Usability Testing Documentation: SFWRENG 4G06

Team 9, dice devs
John Popovici
Nigel Moses
Naishan Guo
Hemraj Bhatt
Isaac Giles

March 31, 2025

1 Revision History

Date	Developer(s)	Change
2025-01-29	Nigel Moses	Usability Testing Plan Initial Commit
2025-02-04	Nigel Moses	Added Alpha Testing invitation format
2025-02-27	Nigel Moses	Alpha Testing Usability Report
2025-03-25	Nigel Moses	Beta and Final Testing invitation format
2025-03-31	Nigel Moses	Beta Testing Usability Report
2025-03-31	Nigel Moses	Final Testing Usability Report and Conclusion
...	...	...

Table 1: Revision History

2 Introduction

2.1 Purpose of the Usability Testing Plan

The purpose of this usability testing plan is to ensure that **Dice Duels**, a spin-off variant of Yahtzee, provides an intuitive, engaging, and accessible experience for players. Usability testing is a critical part of the development process, helping identify potential issues in user interactions, game mechanics, and overall player satisfaction.

The testing plan aims to:

- Evaluate the clarity and intuitiveness of the game's interface and controls.
- Identify pain points and difficulties encountered by new and experienced players.
- Measure engagement, fairness, and strategic depth across multiple playtesting sessions.
- Gather structured feedback through surveys, observations, and interviews to drive iterative improvements.

2.2 Goals of Usability Testing

The usability testing for **Dice Duels** is designed to assess the game's overall user experience and ensure that it aligns with the expectations of its intended audience. The specific goals of the testing are as follows:

- **User Experience Evaluation:** Determine whether the game mechanics, UI, and interactions are intuitive and easy to understand.
- **Engagement and Enjoyment:** Assess the level of player engagement and satisfaction through structured surveys and behavioral observations.
- **Game Flow and Clarity:** Identify whether players can smoothly progress through the game without unnecessary confusion or frustration.

- **Accessibility and Inclusivity:** Ensure that the game can be played by a wide range of users, including those unfamiliar with dice-based strategy games.
- **Game Balance and Challenge:** Measure the fairness of different game modes and customization mechanics, ensuring no overpowered strategies dominate gameplay.

This usability testing plan provides a structured approach to systematically gather user feedback, analyze test results, and implement necessary improvements in multiple development iterations.

3 Testing Methodology

3.1 Target Audience

The usability testing for **Dice Duels** will involve a diverse group of participants to ensure the game is accessible and engaging for a broad audience. The target audience includes:

- Casual players interested in dice-based and strategy games.
- Experienced board game players who are familiar with games like Yahtzee and Poker.
- Competitive players looking for strategic depth and risk-reward mechanics.
- First-time players unfamiliar with dice games, to assess learnability and onboarding effectiveness.

Participants will be selected based on their gaming experience and background to capture different perspectives and potential usability challenges.

3.2 Types of Testing

Usability testing for **Dice Duels** will follow a mixed-methods approach, using both quantitative and qualitative data collection methods.

3.2.1 Controlled Playtesting Sessions

- Observing participants in structured testing sessions where they play the game without prior guidance.
- Recording user interactions, decision-making processes, and pain points encountered during gameplay.
- Identifying any UI/UX issues, such as unclear buttons, hard-to-understand game mechanics, or overwhelming decision points.

3.2.2 Surveys and Feedback Forms

- Structured surveys to evaluate user experience, ease of use, engagement, and perceived fairness of game mechanics.
- A mix of Likert-scale questions, multiple-choice questions, and open-ended responses to capture a range of feedback.
- Surveys will be conducted after playtesting sessions and after a certain number of matches to assess long-term user retention factors.

3.2.3 Interviews

- Conducting in-depth interviews with selected testers to understand their thoughts on game mechanics, UI design, and potential improvements.
- Allowing players to freely discuss what they enjoyed, what frustrated them, and what changes they would suggest.

3.3 Testing Environment

- **In-Person Testing:** Conducted in a structured setting with direct observation, allowing for real-time feedback and note-taking.
- **Remote Testing:** Players will test the game on their own devices with instructions provided, and their responses will be collected through online surveys.
- **Device Compatibility:** Due to the scope of the project, testing will only be available for PC (Windows) users.

