

# Pathways to inclusion: can gamified reflections and mentoring find acceptance at the end of the LGBTQIA+ Rainbow?

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Recibido para publicación: 11-03-2024. Versión corregida: 21-10-2024. Aprobado para publicación: 30-10-2024.

## Model of citation:

Tinoco Giraldo H. **Pathways to inclusion: can gamified reflections and mentoring find acceptance at the end of the LGBTQIA+ Rainbow?** Arch Med (Manizales). 2025;25(1).  
<https://doi.org/10.30554/archmed.25.1.5226.2025>

## Abstract

**Background:** *Despite increasing acceptance of LGBTQIA+ individuals, particularly on university campuses, the process of coming out remains challenging and potentially isolating for many young adults. Supportive relationships, especially mentorship, could significantly benefit LGBTQIA+ individuals.* **Objective:** *To introduce and evaluate “Rainbow Pathways,” a gamified mentoring experience designed to provide guidance for LGBTQIA+ persons in coming out and navigating complex social situations, including mental health challenges and dating.* **Method:** *Qualitative data was collected and analyzed from 33 university students who participated in the “Rainbow Pathways” game.* **Results:** *Participants reported that “Rainbow Pathways” was accessible, offered social support, and provided educational insights on inclusion-related topics. The game allowed them to reflect on their own experiences and those of other LGBTQIA+ students.* **Conclusion:** *“Rainbow Pathways” shows promise as a tool for supporting LGBTQIA+ young adults. However, further research is necessary to determine its applicability to wider audiences beyond university students.*

**Keywords:** *Video games, Mentoring, Gender discrimination, Higher education, LGBTQIA+, Inclusion*

## *Caminos hacia la inclusión: ¿Pueden las reflexiones de juego y el mentoring encontrar aceptación al final del arco iris LGBTQIA+?*

## Resumen

**Antecedentes:** *A pesar de la creciente aceptación de las personas LGBTQIA+, especialmente en los campus universitarios, el proceso de salir del armario sigue*

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siendo difícil y potencialmente aislante para muchos adultos jóvenes. Las relaciones de apoyo, especialmente el mentoring, podrían beneficiar significativamente a las personas LGBTQIA+. **Objetivo:** Introducir y evaluar “Rainbow Pathways”, un juego con una experiencia de mentoring diseñado para orientar a las personas LGBTQIA+ en su salida del armario y en la navegación por situaciones sociales complejas, incluidos los problemas de salud mental y las citas. **Método:** Se recogieron y analizaron datos cualitativos de 33 estudiantes universitarios que participaron en el juego “Rainbow Pathways”. **Resultados:** Los participantes informaron de que el juego era accesible, ofrecía apoyo social y proporcionaba conocimientos educativos sobre temas relacionados con la inclusión. El juego les permitió reflexionar sobre sus propias experiencias y las de otros estudiantes LGBTQIA+. **Conclusiones:** “Rainbow Pathways” se muestra prometedor como herramienta de apoyo a los jóvenes adultos LGBTQIA+. Sin embargo, es necesario seguir investigando para determinar su aplicabilidad a un público más amplio, más allá de los estudiantes universitarios.

**Palabras Claves:** Video juegos, Mentorías, Discriminación de género, Educación Superior, LGBTQIA+, Inclusión

## ***Caminhos para a inclusão: as reflexões lúdicas e a orientação podem ser aceitas no final do arco-íris LGBTQIA+?***

### **Resumo**

**Contexto:** Apesar da crescente aceitação das pessoas LGBTQIA+, especialmente nos campi universitários, o processo de se assumir continua difícil e potencialmente isolante para muitos jovens adultos. Os relacionamentos de apoio, especialmente a orientação, poderiam beneficiar significativamente as pessoas LGBTQIA+. **Objetivo:** apresentar e avaliar o “Rainbow Pathways”, um jogo com uma experiência de mentoria projetado para orientar pessoas LGBTQIA+ a se assumirem e a navegarem em situações sociais complexas, incluindo problemas de saúde mental e namoro. **Métodos:** foram coletados e analisados dados qualitativos de 33 estudantes universitários que participaram do jogo Rainbow Pathways. **Resultados:** os participantes relataram que o jogo era acessível, oferecia apoio social e fornecia percepções educacionais sobre questões relacionadas à inclusão. O jogo permitiu que eles refletissem sobre suas próprias experiências e as de outros estudantes LGBTQIA+. **Conclusões:** O Rainbow Pathways se mostra promissor como ferramenta de apoio a jovens adultos LGBTQIA+. Entretanto, são necessárias mais pesquisas para determinar sua aplicabilidade a um público mais amplo, além dos estudantes universitários.

**Palavras-chave:** Videogames, Mentoria, Discriminação de gênero, Ensino superior, LGBTQIA+, Inclusion

## 1. Introduction

Mentoring can be incredibly important for all university students [1] including those who identify as lesbian, gay, bisexual, transgender, queer or insecure, intersex, or asexual (LGBTQIA+) [2,38]. LGBTQIA+ students face numerous challenges and obstacles throughout their academic journeys [3,4], such as discrimination, social isolation, mental health issues and a lack of support from family and friends. These challenges can be particularly difficult for students who have yet to come out to their families or peers, and those who experience rejection or lack of support from their loved ones [5]. Additionally, transphobia and homophobia remain significant issues in many academic institutions [6] leading to a lack of resources and support for LGBTQIA+ students.

Recognizing the need for support and resources to help LGBTQIA+ students navigate these challenges; mentoring programs have become increasingly popular [7]. Mentors can provide guidance, advice, and support that can help these students navigate these challenges and succeed in their academic and personal lives.

