminatory influences and the effects of disinformation, frequently lacking the critical tools essential for navigating today’s complex information landscape (Smahel et al., 2020; UNESCO, 2023). Within this context, media literacy emerges as a crucial educational response, equipping individuals with the necessary tools to comprehend, critically evaluate and consciously engage with the contemporary media ecosystem.

2.2. Media Literacy and Video Games: Theoretical Foundations and Evaluative Frameworks

In 1980, Seymour Papert investigated the educational potential of technology, highlighting how computers can promote active learning through experimentation and exploration. Media literacy originated from Len Masterman's studies (1985), which highlighted its role in the social construction of media reality. James Paul Gee (2003) further developed this concept by exploring the literacy opportunities offered by games, the experiential learning they ensure, and how players can interact with themes and concepts difficult to access through traditional didactic approaches.

In the 1980s, with the spread of home computers and consoles, educational video games proliferated, mainly in scientific and mathematical fields. In the 1990s, research analysed the key elements to make these games more effective and engaging, such as rules, feedback, and interaction. Simultaneously, Game Studies examined both narrative and ludic aspects, creating the foundations for Game-Based Learning (GBL) and Digital Game-Based Learning (DGBL). These methodologies are divided into three distinct categories: serious games, organised training tools that combine ludic elements with educational purposes; gamification, which uses typical video game elements (scoring systems, progression, and rewards) to increase user engagement; and game-based learning, a didactic approach that employs games, both digital and traditional, as learning means. With the new millennium, the renewed interest in Edutainment that combines education and entertainment, the application of these approaches has extended the educational role of video games.

All this demonstrates how video games have progressively established themselves as educational tools thanks to their interactive nature (Gee, 2003), their ability to simulate complex systems, and their role in promoting critical thinking (Buckingham, 2006; Bogost, 2007).

In this framework and given the growing importance of video games in media literacy, it becomes increasingly essential to develop tools to systematically evaluate their educational effectiveness, integrating existing frameworks such as the Game-based Learning Evaluation Framework (GEM), the Learning Mechanics-Game Mechanics (LM-GM) model, or RETAIN (Relevance, Embedding, Transfer, Adaptation, Immersion, Naturalisation) to measure the educational impact of these tools.

2.3. Educational Video Games Evaluation Frameworks

The assessment of video games' educational efficacy requires sophisticated instruments capable of examining the alignment between pedagogical objectives and game mechanics. A comparative analysis of prominent frameworks—SGDAF (Mitgutsch & Alvarado, 2012), LM-GM (Arnab et al., 2015), RETAIN (Gunter et al., 2008), and the empirical model developed by Ruth S. Contreras-Espinosa and Jose Luis Eguia-Gomez (2023)—reveals complementary yet distinctly limited approaches. SGDAF emphasises the systematic analysis of objectives, mechanics, and narrative, but neglects direct player experience. Conversely, LM-GM concentrates on player-game interaction without providing precise metrics for educational effectiveness. The RETAIN model, through its six interconnected dimensions (relevance, embedding, transfer, adaptation, immersion, and naturalisation), presents a more structured evaluation of the integration between educational content and gameplay. Contreras-Espinosa and Eguia-Gomez's investigation of the "Yo-MEDIA" project, examining 24 media literacy video games, has illuminated both the potential of games in developing critical competencies and the limitations inherent in the prevalent behaviorist approach. To address these constraints, a tripartite evaluative framework emerges as essential: formative (encompassing testing and design iteration), summative (involving pre/post implementation comparative analysis), and longitudinal (comprising effectiveness verification through extended studies). The integration of these phases with mixed methodological approaches could yield more comprehensive assessments of educational impact.

3. VIDEO GAMES FOR MEDIA LITERACY AND COMBATING DISCRIMINATION: CASE STUDY ANALYSIS

3.1. Analysis: Objectives and Methodology

The research aims to investigate the effectiveness of video games as tools to counter discrimination and disinformation, with two main objectives:

- Understanding how to nurture young people's engagement with these educational resources
- Identifying possible development directions for these training tools

To achieve these objectives, this section analyses a selection of video games designed to address the themes of discrimination and disinformation. The selection focuses on projects developed within educational initiatives supported by the European Community, NGOs or international associations, as well as video games that have been awarded or recognised for their quality and impact. Games with different visual design, game mechanics and narrative strategies have been included to offer a broader and more in-depth comparison between works united by similar educational purposes.