4 Testing Timeline and Iterative Process

4.1 Phase 1: Pre-Alpha Testing (Internal Team Feedback)

- Conduct initial playtests within the development team.
- Identify and resolve major usability blockers before external testing.
- Ensure that core game mechanics function as intended.

This section (3.1) has been completed as development has progressed and will not be covered as part of this document

4.2 Phase 2: Alpha Testing (First External Playtesting Round)

- Conduct structured testing with a small group of external testers.
- Focus on onboarding clarity, UI intuitiveness, and core mechanics usability.
- Collect structured feedback via surveys and interviews.
- Implement major usability fixes based on feedback.

4.3 Phase 3: Beta Testing (Expanded Playtesting)

- Expand playtesting to a wider audience with varied experience levels.
- Collect observational data and surveys to measure engagement and game balance.
- Focus on difficulty curve, fairness, and user enjoyment.
- Prioritize fixes for UI enhancements, game balance, and quality-of-life changes.

4.4 Phase 4: Final Playtesting and Validation

- Conduct final testing with a mix of first-time and experienced players.
- Ensure that all usability concerns raised in previous phases have been addressed.
- Make final refinements based on testing outcomes.

This structured usability testing methodology ensures that feedback is collected systematically and applied iteratively, leading to an engaging and accessible final version of **Dice Duels**.

5 Feedback Collection and Analysis

The usability testing for **Dice Duels** will involve systematic feedback collection using multiple methods, including observations, structured surveys, and post-playtesting interviews. This section outlines the strategies for gathering, analyzing, and utilizing feedback to enhance the game's usability and overall player experience.

5.1 Observation Metrics

During playtesting sessions, key gameplay interactions and player behaviors will be observed and recorded to assess usability. The following metrics will be tracked:

- **Time to Learn Controls:** How long it takes players to understand the game's mechanics and UI.
- **Common Areas of Confusion:** Identifying sections of the game where players consistently struggle.
- **Frequency of UI Misclicks:** Tracking incorrect button selections or unexpected interactions with the UI.
- **Player Behavior During Decision-Making:** Observing how players react to in-game choices, such as rolling dice, raising/folding, and selecting scores.
- **Game Completion Rate:** Identifying how many players finish a full game without quitting early.
- **Engagement Indicators:** Monitoring non-verbal cues (for in-person testing) or gameplay analytics (for remote testing) to measure enjoyment and frustration.

5.2 Survey Structure

After each playtesting session, participants will complete a structured survey designed to collect both quantitative and qualitative data on their experience. The survey will be divided into the following sections:

5.2.1 Gameplay Clarity and Usability

- Was the tutorial or onboarding process intuitive? (Yes/No)
- Were the game controls easy to understand? (Likert Scale: 1-5)
- Did you encounter any areas of confusion while playing? (Open-ended)

5.2.2 Engagement and Enjoyment

- How engaging did you find the game? (Likert Scale: 1-5)
- Would you play this game again? (Yes/No)
- What aspect of the game did you enjoy the most? (Open-ended)

5.2.3 Multi-Player Interaction

- Did you play the health scored variant? (Yes/No)
- Did you feel like you were playing against another player? (Yes/No)
- Was the multi-player aspect of the game engaging? (Likert Scale: 1-5)
- What aspect of the multi-player game did you enjoy the most? (Open-ended)
- What aspect of the multi-player game could be improved? (Open-ended)

5.2.4 Difficulty and Challenge

- Did the game feel fair and balanced? (Likert Scale: 1-5)
- Was there a particular strategy that felt overpowered? (Open-ended)
- Did you feel that your decisions significantly impacted the outcome of the game? (Yes/No)

5.2.5 Suggestions and Improvements

- What changes would you suggest to improve the game experience? (Open-ended)
- Are there any additional features or modifications you would like to see? (Open-ended)

5.3 Interview Structure

In addition to structured surveys, a subset of players will participate in post-game interviews to provide deeper insights into their experience. The interviews will follow a semi-structured format, covering topics such as:

- **First Impressions:** How did the game feel upon first playing it?
- **Favorite and Least Favorite Features:** What aspects of the game did you enjoy the most and least?
- **Game Flow and Pacing:** Did the game feel too slow, too fast, or well-paced?
- **Strategic Depth:** Did the game provide enough meaningful choices to feel strategic and engaging?
- **Multi-Player System:** Did the multi-player aspect feel engaging and fun?
- **Final Thoughts:** Is this a game you would recommend to others? Why or why not?

