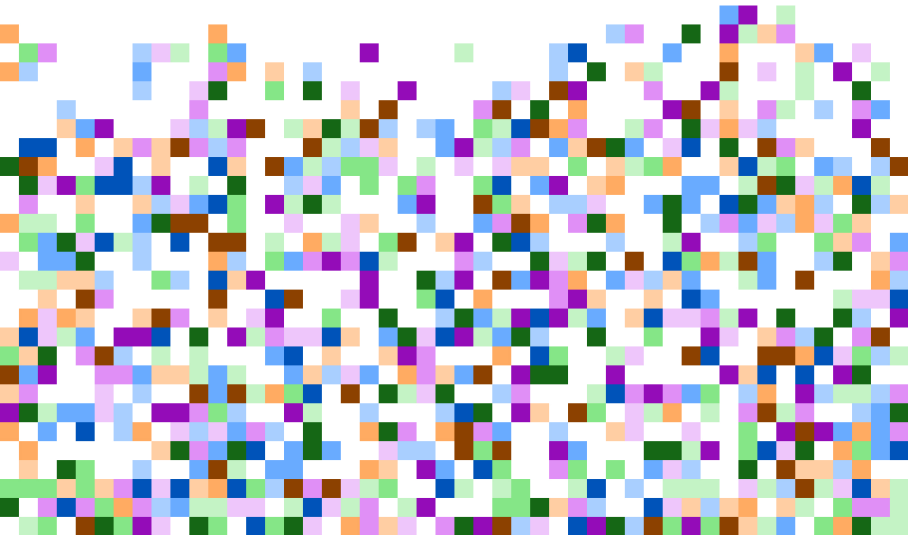
ARRAY OF BARRIERS

Compendium Booklet

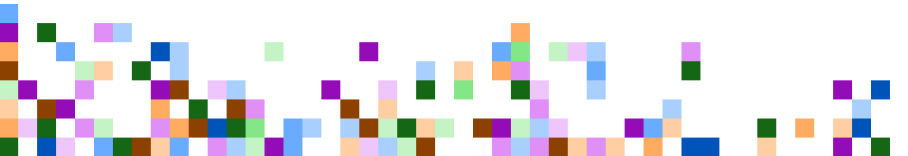


INDEX OF CARDS

All included 43 *Barrier Cards*:

INPUT Barriers

GAMEPLAY Barriers



VIDEO Barriers

- **Clear & Large Text** 3.1.26
- **Subtitles & Captions** 3.2.27
- **Visual Cues** 3.3.28
- **Distinct Interactivity** 3.4.29
- **Contrast Settings** 3.5.30
- **Colour Perception** 3.6.31
- **Motion & Camera** 3.7.32
- **Different Displays** 3.8.33
- **Text Chat & Speech-to-Text** 3.9.34
- **Sensitive Content** 3.10.35
- **Sign Language** 3.11.36

AUDIO Barriers

- **Separate Volume Controls** 4.1.37
- **Multiple Audio Channels** 4.2.38
- **Distinct Audio** 4.3.39
- **Audio Cues** 4.4.40
- **Voice Chat & Text-to-Speech** 4.5.41
- **Narrated Screens** 4.6.42
- **Audio Description** 4.7.43

ARRAY OF BARRIERS

TABLE OF CONTENTS

INTRODUCTION

Welcome to the *Array of Barriers*!

The *Array of Barriers* is a tool that helps you **identify accessibility barriers** in your video games and **find solutions** for them. While playing games, players face various challenges and barriers – with the *Array of Barriers*, you can navigate these various barriers and make your games more accessible. This booklet serves as a compendium to your *Barrier Cards*, providing contextual information on accessibility and the cards themselves.

You don't have or can't find your cards?
Use this get to the **digital version** of all cards:

ABOUT ACCESSIBILITY

What exactly is accessibility? What defines a barrier? Why is accessibility important for players with disabilities? Video games have a lot of rules, goals and challenges, but when does such a challenge become a barrier? This chapter offers a brief introduction to these topics and concepts.

1. What is Accessibility?

This refers to the possibility of a wide array of people with different abilities to access objects, services or environments without further modification or outside help. There are four pillars to accessibility which explain this concept a bit more in detail: **perceptibility**, **operability**, **simplicity** and **forgiveness**.

- **Perceptibility**
  This means that everyone can perceive a design through multiple senses and redundant methods. When perception through typical means isn't possible, assistive systems are provided.

  For example, in games, when players see a visual cue, they can also hear a corresponding audio cue or feel it through controller vibration. In this context, an assistive system could be a screen reader.

