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Component-1

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Contents

INTRODUCTION	2
TEST PERSONAS	2
2.1 Persona One: The Commuter Student	3
2.2 Persona Two: The Mature Postgraduate	4
2.3 Persona Three: The International Student	5
2.4 Persona Four: The Disability Support Officer	6

UWTSD Traitors Game - Design Report: Structure & Content Plan

INFORMATION GATHERING METHODOLOGY	8
3.1 Research Methods	8
3.2 Key Findings	9
3.3 Requirements Analysis (See Appendix A for Full MoSCoW List).....	10
SECTION 4: DESIGNING FOR USABILITY (ILO3)	11
4.1 Key Usability Challenges	11
4.2 Literature-Based Design Recommendations	12
5.1 Design Approach.....	13
5.2 Key Screen Designs	13
5.3 Navigation Flow Diagram.....	19
FEEDBACK COLLECTION	19

6.1 Methodology	19
6.2 Feedback Summary	21
6.3 Unexpected Findings	22
6.4 Design Iterations Based on Feedback	22
CONCLUSION	23
REFERENCES	23
APPENDICES	25
Appendix A: Complete MoSCoW Requirements List	25

INTRODUCTION

The Traitors is a social deduction game where 'Faithful' players identify hidden 'Traitors' The first user-centred design approach for UWTSD Traitors, a mobile version of the social deduction game set on a university campus, concentrated on using primary research to identify player needs. Realistic, fact-based avatars representing various university stakeholders were developed using data from potential student participants. The identification of user objectives, gaming expectations, and accessibility requirements was directed by these personas. The MoSCoW approach was used to prioritise key functional and experiential objectives, guaranteeing that crucial gameplay features, usability, and engagement components were taken care of in the early stages of development.

Low-fidelity wireframe storyboards were created based on these criteria in order to depict user engagement and gameplay flow across mobile displays. For six players, the wireframes prioritised easy-to-use navigation, unambiguous role communication, and seamless multiplayer engagement. In order to facilitate iterative refinement, early prototypes were shown to participants in order to gather early input on layout clarity, interaction design, and overall experience. Section 2 presents detailed personas; Section 3 presents the research methodology; Section 4 presents HCI-based usability considerations; Appendix B presents wireframe designs; Section 6 presents feedback results; and the report is concluded with reflections and references.

TEST PERSONAS

2.1 Persona One: The Commuter Student

Name: Chloe Davies

Age: 20

Role: Second-year Business student (part-time)

Location: Currently lives at home and commutes to the SA1 campus while studying BA Business Management.

Technology Use: Heavy smartphone user (iPhone 13). Relies on phone for train timetables, social media, and messaging. Data plan limited to 10GB/month.

Gaming Experience: Plays casual mobile games (Candy Crush, Wordle) but has limited experience with multiplayer social deduction games.

Motivations for Playing: Despite spending little time on campus, she wants to feel more a part of university life. looks for low-commitment social events that coincide with her lectures and work.

Scenario:

It is Wednesday at 11:30 AM. Chloe's marketing lecture just ended, and she has three hours before her afternoon seminar. A message that reads, "Game starting in 15 minutes - Dylan's Bar, SA1," appears when she is in the library. "Join now?" A game is being organised by a friend from her study group. Chloe chooses to attend one game despite her reluctance because she has an assignment due the following week. She must be able to play for precisely one hour before leaving without interfering with other players' games. She checks for train delays while alternating between the app and her messages throughout the game. She is relieved to be able to depart on time after being slain on Night 2, but she is a little let down not to see the end.

User Requirements:

- **MUST:** Complete a full game within 45-60 minutes
- **MUST:** Receive clear notifications when it's her turn to act
- **MUST:** Function reliably on 4G (poor WiFi in some campus areas)
- **SHOULD:** Have low battery consumption

- COULD: Integrate with calendar to avoid scheduling clashes

Experience Requirements:

- MUST: Feel included despite limited campus presence
- MUST: Not feel anxious about delaying other players
- SHOULD: Feel the game respects her limited time
- SHOULD: Experience social connection with peers
- COULD: Feel invested enough to return for future games

2.2 Persona Two: The Mature Postgraduate

Name: Dr. Aled Hughes

Age: 47

Role: Part-time PhD researcher (Archaeology) and visiting lecturer

Location: Lampeter campus

Technology Use: Uses a mid-range Android device, the Samsung Galaxy A52. For most tasks, a laptop is preferred. has presbyopia, making it difficult to read small letters. wears reading glasses, but frequently forgets to wear them.

