

# Smartphone-based excursions: On the road with *Actionbound*

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# What is *Actionbound*?

A tool to design self-guided excursions and interactive guides that can be played on a smartphone.



**Actionbound**  
Mobile learning experience

Create mobile adventures and interactive guides for smartphones and tablets



Create in your browser

[Get started](#)

*PC and mobile devices*

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Play in the app

[Download Actionbound app](#)

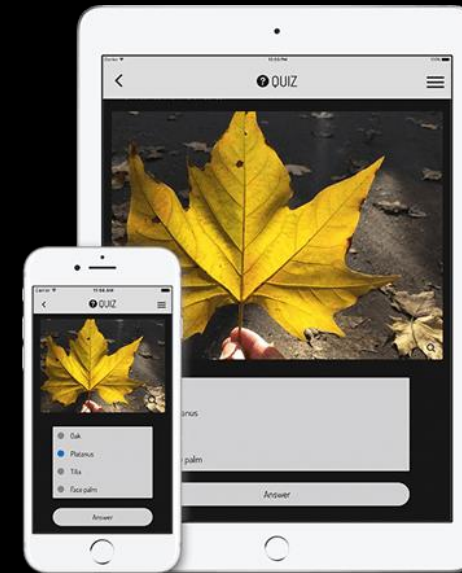
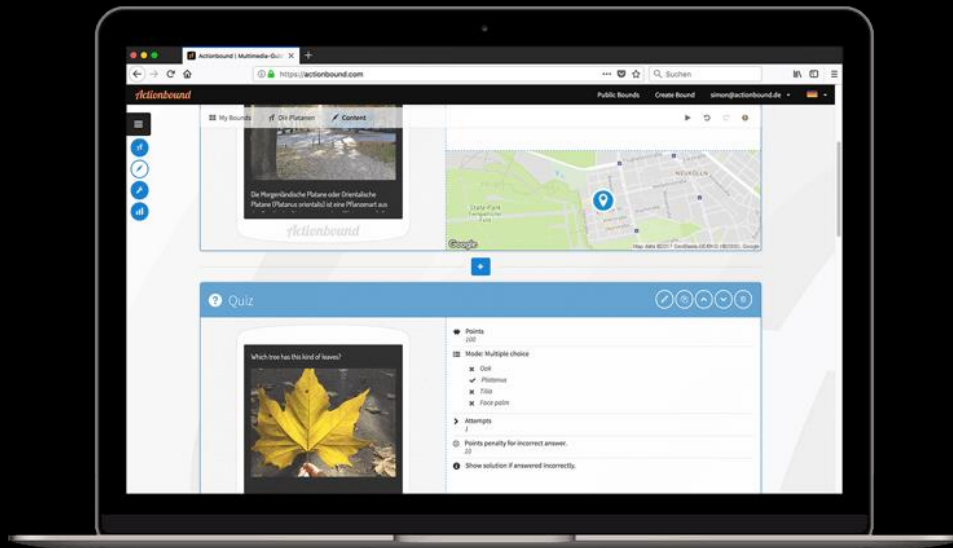
*Android and iOS*



# How does the bound get on a smartphone?

Design on a computer  
actionbound.com

Play in the app  
Free app Actionbound



# Our bounds

## Excursions



Wasser in der Stadt Zürich



Wasser in Baden

## Events and small tours



# Water in the city of Zurich

- Teaching fund project 2020: Self-guided excursions about water in the Swiss cities of Zurich and Baden
- Development started in February 2020
- First application in June 2020 (instead of group excursion that was not possible due to covid)
- Up to now visited by about 400 students



# Water in the city of Zurich

Reasons for a self-guided smartphone-based excursion

- Nobody is standing in the back of the group
- Use of different media types (more difficult in group excursions)
- Direct feedback on exercises and tasks
- No submission and correction of reports required
- Flexible time planning and execution