- **Operability**
  This means that people with different physical abilities can use a design in the same way by minimizing the physical effort required, avoiding repeated actions, and accommodating assistive technologies.

  In games, this can be achieved by avoiding complex inputs such as repeated button presses, quick time events or gestures as well as offering simplified controls and supporting third-party controllers or on-screen keyboards.

- **Simplicity**
  Everyone can understand a design without prior knowledge or having to think about it much. It communicates clearly and consistently, without unnecessary complexity, and is easy to understand for people with different literacy levels.

  In the context of games, this means for example having a simple, clear, and consistent user interface throughout the entire game. Players have enough time to read, interpret, and interact with the interface.

- **Forgiveness**
  This means keeping the likelihood of mistakes low and minimizing their consequences. This is achieved by preventing errors, requesting confirmations and offering an easy way to undo previous actions.

  The ability to reverse or undo mistakes in a game can be seen as forgiveness. Clear, well-worded confirmation steps for irreversible or important decisions help players understand exactly what they are choosing – like when saving over an existing save slot.

2. What is a Barrier?

A barrier is anything that creates difficulty for someone or prevents them from using products, services, or environments altogether.

In games, what is the difference between a challenge and barrier? A game needs to have challenges and goals to be considered a game, yet any challenge could also prove to be a barrier for some players. Making games is an optimisation process, where it is important to figure out, which challenges are reasonable, necessary or avoidable.

3. What is a Disability?

This describes any long-term hindrance that affects people physically, sensorially, mentally, or intellectually and, in combination with various barriers, limits their equal participation in everyday life compared to others.

There are many different disabilities, but all are comprised of three layers: impairment, activity limitation, and participation restriction. An impairment is any difference in physical or mental functions (like loss of a limb or memory); activity limitations relate to difficulties with certain tasks (like talking and walking); and participation restrictions mean difficulties in engaging with the world (such as employment or social life). Disabilities may affect people with the same impairment in different ways and can be related to genetic conditions, develop progressively over time, or occur after sustaining an injury.

On the next pages are the main categories of disabilities and their relation to games.

Physical Disabilities

A physical disability is any limitation that affects movement or physical function, whether it involves the muscles and bones or the nervous system. When the nervous system is affected, controlling muscles can be difficult (often called a motor impairment).

Physical impairments can include paralysis, neurological disorders that reduce muscle function, limb loss, or injuries caused by repeated motions (known as repetitive strain injury). Limited mobility, flexibility, fine motor control, or slower reflexes (often age-related) can make fast, precise, or full-body actions more difficult.

In games, the goal is to support alternative controllers and accessibility hardware through options like full control remapping, adjustable time limits, the ability to skip or autocomplete difficult sections, difficulty customization, and assists such as auto-aim or camera realignment.

Cognitive Disabilities

A cognitive disability is any limitation that affects mental processes such as attention, memory, language, learning, and decision-making. It can change how someone understands information, plans actions, or reacts to sensory input.

Cognitive impairments are linked to many conditions, including autism, ADHD, dyslexia, and dementia. They can also include motion sickness and photosensitive seizure risk, as well as challenges with sensory overload, where intense or repeated stimuli become difficult to process.

In games, the goal is to reduce cognitive load and give players control through clear, contextual tutorials; readable and consistent UI; and flexible difficulty to a point where achieving failure becomes difficult. Helpful options include adjustable game speed or timers, navigation guidance, and assists like auto-aim, camera lock-on or centering, or the ability to skip demanding sections. Comfort settings – such as reducing camera shake/motion blur, removing flashing effects, and offering separate volume sliders for dialogue, music, and sound effects – can further support players who are sensitive to motion or overstimulation.

Visual Disabilities

A visual disability includes both blindness and partial sight (often called low vision). Blindness does not necessarily mean a complete absence of vision; it can also refer to severe vision loss.

While visual disabilities may have various origins, blind or low-vision players often face inconsistent accessibility in games – some parts may be accessible while others are not – which ultimately makes the game unplayable for them.

In games, the goal is to make critical information perceivable through multiple channels. Helpful options include high-contrast and colourblind modes, configurable colours, scalable and clear UI, object highlighting, screen reader or text-to-speech, strong audio design and cues (including 3D audio), as well as haptic feedback. Shortcuts and adjustable time limits can also make more games playable for blind players.

Auditory Disabilities

A hearing disability is any limitation that affects how sound is perceived, ranging from mild to severe hearing loss (often called hard of hearing) to profound hearing loss (deafness). Hearing loss can affect one or both ears and may be present from birth or acquired later in life.

Auditory impairments can impact communication and lead to social isolation and loneliness. While milder hearing loss can be helped with hearing aids, some people with more severe hearing loss might rely on lip reading or on sign language.