The analysis is structured through four fundamental dimensions:

1. *Educational Objectives* involve promoting understanding and respect for cultural, physical, and social diversity; developing critical analysis competencies; and strengthening values such as equality, empathy, and collaboration.
2. *Gameplay Mechanics* encompass gameplay (structuring missions, puzzles, and interactions addressing discrimination and disinformation scenarios); decision systems (meaningful choices affecting narrative development, stimulating reflection and responsibility); and feedback systems (reward or penalty mechanisms that encourage inclusive and constructive behaviors).
3. *Narrative Strategies* include narrative structure (linear or branching paths with choices influencing outcomes, enhancing player engagement) and identification elements (character development and roles designed to stimulate emotional connection and active participation).
4. *Visual Language* considers colour codes and visual tone (strategic use of colour to define atmospheres and emphasize emotional components and educational messages); illustrations and images (approaches ranging from realism to stylisation, or combinations thereof, aligned with learning objectives); and interface design (typographic choices, readability, information hierarchies, and layout accessibility).

For each dimension, the analysis considers:

- Observations and Limitations highlighting main critical issues that emerged in game application and previously analysed aspects
- Development Opportunities suggesting possible improvements and developments for the analysed educational video games

Fig. 1 synthesises the comparative analysis of the examined video games, highlighting the key dimensions identified in the analytical framework.

