

# Usability Report AssertTrue

A review of At The Maze

AssertTrue

Marco Hernandez  
Roland Leferink

Joren Vrancken  
Gijs Hendriksen

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## Introduction

We have tested the app of the Research and Development group ATM. The group made a puzzle game involving a maze. Besides a maze, the puzzle game also includes enemies, locked doors and boxes.

When the group shared their APK with us, it was accompanied with the following e-mail:

*“The app only works on an Android phone running Marshmallow.  
Showing the tiles correctly only works on a certain resolution.  
The app is created to properly work on a Nexus 4 running Marshmallow.  
It is also possible to play on a OnePlus 1, but only if it is running Marshmallow and  
in Display & Lights options the LCD Density is set to 320 DPI. This does not fill the  
whole playing field, but it makes everything visible.  
We do not know if the app works on any other phone running Marshmallow.  
Please keep these points in mind when testing.”*

Luckily one of the researchers (Joren Vrancken) had a Nexus 4 phone at home, thus we would be able to test the app in an optimal real life setting. For this report, the phone got a completely fresh install of Android M.

Our test subjects are:

Test subject 1: Wietze Mulder  
Test subject 2: David Korsman  
Test subject 3: Caja Sieben

From here on forth, we will only refer to them using Test subject 1-3.

All our tests and communication with the other groups were in Dutch. But for this report we translated them to English. The original test data is included in an appendix.

## Method

We came up with the following test objectives:

- Is the game easy to understand?
- Is the game easy to play?
- Is the game entertaining/hard enough?
- Is the tutorial helpful?

From these objectives we derived the following 3 scenarios:

- 1) Read the instructions and play Level 1.
- 2) Read the instructions and play Level 2.
- 3) Do not read the instructions, but start playing immediately.

Test subject 1 tested scenario 1, test subject 2 tested scenario 2, and test subject 3 tested scenario 3.

To construct a complete usability report of this app, we used two commonly used techniques for testing:

- **Thinking-aloud**

With this method, we asked each test subject to test their scenario, and express their thoughts vocally. This gave us a lot of insight in their thoughts and handlings while using the app. We recorded the thinking aloud tests using one of our phones.

- **Stimulated recall interview**

After all testing had been done, we discussed the problems that each test subject had encountered, and based our questions around these issues. We each sat down with a different test subject, and interviewed them using these questions, and noted the answers.

The questions we came up with were:

1. What is the goal of the app?
2. Did you enjoy the game?
3. Does the game work well?
4. Would you recommend this game to family or friends?
5. Do the instructions help your understanding of the app?
6. Is there anything else you would like to add?

Roland Leferink recorded the test subjects while Gijs Hendriksen en Joren Vrancken took notes of the test subjects (Marco, unfortunately, could not attend).

After each test subject played the game for approximately 3 minutes, we individually interviewed them. Test subject 1 was interviewed by Roland Leferink, test subject 2 was interviewed by Gijs Hendriksen and test subject 3 was interviewed by Joren Vrancken.

## Results

### Thinking-aloud

This is only a small excerpt from our original notes, but these were the most telling.

#### Test subject 1

- After reading the tutorial and starting the game, test subject 1 said “What should I do?”.
- After waiting a while and clicking a lot on the screen, test subject 1 said “Is anything going to happen?”
- After playing a while, test subject 1 said, “What? I moved but now I’m not able anymore.”
- During his game, the app crashed multiple times. At the end of his game he said, “Crash number 3” and stopped playing.

#### Test subject 2

- While reading the tutorial test subject 2 said, “Their English is not very good”.
- While coming across a bug of a disappearing a door, test subject 2 said “This should not be disappearing”
- After playing for 3 minutes, test subject 2’s final remarks, “I expect the app to quickly respond, the app is very slow and riddled with bugs”.

#### Test subject 3

- At the beginning of the game test subject 3 said, “Nothing is happening”.
- After doing her first step in the game, test subject 3 said “Oh wow I moved!”.
- After unlocking her first door, test subject 3 said “I can pickup stars!”.
- During playing test subject 3 said, “I do not really understand what the goal of the game is”.
- Unfortunately, test subject 3 experienced 2 crashes while playing the game. The first time her comments were, “Wow wow wow crash”. After the second crash she said “And the game crashed again”.

## Interviews

### What is the goal of the app?

Test subject 1: Reaching the finish is usually the goal, but it’s not quite clear.

Test subject 2: I think I have to reach the finish, but it is not really clear.

Test subject 3: To collect as many stars as possible.