In games, the goal is to help players who may struggle to access information delivered through sound, such as spoken dialogue, audio cues, and environmental feedback. This often appears as missing or hard-to-read subtitles and captions, as well as a lack of visual alternatives for important sounds. This can be helped by making critical audio information available through non-audio channels and giving players control over how sound is presented. Helpful options include readable subtitles (adjustable size, contrast, and placement) with appropriate timing; closed captions that describe sound effects and music, and convey speaker identity and tone; a transcription for all voiced dialogue (including background dialogue); real-time speech-to-text for multiplayer voice chat; visual, directional indicators for important sounds, as well as haptic feedback; separate volume sliders for dialogue, music, and sound effects; and audio mix settings such as mono, stereo, and surround sound.

Speech Disabilities

A speech impairment is any limitation that affects how a person produces spoken language. It can involve fluency (how smoothly speech flows), voice (how speech sounds), articulation (how clearly sounds are pronounced), or the physical ability to coordinate the muscles of the face, mouth, and tongue.

Speech impairments can be caused by injury, neurological conditions like autism or ADHD, or the long-term effects of medical conditions such as stroke or dementia. They may include stuttering or other fluency differences, hoarseness or an uneven voice due to vocal cord issues, and difficulty forming or pronouncing sounds clearly.

In games, the goal is to avoid requiring speech as an essential input and to provide flexible alternatives for communication. Helpful options include full support for text chat, quick chat and pings, as well as other non-verbal communication through symbols or emotes; and communication preferences or matchmaking filters (e.g., voice-only, text-only, or mixed) so players can choose how they want to interact with others.

4. Accessibility in Games over the Years

One of the first accessible games was *Real Sound: Kaze no Regret* for the Sega Saturn console in 1997, which was designed to be fully playable through sound. Over the following decades, many other games joined the list of broadly accessible titles, most notably *The Last of Us Part II*, *God of War Ragnarök* and *Diablo IV*.

ABOUT THE IMPORTANCE OF ACCESSIBILITY

Why should you care about accessibility? Games are a crucial part of our **culture** as well as **society**, and no players should be excluded from these aspects of life. This chapter aims to offer you some points why accessibility in games is so important.

1. Why do Players play Games?

> A player's subjective experience and enjoyment of a game depend on their individual understanding of pleasure and motivation. There are several theoretical approaches to categorize player types and their motivations – such as the Bartle model – which groups players into achievers, explorers, socializers, or killers.

To put this into a more practical perspective – beyond simply playing for fun – players with and without disabilities engage with games for **many reasons**, including relaxation and social connection. Playing can keep the brain engaged, relieve stress, and improve mood by helping people feel happier and less anxious. It also offers an outlet to unwind after a challenging day and can reduce feelings of isolation by helping them connect with others and make new friends.

2. Statistics on Impacted Players

Globally, about **16%** of people (around 1.3 billion) were living with a disability in 2023. To put this number into perspective, the number of people affected by disabilities in just the United States and the United Kingdom combined (around 63.7 million) was almost seven times the total population of Austria, or more than 75% of Germany's entire population in the same year. These numbers are **expected to rise** over time, largely because people live longer.

- **Disability Statistics in the European Union**
  In the EU, estimates vary by definition: around 37% of people aged 16+ reported difficulty with basic activities like seeing or hearing in 2022, while about 23.9% reported a disability that limits activities in 2024 (roughly 90 million people, or 1 in 4 adults). The most common issues reported in 2022 were sight (20.3%), mobility (18.5%), and cognition (14.8%), followed by hearing (11.3%), self-care (6.7%), and communication (4.7%).

- **Disability Statistics in the United Kingdom**
  In 2023-2024, about 25% of the UK population reported a disability (around 17.1 million people), which is an increase of about 41% compared with 2013. Physical limitations were most common (mobility 48%, stamina 36%, dexterity 25%). Cognitive and mental health conditions were also frequent (mental health 35%, memory 17%, learning 16%). Visual and hearing impairments were both reported by 13%.

- **Disability Statistics in the United States**
  In 2023, the US reported about 46.8 million people with disabilities (14% of their population). In 2022, the most common type in adults was cognitive (13.9%), followed by mobility (12.2%). Hearing and vision affected about 6.2% and 5.5%. The US also tracks self-care (3.6%) and independent living (7.7%), such as difficulty dressing and bathing or running errands due to a physical, mental, or emotional condition.