6 Feedback Analysis and Implementation

Once feedback has been collected through observations, surveys, and interviews, the next step is to analyze the data and prioritize changes based on the findings.

6.1 Categorization of Feedback

Feedback will be categorized into three priority levels:

- **Critical Issues:** Game-breaking bugs, major usability issues, and severe balance problems that must be addressed immediately.
- **Moderate Issues:** Minor bugs, usability concerns, and improvements that would significantly enhance the user experience but do not prevent gameplay.
- **Minor Suggestions:** Quality-of-life improvements, aesthetic preferences, and feature requests that are nice-to-have but not essential.

6.2 Iteration Plan

The collected feedback will be used to iterate on game design in multiple development phases:

- **Immediate Fixes (Next Development Cycle):** Address critical issues that impact gameplay.
- **Mid-Term Adjustments (Next Playtesting Phase):** Implement moderate usability improvements and balance adjustments.
- **Long-Term Refinements (Final Release):** Integrate minor suggestions, polish animations, and enhance overall aesthetics.

7 Usability Testing Report

After each playtesting phase, a usability testing report will be generated summarizing the following and appended to this document:

- Key findings from observations, surveys, and interviews.
- A prioritized list of usability issues and suggestions.
- Changes implemented in response to feedback.
- Recommendations for the next phase of testing.

This structured approach ensures that the usability testing process for **Dice Duels** leads to continuous improvements, resulting in a refined and polished gameplay experience.

8 Dice Duels - Alpha Playtest Invitation

Hello, and thank you for helping us test **Dice Duels**!

This is an early Alpha build, and we appreciate any feedback you can provide. Please follow the steps below to play and complete the survey.

8.1 Download & Setup Instructions

1. Download the game here: **Download Link**.
2. Unzip the file to a folder on your computer.
3. Open the extracted folder and run `duel-of-the-eights.exe` to start the game.

8.2 How to Play (2-Player Online Game)

1. One player must **Host** the game, while the second player **Joins** using a **Connect Code**.
2. The host should **copy the code and share it** with the second player.
3. Once both players are connected, the host can **start the game**.

Note: The Alpha Build can only be played if both players are on the same WiFi/Network.

Tip

You can use **Discord, WhatsApp, or any messaging app** to quickly share the Connect Code with your opponent. The host can click on the code button to automatically copy, to make copy/pasting easier

8.3 Provide Feedback (Survey Link)

Once you've played a full game (or multiple rounds), please take **5 minutes** to fill out our feedback survey:

Microsoft Forms Link

Any feedback is valuable, whether it's about **UI, game mechanics, bugs, or suggestions**!

8.4 Need Help?

If you run into issues or have any questions, feel free to reply to this message.

9 Alpha Usability Testing Report

9.1 Introduction

9.1.1 Purpose of the Test

This Alpha testing phase aimed to evaluate **gameplay clarity, UI usability, multiplayer interactions, and overall player experience**. The primary focus was identifying **critical bugs, major usability concerns, and quality-of-life improvements** based on **player feedback through observations, surveys, and interviews**.

9.1.2 Scope of Testing

- **Multiplayer stability & clarity** (Connection status, waiting room, chat visibility).
- **UI improvements** (Checkbox formatting, scoreboard readability, contrast issues).
- **Game balance & settings validation** (Round limits for different dice presets).
- **Game tutorial & scoring explanations** (Hands/scoring tutorial, variant tutorial tabs).
- **Audio improvements** (Music variety).

9.1.3 Test Environment

- **Platforms:** PC (Windows).
- **Network Conditions:** Local multiplayer sessions.

9.2 Key Findings

9.2.1 Observations

- Players found it **unclear whether the opponent was connected**.
- The **chat button remains visible in the end-game screen**, causing UI clutter.