| 1. TITLE EDUCATIONAL OBJECTIVES | 2. PLAYFUL MECHANICS | 3. NARRATIVE STRATEGIES | 4. VISUAL LANGUAGE | OBSERVATIONS AND LIMITATIONS | DEVELOPMENT OPPORTUNITIES |
|---|---|--|---|--|--|
| STRATEGIC RELATIONSHIPS URBAN GAME Develop critical awareness of gender stereotypes and fight hate speech | Urban treasure hunt with a storyline (identified by QR code) where the teams face simulated social scenarios of discrimination. The experience combines physical and digital exploration, concluding with a collective discussion. | Use of storytelling through three characters (Betty, Mary, Zaki) who face different forms of online discrimination. The experience promotes everyday spaces and digital dynamics, allowing stereotypes and prejudices to be recognized and analyzed. | The interface takes up the aesthetics of social media by integrating it with the illustrations of the protagonists. This choice takes advantage of adolescents' familiarity with digital platforms to encourage engagement and identification. | Dependence on connectivity might limit accessibility in some contexts. The speed of solving cases rate benefiting reflection. Educational effectiveness depends on the time discussion, requiring specific skills from facilitators. | Possible developments include expanding the simulated situations beyond the same scenarios. Possibility to include scenarios that reflect different social inequalities, integration of mechanisms to document and share the effective strategies that emerged during the game. |
| YOUTH FOR LOVE - THE GAME Educates on violence and cyberbullying, providing tools to manage critical situations | The gameplay, based on multiple choices that affect the story and relationships, takes place in realistic environments with the intervention of adult support figures. A moderated social component allows you to share the outcomes of the different narrative paths. | The game follows twelve main characters whose interconnected stories explore different forms of violence and cyberbullying. Adult figures accompany the protagonists offering guidance and different perspectives. | The visual section combines cartoon characters and realistic urban environments with pastel colors, balancing lightness and seriousness to speak to teenagers. The interface enriches the aesthetics of social media, while an avatars may guide the exploration of spaces. | The simplification of discrimination dynamics and the mediation of social characters could limit the educational impact. The educational effectiveness of the game depends significantly on the facilitator's skills in managing sensitive issues. | Possible developments include more complex mechanisms to increase agency, a competency-based feedback system, and a moderated community for peer education. These elements could enrich the experience by balancing playful and educational aspects. |
| CONVOY (NOT A GAME) Educates on violence and cyberbullying, providing tools to manage critical situations | The developer game explores four stories of gender-based violence (domestic violence, rape, revenge porn) through flashbacks, multiple-choice decisions, and mini-games. It includes an online role-play and achievements, with both single and multiplayer modes. | The game adopts embedded design, balancing education and entertainment. The stories were developed with the contribution of young people (14-18 years old) and experts (lawyers, psychologists, social workers) to ensure treatment and accurate representation of gender-based violence. | The visual section combines cartoon characters and realistic urban environments with pastel colors, balancing lightness and seriousness to speak to teenagers. The interface enriches the aesthetics of social media, while an avatars may guide the exploration of spaces. | Managing sensitive content requires a delicate balance between realistic representation and psychological protection of young users. The effectiveness of the intervention depends on the involvement of support figures for the mediation of the most complex contents. | Possible developments include an advanced rescue system, further psychological support, and a moderated community for peer sharing. The modular character structure makes it easy to add new scenarios and localize them into other languages. |
| DATA DEFENDERS Develops source assessment skills to counter disinformation | In a lower defense, players use the "Data Analyzer" to classify media content as trustworthy. The "Crisis Impact" module measures the effects of disinformation, while resource management and the progressive escape of information through secure engagement and guide critical analysis. | The story combines science fiction and current social issues in a futuristic setting (2155), where the robotic network is hijacked with disinformation and digital security. The character of Carlos Castillo guides the player through challenges and learning. | The 3D cartoon graphic style and clear interface are aimed at a young audience. The functional color palette associates blue with defensive aspects, orange/yellow with research, and red with threats. Environments, from hospitals to institutional bases, maintain visual consistency. | The repetitive mechanics and simplification of fact-checking risk reducing involvement and not reflecting the real complexity of the phenomenon. The difficult balance between educational and playful components could compromise the desired effectiveness of the experience. | Possible developments include collaborative multiplayer modes, complementary educational content, and moderate levels of complexity for different ages. The expansion of analytical mechanisms and a more articulated engagement system could enrich the experience. |
| HATEDICK THE ADVENTURES OF ALBERT A tool of recognition and control of hatred and social exclusion | The gameplay is structured through the exploration of 3D environments and the overcoming of obstacles that symbolize social barriers. Interaction with non-player characters allows you to discover stories of discrimination and survival through a non-linear narrative approach. | The story takes place in a dystopian world characterized by intolerance, where diversity is systematically repressed. The protagonist, as his journey home, meets marginalized individuals and faces his personal experiences, discovering the dynamics of social exclusion. | The interface uses gray tones to symbolize oppression and conformity, contrasted by brightly colored elements and characters that represent resistance. The graphic style blends cyberpunk/sci-fi aesthetics with indie game minimalism. | The 2D platformer format may limit the depth of thematic exploration. The dystopian setting risks distancing everyday reality from the discriminatory patterns of everyday life. The playability could lead to losing the impact aspect over the reflective one. | Possible developments include expanding the narrative through new levels and characters. Possible development of a cooperative multiplayer mode, integration of social mechanics that link gameplay to Amnesty International's online actions. |
| LULLA AND THE SHADOWS OF WAR Raises awareness of the effects of war through the 2014 Gaza War | The gameplay combines platforming and environmental puzzles to represent survival in a war zone. Essential mechanics, such as avoiding bombing, summarize the perils of the conflict. | The narrative is linear and based on real events of a Palestinian boy and his family, illustrating empathy and awareness of the conditions of conflict, with particular attention to children. | The minimalist aesthetic with black backgrounds and light elements, stylized scenery and sound design build a tense and engaging atmosphere. The irregular level, similar to climbing walls, reinforces the perspective of children in the conflict. | The linearity of the experience could limit the deepening of the topic. The platforming format may oversimplify the complexity of the phenomenon. The difficult balance between educational and playful components could compromise the desired effectiveness of the experience. | Possible developments include expansion with multiple stories and different perspectives. Possible development of a documentary component integrated into the gameplay. Creation of accompanying learning materials for educational use. |
