From Checklists to Playability: A systematic mapping of player reviews to the Game Accessibility Guidelines

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ABSTRACT

This study examines how accessibility frameworks intersect with disabled players' evaluations and deployment. We mapped accessibility reviews from the "Can I Play That?" website written between 2019 and 2025 onto the Game Accessibility Guidelines through coding and scoring, then conducted a heuristic evaluation of Minecraft Education as a case study. The analysis showed that reviews foreground basic hearing, motor and visual provisions such as subtitles, remapping and legible text, while advanced guidelines remain largely absent. Minecraft Education satisfies basic and intermediate items across domains yet leaves gaps. Taken together, the study interrogates whose accessibility counts in contemporary game design and deployment. The annotation framework is replicable and open, in an effort to create a new practical resource for the gaming community.

Keywords

Game Accessibility Guidelines; Can I Play That?; Minecraft Education; Disability; Intersectionality; Player Communities.

INTRODUCTION

Discussions of game accessibility often begin from legal compliance and technical standards, such as compatibility with assistive technologies or adherence to web accessibility norms. Work in human–computer interaction and accessible game design shows, however, that access to games is entangled with questions of who is invited to participate in play at all, and on what terms. Surveys of the field document how many commercial games remain unusable or exhausting for players with sensory, motor, or cognitive impairments, and how this exclusion restricts participation in a central form

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of contemporary culture (Yuan et al. 2011). Research on inclusive game design argues that accessibility should be approached through flexible, adaptive systems that can support diverse sensory and motor abilities, rather than as an afterthought where disabled players are handled via minor tweaks or external assistive technologies (Grammenos et al. 2009). From this perspective, accessibility becomes an ongoing negotiation over who is permitted to enjoy specific play experiences, and whose effort and fatigue are taken for granted.

Player communities have developed their own evaluative practices around accessibility. Can I Play That? (CIPT)[1] is a prominent example: an online outlet that publishes accessibility reviews of games written largely by disabled players and organized into categories such as Deaf or hard of hearing, blind or low vision, mobility, and cognitive. Game studies has examined how marginalized players build communities, share expertise, and assess games from situated perspectives (Gray 2014; Shaw 2015), yet little work has traced how these community discourses relate to formal accessibility frameworks. CIPT reviews offer detailed accounts of how features, settings, and design decisions shape effort, fatigue, enjoyment, and sense of belonging for disabled players. They therefore constitute a rich corpus for examining which aspects of accessibility become narratable and salient in everyday player talk, and which remain backgrounded.

The third object in this study, Minecraft Education, often branded as Minecraft: Education Edition[2], brings these issues into institutional and educational contexts. Building on the open-ended sandbox design of commercial Minecraft, the educational version adds classroom-specific tools such as lesson plans, classroom management features, and collaboration modes. A growing body of research describes how Minecraft and related educational versions are used in schools and informal learning settings, often emphasizing creativity, problem solving, and student motivation. Nebel and colleagues discuss how the game's flexible, constructionist environment can support diverse pedagogical aims, while noting that empirical work on different learner groups remains uneven (Nebel et al. 2016).

The article addresses three research questions. First, it asks which aspects of the Game Accessibility Guidelines emerge as salient in accessibility reviews published by Can I Play That?, that is, which guideline dimensions are foregrounded when disabled reviewers describe games as playable, tiring, or exclusionary. Second, it examines which GAG dimensions remain underrepresented or invisible within this community discourse, identifying guideline areas that rarely surface in reviews and considering how that absence may reflect both current accessibility practices and the genre of review writing. Third, it analyses how Minecraft Education aligns with the Game Accessibility Guidelines and what forms of access and exclusion this alignment creates for players and learners with disabilities, with particular attention to educational settings where time, assessment, and classroom social dynamics matter.

Addressing these questions involves a mixed methodological design. The study compiles a corpus of accessibility reviews from CIPT and codes each review–game pair against a selected subset of GAG items that can reasonably be inferred from review text. This coding supports quantitative analysis of how often particular guideline dimensions appear and qualitative examination of how reviewers describe the pleasures, frustrations, and forms of labour associated with specific accessibility features or barriers. A second stage conducts an in-depth heuristic evaluation of Minecraft Education using a broader set of relevant GAG items. Through extended play sessions that engage core gameplay and classroom-oriented tools, and through systematic inspection of settings and documentation, the evaluation assesses where Minecraft Education meets, exceeds, or falls short of the expectations formulated in GAG across vision, hearing, motor, cognitive, and general domains.

