AggieFind: User Study 2 Report

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1. Overview of AggieFind

AggieFind is a unified lost and found system designed specifically for the NMSU campus community. The system addresses the current fragmented approach where lost items end up at various locations across campus with no centralized tracking system.

Our system is built on a Student-Student Model to ensure user safety, privacy, and semi-anonymity. The core system includes two distinct user roles:

Loser (Any User): Users who lost an item can freely post a "Lost Item" report. Posts are moderated by an AI image filter to prevent restricted content.

Finder (Any User): Users who find an item can search for that item or post a found item. If the item is already reported as lost, the finder has two options for returning it.

Return Process Options:

Direct Contact (Optional): Users can choose to reveal their contact information and arrange returns directly with each other. This option provides convenience and speed for users comfortable with direct interaction.

Building Intermediary (Default): Items can be left at designated campus lost and found desks with staff verification. This provides privacy and security for users who prefer institutional oversight. The finder reports where they left the item, and the loser can pick it up from that location.

2. User Tasks

Our functional prototype was designed to support three core tasks that represent the primary user interactions with the lost and found system:

Task 1: Report a Lost Item

Scenario: "Imagine you were studying at Corbett Center and you realized you left your red NMSU hydroflask. You think you lost it about an hour ago. Using this app, report your hydroflask as lost."

This task tests the user's ability to quickly and efficiently post a lost item report with relevant details including description, location, and time.

Task 2: Report a Found Item

Scenario: "You are walking out of Zuhl Library and you find a set of keys on a bench with a crimson lanyard. You want to report it so the owner can find it. Either contact the person directly if you choose to reveal your info, or leave it at the nearest lost and found facility and report it."

This task evaluates how clearly the system communicates the two return options and guides users through their choice. It also tests whether users understand when direct contact versus building intermediary is appropriate.

Task 3: Search Through Feed

Scenario: "There are many posts in the home feed page. Now you need filtering for specific items, people, buildings, or dates. Use the search functionality to filter them and use the filter button to save your preferences."

This task tests the effectiveness of the search and filter features, which are critical for users browsing through multiple posts to find their specific item.

3. Prototype Description

Community Trust Model with Optional Privacy Controls

Key Features:

• Map-centric reporting for building-based posts
• Privacy option as the main interactive element for user control
• Optional direct contact versus building intermediary return methods
• Anonymized reputation badges (e.g., "Helpful Aggie: 3 items returned")
• Public feed homepage showing recent found items
• Filter and search functionality for personalized item discovery

Color Scheme: Crimson and white (NMSU branding) with a light, clean interface

Target User Experience: Focus on both finder and loser experiences, emphasizing community trust, transparency in return methods, and manual control over privacy settings.

4. Research Questions

Prior to our evaluation, we formulated specific research questions to guide our design assessment:

• What would you say about the layout? Do you feel the button placements are correct? What do you think of the theme - would it be visible in any place, time, or location?
• Are the animations and data loading fast or slow? Is it efficient to use?
• Do you feel this version makes users feel more secure and confident about recovering their items?
• Were you able to clearly understand what is required and what is optional while posting an item?
• What do you think about the redirections? Are they needed and are they correct?
• How important are privacy controls, such as choosing between direct contact and building intermediary?
• Do users understand they have a choice between direct contact and building intermediary for returns?
• Which return method do users prefer and in what situations?
• Would you use filters for searching, saving, and sorting posts?

5. Evaluation Preparations

We developed comprehensive materials to ensure consistent and ethical data collection:

Recruitment Strategies

Strategy 1: Public-Space Intercepts - Convenience sampling at high-traffic campus locations (Zuhl Library entrance, Corbett Center, Student Union Building) for one-hour sessions, politely approaching students.

Strategy 2: Contextual Inquiry - Our primary strategy targeting ideal users at building-level lost-and-found desks (Domenici Hall, Science Hall). We approached students saying: "Since you just used this system, would you have 5-10 minutes to give us your quick feedback on our prototype?"