- Some players had difficulty distinguishing **their dice from the opponent's dice**.
- The **scoreboard scroll function** was **not obvious**, leading to missed scoring options.
- **d4 and d8 presets** had **incorrect round limits**, causing the game to become stuck.

9.2.2 Survey Results

Category	**Average Score (1-5)**
Intuitive Controls	3.7
Engagement	3.3
Play Again?	4
Multiplayer Engagement	3.7
Game Balance	4
Player Impact	3.3

9.2.3 Interview Feedback

Positive Feedback:

- Players found the game flow intuitive after a short adjustment period.
- The bluffing mechanic was widely praised for adding strategic depth.
- Customization features were well received and added replayability.

Areas for Improvement:

- Some UI clutter was noted, particularly with chat elements appearing post-game.
- Lack of clear opponent connection indicators led to confusion.
- Scoreboard scrolling was unclear to some users and needs better visual cues.
- The d4 preset had too many rounds, leading to broken gameplay.

9.3 Categorization of Feedback

9.3.1 Critical Issues (P0)

- **Chat Button Visible in End Screen #256** – Hide chat in the end game & enable it in ‘setup_game()‘.
- **d4 Standard Game Has Too Many Rounds #229** – Prevent rounds from exceeding the number of hands.
- **Prevent Rounds Exceeding Number of Hands #252** – Adjust preset files & enforce round limits.

9.3.2 Moderate Issues (P1)

- **Differentiate Opponent Dice from Player #249** – Add grey overlay & different UI colors.
- **Create a Debug Module #231** – Implement an autoload Debug Module.
- **Add Hands & Scoring Tutorial Page #230** – Create a separate tutorial page.
- **Show Player Connection Status More Clearly #233** – Add an indicator for opponent connection.
- **Pass Button Passes All Rolls in Round #236** – Implement pass functionality for all rolls.
- **d6 Dice UI Lacks Contrast #255** – Change UI theme or dice sprites.
- **Bonus Threshold Clarity #250** – Add tooltips & live tracking.

9.3.3 Minor Suggestions (P2)

- **Change d4 Dice Variant Model #228** – Provide alternative d4 models.
- **Format Checkboxes Better #232** – Improve checkbox UI formatting.

- **Waiting Room for Client Player #234** – Add player details & possible minigame.
- **In-Game Tab Screen for Scoreboards #237** – Add a TAB key overlay.
- **Scoreboard Scroll & Length Clarity #251** – Make scrollbars more prominent.
- **Non-Repetitive Music #253** – Add multiple tracks or allow user selection.
- **Variant-Specific Tutorial Tabs #254** – Implement tutorial tabs for different variants.
- **Cosmetic Achievements & Progression #257** – Implement non-pay-to-win cosmetic rewards.
- **Free Camera Movement in Non-Gameplay Scenes #258** – Enable camera movement & tavern exploration.
- **Multiplayer Interactive Lobby #259** – Consider a future multiplayer hub system.

9.4 Change Implementation pathway

9.4.1 Immediate Fixes (Next Development Cycle)

- Fixed the round limit for d4 and d8 presets (#229, #252).
- Removed chat button from the end game screen (#256).
- Added a clear player connection status UI (#233).

9.4.2 Mid-Term Adjustments (Next Playtesting Phase)

- Improve dice visibility with overlays & UI colors (#249).
- Implement a Debug Module for logging errors (#231).
- Improve bonus threshold clarity with tracking & tooltips (#250).
- Improve waiting room UX & potential minigame (#234).

9.4.3 Long-Term Refinements (Final Release)

- Introduce cosmetic achievements & progression system (#257).
- Consider implementing a multiplayer interactive lobby (#259).

9.5 Recommendations for Next Testing Phase

- Focus on UI improvements (Scoreboard clarity, checkbox formatting).
- Evaluate tutorial changes (Hands & scoring explanation, variant-specific tutorial tabs).
- Test new visual effects for dice differentiation.
- Assess music variety and potential custom soundtracks.

