Star River Notes 2.0 – Evaluation Report

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# 1. Objectives and Validation Metrics

The second round of evaluation aimed to verify improvements made in Star River Notes 2.0 after the first usability test. The updated objectives were:  
- O1 Usability/Learnability: Can participants complete “locate and link nodes” efficiently without ESC-based mode switching?  
- O2 Navigation & Understanding: Can participants identify a target node and describe its neighbors accurately?  
- O3 Structural Understanding/Load: Does the updated spatial layout reduce cognitive burden and enhance comprehension?  
- O4 Interaction Clarity: Are the revised single/double/right-click interactions and direct editing more intuitive?  
- O5 Functional Completeness: Can participants store, retrieve, and manage content using newly implemented features?

# 2. Prototype Iteration Summary

Completed improvements:  
- Simplified editing: removed ESC dependency, enabled direct edit-on-click.  
- Unified click logic to avoid confusion.  
- Added drag-and-drop support and customizable number of nodes.  
  
Not yet implemented:  
- Visual highlight for selected nodes.  
- Undo/delete functions.  
- Hover-based preview of node content.

# 3. Results

From five participants:  
- Task completion: All participants successfully located and linked nodes within the expected timeframe.  
- Navigation: Nodes could be located and neighbors described, though issues arose when nodes generated below ground level, making them inaccessible.  
- Interaction: Direct editing and unified click logic were praised, but absence of in-app guidance/tutorials caused initial confusion (participants did not know which keys triggered which functions).  
- Functionality: Dragging and node customization worked well. Missing highlight/undo/preview features were noticed but did not block core tasks.

# 4. SUS Questionnaire Results

Raw scores (5 participants, 10 items each):  
1. P1: 4 4 5 4 5 4 4 4 4 4  
2. P2: 3 2 3 3 2 4 2 4 2 3  
3. P3: 4 2 3 2 3 4 3 3 2 2  
4. P4: 4 3 4 3 2 3 2 3 3 3  
5. P5: 3 2 2 3 3 4 2 4 3 2  
  
Converted SUS Scores (0–100 scale):  
- P1: 82.5  
- P2: 40.0  
- P3: 47.5  
- P4: 57.5  
- P5: 47.5  
  
Average SUS Score: 55.0  
  
Interpretation: The score reflects 'OK but needs improvement' usability, showing notable gains compared to Iteration 1 but still below the industry benchmark of 68.

# 5. Analysis / Insights

Strengths:  
- Removal of ESC switching significantly reduced frustration.  
- Unified click logic increased intuitiveness.  
- Drag-and-drop and node customization supported exploratory use.  
  
Weaknesses:  
- Onboarding/Guidance Gap: Without built-in instructions, new users struggled with knowing how to interact.  
- Ground-level Bug: Nodes spawning below the floor could not be interacted with, disrupting navigation.  
- Lack of visual highlights and undo/preview features limited clarity and control.  
  
User Perception:  
- Some participants praised the immersive nature and felt progress compared to 2D.  
- Others still found the 3D layout inefficient for quick retrieval.

# 6. Evaluation of Aims

- O1 Usability: Achieved – tasks completed efficiently without ESC reliance.  
- O2 Navigation: Partially achieved – ground-level bug caused accessibility issues.  
- O3 Structure/Load: Partially achieved – cognitive load reduced, but missing guidance increased effort.  
- O4 Interaction Clarity: Mostly achieved – new click logic praised, but absence of highlights caused errors.  
- O5 Functionality: Partially achieved – storage and customization worked, but undo/preview still missing.

# 7. Concept Iteration – Next Steps

- Implement in-app tutorial or guidance overlay.  
- Add highlight feedback for selected nodes.  
- Introduce undo/delete and hover-preview features.  
- Fix node generation bug (prevent below-ground placement).  
- Re-test with a larger and more diverse participant group.

# 8. Reflection

The second evaluation confirmed that iteration improved usability, but also revealed the importance of onboarding and error-prevention mechanisms. Star River Notes 2.0 demonstrates progress toward an intuitive spatial note-taking tool, but further refinements in feedback and guidance are needed before it can achieve higher usability ratings.