To address these challenges, Tinoco-Giraldo et al. [8] support the notion that mentoring programs have emerged as a popular strategy to support LGBTQIA+ students. However, these programs often face various barriers, such as lack of funding or limited accessibility [9]. Therefore, proponents of innovative methods, include Pon-Barry et al. [10], Lee [11], Tolan et al. [12] Wolff et al. [13]; who consider technological initiatives such as online games, as a means of supplementing these programs.

The American Psychological Association of Graduate Students Committee on Sexual Orientation and Gender Diversity (APAGS-CSOGD) [13] is one of these initiatives that has developed an online game to serve as a support tool for LGBTQIA+ students. This game addresses a range of issues that LGBTQIA+ students may

face, including coming out, family and school support, dealing with discrimination and hate, and other mental health challenges, offering LGBTQIA+ psychologist, professional, and advanced graduate student to support students' professional development.

This paper will examine the challenges faced by LGBTQIA+ students in academic settings, students, and the benefits of utilizing an online game as a tool for support in a mentoring program.

By exploring the design and effectiveness of this game. Additionally, it will examine how an online game was developed as a support tool for a mentoring program, addressing these challenges. The game will aim to provide a safe and engaging environment for LGBTQIA+ students to discuss these issues and seek guidance from mentors.

## Mentoring and Support for LGBTQIA+ University Students

Holloway's et al. [14] discussion of mentoring openly acknowledges that forms of social support are crucial for LGBTQIA+ university students because they often face unique challenges related to their sexual orientation and gender identity that can affect their academic and personal success. LGBTQIA+ students may experience discrimination, harassment, or exclusion from peers and faculty, which can lead to feelings of isolation and disconnection [6,8,13,15,37]. Additionally, they may struggle with coming out to family and friends, finding supportive resources, or accessing healthcare services that meet their needs.

Mentoring provides LGBTQIA+ university students with a supportive and inclusive environment where they can connect with peers and mentors who understand their experiences and challenges [16,36]. Krisi and Nagar [17] support the notion that mentors can provide guidance, advice, and emotional support to help students navigate these challenges and

develop the necessary skills and knowledge to succeed academically and personally. The study carried out by Beltman et al. [18] revealed that a mentor can provide a sense of community and belonging that can reduce feelings of isolation and marginalization.

Several studies, examined the importance of mentoring for LGBTQIA+ university students:

- In their 2014 study, Higa et al, [19] found that a mentor who has successfully navigated similar challenges can also serve as a powerful role model and play an important role for the participants demonstrating that it is possible to be happy and successful as an LGBTQIA+ person. LGBTQIA+ students may feel isolated or marginalized on campus, and having a mentor who is also LGBTQIA+ can provide them with a much-needed sense of belonging and validation [20].
- Asakura [21] established a link between support and the creation of safe spaces in mentoring. LGBTQIA+ students may face discrimination and harassment on campus, and a mentor can provide emotional support and advice on how to handle these situations. They can also offer support for personal issues such as coming out to friends and family, dealing with relationship problems, or managing mental health challenges.
- The studies by Beltman et al. [18]; Tinoco-Giraldo et al. [8]; Wolff et al. [13] and Rios et al. [6] have found an association between the additional challenges faced by LGBTQIA+ students when it comes to finding employment or pursuing certain career paths and the understanding of the complexities of peer mentoring in providing guidance on how to navigate these challenges, including networking with LGBTQIA+ professionals and finding LGBTQIA+-friendly employers.
- According to Holloway et al. [14], mentoring can help LGBTQIA+ students advocate for themselves and for other LGBTQIA+ students on campus. They can provide

guidance on how to work with administrators and faculty to address issues such as discrimination and lack of support services.

## Gaming and Mentoring

In times in which learners grow accustomed to digital environments and in which the union between games and technology occurs naturally, new opportunities arise for researchers, instructional designers, and digital content creators. Those who are part of the learning and technology industries can favor the development of better playful-educational experiences, through what is called edutainment.

The emergence of this new education modality can contribute to address the challenge of transforming systems focused on connecting students with mentors in virtual mentoring programs, helping to create the necessary conditions to build the tools that need to be beneficial for learners who may feel isolated or marginalized because of their identities or experiences.

In recent years, educators have witnessed the emergence of edutainment, considered a hybrid genre that relies on visual material, narratives, and playful formats, with an ever-present component of innovation [22].

These new proposals, which are permeating the borders of computer-supported collaborative learning (CSCL) and game based-learning (GBL) by being incorporated into the creative sector, have an enormous potential to generate a high socio-learning impact. The study carried out by Gomez et al. [23] revealed that CSCL refers to the use of technology to facilitate collaborative learning and knowledge-sharing among learners in an educational context.

Rosé and Järvelä [24] recognize the importance of game-based learning through the impact of better learning and maintaining motivation by incorporating visual aids, videos, and much more interactive and participatory concepts. The result is a more comprehensive, adaptable, and effective learning model.

Within edutainment there is a variant called “serious games,” which consists of a set of educational contents that bet on gamification as a mechanism for knowledge transmission [22], generally used by companies to train their employees or measure their knowledge and adaptability. This is because video games teach skills such as critical thinking, resilience, perseverance, and problem solving. Thus, it facilitates the teaching of transversal skills such as teamwork, self-regulation, and collaboration, through project-based learning.

This variant has boosted distance education and the use of tools that enhance it, such as storytelling, which involves creating, adapting, and telling a story to connect with audiences and transmit the message in the most effective way possible. In the context of mentoring programs Rosé and Järvelä [24] support the notion that games can be a powerful tool for fostering connections and creating a supportive community. In similar vein, Pryor and Nachman [25] also found that mentoring programs that utilize games can be particularly effective for LGBTQIA+ students, because these immersive digital environments allow to experience situations and experiences of individuals, communities, places, or other moments.

