

Logan Bunting GPI research Portfolio

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Submission date: 28-Feb-2025 02:55PM (UTC+0000)

Submission ID: 251459134

File name: 58623_Logan_Bunting_Logan_Bunting_GPI_research_Portfolio_644376_1660334773.docx (18.55M)

Word count: 2315

Character count: 13538

[Research Portfolio] (Portal, HyperDot and Dragon Age)

[Logan Bunting]

[Games for positive impact]

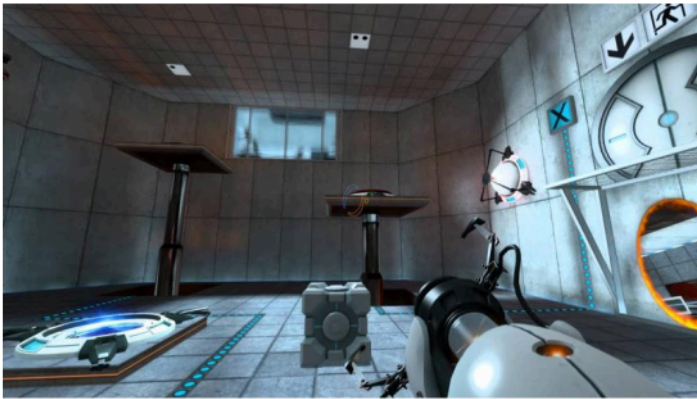
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Portal – Valve Corporation - 2007

Portal and teaching players mechanics through puzzle solving

The Portal series [1] is widely regarded as one of the most innovative and masterfully designed video games in the puzzle genre. The original Portal introduced players to a unique gameplay mechanic using a portal gun to create connected portals in the environment, allowing the player to solve complex puzzles by manipulating the environment in creative ways. One of the reasons for Portal's success is its design; the game teaches players its mechanics organically throughout the experience of the game, without relying on complex tutorials or overt explanations. Through its clever level design, Portal invites players to discover its rules and mechanics, pushing them to come up with their own solutions to puzzles. In doing so, it creates a sense of empowerment and creativity, making the act of solving puzzles feel like a personal achievement rather than a scripted event.



Test chamber 13 displaying the portals and the puzzles [2]

Teaching through playing

Unlike many games that hold the player's hand through every step of the learning process and tutorial, Portal takes a much more subtle approach. The game does not provide a traditional tutorial or long-winded instructions about how the portal gun works or how the buttons only work with certain cubes. Instead, it introduces mechanics gradually, with each level building upon the skills learned in the previous one. The first few puzzles are simple; players are introduced to the portal gun with a straightforward objective: create two portals to move from one side of the room to another. As the game progresses, new mechanics are introduced one at a time, often in a way that feels intuitive based on the player's experience so far.

For example, in the early stages of Portal the player learns how to use the portal gun to create portals on flat, white surfaces. The game doesn't tell the player to use portals to avoid hazards, but the design of the levels suggests that it's a logical assumption to make. The more the player interacts with the environment, the more they begin to recognize which surfaces are "portal-able" and which are not such as the hard metal surfaces or later in the game the paint that blocks your portals. This intuitive learning is crucial because it allows players to understand the game's mechanics at their own pace, without feeling overwhelmed by excessive and brute force information pushed in your face.

Progressive Complexiveness

As players advance through Portal, the puzzles grow in complexity, requiring the player to combine the core mechanics in different ways. What starts as a simple exercise in creating portals to traverse the level soon becomes a dynamic challenge of thinking in multiple ways to complete the challenge. Players must combine the use of portals with momentum, weight, timing, and spatial awareness. For example, in later levels, players must use the mechanic of "flinging" a technique where a player falls through a portal from a high location, gaining momentum, and then using that momentum to launch themselves through another portal. This concept builds on previous knowledge of portal mechanics but requires players to experiment and discover the solution themselves.



Image of "Flinging" mechanic, using infinite falling portals to gain momentum [3]

Rather than being explicitly told how to perform these actions, the game allows players to learn through trial and error. The puzzles are designed to nudge the player towards understanding the necessary mechanics without forcing them. Players who might initially struggle with a puzzle will often have a moment of realization when they finally understand how to approach the issue and then making the solution once they find it,

feel more rewarding than as if it were handed to them. This natural progression encourages players to be patient and resourceful, using what they've learned from earlier stages to confront new challenges.

Environmental Puzzle Design

Portal also uses the environment to reinforce its mechanics, contributing to the overall teaching process. Each level is designed with a clear sense of purpose, guiding players toward solving the puzzle at hand. The levels are clean and minimalist, with an huge emphasis on function over form. The lack of distractions allows players to focus purely on the puzzle mechanics, while the environment itself offers subtle hints to guide them.