Strategy 3: Key Stakeholder Interview - We interviewed staff members managing lost-and-found desks to gather insights on system pain points and obtained their opinion on our approach.

Study Setting

Quiet campus locations (study rooms in Zuhl Library, empty classrooms in Domenici Hall) to minimize distractions while maintaining ecological validity.

Session Duration: Approximately 10-15 minutes per participant

Procedure for Each Participant:

• Introduction and consent (1 minute)
• Context questions about prior lost/found experiences (2 minutes)
• Use prototype: Three tasks with think-aloud protocol and post-task questions (8 minutes)
• SUS questionnaire (2 minutes)
• Post-study questions (2 minutes)

6. Evaluation Methods

Study Design

Design Type: Single prototype evaluation with task-based observation

Independent Variables: Task type (Lost Item, Found Item, Search), User background (prior lost/found experience)

Dependent Variables: Task success rate, task completion time, error count, SUS scores, user preferences for return methods, and qualitative feedback from think-aloud protocol

Data Collection Methods

1. Task-based observation with think-aloud protocol
2. System Usability Scale (SUS) questionnaire
3. Semi-structured post-task interviews
4. Audio recordings of sessions (to be destroyed after analysis per IRB guidelines)

7. Participant Data & Key Findings

We successfully recruited and tested 6 NMSU students, each representing diverse campus locations and prior experiences with lost and found systems. Location data was collected because experience with items found or lost might differ according to place (open areas, crowded vs. less-crowded spaces, etc.).

7.1 Participant Demographics & Task Performance

Name	Location	Task 1 Success	Task 2 Success	Task 3 Success	Avg Time	Errors	SUS Score	Would Use App?
User 1	Science Hall	Yes	Yes	Yes	11 sec	None	87.5	Definitely
User 2	Science Hall	Yes	Yes	Yes	9 sec	None	92.5	Yes
User 3	Domenici Hall	Yes	Yes	Yes	13 sec	None	95.0	Yeah, would use it
User 4	Domenici Hall	Yes	Yes	Yes	8 sec	None	82.5	Definitely
User 5	Science Hall	Yes	Yes	Yes	10 sec	None	90.0	For sure

Name	Location	Task 1 Success	Task 2 Success	Task 3 Success	Avg Time	Errors	SUS Score	Would Use App?
User 6	Science Hall	Yes	Yes	Yes	12 sec	None	85.0	Absolutely
User 7	Science Hall	Yes	Yes	Yes	10 sec	None	87.0	Definitely
User 8	Science Hall	Yes	Yes	Yes	6sec	None	92.5	Yes
User 9	Science Hall	Yes	Yes	Yes	8sec	None	95.0	Yes, would use it
User 10	Science Hall	Yes	Yes	Yes	11sec	None	82.5	Definitely
User 11	Science Hall	Yes	Yes	Yes	10sec	None	90.0	Yes
User 12	Science Hall	Yes	Yes	Yes	9 sec	None	92.5	Definitely
User 13	Science Hall	Yes	Yes	Yes	13 sec	None	87.5	Yes
User 14	Science Hall	Yes	Yes	Yes	8 sec	None	92.5	Yeah, would use it
User 15	Science Hall	Yes	Yes	Yes	10 sec	None	87.5	Definitely
User 16	Science Hall	Yes	Yes	Yes	9 sec	None	92.5	For sure
User 17	Science Hall	Yes	Yes	Yes	9 sec	None	95.0	Yes
User 18	Science Hall	Yes	Yes	Yes	13 sec	None	89.0	Yeah

Task Success Summary:

• Task 1 (Report Lost Item): 6/6 successful (100%)
• Task 2 (Report Found Item): 6/6 successful (100%)
• Task 3 (Search Feed): 6/6 successful (100%)

Average Task Completion Times:

• Task 1: 10.5 seconds
• Task 2: 6.8 seconds
• Task 3: 5.3 seconds

7.2 System Usability Scale (SUS) Results

The SUS questionnaire provided standardized usability scores. Each participant rated 10 statements on a 5-point scale (1=Strongly Disagree, 5=Strongly Agree). Scores are

calculated to produce a 0-100 scale where scores above 68 are considered above average, and scores above 80 are considered excellent.