It has been shown that gaming processes, achieves in students a greater and easier understanding of complex intangible concepts, demonstrating the enormous potential to educate about equity and social justice, as well as to develop empathetic skills in people [23]. GBL allows processes to be customized according to the needs of each learner, thanks to its flexibility and adaptability of space and time. All this makes mentoring contributions a real and safe possibility for many, being particularly useful for people facing numerous challenges and obstacles throughout their academic journeys.

Mentoring processes supported by gaming provide an online platform where students can connect with mentors and peers, participate in group activities, and receive guidance and

support. Edutainment use can create a safe and inclusive space for students to collaborate and learn from one another, while also developing the necessary skills and knowledge to succeed academically and personally [24].

The theoretical framework of Gomez et al. [23, p.108] posits that the central concept of CSCL is that learning is enhanced through collaboration, communication, and social interaction. CSCL is designed to promote interaction among learners, as well as between learners and mentors.

The use of technology tools, in CSCL allows learners to connect and collaborate in different ways and not only reflects what is to be learned and what learning is or is not, but also allows for an awareness of how learning occurs through practice in a range of contexts, people and meanings linked to practices, tools and content that may not be possible in traditional face-to-face settings. In addition, these technological tools can be especially beneficial for learners who may feel isolated or marginalized because of their identities or experiences (Rosé & Järvelä, 2020) [24].

In the context of mentoring LGBTQIA+ university students, the use of games can be a powerful tool for promoting collaboration and social interaction. It can provide a safe and supportive space for students to connect with one another, share experiences, and receive mentorship and guidance. Also, it can be used to facilitate discussions and group activities that promote learning and skill-building.

One of the key benefits of edutainment processes in mentoring is the ability to create a sense of community and belonging. LGBTQIA+ students often feel isolated or excluded from mainstream campus culture and may struggle to find peers who share their experiences. In discussing examples of online games that serve as support tools for LGBTQIA+ students, Oktavanya and Panjaitan [27] talk about “Life Is Strange: Before the Storm” that was designed

to be inclusive and respectful of diverse experiences and identities within the LGBTQIA+ community. This narrative-driven adventure game features a lesbian protagonist and explores themes of friendship, love, and identity within the LGBTQIA+ community.

Similarly, drawing from queer theory and game studies, Pavlounis [28], presents “Gone Home” an exploration-based game follows a young woman who returns home to her family after a year abroad and discovers the story of her younger sister’s coming out as a lesbian. The game is praised for its emotional depth and sensitivity in portraying the coming out experience. Another example is “Queer Quest: All in a Gay’s Work” [26] a game designed to promote empathy and understanding for the experiences of LGBTQIA+ individuals. Players take on the role of a gay man navigating a world of discrimination and intolerance and must make choices that impact the character’s emotional well-being.

These are just a few examples of the many games and resources available for LGBTQIA+ support within the gaming community.

## 2. “Rainbow Pathways” Game Description

“Rainbow Pathways” is a casual type game focused on social themes, which helps to virilize all the actions and processes of the game and to give more solidity to its psychological base; it is a single player game, it has a controlled linear story to ensure the same storyline throughout the game session, user interaction is based on mouse clicks or touches on a touch screen and must record user interactions.

The video game development process is from Gongsook et al. [29] (Figure 1), which implements series of logical steps of that include:

**Design Phase:** The Gender-Based Engagement Model for Serious Games [30] was applied which seeks to optimize and recognize preferences and play styles based on sexual orientation and gender expansiveness (terminology used for any gender expression that falls outside the binary gender standards in force in society [8] of the players; seeking to adapt the game experience by using differentiated game dynamics, allowing players to customize their

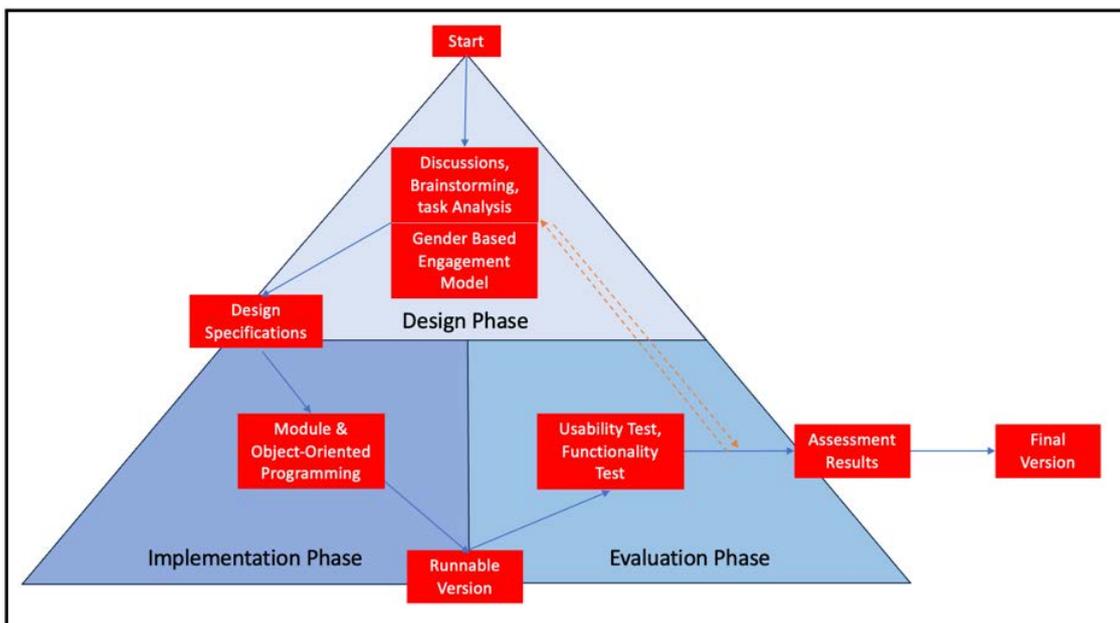


Figure 1. Development process

avatars, environments or game experiences, the use of inclusive narrative, feedback and equitable evaluation.