Image of Exit signs and dotted lines to show direction in environment [4]

For example, when players encounter new elements, such as laser beams or cubes that can be used to activate switches, the game doesn't present an elaborate explanation of how these elements interact with portals. Instead, players are placed in a level where they must figure out how to use these objects to their advantage. It's often that only then once the player has already interacted with these elements that the game introduces new interactions, such as reflecting laser beams using surfaces or creating portals beneath cubes to bring them to a different location.

Empowering Players Through Problem Solving

One of the best features of Portal is how it makes players feel like they are truly solving puzzles with their own ingenuity. Every puzzle in the game can be approached from multiple angles, and while some solutions may be more direct than others, the freedom to experiment and explore gives players a sense of creativity. The game doesn't penalize players for thinking outside the box rather, it rewards the creativity and persistence. This level of freedom encourages players to approach puzzles with a mindset that prioritizes their experimentation over following a set path.



The satisfaction of solving a Portal puzzle is in the player's own ability to think critically and apply the mechanics they've learned. The puzzles may seem daunting at first, but as players begin to master the game's tools, they gain confidence in their ability to tackle more difficult challenges. By the end of the game, players feel a sense of accomplishment not just from completing levels, but from discovering their own solutions to complex problems.

Conclusion

In conclusion, Portal is an excellent example of how a game can teach its mechanics without overwhelming the player with information or instructions. Through a careful design that encourages the player's experimentation, the game allows players to learn through experience, providing them with the tools they need to solve puzzles on their own. By the end of the game, players don't just understand how the portal gun works,

they understand how to use it in creative and unexpected ways. In doing so, Portal elevates puzzle-solving from a simple task to an art form, making the player feel empowered and engaged in the process of discovery and education.

Dragon Age: The Veilguard – Bioware- 2024

Inclusive Character Creation

Dragon Age: The Veilguard [5] has gathered fame and acclaim for its inclusivity and diversity. It offers players a rich and varied experience that represents a wide spectrum of people's associations and backgrounds. The newest installment allows for the players to have a representation and let's all players feel included within the game's world.



Character creation screen, showing gender options and pronouns [5]

One of the most notable things in the latest installment of Dragon age is its character creation system, which provides players with extensive options to craft their protagonists that align with their personal identities. The game allows for the creation of transgender, nonbinary, and gender non-conforming characters, marking a significant step forward in representation within any industry let alone the gaming industry. Players can select gender identity and pronouns independently, with the option to include physical traits such as top surgery scars, offering personalized and relatable character creation experience.

Diverse Companions and Storylines

Beyond character creation, *The Veilguard* features a diverse cast of companions, each that have unique backgrounds, identities, and their own narratives. The game includes characters of various races, sexual orientations, and gender identities, allowing players to engage within multiple experiences and perspectives. This diversity enriches the storytelling, providing players with the opportunity to form meaningful connections with characters that reflect a wide array of identities.

Bioware also did this within their releases prior to *Dragon Age: The Veilguard* as they had games with the likes of *Mass effect* which allowed you to have relationships with companions with no limit on sexual orientation, races or gender.



Various companions found throughout Dragon Age: The Veilguard

Representation of LGBTQ+ Characters

The Veilguard continues the tradition of LGBTQ+ representation by introducing characters who are explicitly queer, including nonbinary individuals. The game features a nonbinary character, Taash, whose storyline is integral to the plot, offering players a chance to explore themes of identity and acceptance within the game's story. This inclusion not only enhances the depth of the story but also provides representation for players seeking characters with who they can identify with.



Image of Non-Binary Character Tash [7]

Cultural and Racial Diversity

The game world of The Veilguard is rich in cultural and racial diversity, with various regions and societies reflecting multiple traditions, appearances, and customs. This diversity is evident in the game's art design, character models, and dialogue, creating an immersive environment that mirrors real-world societies. Players encounter characters from different backgrounds, each contributing to the world and story's depth.