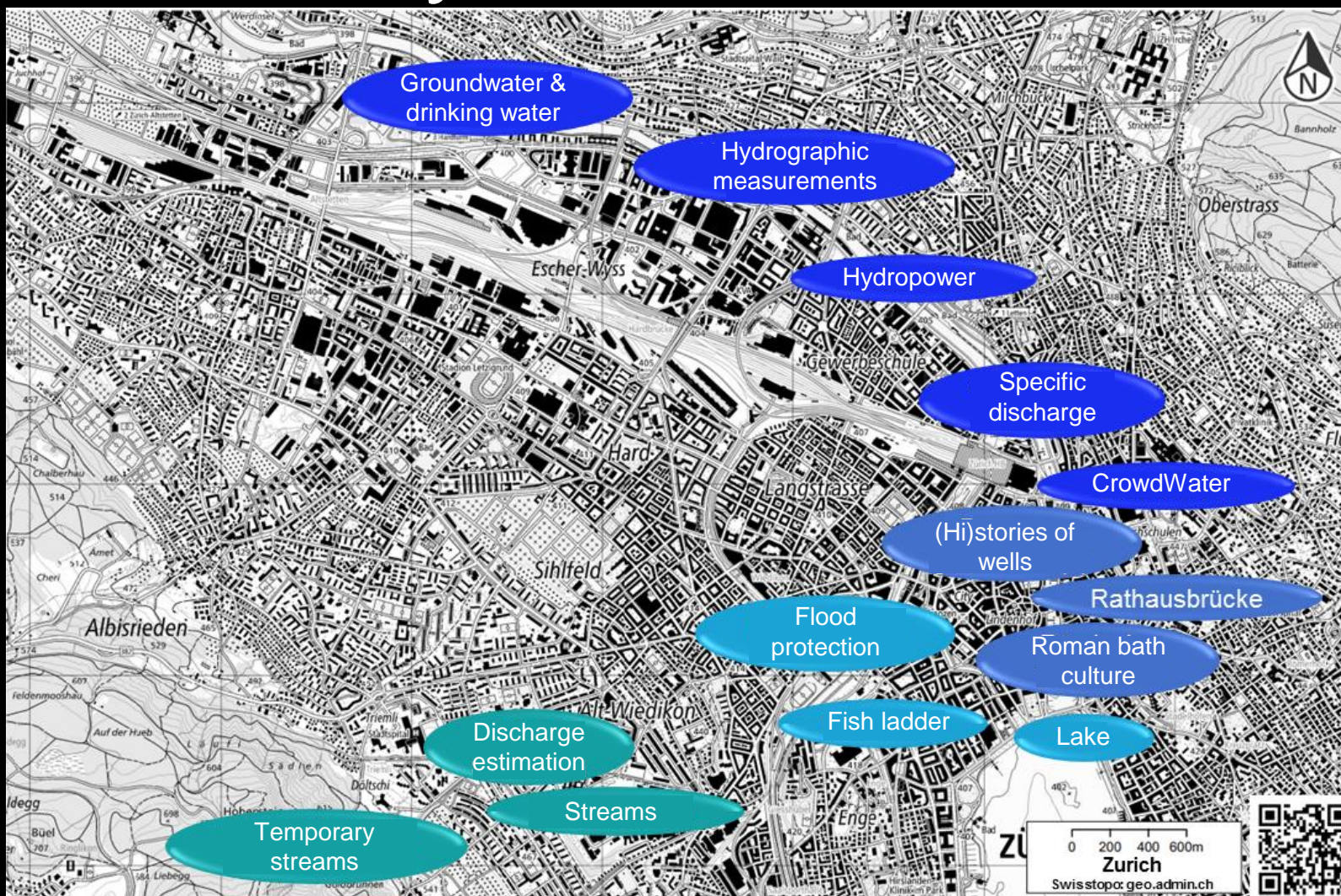
# Water in the city of Zurich

- Four sections, four possible points to start
  - Streams in the city, temporary streams, discharge estimation
  - Lake of Zurich, Schanzengraben, fish ladder, surface water protection act, flood protection
  - Wells, Roman bath culture, important bridges
  - Groundwater and drinking water, hydrometry, hydropower
- About 7 hours (1-day excursion)
  - Individual breaks possible
- Available for the public