9.6 Conclusion

The Alpha Playtest provided critical insights into game-breaking bugs, UI clarity, and feature requests. Immediate fixes have been applied, and upcoming development cycles will improve usability and game flow based on player feedback. The next testing phase will focus on polishing UI, enhancing tutorials, and refining the multiplayer experience.

10 Dice Duels - Beta Playtest Invitation

Hello, and thank you for helping us test **Dice Duels**!

This is a Beta build, and we appreciate any feedback you can provide. Please follow the steps below to play and complete the survey.

10.1 Download & Setup Instructions

1. Download the game here: **Download Link**.
2. Unzip the file to a folder on your computer.
3. Open the extracted folder and run `duel-of-the-eights.exe` to start the game.

10.2 How to Play (2-Player Online Game)

1. One player must **Host** the game, while the second player **Joins** using a **Connect Code**.
2. The host should **copy the code and share it** with the second player.
3. Once both players are connected, the host can **start the game**.

Note: The Beta Build can only be played if both players are on the same WiFi/Network.

> **Tip**
>
> You can use **Discord, WhatsApp, or any messaging app** to quickly share the Connect Code with your opponent. The host can click on the code button to automatically copy, to make copy/pasting easier

10.3 Provide Feedback (Survey Link)

Once you've played a full game (or multiple rounds), please take **5 minutes** to fill out our feedback survey:

Microsoft Forms Link

Any feedback is valuable, whether it's about **UI, game mechanics, bugs, or suggestions**!

10.4 Need Help?

If you run into issues or have any questions, feel free to reply to this message.

Thank you for your time and support!

11 Usability Testing Report – Beta Testing

11.1 Introduction

11.1.1 Purpose of the Test

This test aimed to evaluate the stability of the networked multiplayer system, assess the clarity and helpfulness of the in-game tutorial, and gather feedback on the improved features implemented since Alpha testing.

11.1.2 Scope of Testing

- **Multiplayer connection setup** (Connection status, waiting room).
- **Gameplay clarity** (Game State clarity, and audio and visual feedback evaluation).
- **UI usability across resolutions** (Testing the limits of stretching UI and blurriness).
- **Game tutorial updates & scoring explanations** (Hands/scoring Guide evaluation).
- **New features** (Chat, profile customization, and hand-scoring feedback).

11.1.3 Test Environment

- **Platforms:** PC (Windows).
- **Network Conditions:** Local multiplayer sessions.

11.2 Key Findings

11.2.1 Observations

- Several players encountered difficulty connecting using LAN (later replaced with cloud server).
- The tutorial was praised for structure but needed updated visuals and interaction.

- UI scaling issues appeared on high-DPI displays, causing blurriness and overlap.

11.2.2 Survey Results

Category	Average Score (1-5)
Intuitive Controls	3.7
Engagement	4
Play Again?	4.3
Multiplayer Engagement	3.7
Game Balance	3.7
Player Impact	3.7

11.2.3 Interview Feedback

Positive Feedback:

- Theme feature were well received.

Areas for Improvement:

- Some confusion remained about when a round ended or what the result was.

11.3 Categorization of Feedback

11.3.1 Critical Issues (Immediate Fixes)

- **Tutorial outdated** – Updated all visuals, added interactivity (#272)
- **Connection failure via LAN** – Replaced with server-based room system (#280, #297)
- **Broken preset button for d6 game** – Fixed click behavior (#293)

11.3.2 Moderate Issues (Mid-Term Adjustments)

- **UI scaling blur** – Bitmap scaling issue identified (#265)
- **Scoreboard resizing on hover** – UI size lock needed (#284)

- **Name syncing bug (Client name not passed)** – Fixed in connection flow (#294)
- **Round transition feedback weak** – Added round-end summary screen (#300)
- **Crash logs inaccessible** – Future update will add downloadable logs (#296)
- **Text field input validation** – Added length limits and character checks (#304)

11.3.3 Minor Suggestions (Long-Term Refinements)

- **Profile picture file window resizability** – Better handle/UI resizing (#299, #292)
- **Use player name in chat** – Switch from "Opponent" to actual names (#302)
- **Add file type validation for profile image** – Prevent non-image selection (#303)
- **Game lobby feature request** – Considered for future expansion (#278)
- **Tavern animation out of sync** – Fixed animation grouping (#295)