BACKGROUND Game Accessibility and the Game Accessibility Guidelines

Game accessibility research generally defines accessible games as those that can be located, launched, and played enjoyably by people with diverse sensory, motor, and cognitive configurations, using standard or assistive hardware, without disproportionate effort or fatigue (Oliva-Zamora and Mangiron 2025). Yuan and colleagues (2011) synthesise work across human-computer interaction and rehabilitation engineering and document how common design conventions in commercial games create barriers at multiple levels, including input complexity, visual and auditory information load, time pressure, and inflexible difficulty. Their survey shows that many titles remain partly or wholly unusable for players with impairments, despite a growing range of assistive technologies and bespoke accessible games. Rather than treating disability as a niche market, they argue for broader design approaches that consider diverse capabilities from the outset of development. Grammenos and colleagues (2009) adopt a similar stance in their work on universally accessible games. They propose design frameworks in which games are conceived as adaptable systems whose rules, interfaces, and feedback channels can be configured to suit different sensory and motor profiles. Examples include alternative input mappings, multiple representational channels for critical information, and dynamic adjustment of challenge. This work shifts attention from retrofitting accessibility to integrating it into core game mechanics and interaction models. Archambault et al. (2008) develop related ideas in projects that create accessible platforms for blind and low vision players, combining non-visual feedback, screen readers, and tailored interfaces so that mainstream game genres become playable without full reliance on vision. Across these strands, accessibility is framed as an interaction problem, a design problem, and a cultural participation problem.

Within this context, the Game Accessibility Guidelines (GAG) have emerged as a widely used reference for practitioners and researchers. Developed by industry accessibility specialists and advocates, the guidelines are published as a freely available online resource that organises recommendations into three levels of scope and difficulty (basic, intermediate, advanced) across domains such as vision, hearing, motor, cognitive, speech, and general usability. Each item describes a concrete design practice, for example providing scalable text, allowing full control remapping, or offering alternatives to colour coding. In industry, GAG are often used as checklists to inform production pipelines, internal audits, and publisher requirements; in research, they serve as heuristic frameworks for evaluating existing titles and for structuring design interventions.

GAG sit at the intersection of regulatory standards and community practice. On one side are legal and technical norms, such as the Web Content Accessibility Guidelines (WCAG)[3] or national disability legislation, which specify minimum levels of access for digital services but rarely address the particularities of games. On the other side are informal norms within player communities about what counts as “playable” or “welcoming” for disabled participants. Ellcessor (2016) describes media accessibility as a negotiated assemblage of policy, technology, and everyday practice rather than a purely legal status, and this description applies strongly to games. GAG translate insights from disability advocacy and specialist knowledge into concrete recommendations that are more specific than general web standards yet more technical than most community discourses. They therefore provide a useful bridge for studying how formal frameworks relate to lived experiences of play.

From Accessibility to Pleasure, Discomfort and Exclusion

Much work on accessible games focuses on barriers and enabling technologies, yet disability and media studies emphasise that access is bound up with affect, pleasure, and discomfort. Ahmed's analysis of happiness shows how social norms organise whose comfort is taken for granted and whose presence is treated as disruptive to collective enjoyment (Ahmed 2010). Berlant's account of "cruel optimism" describes how attachments to promised good lives can require subjects to endure ongoing frustration and exhaustion (Berlant 2011). Kafer, in turn, reads disability futures as shaped by cultural assumptions that disabled lives are undesirable or tragic, which affects how inclusion and participation are imagined (Kafer 2013). These perspectives invite questions about how games distribute comfort, risk, and effort across different bodies.

In game studies, scholars have examined the ambivalent nature of play and enjoyment. Juul describes a "paradox of failure" in which players seek out games that repeatedly make them feel inadequate, because these failures can be redeemed through eventual mastery and narrative framing (Juul 2013). Ruberg argues that the dominant focus on fun and empowerment in game culture marginalises other affective experiences, such as boredom, discomfort, or hurt, that may carry particular significance for queer and marginalised players (Ruberg 2015). These arguments complicate simple narratives in which enjoyment is assumed to be universal once technical barriers are removed.