# Water in the city of Zurich

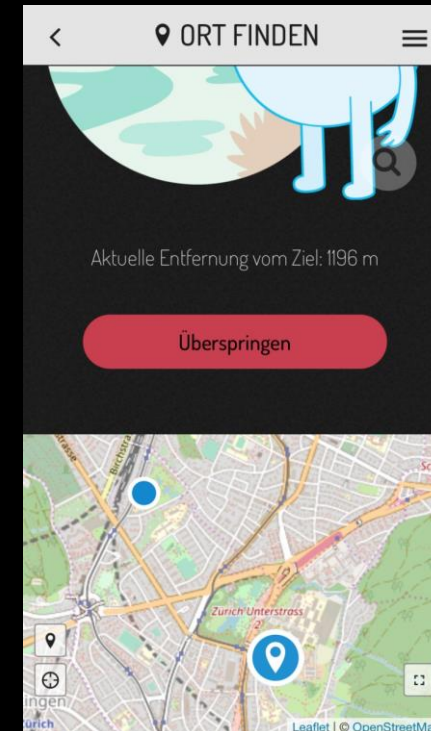


# Possibilities: Find locations

With a directional arrow plus the distance from the target



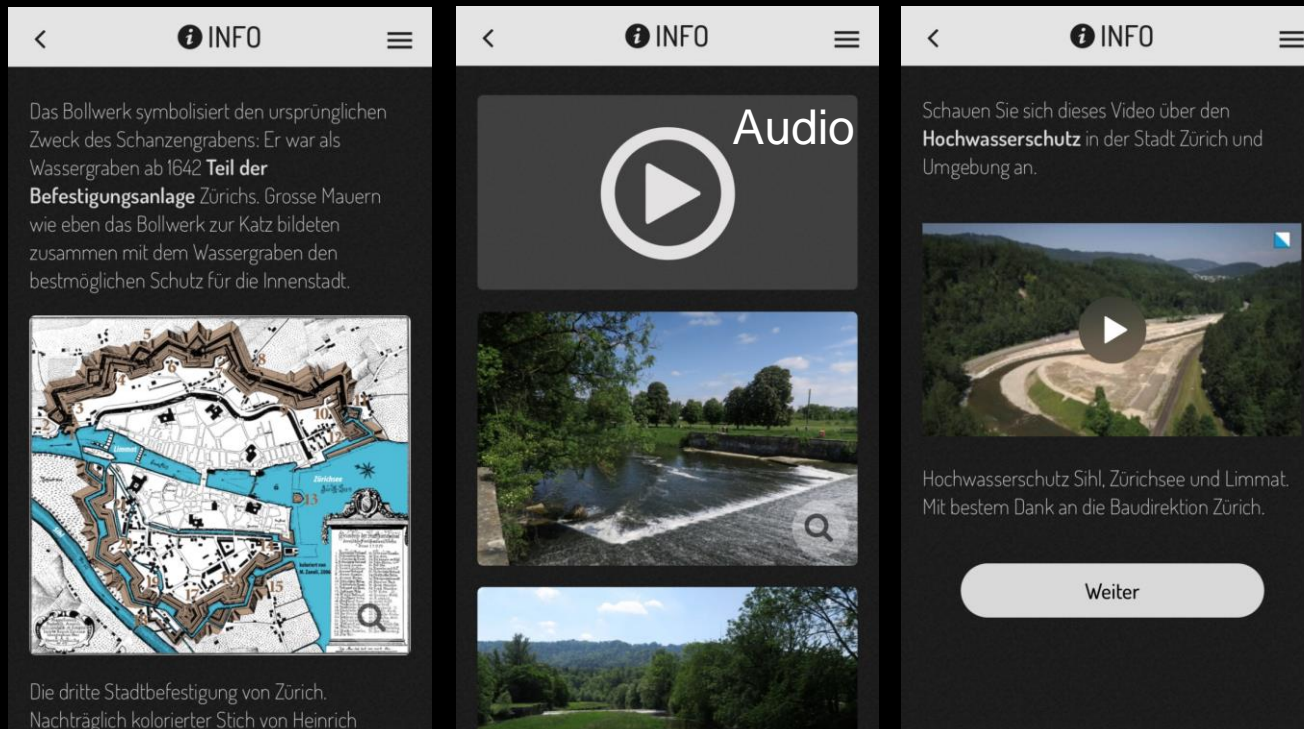
With a map plus the distance from the target