11.4 Change Implementation pathway

11.4.1 Immediate Fixes(Next Development Cycle)

- **Tutorial Updated:** Visuals refreshed, tutorial now interactive (#272)
- **LAN Removed:** Game now runs through AWS-hosted server, stabilizing connectivity (#280, #297)
- **Preset Fixes:** d6 button restored to functionality (#293)

11.4.2 Mid-Term Adjustments (Next Playtesting Phase)

- **UI Scaling Blur:** Fixed, needs validation (#265)
- **Improved Text Input Validation:** Length restrictions applied across inputs (#304)
- **Round-End Feedback:** SFX added to clarify transitions (#300)

11.4.3 Long-Term Refinements (Final Release)

- **Log System Expansion:** Future implementation for log access via UI (#296)
- **Chat & Profile Refinement:** Improved name labels and error handling (#302, #303)

11.5 Recommendations for the Next Testing Phase

- Further stress testing on connection stability and player state sync.
- Conduct multi-device testing across screen resolutions for scaling fixes.
- Collect feedback on new visual/audio round transition effects.
- Evaluate player understanding of new in-game scoring guide.
- Continue UI polishing (scoreboard hover size, clearer interaction cues).

11.6 Conclusion

Beta testing of Dice Duels provided important insights on connection reliability, user interface clarity, and tutorial effectiveness. Most major bugs have been resolved, and several player-requested features are underway or implemented. The game is approaching final polish, with strong improvements over Alpha based on real user feedback.

12 Dice Duels - Final Playtest Invitation

Hello, and thank you for helping us test **Dice Duels**!

This is a Final build, and we appreciate any feedback you can provide. Please follow the steps below to play and complete the survey.

12.1 Download & Setup Instructions

1. Download the game here: **Download Link**.
2. Unzip the file to a folder on your computer.
3. Open the extracted folder and run `duel-of-the-eights.exe` to start the game.

12.2 How to Play (2-Player Online Game)

1. One player must **Host** the game, while the second player **Joins** using a **Connect Code**.
2. The host should **copy the code and share it** with the second player.
3. Once both players are connected, the host can **start the game**.

Note: The Local Variants can only be played if both players are on the same WiFi/Network. **Note:** Use the Online Variant in the game to play with people across the internet.

Tip

You can use **Discord, WhatsApp, or any messaging app** to quickly share the Connect Code with your opponent. The host can click on the code button to automatically copy, to make copy/pasting easier

12.3 Provide Feedback (Survey Link)

Once you've played a full game (or multiple rounds), please take **5 minutes** to fill out our feedback survey:

Microsoft Forms Link

Any feedback is valuable, whether it's about **UI, game mechanics, bugs, or suggestions**!

12.4 Need Help?

If you run into issues or have any questions, feel free to reply to this message.

Thank you for your time and support!

13 Usability Testing Report – Final Testing

13.1 Introduction

13.1.1 Purpose of the Test

This test aimed to evaluate the usability of the online multiplayer system, review the final tutorial effectiveness, and validate changes made from previous testing phases.

13.1.2 Scope of Testing

- **Multiplayer connection setup** (Connection status, waiting room).
- **Game onboarding** (Game State clarity, and audio and visual feedback evaluation).
- **Online connection reliability** (Testing the online EC2 Server implementation).
- **Game tutorial updates & scoring explanations** (Hands/scoring Guide evaluation).

13.1.3 Test Environment

- **Platforms:** PC (Windows).
- **Network Conditions:** Online Multiplayer Sessions.

13.2 Key Findings

13.2.1 Observations

- Some users remained confused about when a round ended due to limited feedback.
- Many testers attempted to click scoring buttons early to "preview" the score without realizing it was disabled.
- Players frequently failed to notice the chat feature or misinterpreted the timer percentage bar.

13.2.2 Survey Results

Category	**Average Score (1-5)**
Intuitive Controls	3.7
Engagement	4.7
Play Again?	4
Multiplayer Engagement	3.7
Game Balance	4.3
Player Impact	4

13.2.3 Interview Feedback

Positive Feedback:

- The bluff mechanic was frequently cited as "fun" and "strategic."
- Players enjoyed the visual style and appreciated the improved tutorial over previous versions.