Gaming Experience: Enjoys playing strategy board games (such as Ticket to Ride and Settlers of Catan) and playing chess online. I'm new to multiplayer apps.

Motivations for Playing: overseeing six students on placement as undergraduates. views the game as a team-building activity that might spark conversations about deceit, trust, and evidence interpretation—all of which are pertinent to the archaeological approach.

Scenario:

During their lunch break, Aled advises his placement students to play the game in the common area of the Old Building. He's looking for something enjoyable and intellectually challenging. He finds himself making comparisons between spotting traitors and analysing contradicting archaeological evidence as the game goes on. Squinting helps him get through

the brief role description material. He avidly participates in the round table talks and values the game's strategic depth. His competitive nature surprises his students.

User Requirements:

- **MUST:** Support text scaling/accessibility options
- **MUST:** Include a clear, accessible rules reference
- **SHOULD:** Allow review of previous game events/chat logs
- **SHOULD:** Include optional strategy guidance for newcomers
- **COULD:** Feature thematic elements related to UWTSD history/Lampeter campus

Experience Requirements:

- **MUST:** Feel intellectually challenging and strategic
- **MUST:** Avoid frustration from fiddly interface elements
- **SHOULD:** Function as an effective team-building tool
- **SHOULD:** Feel intuitive enough to focus on players, not phone
- **COULD:** Provide teachable moments about trust and evidence

2.3 Persona Three: The International Student

Name: Mei Lin

Age: 23

Role: First-year MSc Computer Science student (international, from China)

Location: Carmarthen campus (living in halls)

Technology Use: Highly tech-savvy. Uses iPhone 15 Pro, iPad, MacBook. Comfortable with complex apps and multiple platforms. Uses translation apps frequently.

Gaming Experience: Experienced gamer – plays Genshin Impact, Among Us, and various mobile games. Familiar with social deduction genre.

Motivations for Playing: Saw a poster for "Trailers Game Night" (misreading of Traitors) at the Students' Union. Wants to meet British students in a structured, small-group setting. Finds large social gatherings intimidating due to language confidence.

Scenario:

Mei is anxious but enthusiastic when she gets to the SU. Mei is relieved to find the app user-friendly after the game organiser clearly explains the regulations. She has been designated as a traitor. She must discuss who to kill with the other Traitor, a Welsh student, during the night phase. She is concerned about being misinterpreted and using the right words. She writes texts with care and simplicity. She is patient with her fellow traitor. She feels a great sense of accomplishment and community once she successfully tricks the Faithful and wins the game.

User Requirements:

- MUST: Use clear, simple, unambiguous language for all rules and actions
- MUST: Support Unicode characters correctly (for typing in multiple languages)
- SHOULD: Offer slower text display option for chat
- SHOULD: Be compatible with phone's native translation features
- COULD: Use universal icons alongside text for key actions (dagger, shield, etc.)

Experience Requirements:

- MUST: Feel capable of playing successfully regardless of English confidence
- MUST: Avoid feeling "othered" or left behind by fast chat
- SHOULD: Foster sense of achievement through collaboration or deception
- SHOULD: Feel welcomed into UK student culture
- COULD: Connect her with other students for future games

2.4 Persona Four: The Disability Support Officer

Name: Sam Jones (they/them)

Age: 31

Role: Disability Support Officer, Student Services

Location: SA1 campus (with travel to all campuses)

Technology Use: uses the iPad and iPhone SE, which is a smaller phone. knowledgeable about accessibility features. has dyslexia and, when available, uses the OpenDyslexic

typeface. prefers the dark mode.

Gaming Experience: plays a few mobile games but gives accessibility top priority when making decisions. prefers cooperative games than competitive ones. Games that disregard accessibility requirements irritate me.

Motivations for Playing: planning a "Welcome Back" celebration for students with impairments. searching for inclusive events in which all participants can contribute equally. wants to evaluate the game's usability before suggesting it to pupils.