| THIS WAR OF MINE Focuses on the impact of war on civilians and moral dilemmas in war zones | The gameplay is divided into daylight cycles, during which the player manages the shelter and the escape of the survivors, while at night they explore the city in search of resources. The game highlights the moral dilemmas created by the war and the different choices of the characters and the development of the story. | Inspired by the image of Bananas but without explicit references, the game explores the impact of war on civilians, with developments determined by the choices of the player. The game highlights the moral dilemmas created by the war and the different choices of the characters and the development of the story. | The black and white documentary aesthetic, with occasional color, creates a somber and realistic atmosphere. The use of real photographs and audio recordings, the side-section, blends cyberpunk/sci-fi aesthetics with indie game minimalism. | The repetitive daytime cycle mechanics and high difficulty may reduce the engagement of some players. The emotional intensity of the situation and the moral dilemmas could be further emphasized by the effectiveness of the anti-war message. | Possible developments include expansion with scenarios that explore different aspects of war, integration of cooperative multiplayer. The integration of documentary elements, such as real photographs and audio recordings, could further emphasize the accessibility and effectiveness of the anti-war message. |
| FAMILY PLEASE Educates on the impact of war on civilians and moral dilemmas in war zones | The gameplay is divided into daylight cycles, during which the player manages the shelter and the escape of the survivors, while at night they explore the city in search of resources. The game highlights the moral dilemmas created by the war and the different choices of the characters and the development of the story. | Inspired by the image of Bananas but without explicit references, the game explores the impact of war on civilians, with developments determined by the choices of the player. The game highlights the moral dilemmas created by the war and the different choices of the characters and the development of the story. | The black and white documentary aesthetic, with occasional color, creates a somber and realistic atmosphere. The use of real photographs and audio recordings, the side-section, blends cyberpunk/sci-fi aesthetics with indie game minimalism. | The repetitive daytime cycle mechanics and high difficulty may reduce the engagement of some players. The emotional intensity of the situation and the moral dilemmas could be further emphasized by the effectiveness of the anti-war message. | Possible developments include expansion with scenarios that explore different aspects of war, integration of cooperative multiplayer. The integration of documentary elements, such as real photographs and audio recordings, could further emphasize the accessibility and effectiveness of the anti-war message. |
| 1.800 CUT JOURNEY Promotes anti-racism awareness through simulated experiences | The experience allows you to immerse in the challenges of the protagonist through interaction based on VR controllers. Interactions are supported by a 3D world that takes you to the real world. | The experience is divided into three interconnected chapters that follow key moments in the protagonist's growth, with the same character guiding the player towards the final goals of the interactions. | The minimalist interface presents immersion in an experience characterized by photorealistic images and specific details of the characters. The color palette evolves from the vibrant tones of childhood to more sober tones, while dynamic lighting increases the realism of the narrative. | The repetitiveness of the mechanics could be limiting. The complexity of bureaucratic rules risks shifting the focus of a real-world problem to the current problems of immigration and social control. | Possible developments include new contemporary scenarios by introducing more narrative specifications. Development of a multiplayer mode. Creation of complementary educational content that connects game mechanics to current phenomena. |
| CONCRETE GENIE Uses artistic creativity as a tool against bullying | The game system combines virtual painting with creative challenges that develop artistic skills and environmental puzzle. The player brings abandoned urban spaces to life through artistic creation, giving shape to characters and landscapes that transform their surroundings. | The game follows Ash's journey, who through artistic creation finds the strength to overcome bullying. The development of the abandoned city becomes a metaphor for personal transformation, while magical creatures become catalysts in the healing process through art. | The minimalist interface with hand-drawn fonts blends with the gameplay, while the contrast between dark, low-level environments and vibrant artistic creations represents Ash's emotional healing journey. The illustrations, which mix realism and fantasy, underline the power of creative expression. | The artistic approach risks oversimplifying the problem of bullying, while the emphasis on individual creativity may obscure the importance of collective solutions. The game mechanics could be more interactive and encourage the complexity of the phenomenon. | Possible developments include expanding the narrative through new levels and characters. Possible development of a cooperative multiplayer mode, integration of social mechanics that link gameplay to Amnesty International's online actions. |
| DOTS HOME Educates on systemic racism and social inequalities | The gameplay combines point-and-click graphics, adventure elements with a narrative system. Multiple choices reflect the complexity of decisions based on different historical periods. | The story unfolds through key moments in family life, where personal choices are intertwined with broader social dynamics. Time travel becomes a metaphor to explore how individual decisions relate to social structures. | The 3D illustrations are inspired by animated short films, with expressive characters and detailed settings. Realistic and surreal scenes alternate, with abstract color palettes, warm tones for the present and soft shades for the past. | The point-and-click format may be outdated. The complexity of the themes is likely to be simplified by the video game format, while the specificity of the context could make it more difficult for players of different backgrounds to identify. | Possible developments include adding timelines and multiple perspectives, enriched with documentary content and testimonials. The integration of learning materials, a more articulated narrative system and spaces for reflective discussion would increase the educational potential. |
| ANOTHER DREAM Develops empathy towards LGBTQ+ migrants in contexts of persecution | The interactive experience transforms the user into an explorer, allowing them to discover the hidden stories of exploration of the virtual environment. VR is used to immerse the player in the experience, creating an emotional bond to the true story. | The narrative combines documentary and artistic elements, using VR environments. The real testimonies are integrated with symbolic elements, while the transitions between scenes reflect the emotional journey of the passage between cultures and identities. | Stylized animation blends traditional drawing and digital elements. The palette evolves from the warm tones of Egypt to the cool colors of Europe. Topography is part of the virtual environment, while sound design integrates testimonies, music, and environmental effects. | Limited access to VR technology could exclude potential users. The complexity of the themes is likely to be simplified by the video game format, while the specificity of the context could make it more difficult for players of different backgrounds to identify. | Possible developments include a non-VR version and the integration of a documentary component. Possible development of a documentary component integrated into the gameplay. Creation of complementary learning materials for educational use. |