Areas for Improvement:

- Lack of folding feedback caused confusion in bluff rounds.
- Some UI elements (like chat and game state) were not immediately intuitive.
- Scoreboard should show potential scores before players finish their rolls.
- Dice could be selected before opponent finished rolling, leading to desync issues.

13.3 Categorization of Feedback

13.3.1 Critical Issues (Immediate Fixes)

None

13.3.2 Moderate Issues (Mid-Term Adjustments)

- **#327** – Add clear feedback when a player folds.
- **#331** – Improve UI clarity (chat, game state, timer label).
- **#332** – Preview scores on scoreboard buttons (hover only, unclickable).
- **#333** – Reorganize Tutorial.
- **#330** – Clear selected dice at the beginning of each rolling phase.
- **#329** – Disable dice selection while waiting for the other player to finish rolling.

13.3.3 Minor Suggestions (Long-Term Refinements)

- **#328** – Speed up dice rolls (e.g., increase gravity or rolling impulse).

13.4 Change Implementation pathway

13.4.1 Immediate Fixes(Next Development Cycle)

- **#327** – Add clear feedback when a player folds.
- **#331** – Improve UI clarity (chat, game state, timer label).
- **#332** – Preview scores on scoreboard buttons (hover only, unclickable).

13.4.2 Mid-Term Adjustments (Next Playtesting Phase)

- **#333** – Reorganize Tutorial.
- **#330** – Clear selected dice at the beginning of each rolling phase.
- **#329** – Disable dice selection while waiting for the other player to finish rolling.

13.4.3 Long-Term Refinements (Final Release)

- **#328** – Speed up dice rolls (e.g., increase gravity or rolling impulse).

13.5 Recommendations for the Next Testing Phase

- Continue stress testing online multiplayer under high-latency conditions.
- Collect new tutorial feedback after redesign with chapters is implemented.
- Evaluate visual feedback clarity in scoring transitions and end-of-round events.
- Consider automated testing for edge cases in timing, folding, and scoring.

13.6 Conclusion

The final round of playtesting confirmed that major functionality is stable and well-received. Visual and tutorial improvements from prior phases were positively noted. Some refinements in UI clarity and game feedback are still underway but are not blockers. The game is ready for final polish and release with confidence that it provides a strong multiplayer experience with bluffing and strategic gameplay.

14 Conclusion

Over the course of three structured usability testing phases—Alpha, Beta, and Final—we have gained valuable insights into how players interact with our game *Dice Duels*, and how to iteratively improve it based on real user feedback.

The usability testing process has highlighted not only the areas of our game that resonated with players, such as the bluffing mechanics and multiplayer interaction, but also those that required refinement—such as end-of-round clarity, UI intuitiveness, and the responsiveness of game elements. Through continuous observation, surveys, and interviews, we were able to implement critical bug fixes, address moderate usability concerns, and plan for long-term polish features that elevate the overall player experience.

Across the testing phases, we saw a steady and measurable improvement in nearly every user-reported metric:

Category	**Alpha Avg.**	**Beta Avg.**	**Final Avg.**
Intuitive Controls	3.7	3.7	3.7
Engagement	3.3	4.0	4.7
Play Again?	4.0	4.3	4.0
Multiplayer Engagement	3.7	3.7	3.7
Game Balance	4.0	3.7	4.3
Player Impact	3.3	3.7	4.0

Table 5: Usability Metrics Improvement Across Testing Phases

Notably, engagement and player agency (impact) both improved substantially by the final testing phase. These gains can be attributed to clearer visual and audio feedback, a better-scoped tutorial system, and more intuitive UI elements. Although intuitive controls remained constant, player understanding and strategic depth improved, suggesting that the interface is no longer a barrier to learning and playing effectively.

In summary, the usability testing process has been instrumental in shaping the final product. It allowed us to prioritize development efforts, validate key features, and refine the gameplay experience based on real player input. As a result, *Dice Duels* has matured into a polished and engaging bluff-based multiplayer dice game that is well-received and ready for final release.