Scenario:

Sam arrives early to set up. As soon as they launch the application, they look for accessibility features like colour contrast, screen reader compatibility, and font choices. Although they are happy to find simple solutions, they point out areas that may be improved. They watch how various pupils engage with the UI throughout the game. The brief chat text is difficult for one kid who has vision impairments. Indicators of loyalty and treachery are indistinguishable to someone who is colour blind. Sam takes thorough notes to provide the developers with feedback. Despite these problems, they find the game enjoyable, but they worry that some pupils may be excluded due to accessibility issues.

User Requirements:

- **MUST:** Be fully compatible with screen readers (VoiceOver/TalkBack)
- **MUST:** Offer dyslexia-friendly font option (e.g., OpenDyslexic)
- **MUST:** Use colour-blind friendly palettes (avoid red/green distinctions)
- **SHOULD:** Provide visual alternatives for all audio cues
- **SHOULD:** Include adjustable contrast settings
- **COULD:** Offer "quiet mode" with reduced animations/flashing

Experience Requirements:

- **MUST:** Feel equitable and accessible to all players
- **MUST:** Not disadvantage anyone based on disability
- **SHOULD:** Feel professionally designed with inclusivity as priority

- **SHOULD:** Give confidence that the platform is safe for all students
- **COULD:** Serve as a model for inclusive game design at UWTSD

INFORMATION GATHERING METHODOLOGY

3.1 Research Methods

Primary research employing various techniques was carried out in order to ground the personas in actual user demands. In order to learn about university students' gaming habits, preferences for social contact, and expectations for multiplayer mobile games, surveys and casual interviews were conducted. In a campus-based social setting, the study sought to determine user motivations, obstacles, and preferred gaming experiences.

Method 1: Semi-Structured Interviews (n=4)

- **Duration:** 20-30 minutes each
- **Participants:** Two undergraduate students, one postgraduate researcher, one professional services staff member
- **Location:** Conducted in-person at SA1 campus library and online via Microsoft Teams
- **Question Topics:** Gaming habits, barriers to social participation on campus, preferred app features, accessibility needs, experiences with multiplayer games
- **Rationale:** Semi-structured interviews allow exploration of unexpected themes while maintaining consistency (Rubin & Rubin, 2012)

Method 2: Online Questionnaire (n=12)

- **Platform:** Microsoft Forms
- **Distribution:** Posted on groups
- **Question Types:** Multiple choice (gaming frequency, preferred platforms) and open-ended (desired features, accessibility concerns)
- **Response Rate:** 12 complete responses over 7 days
- **Rationale:** Questionnaires efficiently gather broader data to complement in-depth interviews (Lazar, Feng & Hochheiser, 2017)

Method 3: Observational Session (n=1)

- **Activity:** Observed a group of 4 students playing the physical Traitors card game
- **Location:** Student common room
- **Focus:** Natural language used, points of confusion, social dynamics, technology habits during gameplay (e.g., phone checking)
- **Rationale:** Observation reveals behaviours participants might not self-report (Preece, Sharp & Rogers, 2019)

3.2 Key Findings

From Interviews:

Theme Identified	Evidence from Participants	Design Implication
Time Constraints	Participants stated that their study schedules and lengthy commutes prevented them from participating in social activities.	In between academic activity, game rounds should be brief and manageable.
Language Anxiety	Because there was less pressure to engage in conversation, international students favoured digital communication.	Incorporate straightforward onboarding instructions and text-based communication.
Accessibility Awareness	Employees brought attention to issues with weariness, social anxiety, and the use of assistive technologies.	Interface must support accessibility features such as readable text and clear navigation.

From Questionnaire:

Research Area	Result	Interpretation for Design
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Preferred Game Duration	82% preferred games under 60 minutes	Gameplay designed as short session-based rounds
Device Ownership	100% owned smartphones	Mobile-first design approach justified
Platform Preference	75% preferred mobile apps	Native mobile interface prioritised
Accessibility Needs	33% reported accessibility requirements	Inclusive interface design required
Social Motivation	67% motivated by meeting new people	Emphasis on multiplayer collaboration

From Observation:

Observation	Behaviour Identified	Design Response
Phone checking during inactive turns	Players disengaged while waiting	Introduce timers and active participation prompts
Long rule explanation (10–15 mins)	Players remained confused	Provide interactive tutorial and guided onboarding
Natural suspicion language	Players engaged in deduction dialogue	Support discussion and voting mechanics
Familiarity with social deduction games improved adaptation	Players with more experience picked things up more quickly.	Make use of well-known interaction patterns from current multiplayer games.

