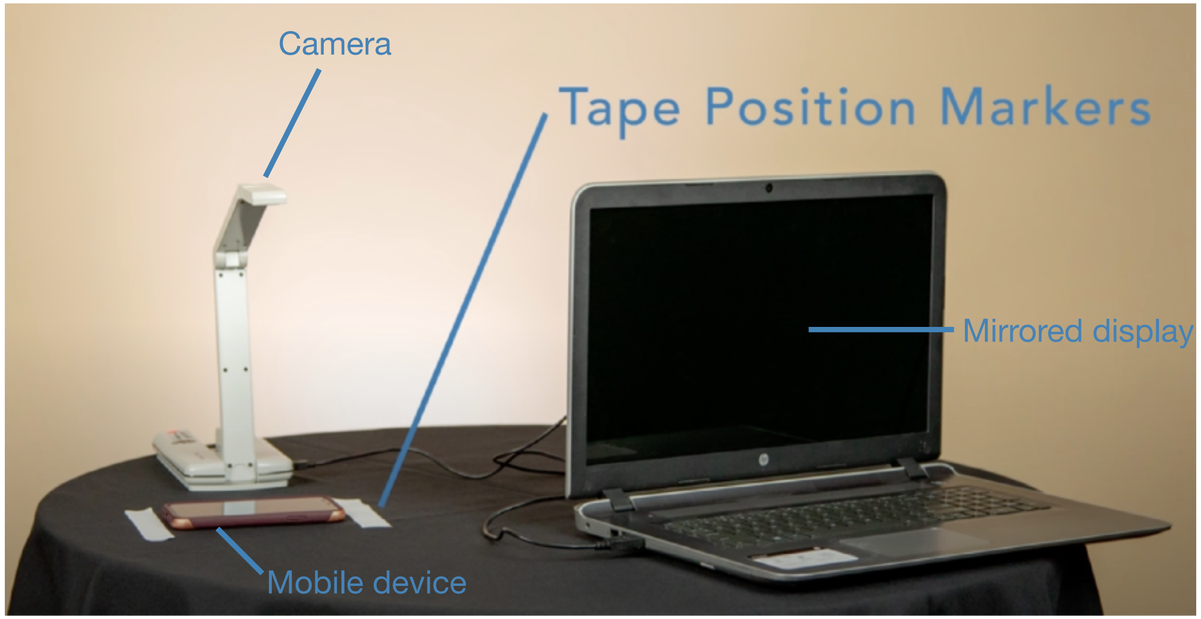
1) Evaluar la usabilidad de un sistema



https://www.youtube.com/watch?v=NdqTbpyvalg

Estudio de usabilidad
Con/Sin “Think Alound Protocol”
(Pensar en voz alta)

NASA Task Load Index

Hart and Staveland's NASA Task Load Index (TLX) method assesses work load on five 7-point scales. Increments of high, medium and low estimates for each point result in 21 gradations on the scales.

Name	Task	Date

Mental Demand — How mentally demanding was the task?
Very Low … Very High

Physical Demand — How physically demanding was the task?
Very Low … Very High

Temporal Demand — How hurried or rushed was the pace of the task?
Very Low … Very High

Performance — How successful were you in accomplishing what you were asked to do?
Perfect … Failure

Effort — How hard did you have to work to accomplish your level of performance?
Very Low … Very High

Frustration — How insecure, discouraged, irritated, stressed, and annoyed wereyou?
Very Low … Very High

System Usability Scale

© Digital Equipment Corporation, 1986.

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

Cuestionarios estandarizados
(SUS, NASA-TLX)

2) Entender las necesidades de los usuarios

Emoji Accessibility for Visually Impaired People

Garreth W. Tigwell
Rochester Institute of Technology
Rochester, NY, USA
garreth.w.tigwell@rit.edu

Benjamin M. Gorman
Bournemouth University
Bournemouth, England, UK
bgorman@bournemouth.ac.uk

Rachel Menzies
University of Dundee
Dundee, Scotland, UK
r.menzies@dundee.ac.uk

ABSTRACT
Emoji are graphical symbols that appear in many aspects of our lives. Worldwide, around 36 million people are blind and 217 million have a moderate to severe visual impairment. This portion of the population may use and encounter emoji, yet it is unclear what accessibility challenges emoji introduce. We first conducted an online survey with 58 visually impaired participants to understand how they use and encounter emoji online, and the challenges they experience. We then conducted 11 interviews with screen reader users to understand more about the challenges reported in our survey findings. Our interview findings demonstrate that technology is both an enabler and a barrier, emoji descriptors can hinder communication, and therefore the use of emoji impacts social interaction. Using our findings from both studies, we propose best practice when using emoji and recommendations to improve the future accessibility of emoji for visually impaired people.

and are used by politicians and government bodies [36, 55], travel companies [54], media outlets, and public figures (e.g., singer Katy Perry who has one of the largest Twitter followings [51]). Emoji have even been discussed within official court transcripts [35], and resulted in convictions [23].

People interpret emoji differently, and emoji design variations across different platforms (e.g., iOS vs Android) can exacerbate misunderstandings [45, 64]. Furthermore, emoji are often used beyond their original intended meaning, which adds another layer of complexity to disambiguating the intended use of an emoji [64, 74]. Prior research on emoji has largely focused on those with typical vision. However, it is estimated that 36 million people worldwide are blind and 217 million have a moderate to severe visual impairment [73]. Prior work highlighted challenges visually impaired people face when using technology [7] and social media [22, 49]. However, it is not clear what accessibility challenges occur with emoji.

Poor Use in Context: Our participants highlighted that emoji used in different contexts can lead to specific challenges. Decorative emoji, e.g. emoji in usernames on social media, caused challenges as many decorative emoji could be announced by a screen reader. An example of this is shown in Figure 2.A.

P7: *"Try listening to 'cat with heart shaped eyes fireworks sparkles watermelon kissing face flag of Andorra' a few times in a row and you get the frustration."*

Visual Design: Emoji design also caused challenges for 22% of the participants. For participants who had some residual vision, this was often related to the use of colour such as P6 who described that *"the colors of the heart [emoji] can be too similar."*. For blind participants, differences between design of the visual emoji and the description were challenging:

P28: *"Some emoji [are] useless or just have a bad design (I was told the 'pray' emoji [🙏] is actually a 'high five')."*

Misunderstanding: This relates to the use of visual representations of things that blind users had not experienced. This sometimes made it difficult to select an emoji.

P38: *"...I entered the word 'happy', and it suggested many faces, which were all described to me; however, as I have never had vision, I was unable to know which face was the most appropriate for my situation."*

Entrevistas semi-estructuradas

Cuestionarios