Reception of the Inclusivity

Critics have admired The Veilguard for its inclusive approach to the RPG Style, highlighting the character creator's body diversity and the representation of transgender and non-binary characters. One of the many Reviews from IGN emphasizing the character creator's "body diversity," noting that "the options feel almost endless.", praising the inclusivity. [8]

Players have also expressed their appreciation for the game's commitment to diversity. One player noted that the developers "did an incredible job making the world feel rich and inclusive," [9] highlighting that the diversity "doesn't feel forced, it feels real." Another player praised the game for giving players the freedom to represent themselves, stating that it "gives players the freedom to represent themselves in a world that's as immersive as it is impressive." [10]

Conclusion

Dragon Age: The Veilguard stands as a testament to not just the gaming industry but the entertainment industry as a whole for potential for inclusivity and representation. Through its innovative character creation system, diverse companions, and thoughtful storytelling, the game offers an opportunity where all players can see themselves

reflected in its Open world. By embracing diversity in all its forms, The Veilguard inclusivity not only enhances the experience but transcends it to a whole new level.

HyperDot – Glitch – 2020

HyperDot [11] is an action arcade game that has gathered quite a popularity for its innovative approach to accessibility. Developed by Charles McGregor and published by Glitch, the game was released on January 31, 2020, and was also nominated for the Innovation in the Accessibility award at The Game Awards in 2020 [12].

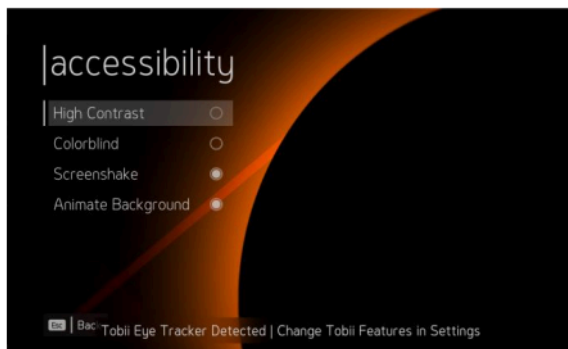


Image of one of HyperDot's many accessibility features [13]

Innovative Accessibility Features

From the beginning of its development, HyperDot was designed with accessibility at its core. The development team collaborated with disabled content creators to gather feedback, ensuring the game was inclusive and playable for a diverse audience.

Some of the key Accessibility features include:

- **Control schemes:** HyperDot supports various control schemes, including mouse and keyboard, Xbox Adaptive Controller, standard controllers, eye-tracking, touch, and tilt controls. This flexibility allows players with different abilities to choose the control method that best suits them.
- **Visual Accessibility:** The game offers high contrast and colorblind modes, enhancing visibility for players with visual impairments.
- **Customization:** Players can also adjust various settings, including gameplay speed and difficulty, to tailor the experience to their needs and

skill sets. This setting ensures that all players can enjoy the game at their own pace and skill level.

Impact and Recognition

The dedication that Glitch has to accessibility in HyperDot has been widely recognized throughout the community. The game was nominated for the Innovation in the Accessibility award at The Game Awards 2020, highlighting its commitment to inclusivity.



Additionally, HyperDot received the Best Physical/Motor Accessibility award at the 2020 Can I Play That Accessibility Awards, further acknowledging its efforts to accommodate players with physical and motor impairments. [13]

Community Engagement

The development team's proactive approach involved engaging with the disabled gaming community through the #HyperDotA11y project. By partnering with the disabled content creators, the team gathered valuable and irreplicable feedback to refine and enhance the game's accessibility features.

Conclusion

HyperDot is an amazing example of the positive impact that thoughtful design and community collaboration can have on a feature in games, especially accessibility in gaming. Its innovative features using things such as the Xbox Adaptive controller and

the eye trackers show their commitment to setting a new standard for accessibility and game design, ensuring that players of all abilities can enjoy a seamless and engaging experience with no hassle.

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GRADEMARK REPORT

FINAL GRADE

60/100

GENERAL COMMENTS

Marks Breakdown

1. Engagement With Literature Skills (58%)

References are present in the main body of the work, showing independent research has been carried out.

IEEE formatting has been applied in the bibliography, which is good to see.

2. Knowledge & Understanding Skills (60%)

Use of supporting screenshots with captions help add context to the points being raised in the case studies, which is helpful for anyone reading who is less familiar with the games that are listed.

Consider looking more into theoretical elements (such as learning through actions or polls on LGBTQ+ representation) to further back up your work with knowledge beyond the games themselves. This information may help when designing your own projects in the future.

3. Cognitive & Intellectual Skills (62%)

Analysis of gameplay is evident in the case studies, though this would benefit more from additional sources of research to back up the claims made – a good example of this is Hyperdot's award for Best Physical/Motor Accessibility, as this shows evidence

that this game has been
officially recognised as having accessibility benefits.

4. Practical Application Skills

(not assessed in this assignment)

5. Transferrable Skills for Life and Professional Practice

(not assessed in this assignment)

Overall Mark: 60.1%

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