| GAMER GIRL Explores gender discrimination in study and professional settings | A multiple-choice dialogue system simulates real-world interactions. Decisions influence narrative development, with immediate feedback through character reactions and narrative consequences of choices made. | The branching narrative, based on real cases, explores female isolation in male-dominated environments, and the management of complex social situations. The narrative decisions lead the player's identification in the need to make quick and responsible decisions. | The minimalist style of the interface uses mainly pastels and black. The characters are illustrated in a detailed and expressive way, while the backgrounds of the environments are more realistic. The typography is clear and effectively distinguishes narrative text and choice options. | The system of choices could benefit from greater depth and long-term consequences. Some situations may be too simplified compared to the complexity of the problems faced in reality. | Possible developments include expanding the narrative system with more complex choices, non-gameplay social features. The addition of multiple scenarios, real testimonies and multiplayer modes would strengthen the educational effectiveness on refugee-related issues. |
| BURY ME, MY LOVE Raises awareness about the plight of refugees through personal stories | The gameplay simulates a real-time message conversation between spouses. The decisions of the couple affect the story and the fate of the protagonists. The specific situation and journey between messages surface engagement. | The player takes on the role of Maud, Maud's husband, and through this relationship intimacy is simulated the migration story. The narrative is interactive and has multiple endings that depend on the choices made. | The messaging interface creates an intimate experience, images and text stimulate the imagination of events. Personal drawings style, illustrations, and the palette of colors and pink support the storytelling. | The exclusive use of text messages and real-time conversations risks limiting the experience. The focus on a single narrative does not reflect the complexity and variety of migration stories. | Possible developments include expanding the narrative system with more complex choices, non-gameplay social features. The addition of multiple scenarios, real testimonies and multiplayer modes would strengthen the educational effectiveness on refugee-related issues. |
| NEWSPAPER DEFENDERS Develops fact-checking skills and media literacy | Players face realistic scenarios where they have to choose which news to share, verifying sources and checking context. The game highlights the impact of individual choices in the dissemination of information. | The narrative is based on concrete situations that increase the experience of browsing social media. Despite the complexity of the task, players are motivated in the need to make quick and responsible decisions. | The graphics reproduce the environment of a social platform with notifications, posts and images familiar to users. The screen size makes the experience accessible and makes it easier to understand the educational message. | The game risks being interpreted as a manual of instructions rather than an experience. The emphasis on individual choices may limit the impact of the educational message. | Possible developments include expanding the narrative system with more complex choices, non-gameplay social features. The addition of multiple scenarios, real testimonies and multiplayer modes would strengthen the educational effectiveness on refugee-related issues. |
| BAD NEWS Raises awareness about the impact of disinformation and develops critical thinking | The game simulates the management of a social media identity, where players accumulate followers through the creation of disinformation, while the player's choices lead to the dissemination of false information. | The narrative develops through decisions that reveal the impact of disinformation on society. The player's choices lead to the dissemination of false information, while the player's choices lead to the dissemination of false information. | The interface faithfully replicates the aesthetics of social media, with a layout dominated by text and images. The design uses familiar graphic elements (emojis, avatars) to increase the realism of the experience. | The many may not be understood by everyone, and the emphasis on individual choices may limit the impact of the educational message. | Possible developments include expanding the narrative system with more complex choices, non-gameplay social features. The addition of multiple scenarios, real testimonies and multiplayer modes would strengthen the educational effectiveness on refugee-related issues. |
| HARMONY SQUARE Raises awareness about the impact of disinformation and develops critical thinking | In a virtual community, the player manages relationships through the use of social media. Decisions influence narrative development, with immediate feedback through character reactions and narrative consequences of choices made. | The branching narrative, based on real cases, explores female isolation in male-dominated environments, and the management of complex social situations. The narrative decisions lead the player's identification in the need to make quick and responsible decisions. | The minimalist style of the interface uses mainly pastels and black. The characters are illustrated in a detailed and expressive way, while the backgrounds of the environments are more realistic. The typography is clear and effectively distinguishes narrative text and choice options. | The system of choices could benefit from greater depth and long-term consequences. Some situations may be too simplified compared to the complexity of the problems faced in reality. | Possible developments include expanding the narrative system with more complex choices, non-gameplay social features. The addition of multiple scenarios, real testimonies and multiplayer modes would strengthen the educational effectiveness on refugee-related issues. |
| COVID VITAL Raises awareness about the impact of disinformation and develops critical thinking | The gameplay explores three narrative techniques (documentary, simulation, and role-play) to explore the impact of disinformation on society. The player's choices lead to the dissemination of false information, while the player's choices lead to the dissemination of false information. | The narrative is based on concrete situations that increase the experience of browsing social media. Despite the complexity of the task, players are motivated in the need to make quick and responsible decisions. | The graphics reproduce the environment of a social platform with notifications, posts and images familiar to users. The screen size makes the experience accessible and makes it easier to understand the educational message. | The game risks being interpreted as a manual of instructions rather than an experience. The emphasis on individual choices may limit the impact of the educational message. | Possible developments include expanding the narrative system with more complex choices, non-gameplay social features. The addition of multiple scenarios, real testimonies and multiplayer modes would strengthen the educational effectiveness on refugee-related issues. |