3.3 Requirements Analysis (See Appendix A for Full MoSCoW List)

Based on research findings, requirements were categorised using the MoSCoW method (Clegg & Barker, 2004):

- **MUST have:** Critical for minimum viable product

- **SHOULD have:** Important but not vital
- **COULD have:** Desirable if resources permit
- **WON'T have:** Explicitly excluded from current scope

SECTION 4: DESIGNING FOR USABILITY (ILO3)

4.1 Key Usability Challenges

Designing for "The Traitors" presents unique usability challenges:

Challenge 1: Learnability (Nielsen, 2012)

The game features a variety of roles (Traitor/Faithful), phases (Night/Day), and actions (murder/banish/shield). New players must be able to grasp these right away without interfering with gaming. While the traditional version of the card game requires reading the rules beforehand, the digital version must include learning into games.

Challenge 2: Error Prevention

If one unintentional tap reveals the identify of a traitor, everyone's game could be spoilt. Critical acts require confirmation systems. According to Norman (2013), design should make it impossible to unintentionally perform irreversible actions.

Challenge 3: Cognitive Load (Sweller, 2011)

Players must monitor suspicions, hold onto claims, and come up with a plan while using the UI. The design must minimise needless cognitive load by clearly presenting information only when needed.

Challenge 4: Accessibility (WCAG 2.2, 2023)

Since Persona 4 (Sam) reflects real accessibility requirements, the design must follow Web Content Accessibility Guidelines, which include sufficient colour contrast, screen reader compatibility, and alternatives for aural information.

Challenge 5: Social Context

The app is used by players during face-to-face interactions. Players shouldn't need to constantly focus on the interface in order to comprehend social cues and keep eye contact.

4.2 Literature-Based Design Recommendations

Recommendation 1: Progressive Disclosure (Lidwell, Holden & Butler, 2010)

Only provide information when it is pertinent. Murder options should only be visible to traitors during the Night phase. Role descriptions don't clutter the main interface when they are first assigned.

Recommendation 2: Consistency and Standards (Nielsen, 2012)

Use well-known smartphone patterns: tap to choose, swipe to scroll, and bottom navigation for important actions. Icons should follow platform conventions (e.g., dagger for murder, shield for protection).

Recommendation 3: Visibility of System Status

Always display the current game phase (DAY or NIGHT), the amount of time left for actions, and the player's turn. This keeps players informed and lessens anxiety (Norman, 2013).

Recommendation 4: Aesthetic and Minimalist Design (Nielsen, 2012)

Eliminate any extraneous information. Vote buttons and player names/avatars should be the only things displayed while voting. Additional flavour text may be found elsewhere.

Recommendation 5: Accessibility by Design (Henry, 2018)

Make accessibility a priority rather than an afterthought. This comprises:

- Options for text scaling
- Palettes that are suitable for colourblind people (following ColorBrewer guidelines)
- Compatibility with screen readers (semantic HTML/Android accessibility labels)
- A dyslexia-friendly font choice

4.3 Specific Design Solutions Addressing Persona Needs

Persona	Need	Design Solution	Literature Basis
Chloe (Commuter)	Time-limited play	Visible game timer, estimated duration at start	Visibility of system status (Nielsen)
Aled (Mature)	Text readability	Text scaling, high contrast mode	WCAG 2.2 (W3C, 2023)
Mei (International)	Clear language	Simple terminology, icon support	Universal design (Lidwell et al., 2010)
Sam (Support Officer)	Screen reader support	Semantic labelling, proper heading structure	Accessibility (Henry, 2018)

5.1 Design Approach

The wireframes adhere to a mobile-first approach that is appropriate for the portrait orientation of smartphones, which are used by 75% of the target market. Because it follows Google's Material Design Guidelines and, when appropriate, Apple's Human Interface Guidelines, both Android and iOS users will recognise the design.