3. Financial Value of Games

The gaming industry is significantly larger than other entertainment sectors – almost double the size of **movies** and **music combined** in 2022. Consumer spending on games that year was more than double what was spent on watching movies and seven times what was spent on consuming music. Disabilities affect millions of people worldwide; therefore, purely from a financial perspective, making games accessible can reach millions of **additional players** and increase revenue, while less accessible games may miss those players and generate less revenue.

4. Legal Aspects of Accessibility

Besides the ethical and business case, there are mulitple legal requirements to consider. Most game-related laws focus on things like intellectual property, censorship, age ratings, or gambling and addiction. Clear, game-specific accessibility laws are still rare – except in areas like communication features.

Quick note: This is **not legal advice**. It's meant to help you identify what may apply to your game and encourage you to check the rules early.

Here's a quick overview of two major regions, the European Union and the United States:

- **Laws on Accessibility in the EU**
  The European Accessibility Act (EAA) was adopted in 2019 and is in effect since 2025 and directs the EU member states to create their own national laws. Its goal was to standardize regulation, remove barriers and increase the overall accessibility and safety of products or services.

  The EAA can apply to games when the game includes services covered by the directive – mainly **electronic communication** (like player chat) and e-commerce (in-game purchases). If a game offers voice chat, it must also offer a text option. If it offers video communication, voice and text must also be available. For e-commerce, the main requirement is that the storefront as well as purchasing processes are accessible.

  Some EAA requirements can be left out only if they would create a "disproportionate burden", but this must be very well documented. Small companies are exempt, if they have under €2 million annual revenue or fewer than 10 employees – however, if they grow beyond this (planned or unplanned), the EAA applies as well.

Additionally, the General Product Safety Regulation (GPSR) has applied equally in all EU member states since December 2024. It treats software (including games) as a product and requires products sold into the EU to be as safe as possible, with minimal risk to physical, mental, and social well-being. Companies must also have an EU-based representative and perform and publish a safety risk assessment.

For games, relevant risks can include **seizure risk** from flashing patterns, **injuries** from repetitive button presses, and **psychological harm** (e.g., harassment). The GPSR applies when a product is clearly targeted at EU consumers (e.g., shipping to the EU, dealing in euros, offering EU languages, or using an EU domain). There are no size-based exemptions, but it generally applies only to products released after December 2024; older products are exempt.

- **Laws on Accessibility in the US**
  The main accessibility law, the Americans with Disabilities Act (ADA, 1990), covers areas like employment, transport, and public-facing services, but it does not explicitly cover video games because games are not treated as a “public place”.

However, there is another piece of legislation on accessibility and telecommunications services: the 21st Century Communications and Video Accessibility Act (CVAA), passed in 2010.

The CVAA only covers the **communication features** in a game (for example, voice chat or text chat) – like the EU's EAA – but it does not require the gameplay itself to be accessible. The law says communication software must be reasonably usable for people with disabilities (including hearing, vision, or mobility impairments). Games released after January 2019 must comply when it is "reasonably achievable", based on the creator's available resources. One can use third-party chat tools for that, but the game's creator is still responsible if the communication features are not accessible.

Accessibility rules are moving forward, but game-specific standards are still limited. Web Content Accessibility Guidelines (WCAG) are mainly for web content, but can still be a useful reference. Overall, to sell in both the EU and US, you may need to meet overlapping requirements (especially around communication). It is a general recommendation to including accessibility early on your **own timeline**, rather than waiting for **stricter regulations**.

5. Why Accessibility Makes Games Better for Everyone

Accessibility matters because it pushes you to design better games and makes play possible for more people. Most players agree that games can create meaningful experiences for people with different abilities – experiences that might otherwise be out of reach. Accessibility features are the **foundation** that lets players with disabilities participate, while also offering customization, comfort, and preference options that benefit players without disabilities as well. Because many players rely on these features, excluding them is neither fair nor financially viable; **everyone** should be able to play on equal terms.

While implementing accessibility can bring challenges, most can be addressed through thoughtful design especially when accessibility is considered early in the design process, maintained throughout the game's lifecycle, and informed by **feedback** from players with disabilities.

ABOUT THE ARRAY OF BARRIERS

The *Array of Barriers* is a tool for integrating and improving accessibility in video games – these often possess **unnecessary** barriers, which can impact multiple overlapping groups of players. With this *Array of Barriers*, you can examine your game for any existing barriers and start to design and implement solutions to overcome these barriers. By targeting these barriers directly, you often create solutions which can be utilized by many overlapping groups of players and create a more **inclusive** game overall.