Fig. 1
A Comparative Analysis
Framework of Educational
Video Games Addressing
Discrimination and
Misinformation

3.2. The Case Studies

3.2.1. European Community-Supported Initiatives: Educational Video Games for Addressing Discrimination and Misinformation

Recent years have witnessed the implementation of several European Community-supported projects utilising video games as tools for enhancing media literacy, fostering critical thinking, and addressing discrimination. These initiatives are aligned with the United Nations Action Plan on combating hate speech, which emphasises the fundamental importance of addressing root causes through educational interventions and youth engagement. The European Union Code of Conduct monitoring framework, implemented through a network of member state organisations, provides a methodological structure for evaluating the efficacy of these educational instruments. Within this context, video games are integrated as components of comprehensive educational programmes encompassing multiple pedagogical activities. Four initiatives merit particular attention for their methodological approaches and demonstrated impact:

1. The “Yo-MEDIA” initiative, supported by the European Media and Information Fund, addresses youth media literacy within pandemic and conflict contexts. The methodological framework incorporates both qualitative and quantitative analytical approaches, emphasising experiential learning through gaming mechanisms. The programme facilitates collaboration among educators, media professionals, and youth participants (aged 11-17) to enhance information verification competencies. The initiative comprises three distinct gaming instruments: the Social Media Puppeteers role-playing simulation, the Social Media Fake News card game, and the Data Defenders video game. The latter, situated in 2165, integrates tower defence mechanics with media literacy elements, requiring participants to implement data analysis tools to protect information systems from disinformation attacks.

2. “Youth for Love”, co-financed through the European Union Rights, Equality and Citizenship (REC) programme, addresses adolescent bullying, violence, and cyberbullying phenomena. The pedagogical framework, grounded in identification and decision-making processes, facilitates the development of risk situation recognition and management competencies. The programme’s central component, Youth for Love – The Game, presents an interactive narrative environment wherein participants engage with twelve interconnected character narratives, implementing decision-making processes within quotidian contexts, supported by adult guidance frameworks.

3. “CONVEY”, a transnational initiative within the Rights, Equality and Citizenship programme, addresses sexual violence and harassment through digital pedagogical interventions focusing on gender stereotypes. Targeting adolescents aged 14-18, the programme integrates educator training, pilot implementation, policy recommendations, and longitudinal impact assessment. The initiative’s primary instrument, Not A Game [Fig. 2], examines gender-based violence through an investigative framework incorporating four case studies. The gameplay methodology synthesises investigative processes, temporal narratives, and interactive dialogue, integrating documentary evidence and primary source testimonials through multimedia presentation.

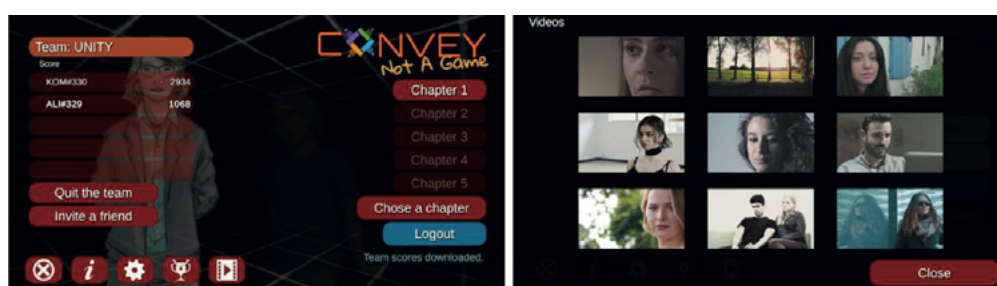


Fig. 2
Screenshot from
the video game *Not A Game*.
(CONVEY Onlus, 2019).

4. “Play for your rights!”, supported by Erasmus+, addresses gender-based discrimination and sexism through media education and gamification methodologies. The initiative facilitates educator-student collaboration (ages 12-18) in the co-development of digital instruments addressing social media hate speech. The programme incorporates the Strategic Relations card game and an Urban Game implementation [Fig. 3], integrating physical exploration and digital interaction through strategically positioned QR codes. Participating groups engage with discrimination scenarios through competitive social media simulations.