Also, a user-centered design approach [31,32,35] was used, where potential users of the video game are observed and interviewed to determine product requirements. In addition, an expert company in video game development was consulted, who trained the development group and helped them define the characters and graphical environments of the video game. The game consists of several levels designed to retain the player's interest during a single game session of approximately 20 minutes. Each level applies more than one diagnostic test.

A story was proposed to give coherence and unity to "Rainbow Pathways" through its levels, which must be resolved in a sequential manner. It was based on the methodological narrative structure of the podcast "This is my story" [33] as an underlying framework. This narrative structure is composed of five chapters, made from the school climate survey designed by "Cien por ciento Diversidad y Derechos". Each chapter recounts and represents the perceived and manifested reality of LGBTQIA+ youth describing their own journey of sexual orientation and gender expression.

From this structure, we designed 5 different scenarios with a diagnostic purpose and adapted into a single story with different challenges that include the challenges faced by LGBTQIA+ college students in

building a supportive community and achieving personal goals and the evidence that allows us to conduct their assessment (Table 1).

The tests make it possible to extract the necessary information to evaluate the emotional and persuasive level of the player, as he/she interacts with the video game, to generate possible advice and recommendations. Figure 2. Shows the distribution of the screen elements of the developed video game.

At the top left, element (1), there is a bar showing the time the player must execute the challenge. At the top right, element (2), there is a light bulb with the number of challenges to perform. In the lower left part is the avatar, element (3), which must be moved through different scenarios to accomplish the different challenges of the game. The movement controls (cursor) element (4) to move the character to any direction and make jumps.



Figure 2. Distribution of the screen elements

**Table 1. Scenarios Challenges & Solutions**

Scenarios	Challenges	Possible solutions/actions
<b>1: “Coming out of the closet”.</b> A player is struggling with their sexual orientation or gender identity and wants to come out to their friends and family but doesn’t know how.	<b>1. Fear of Rejection:</b> The player faces the fear of being rejected by friends, family or classmates when revealing their identity.	<b>1. Conversation with a Friend:</b> The player must simulate a conversation with a friend to practice safely disclosing his or her identity.
	<b>2. Social Pressure:</b> Social pressure to conform to heteronormative norms can create internal conflict and hinder the process of authenticity.	<b>2. Personal Decision Making:</b> Player must make decisions related to their identity in the face of social pressure and explore the consequences of those decisions.
	<b>3. Isolation:</b> The possibility of social isolation and loss of close relationships can represent an emotional challenge.	<b>3. Managing Isolation:</b> The player explores strategies for maintaining social connections and coping with isolation.
<b>2: Bullying and harassment.</b> A player is experiencing bullying or harassment from peers or teachers because of their sexual orientation or Gender expansiveness.	<b>1. Verbal Harassment:</b> Player may face insults and offensive comments based on their identity.	<b>1. Handling Offensive Comments:</b> Player should choose effective strategies for handling verbal harassment situations.
	<b>2. Social Isolation:</b> Bullying can lead to social isolation, affecting participation in academic and extracurricular activities.	<b>2. Rebuilding Social Relationships:</b> The player identifies opportunities to rebuild social relationships affected by bullying.
	<b>3. Impact on Academic Performance:</b> Bullying can have negative consequences on students' academic performance and mental health.	<b>3. Academic Strategy Development:</b> Participant faces academic challenges related to bullying and must find ways to maintain their performance.
<b>3: Mental health challenges.</b> A player is struggling with mental health challenges related to their sexual orientation or Gender expansiveness.	<b>1. Social Stigma Associated with Mental Health:</b> Player doesn't know how to address stigmatization.	<b>1. Open Conversation about Mental Health:</b> Player is willing to practice empathetic and supportive responses, sense of relief from talking openly about mental health.
	<b>2. Lack of resources and institutional support.:</b> Player doesn't know anything about resources and support college services.	<b>2. Accessing Resources and Support:</b> Player is discovering and clicking available links resources and support from college.
	<b>3. Impact on academic performance:</b> Payer doesn't recognize tactics to manage performance during difficult times.	<b>3. Academic Strategies:</b> The player makes a list of academic skills to decrease of academic pressure.
<b>4: Dating and relationships.</b> A player is navigating the world of dating and relationships as an LGBT person and wants advice on how to approach this.	<b>1. Stigma and Discrimination in Relationship:</b> Managing stigma in dating situations.	<b>1. Stigma Dating Simulation:</b> Participant makes a list of skills to address intersectional challenges in relationships
	<b>2. Lack of Positive Representation:</b> Player is experiencing and building negative relationships.	<b>2. Building Positive Relationships:</b> Player explores alternatives to having authentic and positive relationships.
	<b>3. Social Norms Pressure:</b> Player has not been setting boundaries and challenging pre-existing norms.	<b>3. Negotiating Social Norms:</b> Player is empowered by setting healthy boundaries in relationships.
<b>5: Intersectionality.</b> A player is experiencing challenges related to multiple marginalized identities, such as being an LGBTQIA+ person of color or an LGBTQIA+ person with a disability.	<b>1. Multiple Discrimination:</b> Player unable to address discrimination arising from the intersection of LGTBQIA+ identity with race, ethnicity, or disability.	<b>1. Negotiating Multiple Identities in Academics:</b> Player recognizes academic challenges related to the intersection of their LGTBQIA+ identity with race, ethnicity, or disability.
	<b>2. Intersectional Internalized Stigma:</b> Dealing with internalized stigma related to the intersection of multiple identities, which can affect self-esteem and full participation in college.	<b>2. Overcoming Internalized Stigma:</b> Participant addresses situations that challenge internalized stigma, fostering acceptance and positive self-esteem in an intersectional context.
	<b>3. Intersectional Cultural and Academic Pressures:</b> Managing additional cultural and academic pressures.	<b>3. Creating Intersectional Communities of Support:</b> The payer presents creates a list of strengths and communities of support that recognize and celebrate intersectional diversity.