1. What are the *Barrier Cards*?

The *Array of Barriers* contains 43 *Barrier Cards*, which represent the most common barriers players may face when playing games. They are numbered through and split into 4 main categories, being with which part of the game they are associated. These are INPUT, GAMEPLAY, VIDEO and AUDIO. You can easily identify them with these labels, as well as in which colour range a *Barrier Card* comes in. They are sorted by these categories, **Input** being the first in order because it is the initial point of contact with the game, then **Gameplay** as the core of the interactions, and lastly **Video** and **Audio** which are the primary and secondary ways to experience the game.

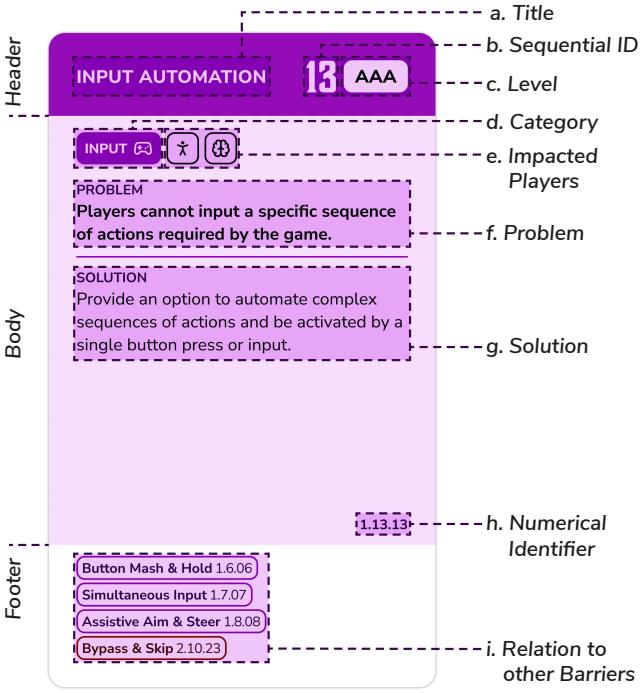
The *Barrier Cards* are also sorted by their level rating from **A** to **AAA**, which indicates reach and implementation value. Level A represents more **common** barriers, level AA **intermediate** barriers and level AAA **advanced** ones. Level A covers basic, easily removable barriers that affect many players, while AAA reflects the highest accessibility standard and may be more costly to address, even if it impacts fewer players.

2. How are *Barrier Cards* structured?

- **Card Header**
  Here you can find all you need to identify the *Barrier Card*: its title, sequential ID and level rating.

- **Card Body**
  Here you can find all the contextual information to each barrier; in which category it falls, its impact on the different types of players as well as its problem description and solution approaches. You can also find the numerical identifier at the bottom right of this part on the *Barrier Card*.

- **Card Footer**
  Here you can see all relations, overlaps and connections to other barriers.


Header
Body
Footer
INPUT AUTOMATION
13
AAA
INPUT
PROBLEM
Players cannot input a specific sequence of actions required by the game.
SOLUTION
Provide an option to automate complex sequences of actions and be activated by a single button press or input.
1.13.13
Button Mash & Hold 1.6.06
Simultaneous Input 1.7.07
Assistive Aim & Steer 1.8.08
Bypass & Skip 2.10.23
a. Title
b. Sequential ID
c. Level
d. Category
e. Impacted Players
f. Problem
g. Solution
h. Numerical Identifier
i. Relation to other Barriers

a. Title
Gives you a clear name with which to identify each *Barrier Card* and communicate its barrier.

b. Sequential ID
All *Barrier Cards* are numbered with a unique 2-digit number to identify them easily without needing to memorize the name.

c. Level
This rating indicates how many players are reached and impacted, and the value of implementing a solution to the *Barrier Card*, which starts at level A and goes up to level AAA.

You can think of level A as the **minimum requirements** and simple barriers, which affect most people and can be removed rather easily. AAA barriers adhere to the **highest accessibility** standards and might not impact many players directly or may even be costly to implement solutions for, but they mean a lot to the impacted players.

d. Category
This indicates, which part of the game this barrier is associated with – either INPUT, GAMEPLAY, VIDEO or AUDIO.

e. Impacted Players
This shows you, which types of bodily abilities are impacted. A solution to a barrier can impact players in the areas of physical, cognitive, visual, auditory or speech ability.


Physical Impact
Cognitive Impact
Visual Impact
Auditory Impact
Speech Impact

f. Problem
Describes which specific problem players might experience with this barrier.

g. Solution
These are approaches and options to implement to remedy the problem posed by this barrier.

h. Numerical Identifier
With this identifier you can also gather information on the relative positioning of *Barrier Cards* within the *Array of Barriers*, but by numbers alone. How does it work? The identifier is split into 3 sections divided by dots: the first number of 1 to 4 shows you which category (1: Input, 2: Gameplay, 3: Video, 4: Audio), the second number is the ascending number within

this category and the last digits signify the overall position within all barriers – and also mirrors the original sequential number. As an example, the barrier "3.4.29" is within the gameplay category (3) the fourth barrier (4) or the overall the 29th barrier.

i. Relation to other Barriers
These show you the connection to other barriers in ascending order, starting with the first *Barrier Card* and consist of the colour-coded titles of other *Barrier Cards*. You can also work with the numerical identifier to locate these other *Barrier Cards* more easily.