Fig. 3
Screenshot from the video game
Play for your rights! - Urban Game.
(Zaffiria Onlus, 2020).

3.2.2 Amnesty International’s Contribution: HateSick – Alter’s Adventures

Amnesty International, as part of its comprehensive programme of initiatives addressing online hate and promoting inclusion - including the “Hate Barometer” and the “Table for Countering Hate Speech” - has developed a video game addressing intolerance and discrimination: *HateSick – Alter’s Adventures* [Fig. 4]. Developed with input from children and

adolescents, the game aims to raise youth awareness about hate and discrimination. The video game is structured as a 2D platform experience where environmental exploration and overcoming physical obstacles serve as metaphors for social barriers. The narrative unfolds through non-player characters' personal stories within a dystopian context dominated by intolerance, where the protagonist discovers social exclusion dynamics through encounters with marginalised characters.

3.2.3. Games for Change: Diversified Approaches to Addressing Discrimination



Fig. 4
Screenshot from the video game *HateSick - Alter's Adventures* (Steam Factory, 2019).

Since 2004, the Games for Change (G4C) organisation has supported initiatives utilising Serious Games for social change. As illustrated in Fig. 1, analysis of the video games on their platform reveals ten significant cases addressing discrimination and misinformation through complementary approaches. In media literacy, *NewsFeed Defenders* simulates a social media experience to develop information verification competencies, whilst in the migration context, *Bury Me, My Love* and *Papers, Please* offer distinct perspectives on the phenomenon: the former through real-time interactive narrative of a refugee's journey, the latter through simulation of bureaucratic and moral complexities in border control.

Social discrimination is explored through diverse immersive experiences: *Dot's Home* addresses systemic racism through temporal navigation of urban dynamics, whilst *1,000 Cut Journey* employs virtual reality to illuminate daily microaggressions. *Another Dream* combines interactive documentary and VR to examine the intersection of LGBTQ+ discrimination and forced migration. *This War of Mine* and *Liyla and the Shadows of War* [Fig. 5] document conflict impact on civilians, the former through survival mechanics, the latter via a platform narrative based on actual events in Gaza.

Gamer Girl and *Concrete Genie* [Fig. 6] represent innovative approaches to technological sector sexism and bullying respectively, the latter employing visual metaphors and creative mechanics that transform art into a resilience instrument.



Fig. 5
Screenshot from the video game *Liyla and the Shadows of War* (Rasheed Abucide, 2016)..



Fig. 6
Screenshot from the video game *Concrete Genie* (Pixelopus, 2019).

3.3.4. Newsgames and Inoculation Theory in Addressing Disinformation

Newsgames represent a hybrid form combining journalism and game design to inform the public about current affairs and develop resistance to false information, applying principles of psychological inoculation theory. According to van der Linden, Roozenbeek and Basol (2022), this theoretical framework employs a vaccine analogy: exposing individuals to controlled doses of manipulative information (prebunking) activates “mental antibodies” against persuasive techniques, effectively “inoculating” the mind against disinformation. *Bad News*, developed through collaboration between DROG, Gusmanson Design, and the University of Cambridge, exemplifies this approach through paradoxical design: players, positioned as disinformation creators, directly experience media manipulation strategies, from polarisation to conspiracy theory construction. The interface, replicating social media aesthetics, structures this experience through progressive choices revealing the consequences of information manipulation. Longitudinal research on *Bad News* [Fig. 7] efficacy (Maertens et al., 2021) documents significant enhancement in false information recognition and critical evaluation capabilities.

This methodology has generated targeted implementations: Harmony Square (2020) addressing political disinformation and subsequently Go Viral countering pandemic-related misinformation proliferation, demonstrating the model’s adaptability in responding to diverse forms of information manipulation.



Fig. 7

Screenshot from the video game *Bad News* (DROG, Gusmanson Design, University of Cambridge, 2018).