# Possibilities: Texts, pictures, audio and video

Easy to implement using a media folder for different file types





# Possibilities: Quizzes

## Different types of questions

### Multiple choice

< ? QUIZ ≡

max. 50 Punkte

Welche Massnahmen wurden bereits ergriffen oder sind geplant, um das Hochwasserrisiko zu senken?

- ☒ Schwemmholtzrechen bei Langnau am Albis.
- ☒ Sihlseesteuerung optimiert und automatisiert.
- ☐ Vergrösserung der Speicherkapazität des Zürichsees durch Absenkung.
- ☒ Erweiterung der Sihldurchlässe am Hauptbahnhof.

### Single choice

< ? QUIZ ≡

Berechnen Sie die theoretische Verweilzeit des Wassers im Zürichsee. Für das Volumen können Sie die besagten 3.9 Kubikkilometer (entspricht 3'900'000'000 Kubikmetern) verwenden, für den Abfluss 90 Kubikmeter pro Sekunde.

Wie gross ist die Verweilzeit (in Tagen)?

- ☐ rund 100 Tage
- ☐ rund 200 Tage
- ☐ rund 300 Tage
- ☐ rund 400 Tage
- ☐ rund 500 Tage

Beantworten

### Number estimate

< ? QUIZ ≡

max. 50 Punkte


Angenommen, die **Anforderungen für die Länge von Becken** sei an dieser Fischtreppe erfüllt. Wie lange schätzen Sie dann den grössten zu erwartenden Fisch im Schanzengraben in Zentimeter?

90

Beantworten

### Text

< ? QUIZ ≡



Sihlkanal mit heutigem Strassenverlauf. Wikipedia, gemeinfrei.

Uraniastrasse

Fertig

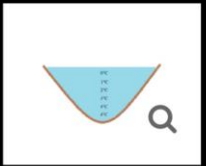

q w e r t z u i o p ü  
a s d f g h j k l ö ä  
y x c v b n m  
123 Leerzeichen

### Sort list

< ? QUIZ ≡

Ordnen Sie die vier Zustände des Sees den vier Jahreszeiten zu. Sortieren Sie die Bilder nach der Reihenfolge **Sommer - Herbst - Winter - Frühling**.

Wenn ein See den auf den Bildern dargestellten Zyklus so durchläuft, wäre ein Zufrieren im Winter theoretisch möglich.