A list of all *Barrier Cards* included in this deck can be found in the front of the booklet.

With this link you can access the digital version of the *Array of Barriers* as well as a print-at-home version which goes easy on your printer.

By the way, you can find this **QR-Code** on each card as well on its backside – so you can access all cards digitally even if you have just one card!

WORKING WITH THE ARRAY OF BARRIERS

With these *Barrier Cards*, you can integrate accessibility into your games in a variety of ways and scenarios. They can help you familiarize yourself with accessibility and can be used in professional, testing, or educational settings. In this chapter, you'll find a guide on how to work with the *Array of Barriers* and other related approaches.

Generally speaking: aim to implement solutions in your game for all level **A** *Barrier Cards* at a **minimum**, as many level **AA** barriers as **possible**, and solutions for level **AAA** barriers wherever **feasible**.

1. Using the *Array of Barriers*

- **Step 1: Familiarization**
  Use the *Array of Barriers* to familiarize yourself with common barriers and adding accessibility. You can also search for specific barriers and read up on their problems and possible solution approaches or find connections between the different barriers.

- **Step 2: Plan, Prioritize & Implement**
  After familiarization, use the *Array of Barriers* to plan how you will implement accessibility in your game. Gather the cards, sort them, and prioritize which barriers to address. Or remove any *Barrier Cards* that are not applicable to your game. If you are already working on a game, use the cards as a checklist to identify existing barriers and gaps in accessibility. Create two card piles – one for already completed tasks and one for remaining barriers – to visualize your progress in making your game more accessible.

- **Step 3: Teamwork & Communication**
  Use your knowledge and the standardisation of language around barriers provided by the *Array of Barriers* to better communicate with your team about accessibility. Talk about how and which problems you want to solve and what you have already achieved – also to players, to show that you accomplished and what they can expect when playing your game.

Tip: While you can share a deck of *Barrier Cards* with your team, to distribute which barriers to address as tasks to different team members, everyone can access all cards by scanning the **QR-Code** found on the backside of each card.

- **Step 4: Indefinite Facilitation**
  Accessibility is an ongoing effort. Make sure it doesn't break during updates or patches and keep improving it over time. Ensure everyone in the production pipeline understands the importance of accessibility and the benefits it brings to your game.

2. Alternative Approaches to the *Array of Barriers*

While working alone on your game, you can try to shuffle the deck and start to randomly draw *Barrier Cards* from it; letting your luck decide which barrier to tackle today. Or when working in a team, You can use these cards in brainstorming sessions: have other team members draw *Barrier Cards* blindly and work on implementing solutions to the picked barriers.

Try other approaches in **educational**, **working** or **testing environments** and experiment with gamifying the implementation of accessibility features with the help of your *Array of Barriers*. Or you can simply keep them near your workstation – like a sticky note – as a reminder which barriers are still open and to work towards implementing solutions.

FURTHER READING ON ACCESSIBILITY IN GAMES

The *Array of Barriers* is by no means a complete set of accessibility recommendations. These are some of the other, very valuable repositories on game accessibility which helped to create the *Array of Barriers* and provide further information and help:

- Game Accessibility Guidelines
  by independent contributors
- Xbox Accessibility Guidelines V3.2
  by Microsoft
- Accessible Games Initiative
  by the Entertainment Software Association
- Accessible Player Experiences
  by The AbleGamers Foundation
- SIG Top Ten & Guidelines
  by the International Game Developers Association Game Accessibility Special Interest Group
- CIPT Accessibility Reference Guides
  by Can I Play That?
- RNIB Design for every gamer
  by the Royal National Institute of Blind People

There are many more sources on game accessibility, so be encouraged to try some of these as a starting point to familiarize yourself more with accessibility in games.

EXAMPLE SITUATIONS & PLAYER EXPECTATION

Here you can find some example situations to each *Barrier Card* as some more additional context. This explains where barriers might occur as well as **what players expect** the game to offer in return.

INPUT Barriers

Simple Controls 1.1.01

Players may prefer to use the simplest controls possible due to physical and cognitive abilities.
Players can interact with the game through the simplest controls possible.