5.2 Key Screen Designs

Screen 1: Game Lobby / Join ScreenElements:

Traitors of UWTSD

Create Game

Join Game

Tutorial

Game Lobby

- ✓ Aisha
- ✓ Tom
- ✓ Megan
- ✓ Rhys
- ✓ Ali
- ✓ Sara

Start Game

User Flow:

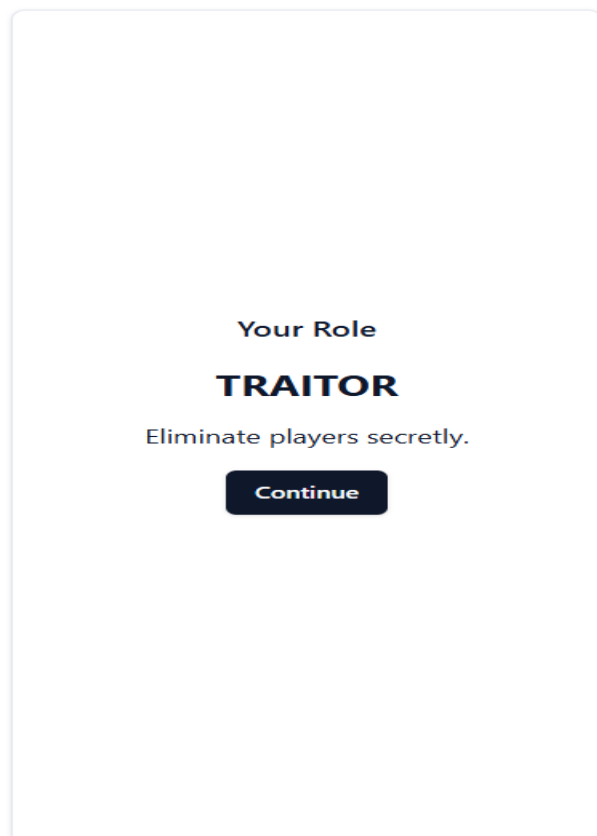
1. User taps "CREATE GAME"
2. Selects campus location
3. Generates game code for sharing
4. Enters lobby to await players

Design Rationale:

- Fat-finger errors are accommodated by large buttons (minimum 44x44pt touch target).
- A straightforward two-option design lowers cognitive load

- Chloe's desire for speedy setup is met by the game code being publicly exposed for simple distribution.

Screen 2: Role Reveal



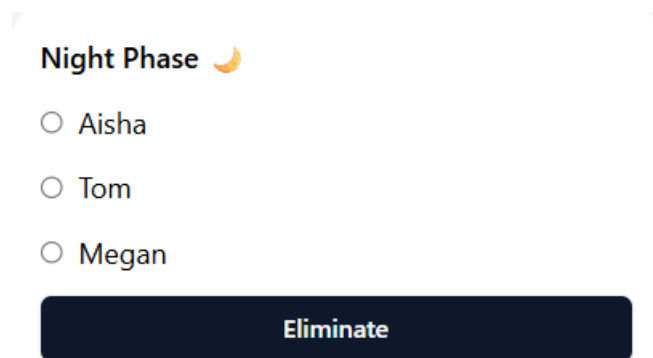
User Flow:

1. Dramatic animation is shown to all players at once.
2. To continue playing the game, tap continue.
3. Additional private instruction is given to traitors

Design Rationale:

- According to Norman's emotive design, the emotional effect of role revelation improves enjoyment.
- Roles are clearly distinguished visually (but not color-dependent; icons give colour-blind people redundancy).
- Aled and Mei are supported by the option to read the rules again.

Screen 3: Night Phase (Traitor View)



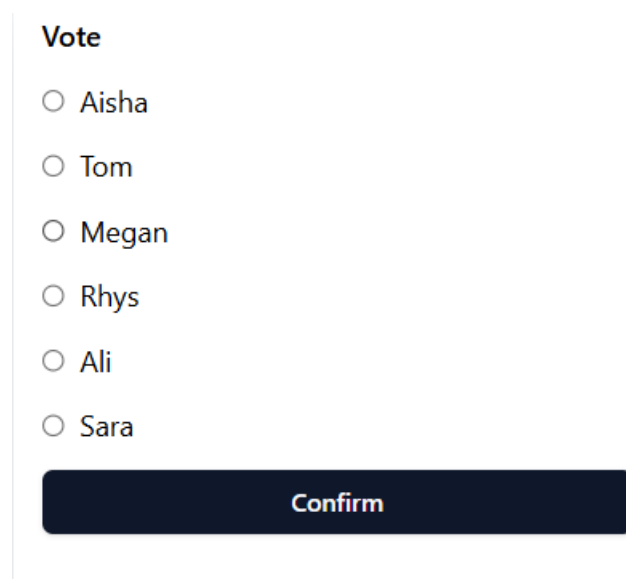
User Flow:

1. Traitors view the screen at the same time
2. Each chooses a victim (a majority vote or consensus is needed).
3. The confirmation stage averts mishaps
4. Before moving forward, all traitors must confirm

Design Rationale:

- A dark theme naturally indicates a phase transition
- Chloe's time concerns are addressed by the timer, which keeps the game moving at a steady pace.
- The confirmation step guards against disastrous mistakes (Norman, 2013).
- The error prevention heuristic is supported by redundant selection and confirmation.