The game has different elements that the player must discover that so marked with the bulbs of the challenges and has options to jump up the steps (elements 5-6-7), has a rabbit with a mask that is an element that must elude and contains negative voices in his journey (element 8) and rabbit with heart eyes (element 9) support message. The game has an additional character, the mentor (10), at the bottom right side of the game, which the player can click on and accept his help when he is not able to solve the challenges.

In turn, each scenario of the video game is composed of three challenges, each with a set of tests, to extract data on the player's behavior and generate specific reports on the numerous obstacles along their journey as LGBTQIA+ students [3,4]. The three levels take place in different environments where the player must fulfill various objectives by performing different actions, it is here where the notion of mentoring plays its main role of support with the figure of the mentor.

The game will also incorporate an additional character, that is introduced as a mentor who helps players on their journey and supports them as they navigate in the game. The mentor points out crucial user interface (UI) elements within the game to offer detailed explanations to the mentees.

Subsequently, provide an overview of each level and its respective challenges to ensure that players acquire a fundamental understanding of the learning content. Amid a challenge, the mentor presents an illustrative example to aid players in overcoming the challenge. If a player commits an error, provides clarification on the accurate solution and the steps involved.

Whenever a player provides an explanation, the message smoothly descends from the bottom, accompanied by a sound to capture the user's attention. Upon the player's request, there is an option to review a log containing all prior messages from the mentor.

Throughout the game, the goal is to build a strong and supportive community of allies and friends, and to overcome the challenges and obstacles faced by LGBTQIA+ college students in the pursuit of personal and academic success.

- *Implementation Phase:* Focused on game implementation techniques, Unity Engine software version 2023.1.7 f1 was selected to develop the game, compatible with MacOS (X86-64). This software is a tool for the development of 2D video games, based on HTML5, with multiple benefits, such as easy learning from programming blocks, without writing lines of code (but with the possibility of adding modular and OO code), generation of mobile applications, and incorporation of graphic, sound, and animated resources, among others.
- *Evaluation Phase:* Feedback on the use of the video game was obtained. For this purpose, a protocol was defined for conducting the test with ninth and tenth semester undergraduate students of Medicine 2022-2023 and in turn students identified as LGBTQIA+ subscribed to the "PRIDE" network. Then, a test session was planned with the participation of a gaming expert. When everything was set up, the test began, which took about 20 minutes. A form was used to recognize the good use of Rainbow Pathways, UX experience and the congruence of the scenarios with the objective of the game.

## 3. Data Collection

### Participants

A deliberate sampling approach was utilized to choose the university student sample.

Inclusion criteria: (1) ninth and tenth semester undergraduate students of Medicine 2022-2023; (2) students identified as LGBTQIA+ subscribed to "PRIDE" network (LGBTQIA+ association that connects and collaborates with LGBTQIA+ students within the participating university) (3) informed consent and voluntary participation.

Exclusion criteria: (1) undergraduate students from other semesters and other university degrees; (2) students identified as LGBTQIA+ ally or within the cisgender or heterosexual umbrella.

46 students were invited to participate, and in the end, after some hesitation and lack of interest from other participants, 33 university students (31 gay-identified individuals and 2 transgender) were interviewed. Their ages ranged from 20 to 24 years, and their involvement with Pride ranged from 8 months to 2 years. Participants were recruited in March 2023 with the help of the PRIDE network.

The investigators presented the study recruitment information to potential participants via social networks. Participation was voluntary and no incentive was offered for participation.

The evaluation consisted of inviting two groups of players of 17 and 16 people each in a room set up by the Pride Association for the guests to play the game for 20 minutes and after the conclusion of the game, a survey created by the research group was handed out, adapting the questions with the general characteristics of interest to identify concepts of gender expression and diversity supported by the game scenarios.

This survey was validated with 11 experts in LGBTQIA+ advocacy processes and organizations supporting LGBTQIA+ communities. These experts were randomly selected directly from ILGA WORLD North America- The international lesbian, gay, bisexual, trans and intersex association, and Greater Houston LGBT Chamber Commerce. A data collection protocol was created to create the survey in which each of the experts assigned a score to the protocol questions to identify what information should be generated and included in the data collection instrument.

In addition to the questions on demographic information, the participation questionnaire asked the following questions: (1) Describe

how you felt interacting with the characters and scenarios in the game related to the experiences and challenges faced by LGBTQIA+ students. Do you think the game authentically represents these experiences? (2) Share how you perceived the representation of diverse cultures and geographic contexts in the game. Do you consider the game to be sensitive to cultural differences in LGBTQIA+ experiences? (3) How would you describe the interactivity of the game, and did you feel involved and an active part of the plot? (4) Evaluate the presence of the mentor in the game - did you feel that he/she provided meaningful support, both emotionally and in terms of guidance? Describe specific situations in which the mentor positively impacted your experience. (5) Identify and discuss the variety of challenges you encountered in each game scenario. Do you feel they addressed different aspects of the LGBTQIA+ experience in academic settings? (6) Did you find the game accessible for your participation? Consider aspects such as ease of navigation and the inclusion of features that facilitate participation by people with disabilities. (7) Consider whether the game included educational components that informed and raised awareness about the experiences of LGBTQIA+ students. Did you learn anything new through the game?