Basic Control Remapping 1.2.02

Players may want to remap or simplify the controls to make interaction possible with alternative controllers or to fit their playstyle more comfortably, regardless of cognitive or physical ability.
Players can change and reconfigure the default controls to interact with the game to their preference.

Full Actions Remapping 1.3.03

Players with physical disabilities may rely on alternative controllers, which require actions to be fully remapped to be used effectively in the game.
Players can choose which controls are assigned to which actions in the game to their preference.

Sticks & Sensitivity 1.4.04

Players may need slower or more precise movement to aim or interact with interfaces, while others may want to reduce effects like motion sickness.
Players can easily operate thumbsticks in the way they are comfortable with.

Saving Settings 1.5.05

Players may need to retain their controller and display settings across play sessions; due to the time or effort it takes to set up.
Players configure controls and presentation settings once and can reliably use them afterwards.

Button Mash & Hold 1.6.06

Players may have difficulty with repeatedly pressing buttons in quick succession or holding them for an extended duration due to physical ability.
Players can easily circumvent repeating or holding inputs via an easier alternative.

Simultaneous Input 1.7.07

Players may have difficulty giving precise multiple inputs due to physical or cognitive abilities.
Players can easily circumvent simultaneous inputs via an easier alternative.

Assistive Aim & Steer 1.8.08

Players with physical disabilities may need assists with aiming at enemies or navigating game environments, while other players might simply not be proficient at the game.
Players can access assistive features which help them with inputting precise actions.

Input Flexibility 1.9.09

Players may need to use a different input method in place of the standard input due to preference or physical ability.
Players can use any input device they want or need.

Inaccessible Input Methods 1.10.10

Players with physical disabilities may not be able to move in a way the game requires, or players with speech impairments cannot input voice commands.
Players can play the game without using speech, touch, motion or gesture inputs.

Haptic Feedback 1.11.11

Players may want to have haptic feedback as an additional output modality, while others prefer to disable it due to discomfort or pain it might elicit.
Players can enable haptic feedback to convey game information.

Easy Communication 1.12.12

Players with impaired speech or hearing may want to communicate with other players regardless of their impairment.
Players can communicate with other players through visual means.

Input Automation 1.13.13

Players may experience fatigue or pain when executing many repetitive sequences and may require reduced interaction with the game.
Players can easily input complex sequences of actions through automation.

GAMEPLAY Barriers

Difficulty Settings 2.1.14

Players may have different skill or ability levels but want to experience the game regardless.
Players can modify the difficulty of any challenge at will so they can choose an option that better matches their abilities and preferences.

Save & Load 2.2.15

Players may prefer to retain their progress and avoid repeating difficult challenges due to physical, cognitive or emotional ability.
Players can save & load progress of completed sections, so they safely can stop playing when they want.

User Interface 2.3.16

New players, players with cognitive disabilities or those which navigate with various types of assistive technologies rely on clear and simple user interfaces.
Players can interpret and navigate the user interface as easy possible.

Tutorial & Trial 2.4.17

Players may need to practice skills to gain skill competence, mastery or simply try out new control configurations.
Players can easily try out new concepts within the game without failure.

Error Prevention & Forgiveness 2.5.18

Players may need to confirm decisions which are irrevocable, undo already made decisions which impact their progress or have been made in error due to imprecision.
Players can undo actions easily.

Clear Objective 2.6.19

Players may forget what to do or interact with due to memory or cognitive ability and rely on reminders or on visual and audio cues on interactive elements to progress the game.
Players can easily identify what they are supposed to do in the game.

Narrative 2.7.20

Players may return to game with a complex narrative after not playing for a while or have difficulties with memory, attention or processing.
Players can easily identify what is going on and their relative position within the narrative.

Recall Controls 2.8.21

Players who are new to the game, need more time to read or have limited memory may need to review the game controls, to understand what to do next.
Players can easily identify what the controls of a game or specific context within the game are.

Game Speed & Time Limits 2.9.22

Players may need more time than others to successfully complete timed challenges, due to preference, physical or cognitive ability.
Players can modify how fast or slow the game expects them to be.

Bypass & Skip 2.10.23

Players may need the option to bypass a section to progressing the game, due to issues with physical ability, decision-making, timing or obstacle-based challenges.
Players can bypass difficult, non-essential sections to keep progressing the game.

Multiplayer Preferences 2.11.24

Players may want to set preferences in multiplayer games that let them play without others who use voice chat, so they can play even if they cannot or do not want to speak.
Players can choose with which teammates and opponents they play.

Navigation & Traversal 2.12.25

Players who are blind or have low vision need assistance when navigating complex 3D environments to avoid becoming disoriented.
Players can access assistive features, which help them traverse the game world.