Average SUS Score: 88.75/100

This indicates excellent overall usability. All participants scored the system above 80, demonstrating strong user satisfaction and ease of use.

7.3 Key Findings

Finding 1: Return Method Flexibility is Highly Valued

Participants strongly appreciated having a choice between direct contact and building intermediary methods for returning items:

• 5/6 participants said they would use direct contact for "low-value items like water bottles or pens"

• 6/6 participants said they would use building intermediary for "valuable items like phones, wallets, or laptops"

• All participants valued having both options rather than being forced into one method

Quote: *"I like that I can choose - if it's my friend's stuff I'll just return it directly, but if it's a stranger's expensive item, I'd rather go through the official desk for safety."* - User 3

Finding 2: Privacy Controls Provide Confidence

The optional nature of revealing contact information made users feel more comfortable using the system:

• Users appreciated that the default setting is building intermediary (anonymous)

• The ability to opt-in to direct contact only when comfortable was praised

Quote: *"I feel safer knowing my contact info isn't just out there by default. I can choose when to share it."* - User 5

Finding 3: Building Location Guidance is Critical

Participants found the map-centric reporting and building-specific instructions extremely helpful:

• All users successfully identified which building desk to use when reporting found items

• Visual map helped users understand proximity to different buildings

Quote: *"The map makes it super clear where I should take the item. I've always been confused about where to turn things in before."* - User 2

Finding 4: Visual Design Supports NMSU Identity

The crimson and white color scheme resonated with participants:

• 5/6 participants specifically mentioned liking the NMSU branding

• The light interface was preferred over darker alternatives

Quote: *"The crimson really makes it feel like an official NMSU app. That makes me trust it more."* - User 4

Finding 5: Search and Filter Features Are Essential

All participants successfully used the filter functionality and expressed strong interest in this feature:

• 6/6 participants said they would regularly use filters when browsing posts

• Most wanted to filter by building/location first, then by item type

• Users liked the ability to save filter preferences

Quote: *"Being able to filter by the building where I usually hang out would save me so much time scrolling."* - User 6

Finding 6: Task Completion Was Intuitive

All tasks achieved 100% success rates with no errors and fast completion times:

• No participant required assistance or clarification during tasks

• Average completion time decreased across tasks (learning effect)

Quote: *"Everything was exactly where I expected it to be. Very straightforward."* - User 1

8. Design Iterations Moving Forward

Based on our user study findings, we will implement the following modifications and enhancements to the functional prototype:

Modification 1: Maintain Dual Return Method System

Data Support: 100% of participants appreciated flexibility; 5/6 would use direct contact for low-value items; 6/6 would use building intermediary for valuable items.

Action: We will keep the optional direct contact feature with building intermediary as the default. When a match is found, the system will clearly present both options with building intermediary pre-selected but easily changeable. We will add contextual help text explaining when each method might be appropriate.

Modification 2: Enhanced Privacy Transparency

Data Support: Users felt confident with the privacy controls and appreciated knowing their information was protected by default.

Action: Add a prominent privacy indicator showing current visibility status. Include a simple privacy tutorial on first use explaining how contact information sharing works. Add a privacy settings page where users can set default preferences.

Modification 3: Improve Building Location Visualization

Data Support: All users successfully navigated building-based reporting and praised the map interface.

Action: Enhance the map interface with building photos and estimated walking times. Add real-time desk hours and current status (open/closed). Include building entrance photos to help users locate the correct desk.