### Did you enjoy the game?

Test subject 1: No, the app did not work well.

Test subject 2: Not really, the response time was too long.

Test subject 3: The idea is fun.

### Does the game work well?

Test subject 1: No, the controls did not work. In three minutes, I had taken two steps and crashed thrice.

Test subject 2: No. Boxes disappeared? It crashed, is vague and contains weird symbols. And it's really slow.

Test subject 3: No!

### **Would you recommend this game to family or friends?**

Test subject 1: I would not, since it does not work.

Test subject 2: No.

Test subject 3: Only to mess with them.

### **Do the instructions help your understanding of the app?**

Test subject 1: They are not necessary, but can be useful.

Test subject 2: A little.

Test subject 3 was not asked this question, as they did not read the instructions.

### **Is there anything else you would like to add?**

Test subject 1: -

Test subject 2: -

Test subject 3: I would not have handed the app in like this.

## **Conclusion**

From these test results, we drew a conclusion regarding our objectives.

### **Is the game easy to understand?**

After reading the tutorial, test subject 1 expressed that he did not know what to do. Also, test subject 3 thought she could grab “stars”, which were actually buttons. Furthermore, she thought the goal was to collect as many of these stars as possible. The other test subjects assumed the goal of the game was to reach the finish, but they were not quite sure.

From this, we can conclude that the game itself is not quite self-explanatory. After a bit of playing, the test subjects understood how to play the game, but the goal was not extremely clear. Having played games like this one before, some were able to guess the goal, but the game itself did not make this clear.

The controls were easy to understand, though, and even test subject 3, who did not read the tutorial, discovered them immediately.

### **Is the game easy to play?**

Even though the controls were intuitive, and two of the three test subjects understood the goal of the app, they were all confused as to how the game worked. All of them thought that the app responded very slowly, and that moving around was a bit buggy. Also, some of the textures disappeared and then reappeared, which was a cause for some confusion.

On top of that, both test subject 1 and test subject 3 have had the app repeatedly crash on them, which makes the app not very playable. Both this and the slow or even absent response, made the game unplayable for two of the test subjects. The last one, test subject 3, got quite far until the app crashed. Thus, in the end, the game is not really easy to play, or playable at all.

## **Is the game entertaining/hard enough?**

The app only functioned whilst test subject 3 was playing. Test subject 1 and test subject 2 were not quite able to play the game. Test subject 1 was not able to move the player. Game crashes are frequent enough that most players will likely encounter them on their first playthrough of the game. All progress is lost upon a crash, forcing a player to replay parts of the game, detracting from their enjoyment of the game. We were not able to test whether the game was sufficiently challenging, because none of our test subjects got far enough in the game to be puzzled by it. For test subject 1 the problem was not being able to move at all, for test subject 2 the problem was a door that he opened but it kept reappearing in the game. Test subject 3 did play a large part of the first level, but did not understand the goal of the game, and thus did not try to find the way out of the maze. While the app might become entertaining when these issues have been addressed, it is simply not stable enough to be playable current state.

## **Is the tutorial helpful?**

Tests subjects one and two read the tutorial. Neither of them seemed to understand the goal of the app from reading afterwards, but they guessed what the goal is from the context (maybe the title helped in that regard). Test subject 3, who did not read the tutorial, figured the goal of the game was collecting stars.

Even though test subject 1 did not get the goal of the app, he claimed the information given in the tutorial was not necessary. All test subjects agreed the tutorial itself was poorly written. Not only in the information it provides, but also its wording and vocabulary. We concluded that a tutorial is necessary (as the game interface is not intuitive enough to be understood on its own by most players), but that the current tutorial is not good enough at conveying the goals (and subgoals) of the app.

## **Discussion**

First, the fact that the app can only run on very specific devices with very specific settings is unpractical. Even in the optimal environment in which we tested (the only supported device with a fresh install of the only supported Android version), the app did not seem to work properly. The app suffers from frequent crashes and other bugs that interfere directly with core gameplay. None of our test subjects thought the game was playable, let alone enjoyable.

One comment by test subject three is particularly telling: “The idea is fun”. The premise of the puzzle, a maze game with enemies, traps, treasures and other features, sounds interesting and quite entertaining. The implementation of the idea, however, is not satisfactory. The tutorial falls short and the game is not in a playable state.

## **Bugs discovered by the researchers**

We ourselves, of course, also tried to play the game when it was sent to us.

While playing and spending time with the game, we found some bugs the test subjects did not find.