## Data Analysis

The data were evaluated using qualitative analysis software NVivo 12. The process consisted of the following steps: (1) transcriptions, preliminary coding, and note taking; (2) Selection of the final codes through reading and rereading the transcripts to identify patterns and themes; (3) Defined themes and sub-themes; (4) Final report.

Researchers conducted the data analysis to ensure reliability, reviewed and validated the data, codes, and analyses. There were discussions among the researchers about the textual information until a consensus was reached.

## 4. Results

Three themes emerged from the data analysis: (1) LGBTQIA+ Experiences and Cultural Diversity, (2) Game Interactivity and Challenges Related to the LGBTQIA+ Experience in Academic Settings, and (3) Mentor Role and Educational Components of LGBTQIA+ Experiences.

### LGBTQIA+ Experiences and Cultural Diversity

- *Representative Authenticity*: Game developers are increasingly inclined to ensure that their narratives and characters reflect the diversity present in society, seeking inclusion and authenticity. This shift is driven not only by a sense of responsibility and social values, but also by the recognition that insensitivity in character creation poses a potential risk to a game's success and reputation. "Rainbow Pathways", supports initiatives that prioritize diverse voices and narratives. In fact, players have recognized the key fit and evaluation the game had with these principles. Figure 3 shows the principles recognized.

"The game truly embraces diversity in its storyline and characters. The game's commitment to prioritizing diverse voices and narratives is evident, and it made my gaming experience more inclusive and relatable..." (23 years old, gay-identified individual).

"It was a refreshing experience. It's clear that the creators took thoughtful steps to ensure inclusivity, and it positively impacted my overall perception of the game." (22 years old, gay-identified individual).

**Figure 3.** Principles recognized

Authenticity is a perception, especially important for recognized players in the LGBTQIA+ community (Figure 4). Some students think that game authenticity is an absolute quality and moves a range of gamer sensibilities.

"It's great to see a game that aligns with my values and reflects the diversity of the LGBTQ community." (23 years old, gay-identified individual).

"I found 'Rainbow Pathways' to be a game-changer. This level of authenticity is what the gaming world needs, and it resonated with me as an LGBTQ player." (22 years old, gay-identified individual).

"Big shoutout to 'Rainbow Pathways' for being a game that truly understands and respects diversity. The fact that it supports initiatives prioritizing diverse voices and narratives makes me proud to be a player. It's a step in the right direction for inclusivity in the gaming community." (22 years old, Transsexual-identified individual).

**Figure 4.** Authenticity

Players perceive how authentic the game is based on their personal background. Figure 5 shows some expectations of what they think they will encounter, and the qualities of the game.

Playing 'Rainbow Pathways' was a deeply personal experience for me. As an LGBTQ individual, I felt a strong connection to the authenticity of the game. It exceeded my expectations, reflecting aspects of my own journey and making it a truly relatable gaming experience." (24 years old, gay-identified individual).

"...as an LGBTQ player, I felt seen and understood. The game reflects a genuine understanding of diverse experiences, and I appreciate the effort put into making it authentic and relatable." (22 years old, gay-identified individual).

"I approached 'Rainbow Pathways' with certain expectations, and I was pleasantly surprised by how authentically it portrayed LGBTQ experiences. The game resonated with my personal background, making it more than just a game. It's a reflection of the diverse stories within the LGBTQ community." (22 years old, gay-identified individual).

"It's a mirror of my own experiences. I could relate to the characters and narratives. It's a testament to the game's commitment to representing diverse backgrounds." (21 years old, gay-identified individual).

**Figure 5. Expectations**

- **Cultural Sensitivity:** Representing LGBTQIA+ characters with compassion, nuance and complexity is not only a way to reach new segments, but also a way to make it unmistakably clear that LGBTQIA+ players belong. It is worth noting that "Rainbow Pathways", must be played from the point of view of an LGBTQIA+ character. This sets them apart from games that hide LGBTQ+ visibility behind player choices, making LGBTQIA+ players responsible for adding representation to the story. Figure 6 shows the sensitivity characteristics found by the players.

"Playing from the perspective of an LGBTQIA+ character made it evident that the game is not just reaching out to new segments but actively affirming that we belong. It's a game-changer for representation." (23 years old, gay-identified individual).

"'Rainbow Pathways' stands out by making it clear from the start: LGBTQIA+ players belong. The game's commitment to representing our community with compassion and complexity is empowering. It goes beyond mere visibility; it's a statement that our stories matter and deserve to be told." (21 years old, gay-identified individual).

"Playing 'Rainbow Pathways' as an LGBTQIA+ character was a unique and validating experience. It's refreshing to see a game that doesn't hide LGBTQ+ visibility behind choices, but rather ensures that our stories are front and center. (21 years old, gay-identified individual).

This game makes LGBTQIA+ players feel represented." (23 years old, gay-identified individual).

"'Rainbow Pathways' takes a bold step by allowing players to experience the game exclusively through an LGBTQIA+ character's point of view. " (24 years old, gay-identified individual).

"It's a game empowers us by owning our narratives."(23 years old, gay-identified individual).

**Figure 6. Sensitivity**

In this sense, each sexuality intersects with other forms of subordination such as gender, social class, racialization, or ethnocentrism. By way of illustration, although the possibilities are multiple, we can say that lesbians suffer specific forms of discrimination for being women in societies that are still mostly sexist; gays because of prejudices about male sexuality and masculinity; bisexuality and asexuality are often considered as phases, whims, or fads, among others. Figure 7 illustrates the answers to the challenges faced.