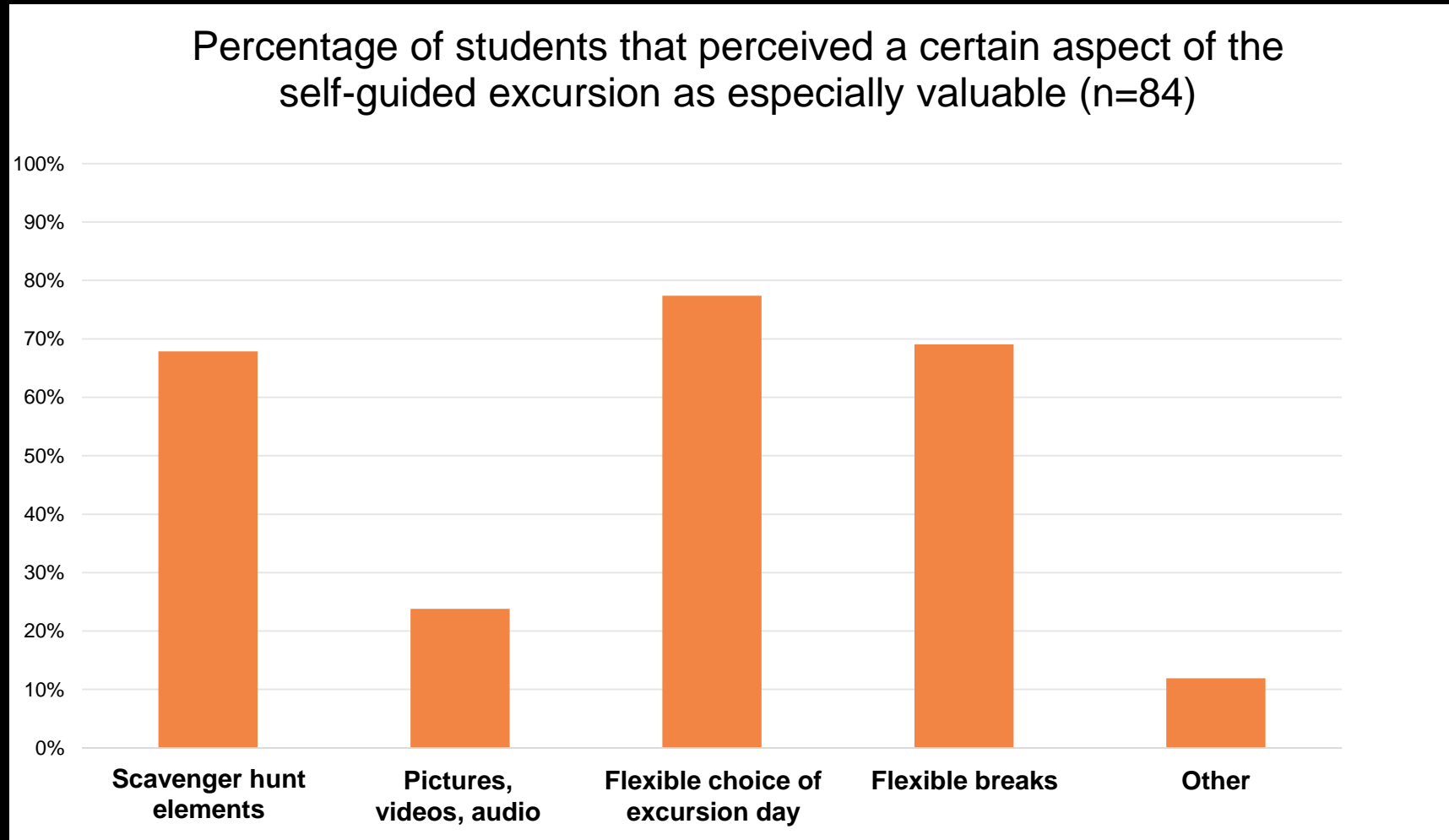
# Feedback from students

Positive feedback:

- Flexible schedule
- Independent thinking
- Innovation and variation
- Intuitive use of the app
- Fun thanks to gamified elements