- The back button does not work properly in combination with the back button of the app itself. The pure existence of this implemented back button can be cause for confusion, and it is frankly unnecessary.
- On some occasions the sound did not work.
- On some phones, when the home button is pressed, the sound keeps playing outside of the game.

- When the user leaves the app, but keeps it running (i.e. when the screen turns off or the home button is pressed), the level resets.

## **Future Development**

First of all, the bugs should be fixed. The app should become playable and not crash every so often. Beside the crashes, the response time and the disappearing doors are top priority bugs.

When the bugs are fixed, the tutorial should be rewritten. The tutorial is not really helpful, as our tests show. A longer and more complete tutorial would be nice. An improvement in the quality of the English would also be nice. Maybe even an interactive tutorial, in which the player learns to play the game whilst playing.

Once those improvements are made, more features could be added. More supported devices and more levels are features that would improve the app.

More features in the game itself would also be good. Different types of enemies, more types of traps would make the game more fun.

# Appendices

## Notes by researches

The following are the notes that were taken by our researchers during the test. They describe the most important moments in testing the apps, and record the most significant comments made by the test subjects. These are untranslated and are mentioned in this report to clear up points.

### Joren's Notes

#### Test Subject One

- Horizontaal
- Zwart scherm
- Doel? Instructie
- De game crashte voor de derde keer.
- "Ruk spel"

#### Test Subject Two

- Slecht Engels
- Vast lopen
- Onduidelijk
- Response time
- Response time 5 sec+ ?
- Onzichtbaar slotje
- Traag
- Bugs
- Laggy

#### Test Subject Three

- Meteen spelen
- "Er gebeurt niets"
- Crash (tweede keer)
- Nu lukt het weer wel om te lopen
- Traag
- "Wat is nou het doel?"
- "Wat moet ik doen"
- Het spel geeft geen reactie

## **Gijs' Notes**

### **Test Subject One**

- Scherm ging zwart, de proefpersoon is geïrriteerd; “dat is kut”
- “Wat moet ik doen?”; doel niet duidelijk
- Starten duurt lang
- Gebeurt niks
- Crash (tweede keer)
- Controls reageren niet goed (vijfde keer)
- App reageert niet
- Het lijkt dat de tester niet meer verder wil: “Rukspel”

### **Test Subject Two**

- Engels niet goed, leidt af
- Poppetje niet duidelijk in het begin
- Icons niet duidelijk na tutorial
- Niet duidelijk wat er precies gebeurt
- Controls reageren traag of helemaal niet
- Heel traag (3x)
- Onzichtbare muren, etc.
- Buggy

### **Test Subject Three**

- Redelijk lang wachten
- Er gebeurt niets
- Crash (2x)
- Hij doet het gewoon
- Traag
- Doel niet duidelijk
- Doel eindelijk duidelijk
- Lopen reageert niet
- Rage mode activated

## **Interviews with test subjects**

These are the interviews with the test subjects that were held after the test. Again, these are the untranslated versions. The most important results have been translated for this review.



## **Gijs' Interview with Test Subject Two**

Question: Wat is het doel?

Answer: Om het doel te bereiken, denk ik. Doel niet duidelijk.

Question: Is het spel leuk?

Answer: Niet echt, te langzaam

Question: Werkt het spel goed?

Answer: Nee, niet echt. Blokken verdwijnen. Crashes, vaagheid, aparte symbooltjes. En het is traag!

Question: Zou je het spel aan familie en vrienden aanraden?

Answer: Nee.

Question: Helpen de instructies?

Answer: Een beetje.

## **Roland's Interview with Test Subject One**

Question: Wat is het doel?

Answer: De finish halen dat is meestal het doel maar niet duidelijk.

Question: Is het spel leuk?

Answer: Nee, het werkt niet goed.

Question: Werkt het spel goed?

Answer: Nee, besturing werkte niet (3 minuten 2 stappen 3 crashes).

Question: Zou je het spel aan familie en vrienden aanraden?

Answer: Nee, het werkt niet.

Question: Helpen de instructies?

Answer: Niet nodig, wel handig.

## **Joren's Interview with Test Subject Three**

Question: Wat is het doel?

Answer: Sterren verzamelen.

Question: Is het spel leuk?

Answer: Het idee is leuk.

Question: Werkt het spel goed?

Answer: Nee!

Question: Zou je het spel aan familie en vrienden aanraden?

Answer: Alleen om te trollen.

Question: Heb je nog iets wat je wil zeggen?

Answer: Ik zou de app niet zo hebben ingeleverd.