"The game portrays the unique challenges faced by LGBTQIA+ individuals, acknowledging how each sexuality intersects with factors like gender, social class, and racialization. It adds a layer of depth that reflects the complexities of real-life experiences." (23 years old, gay-identified individual).

"'Rainbow Pathways' does an excellent job illustrating the varied forms of discrimination faced by different sexualities." (21 years old, gay-identified individual).

"It's a commendable effort to portray the multifaceted nature of our experiences." (21 years old, gay-identified individual).

"The depth of 'Rainbow Pathways' lies in its recognition that sexuality intersects with various forms of subordination. The game skillfully highlights the layers of discrimination faced by different sexualities." (23 years old, gay-identified individual).

**Figure 7. Challenges Faced**

Thus, the activities proposed in the game aim to adopt a plural and inclusive perspective that pays special attention to how sexuality and gender intersect, to reflect on the myths, stereotypes and prejudices that persist about sexual diversity and to raise awareness about the importance of visibility and respect. Thus, Figure 8 contains the answers that allow for an inclusive perspective of the game.

"It's a game that goes beyond entertainment to create meaningful conversations." (23 years old, gay-identified individual).

"It was an empowering experience as it adopted a plural and inclusive perspective. The game raises awareness about the vital aspects of visibility and respect, it's an educational journey toward understanding and acceptance." (23 years old, gay-identified individual).

**Figure 8. Inclusive Perspective**

## Game Interactivity and Challenges Related to the LGBTQIA+ Experience in Academic Settings

- *Interactivity*: Making a game interactive requires the developer to understand two things. First, that the interaction must focus on the unique features of the game and, second, the types of interactions available for a game. Thus, Figure 9 interprets responses from unique game features because it is these features that drive game development. If interactions focus on the unique features of a game, the game itself will make sense to players because the interactions serve to enhance the experience.

A consistent and unique game that focuses on only the most essential and necessary aspects of fun gameplay will be unlike any other. Interactions will be classified as cerebral, emotional, or physical. Cerebral interactions include things like strategy. Emotional interactions include empathizing and identifying with a character. Physical interactions include pressing buttons or hearing sounds.

"What struck me most about 'Rainbow Pathways' was the clear understanding the developer had about the game. the interactions are purposeful and enhance the overall experience. the emotional connections through empathy with my own character and interactions with the challenges and mentor contribute to a cohesive and uniquely enjoyable gameplay." (21 years old, gay-identified individual).

"'Rainbow Pathways' impressed me with its interactive design, which clearly prioritizes the game's unique features. The game's approach makes it unlike any other game I've played." (24 years old, gay-identified individual).

**Figure 9. Interactivity**

The game is adapted to the psycho-evolutionary characteristics of the players, it is motivating and easy to understand and execute, Figure 10 tells it.

"The game's motivation factor was evident throughout, making it a genuinely engaging experience. The ease of understanding and executing actions in the game added to the overall enjoyment, creating an inclusive and accessible environment." (21 years old, gay-identified individual).

"The game was easy to understand, and execution of the actions made it user-friendly." (22 years old, gay-identified individual).

**Figure 10. Motivation**

- *Variety of Challenges:* The level structure of our Challenges allows for personalized learning: early levels engage players and provide them with a quick learning curve, while more advanced tasks in later levels build confidence and skill (Figure 11).

"I found the 'Rainbow Pathways' levels to be effective in understanding my own lack of knowledge of LGBTQ issues. I found the first few levels very easy and as I progressed to more advanced tasks in later levels, not only did my confidence increase, but my skills improved as well." (24 years old, gay-identified individual).

"I really liked how 'Rainbow Pathways' made learning personal. At first, the levels were fun and helped me pick things up quickly. As I progressed, the game got a little more difficult, it felt like the game was designed for me and suited my pace." (24 years old, gay-identified individual).

"... As I progressed, the challenges became more advanced, but surprisingly, I felt a confidence boost." (21 years old, gay-identified individual).

**Figure 11. Personalized Learning**

Moreover, the game provides an interactive and safe environment in which the player must take the initiative to explore, be able to make mistakes and learn from them to finally achieve a greater experience to reach their goal (Figure 12).

"... I found it a comfortable journey where I could take the initiative, make my own decisions and, in the end, get a more enriching experience." (21 years old, gay-identified individual).

"The game is a place where you can explore freely and learn by doing." (21 years old, gay-identified individual).

**Figure 12. Feeling of Explore**

- **Accessibility:** The responses in Figure 13 recognize that Accessibility in video games is a crucial aspect to ensure that all players can enjoy a satisfactory gaming experience.

“I really appreciate how 'Rainbow Pathways' thinks about everyone. Making sure the game is accessible means that all kinds of players, including those in the LGBTQ community, can enjoy it fully. It's great to see a game that cares about giving everyone a chance to have a good time.” (24 years old, gay-identified individual).

“It's awesome that the game is thinking about all kinds of players. It makes gaming more welcoming for everyone, and that's something I value in a game.” (23 years old, gay-identified individual).

**Figure 13.** Satisfaction with the game

It is also important to ensure that all people could enjoy this form of entertainment and to ensure that people with disabilities do not feel excluded from a meaningful gaming experience.

“... It's great to know that they want to make sure that everyone, whoever you are, can enjoy the game. It's about no one feeling left out, and that's something I look for in a game.” (22 years old, gay-identified individual).

“It's nice to see a game that wants everyone to have a good time, regardless of their disabilities. It makes the game more meaningful and more fun for everyone.” (21 years old, gay-identified individual).