Screen 4: Round Table / Voting



Vote

☐ Aisha

☐ Tom

☐ Megan

☐ Rhys

☐ Ali

☐ Sara

Confirm

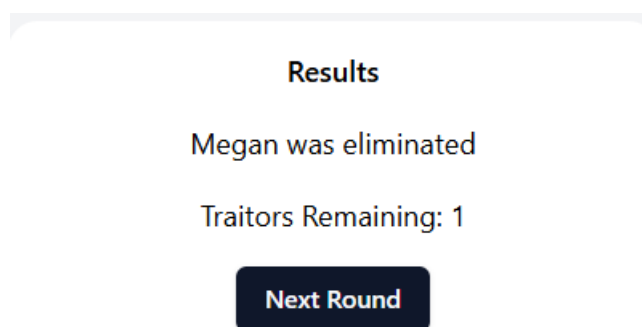
User Flow:

1. The voting panel is visible to all players
2. Each chooses one participant.
3. Able to alter the choice prior to casting
4. The button is disabled after casting (votes cannot be changed).
5. Every vote in the results screen

Design Rationale:

- The system status is displayed via the progress indicator (Nielsen).
- The ability to modify votes promotes user autonomy and control.
- Errors are avoided when casting and selection are clearly separated.
- During a heated discussion, a simple list lessens cognitive stress.

Screen 6: Game Over / Results



User Flow:

1. All players see results simultaneously
2. Tap to reveal full breakdown
3. Option to start rematch or return to lobby

Design Rationale:

- Emotional payoff for game completion
- Statistics encourage repeated play
- Share results supports social connection

5.3 Navigation Flow Diagram



FEEDBACK COLLECTION

6.1 Methodology

Prototype Fidelity:

Figma was used to generate interactive wireframes that simulated important user flows, such as entering a game, revealing a role, voting at night, round table voting, and chatting. Participants were able to swipe through screens and experience the anticipated flow even if the prototype was not fully working.

Participant Recruitment:

six participants were recruited to match the six personas:

Participant	Matched Persona	Recruitment Method
P1 (Female, 19, commuter from Neath)	Chloe	Student Facebook group
P2 (Male, 52, part-time PhD)	Aled	Postgraduate researcher mailing list
P3 (Female, 24, international student from India)	Mei	International Student Support
P4 (Non-binary, 29, Disability Services)	Sam	Professional services email

Testing Protocol:

1. **Introduction (5 mins):** Explain purpose, obtain consent
2. **Task scenarios (20 mins):** Participants completed 5 tasks while thinking aloud:
 - Task 1: Create a new game and invite a friend
 - Task 2: (As Traitor) Navigate night phase and select a murder victim
 - Task 3: Participate in round table voting
 - Task 4: Send a private message to fellow Traitor
 - Task 5: Adjust text size for better readability
3. **Post-task questionnaire (10 mins):** 5-point Likert scale questions on usability and emotional response
4. **Semi-structured interview (10 mins):** Open-ended feedback

Data Collection:

- Session video/audio recorded (with permission)
- Observer notes on task completion, errors, hesitation
- Questionnaire responses recorded in spreadsheet

- Think-aloud protocol captured real-time reactions
-

6.2 Feedback Summary

Positive Feedback:

Aspect	Participant	Quote
Visual clarity	P2 (Aled)	Compared to most apps I use, the language is more clearer. My glasses weren't even necessary.
Role reveal excitement	P3 (Mei)	"My pulse literally raced when I saw that I was a traitor on the red screen! incredibly thrilling.
Voting clarity	P1 (Chloe)	"I appreciate that you must verify. I was concerned that I would unintentionally cast a ballot.
Accessibility options	P4 (Sam)	"What we really need is the text slider on the conversation screen. This should be done by more apps."
Timer visibility	All	"Good to know how long I have to decide."