4. RESULTS OF VIDEO GAME ANALYSIS AGAINST DISCRIMINATION AND DISINFORMATION: EMERGING TRENDS AND CRITICAL ISSUES

4.1. Identified Evolutionary Patterns

The analysis of 18 case studies, developed through four analytical dimensions and summarised in Tab. 1, shows significant evolutionary patterns in serious games. The comparative table highlights a growing integration between game mechanics and educational objectives, alongside a diversification of narrative strategies based on the themes addressed and a constant adaptation of visual language to the needs of the target audience. Specifically:

1. In educational objectives, a training strategy structured on three interconnected dimensions emerges. The first concerns the development of empathy and identification, as in *1,000 Cut Journey* and *Another Dream*, which emphasise direct experience and emotional immersion. The second focuses on analytical skills, as in *Bad News*, *NewsFeed Defenders* and *Data Defenders*, emphasising critical thinking and information evaluation. The third involves socio-personal growth, present in *Youth for Love* and *Concrete Genie*, where social learning combines with individual development.

2. Game mechanics follow two distinct but complementary approaches. The first favours consequential decision-making systems, as in *Papers, Please* and *This War of Mine*, where player choices produce concrete effects in the game world. The second emphasises analytical-evaluative systems, as in *Data Defenders* and *NewsFeed Defenders*, focusing on measuring decisional impact.

3. The narrative approach develops through three modes: contextualised personal narrative, as in *Dot's Home* and *Gamer Girl*; projection into future scenarios, illustrated by *Data Defenders*; and narrative based on real events, as in *Not A Game*. Character development and construction of realistic situations strengthen player identification.

4. Visual design presents various solutions, from the minimalism of *Liyla and the Shadows of War* to the photorealism of *1,000 Cut Journey*. The strategic use of colour becomes essential narrative support, as in *Concrete Genie* and *Another Dream*. Interfaces incorporate social media elements and digital platforms familiar to the target audience.

4.2. Critical Discussion and Future Perspectives

The results highlight that game design evolution in this field manifests in growing thematic complexity and refinement of narrative solutions, and that the integration of these games into broader educational projects enhances their pedagogical effectiveness. There is an emerging greater capacity to balance the playful aspect with the educational one and to create meaningful experiences where learning arises from interaction. Also significant is the co-design of these video games with young people to ensure the correspondence of content and mechanics to target audience needs.

The evolution of game design reflects increasing thematic complexity and narrative sophistication, amplified by integration into broader educational projects. As theorised by Miguel Sicart (2013), systems based on micro-decisions foster greater ethical depth compared to limited-choice narratives, creating environments where consequences emerge from the accumulation of small decisions.

The main critical issues concern: dependence on intermediaries to optimise educational impact, technological obsolescence due to the rapid evolution of digital media, the need for constant content updating due to continuously changing strategies in the spread of discriminatory ideas and disinformation. Another limitation is the difficulty of measuring the specific impact of these educational tools, distinguishing them from other factors that influence media literacy.

These critical issues indicate possible directions for future research, including the need to develop precise metrics to evaluate the effectiveness of these tools and to consider cultural variables in their implementation, through an approach that measures not only skill acquisition but also long-term behavioural changes. Quantitative pre/post intervention analyses could be employed with validated scales and qualitative evaluations through focus groups, semi-structured interviews, and longitudinal behavioural tracking.

5. CONCLUSIONS: EFFECTIVENESS AND PERSPECTIVES OF VIDEO GAMES IN MEDIA EDUCATION AND COMBATING DISCRIMINATION

Recent years have shown significant evolution in educational video game implementation, confirming Katie Salen and Eric Zimmerman's (2003) insight: games not only reflect culture but help shape it, influencing our thought patterns. Game design proves crucial in developing critical competencies and media literacy, promoting exploration of diverse perspectives and reducing prejudice (Passmore et al., 2018). This evolution reflects EU Code of Conduct and UN Action Plan objectives: developing resistance to hate narratives through innovative educational tools, while promoting critical thinking and digital awareness in an evolving media ecosystem.

Analysis highlights three key dimensions in educational video game effectiveness: capacity to transform complex social themes into meaningful interactive experiences; integration of ludic mechanics with educational objectives; and development of critical competencies through narrative immersion. For anti-discrimination video games, direct youth involvement in design emerges as a determining factor, alongside multiplayer experience implementation

facilitating intercultural dialogue through immersive technologies.

Visual design assumes a strategic role in mediating between representative authenticity and emotional engagement, while newsgame evolution indicates significant potential in social platform integration and artificial intelligence utilisation for personalised learning. The collaborative dimension proves essential in developing effective informal learning communities. Future challenges require an integrated approach combining more sophisticated evaluation tools with continuous adaptation to the digital ecosystem. These educational tools' success depends on their ability to evolve alongside technological and social transformations, maintaining educational effectiveness through synergistic collaboration between game designers, educators, researchers and young users, supported by institutions. This represents the necessary condition for developing educational tools capable of effectively contributing to building a digitally aware and inclusive society.

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BIOGRAPHY

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