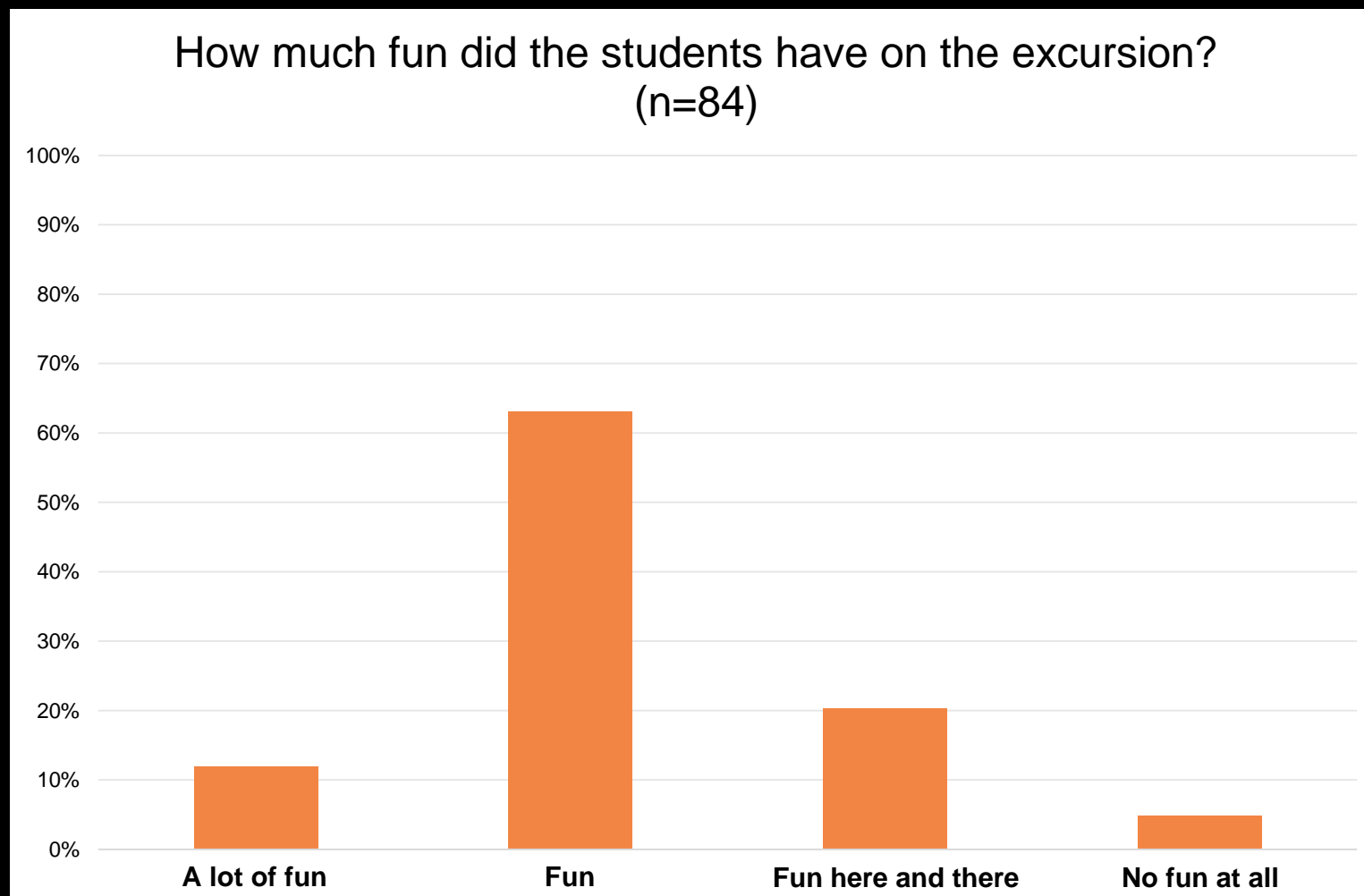


# Feedback from students





# Feedback from students



# Feedback from students

Negative feedback and corresponding improvements:

- A lot to read on the display
  - Long text additionally as a pdf
- Difficulties to find the way
  - A lot of pictures showing the right way
- Issues with the GPS on the smartphone
  - Instead of finding the location, one can upload a picture of the corresponding location
- A lot of time required, exhausting, tired feet, ...
  - Clearer statement on time requirements, walking distance and gear (good shoes, ...)





## Self-Guided Smartphone Excursions in University Teaching—Experiences From Exploring “Water in the City”

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Like many other university teachers, we were faced with an unprecedented situation in spring 2020, when we had to cancel *on-site* teaching and excursions due to the Covid-19 pandemic. However, we were in the fortunate position that we had already started to develop a smartphone-based self-guided excursion on the topic of “Water in the City”. We accelerated this development and used it to replace the traditional group excursion in our

<https://www.frontiersin.org/articles/10.3389/fenvs.2022.875712/full>

Schwarzenbach F. M., Seibert J. and van Meerveld H. J. (2022) Self-Guided Smartphone Excursions in University Teaching—Experiences From Exploring “Water in the City”. *Front. Environ. Sci.* 10:875712. doi: 10.3389/fenvs.2022.875712

More information on the Zurich excursion

<https://www.geo.uzh.ch/en/units/h2k/Learn-about-water/Excursion-Water-in-Zurich-.html>