**Figure 14.** Inclusion experience

## Mentor Role and Educational Components of LGBTQIA+ Experiences

- **Social Support:** The mentoring action is a privileged place to promote the inclusion and participation of students in university life. Mentoring can be a source of information and an engine of change and innovation in educational centers, as well as the ideal spaces for an effective and affective follow-up of each student, on an individualized basis.

The function of a mentor is to detect relational conflicts due to the “invisibility” of the diversity of mentees or to be affected by following only one social “model” to which the student has been exposed (male, cis, heterosexual, white, etc.). (Figure 15)

“The mentor in the game is like a guide, making sure everyone's unique story is seen and understood.” (22 years old, gay-identified individual).

“The mentor character steps in when things get tough because of differences.” (24 years old, transgender-identified individual).

**Figure 15.** Mentor Role

**Educational Inclusion:** The educational inclusion of the game emphasizes its actions in individuals who present constituent elements of some type of exclusion or marginalization, which suggests an educational commitment and greater attention to individuals who are in more vulnerable circumstances. (Figure 16).

"It's not just about playing a game; you actually develop skills to resolve conflicts and work well in a team with the help of your mentor." (21 years old, gay-identified individual).

"... It's like the game sparks that motivation to improve and keeps you excited about gaining knowledge and learning new things." (22 years old, gay-identified individual).

"I've found that Rainbow Pathways is not just about winning, but also about getting along with others. The game helps you develop social skills and teaches you how to handle conflict without being impulsive..." (21 years old, gay-identified individual).

Figure 16. Educational Inclusion of the game

## 5. Discussion

The added value of the developed video game lies in providing a tool to support LGBTQIA+ students as they face numerous challenges and obstacles throughout their academic journey [3,4], incorporating engaging and challenging game levels such as discrimination, social isolation, mental health issues, and lack of support from family and friends, through immersions in various graphical environments, problem-solving exercises, homework assignments, and goal completion. "Rainbow Pathways" supports players by engaging them in experiences that elicit a variety of emotional and cognitive responses that can help corroborate their own journeys their sexual orientation or gender expansiveness.

With respect to the practical implications of the study, the use of video games can have a particularly large impact by possessing immense potential to offer new ways of thinking and behaving. This study aims to approach mentoring from a promising perspective with a playful approach that facilitates its use. Along these lines, Krisi, and Nagar [17] indicate that mentoring guided by inclusive education effectively allows each player to become "a guarantor and reflection of the diversity of the societies in which the game is inserted".

On the other hand, a game that provides elements of mentoring and has a special focus on diversity and inclusion [25] can completely transform expectations and convey experiences and belonging. Indeed, as LGBTQIA+ players of "Rainbow Pathways" have learned

to individually build their trajectories based on successes and failures on different planes of their lives, it is easy for them to assume that the help of a mentor may be the only way to learn and achieve goals on other planes of their own lives. However, game-like processes that include inclusive mentoring open opportunities for trust, dialogue, and mutual learning [21].

But, in addition, it allows for improved self-confidence and the proliferation of relationships based on trust, respect and communication in the academic and workspace, generating an environment conducive to the exchange of ideas and synergy [6, 13,18].

In either case, Online Games that function as support tools for LGBTQIA+ students become a space for meeting and sharing. Ruberg, [26, p. 121] stresses "LGBT people have experienced barriers and hostility at some point. Education and open dialogue around experiences can help address these issues."

Taking the experience to the level of innovation, projecting it as a playful initiative can articulate the different interests and motivations of the training. Thus, teaching and learning processes are thought from a different perspective [23]. Our bet with "Rainbow Pathways" is in the opportunity to look at the development of competencies from a complex model where competencies are determined from the identification of social, professional and disciplinary problems, present or future, looking for criteria that account for the different knowledge that are integrated into the competence [34], and where the perspective of inclusion is indeed a

common perspective in the training of all future professionals.

“Rainbow Pathways” is designed to be inclusive and respectful of the diverse experiences and identities of the LGBTQIA+ community [14] and offering players the opportunity to explore and celebrate their own identities and experiences. One of the main functionalities of “Rainbow Pathways” is to encourage players to reflect on their own experiences and perspectives, helping them to better understand themselves and others. Pavlounis [28, p. 586], claims that “The virtual universes of video games give LGBTQIA+ people the opportunity to express their identity, and avatars and in-game add-ons help our digital selves reflect our real-life uniqueness”.

When considering the elements that converge in the application and use of video games, we can observe the capacity and potential that video games have in the acquisition of learning, likewise, how they provide scenarios for the development of inclusive education, specifically with the recognition of social support, participation, and cultural sensitivity. In this sense, the implementation of digital games such as “Rainbow Pathways”, become a methodological element of great value for teachers, by triggering skills, abilities and attitudes that consider

their individual capabilities and globalize their own formative experiences as LGBTQIA+ individuals.

## 6. Conclusions

Online games can be a powerful tool for mentoring in the LGBTQIA+ community, as they can provide a safe and inclusive space for individuals to express themselves and connect with others who share similar experiences and identities.

In terms of promoting inclusivity and respect for diverse experiences and identities within the LGBTQIA+ community, online games can be designed with specific features and content to address these issues. For example, including a variety of characters and scenarios that represented different identities and experiences and promoting acceptance and understanding.

While this study indicates that the positive influence of “Rainbow Pathways” is observed in LGBTQIA+ college students exposed to the game, it’s important to note that the data is cross-sectional, and longitudinal research is still needed to confirm its long-term impact. The data is limited to the active responses provided by the respondents, implying the possibility of an undisclosed portion of the self-reflection content of these participants.

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