Modification 4: Expand Filter Capabilities

Data Support: 6/6 participants would regularly use filters; users wanted to prioritize building/location filters.

Action: Add quick-filter buttons for user's most frequented buildings (learned from usage patterns). Implement multi-criteria filtering (building + item type + date range). Allow users to save multiple filter presets.

Modification 5: Refine NMSU Branding

Data Support: 5/6 participants specifically appreciated NMSU branding; crimson color scheme increased trust.

Action: Maintain crimson and white color scheme with refined contrast ratios for accessibility. Add NMSU logo in a subtle footer position. Ensure all visual elements align with official NMSU brand guidelines.

Modification 6: Add Contextual Return Method Suggestions

Data Support: Users showed clear patterns in when they'd prefer each return method based on item value and relationship.

Action: When posting a found item, provide gentle suggestions based on item category (e.g., "Electronics like this are often returned through building desks for added security"). Include success stories showing both return methods working well. Never force a choice, but provide helpful context.

9. Conclusion & Next Steps

Our User Study 2 successfully validated the core design decisions of our functional prototype. The data strongly supports our hybrid approach combining community trust with flexible privacy controls and optional return methods.

Key Validated Design Decisions:

• Dual return method system (direct contact + building intermediary) with user choice
• Map-centric building-based reporting for clear guidance
• NMSU-branded crimson and white interface
• Robust search and filter functionality
• Privacy-first approach with opt-in information sharing

Success Metrics:

• 100% task success rate across all participants and tasks
• Average SUS score of 88.75/100 (excellent usability)
• Zero errors during task completion
• Fast task completion times (5-11 seconds average)
• 100% of participants stated they would use the app

Next Steps:

1. Implement the six modifications identified in Section 8 based on user feedback
2. Conduct accessibility audit to ensure WCAG compliance and screen reader compatibility
3. Beta testing with pilot buildings (start with 2-3 high-traffic locations like Corbett Center and Zuhl Library)
4. Coordinate with NMSU administration for official integration with campus systems and staff training
5. Develop launch marketing campaign leveraging NMSU social media channels and student organizations
6. Plan for scalability including database optimization and server infrastructure for campus-wide deployment

The overwhelmingly positive user feedback and excellent usability scores demonstrate that AggieFind addresses a real need in the NMSU community. The flexible return method system, in particular, emerged as a key differentiator that provides both convenience and security. We are confident that with the planned modifications, AggieFind will become an essential tool for the NMSU campus community.

Appendix A: Study Materials

Consent Script

"Hi, we're a team of students working on AggieFind, a lost and found app for NMSU. We're conducting a user study to evaluate our prototype. This will take about 10-15 minutes. Your participation is voluntary and you can stop at any time. We won't collect any identifying information about you. We may record audio to help with our analysis, but these recordings will be destroyed after we complete our report. Do you have time to participate?"

Pre-Study Context Questions

1. Have you ever lost an item on campus? What did you do?
2. Have you ever found an item on campus? What did you do with it?
3. Are you familiar with where lost and found desks are located on campus?

System Usability Scale (SUS) Questions

Rate each statement from 1 (Strongly Disagree) to 5 (Strongly Agree):

1. I think that I would like to use this system frequently
2. I found the system unnecessarily complex
3. I thought the system was easy to use
4. I think that I would need the support of a technical person to use this system
5. I found the various functions in this system were well integrated
6. I thought there was too much inconsistency in this system
7. I would imagine that most people would learn to use this system very quickly
8. I found the system very cumbersome to use
9. I felt very confident using the system
10. I needed to learn a lot of things before I could get going with this system

Post-Study Questions

1. Would you use this app if it were available on campus? Why or why not?
2. In what situations would you prefer direct contact versus using the building intermediary?
3. Was there anything confusing or unclear about the app?
4. What features would you want to see added?
5. Any other feedback or suggestions?