Negative Feedback / Areas for Improvement:

Issue	Participant	Quote	Proposed Solution
Private chat hard to find	P2, P3	"At first, I was unaware of the tabs. I typed in public chat by accident."	Make tabs more prominent, add visual cue (e.g., different colour for private tab)
Timer caused anxiety	P2	"The countdown felt stressful. I prefer to think strategically, not under time pressure."	Add optional "relaxed mode" with longer timers or option to hide timer
Font options limited	P4	"OpenDyslexic is great, but some students need even more spacing."	Add line spacing and character spacing options

Campus selection unclear	P1	"Why do I need to choose a campus? Does the game use my location?"	Add explanatory tooltip: "Select your campus to find nearby players"
Rules not accessible during play	All	"I forgot what the night phase rules were."	Add persistent "?" button on all screens linking to relevant rule section

Emotional Response Summary:

- **Excitement:** High during role reveal and late-game moments
- **Anxiety:** Moderate during timed actions (especially for P2)
- **Satisfaction:** High after successful deception (P3) and game completion (all)
- **Frustration:** Low-moderate when chat tabs were missed
- **Inclusion:** High for P3 (felt welcomed), moderate for P4 (accessibility good but not perfect)

6.3 Unexpected Findings

1. Timers keep things moving forward, but for strategic players (P2), they caused more negative stress than good tension. This implies that the game speed needs to be adjustable.
2. All six participants initially missed the tabs, suggesting the design needs stronger visual differentiation between public and private channels.
3. P3's description of her "racing heart" during the role reveal beyond expectations, indicating the effectiveness of the dramatic design aspects.
4. The rationale behind choosing a campus was unclear, suggesting the necessity for a more detailed explanation or a different strategy (automated location detection with consent).

6.4 Design Iterations Based on Feedback

Based on this feedback, the following changes will be implemented in the full-colour design:

1. These will be bigger, employ public and traitor symbols, and have a subtle animation when a new private message is received.
2. During game setup, game developers can choose a timer duration (30s, 60s, 90s, or infinite).
3. Include sliders for character and line spacing in addition to text size.
4. Include a floating "?" button that points straight to the current screen's pertinent rule section.
5. Include an information icon that says, "Choose your campus to connect with players nearby."

CONCLUSION

Six distinct personas—commuter students, mature postgraduates, international students, and professional services staff with accessibility expertise—were created as part of the first user-centred design process for UWTSD Traitors. These personas were based on primary research with a variety of university users. Evidence-based wireframe designs were driven by key needs including text readability, accessibility features, flexible scheduling, and clear language. Participants commended the designs for their inclusivity, clarity, and engagement. In order to ensure that the game stays true to The Traitors while being accessible and entertaining for the whole UWTSD community, feedback identified issues such as timer anxiety and chat tab visibility. These issues will inform the next iteration and full-color design phase.

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APPENDICES

Appendix A: Complete MoSCoW Requirements List

ID	Requirement	Category	Persona	Source
M01	Complete game within 60 minutes	MUST	Chloe	Interview P1
M02	Turn notifications	MUST	Chloe	Interview P1
M03	Text scaling to 200%	MUST	Aled, Sam	WCAG 2.2
M04	Screen reader compatibility	MUST	Sam	Interview P4
M05	Colour-blind friendly palette	MUST	Sam	WCAG 2.2
M06	Clear public/private chat distinction	MUST	Mei	Observation
M07	Confirmation for critical actions	MUST	All	Nielsen (2012)
M08	Game phase indicator	MUST	All	Norman (2013)
S01	Offline rules reference	SHOULD	Aled	Questionnaire
S02	Strategy guide for newcomers	SHOULD	Aled, Mei	Interview P3
S03	Game history review	SHOULD	Aled	Interview P2
S04	Dark mode default	SHOULD	Sam	Questionnaire
S05	Visual alternatives for audio	SHOULD	Sam	WCAG 2.2
S06	Campus-based matchmaking	SHOULD	Chloe	Interview P1
C01	Calendar integration	COULD	Chloe	Interview P1
C02	Thematic campus elements	COULD	Aled	Interview P2
C03	Translation API integration	COULD	Mei	Interview P3
C04	Achievement badges	COULD	All	Questionnaire

C05	Statistics tracking	COULD	All	Questionnaire
W01	Video chat integration	WON'T	-	Scope limit
W02	Desktop version	WON'T	-	Scope limit