VIDEO Barriers

Clear & Large Text 3.1.26

Players may require larger and more contrasting texts in game due to visual impairment or distance to their viewing device.
Players can easily read and understand text displayed within the game.

Subtitles & Captions 3.2.27

Players who are unable to access audio due to hearing impairments or noisy environments may rely on subtitles and captions to access information that is normally conveyed through audio.
Players can follow dialogue and events in the game by visuals alone.

Visual Cues 3.3.28

Players who are deaf or hard of hearing, or players which might not have access to the game audio at the moment may need an alternative way to perceive key audible information through visuals.
Players can access visual cues for events in the game, additionally to audio cues.

Distinct Interactivity 3.4.29

Players may need assistance in differentiating between elements due to visual or cognitive ability and rely on strong contrasts and visual highlights of interactive game elements.
Players can easily identify which elements in the game are interactive.

Contrast Settings 3.5.30

Players may rely on contrast settings to see the game clearly in bright sunlight or because of a visual impairment.
Players can modify contrast settings to their own preference.

Colour Perception 3.6.31

Players may want to change the colours in a game due to colour-blindness.
Players can pick and choose colours freely.

Motion & Camera 3.7.32

Players with visual or cognitive disabilities may need to remove background details to identify important objects or remove unnecessary camera movement to keep these in focus more easily.
Players can view the game without experiencing discomfort or harm.

Different Displays 3.8.33

Players may need to change the size or resolution of the game or its components to either see the information more clearly, make it easier to find and target, or reduce the number of visible things to play comfortably.
Players can use a wide variety of displays to view the game.

Text Chat & Speech-to-Text 3.9.34

Players need multiple ways of communicating with other players in multiplayer games via chats.
Players can access what other players say in chats through visuals.

Sensitive Content 3.10.35

Players may need to remove sensitive content due to preference, age or other mental health needs.
Players can disable sensitive content at their own will.

Sign Language 3.11.36

Players who are deaf or hard of hearing might prefer to receive information through sign language.
Players can enable signing to be displayed alongside their gameplay.

AUDIO Barriers

Separate Volume Controls 4.1.37

Players may want to adjust the volume or amount of each type of sound so they can reliably take in information and focus on the sounds they want to hear, especially when visual cues are harder to detect or when multiple information sources make it difficult to focus on any of them.
Players can modify each volume level for each sound source.

Multiple Audio Channels 4.2.38

Players might be experiencing problems with hearing on one ear or cannot rely on visuals alone to determine where a sound is coming from.
Players can choose, if they hear the sound in a mono, stereo or surround mix.

Distinct Audio 4.3.39

Players who are blind or have low vision use audio to distinguish between different context, such as environments, items or enemy types.
Players can easily identify information in the game by sound alone.

Audio Cues 4.4.40

Players who are blind or have low vision may need an alternative way to perceive key visual information through audio.
Players can access audio cues for events in the game, additionally to visual cues.

Voice Chat & Text-to-Speech 4.5.41

Players need multiple ways of communicating with other players in multiplayer games via chats.
Players can access what other players write in chats through audio.

Narrated Screens 4.6.42

Players who are blind or have low vision rely on screen reader or narration to understand text on screen.
Players can enable screen reader or voice narration for all text.

Audio Description 4.7.43

Players who are blind or have low vision need audio description to describe essential visuals and context. **Player can enable audio description to follow and enjoy the story.**

IMPRINT

Version 1.0 of Cards & Booklet.

Created by Max Müller as product of a Master's Thesis at **FH JOANNEUM Graz** in the degree of Communication, Media, Sound and Interaction Design at the Institute of Design & Communication. Supervised by FH-Prof. DI Dr. Maja Pivec. Proofreading by Pascal Bieder.

Content of *Barrier Cards* sourced and derived from:

Game Accessibility Guidelines
by independent contributors
Xbox Accessibility Guidelines V3.2
by Microsoft
Accessible Games Initiative
by the Entertainment Software Association
Accessible Player Experiences
by The AbleGamers Foundation

Inspired by the Accessible Player Experience (APX) Cards developed by the AbleGamers Foundation.
Concept adapted from the WCAG 2.2 Card Deck by Johannes Lehner, Version 1.2.1, licensed under CC BY-SA 4.0 (http://creativecommons.org/licenses/by-sa/4.0/).

Icons provided by Lucide Icons.

Fonts used are Nunito Sans, Bely and Boucherie Block.
Printed by Offsetdruckerei Dorrong in Graz.

"Every game has a wide range of barriers. Some are a core part of what makes the game fun, and some are not."

– Ian Hamiliton