For disabled players, the pleasures and pains of games are often distributed in unequal ways. Gray's ethnography of women of colour on Xbox Live shows how participation in multiplayer games can involve continual exposure to racism and sexism, coupled with intense affective labour to remain present in those spaces (Gray 2014). Shaw's interviews with players from diverse backgrounds document how representation, identification, and recognition shape whether games feel welcoming or alienating (Shaw 2015). While these studies do not focus primarily on disability, they demonstrate how access to the pleasures of play depends on social positioning, material infrastructures, and the implicit assumptions embedded in design. Bringing these perspectives together suggests that accessibility is not only a matter of functional interaction but also a question of who is allowed to enjoy which aspects of a game, on what terms, and with how much additional effort. Interface legibility, flexible control schemes, and adjustable pacing affect whether a disabled player can participate in the calibrated frustrations that many games offer, or whether play instead becomes an exercise in managing pain, fatigue, and dependence on others. Safety and comfort are unevenly distributed across senses as well. For example, loud audio cues or intense haptic feedback may enhance immersion for some players while causing distress or sensory overload for others (Yuan et al. 2011). Attention to pleasure, discomfort, and exclusion therefore complements technical frameworks like GAG, and it informs this article's concern with which forms of enjoyment are foregrounded in guidelines and in community discourse.

Player Communities and "Can I Play That?"

Player communities are key sites where the value and accessibility of games are negotiated. Studies of game cultures describe how players collectively develop expertise, share strategies, and evaluate games through practices such as walkthrough creation, modding, and reviewing (Consalvo 2009; Postigo 2016). These practices generate situated forms of knowledge that differ from those codified in design documentation or regulatory standards. Gray and Shaw in particular show how marginalised players develop their own criteria for judging whether games and platforms feel habitable, integrating considerations of harassment, representation, and everyday effort (Gray 2014; Shaw 2015).

Can I Play That? (CIPT) is a prominent example of such community-based evaluation in the specific domain of accessibility. The site describes itself as a platform for accessibility reviews of games, written primarily by disabled players and organised into categories such as Deaf or hard of hearing, blind or low vision, mobility, and cognitive reviews (Di Leo 2025). Reviews typically combine a descriptive account of accessibility features and barriers with an assessment of how these factors shape the reviewer's effort, fatigue, enjoyment, and sense of inclusion. CIPT also publishes opinion pieces, guides, and news, but its structured review format, with recurring headings and category-specific concerns, provides a relatively consistent discursive space where accessibility is made narratable.

CIPT can be understood as a site of situated, experiential knowledge production about game accessibility. Reviewers draw on their own impairments, assistive technologies, and histories of play to articulate what matters for their participation. This aligns with Haraway's account of "situated knowledges," which emphasises that partial, embodied standpoints can reveal aspects of systems that remain invisible from abstract, expert perspectives (Haraway 1988). At the same time, CIPT occupies a position between fan discourse and quasi-professional games journalism, which affects how reviews are structured, the kinds of evidence that are valued, and the rhetorical conventions available to writers.

Reading CIPT reviews through the lens of the Game Accessibility Guidelines opens a way to relate this community discourse to a formalised framework. GAG specify a wide spectrum of potential accessibility features, many of which may never be mentioned in reviews if they are rare in the market or difficult to observe. Conversely, reviewers may discuss sources of pleasure or frustration that cut across several guideline items or that GAG do not explicitly address, such as social dynamics in multiplayer spaces or the affective labour of continuously changing settings. Mapping CIPT content to GAG therefore promises insight into which parts of the framework are echoed, adapted, or ignored in everyday player talk, and how disabled reviewers implicitly prioritise some forms of accessibility over others.

Minecraft Education as an Educational and Institutional Game

Minecraft has become a widely studied example of commercial game appropriation in education. Teachers and researchers use Minecraft to support learning in domains ranging from science to history, often emphasising its open-ended sandbox structure, block-based building, and emergent problem solving (Di Leo and Traetta 2025). They note that the game's flexible environment aligns well with constructionist and inquiry-based pedagogies, but they also point to gaps in systematic evaluation and in attention to diverse learner needs. Checa-Romero (2016) similarly discusses how Minecraft supports creativity, collaboration, and media literacy, describing classroom activities in which students script and record machinima inside the game world.

Minecraft Education builds on the commercial version by adding features tailored to formal and informal learning settings. These include world templates linked to curriculum topics, in-game lesson plans, classroom management tools that allow educators to monitor and moderate student activity, non-player characters and chalkboards for presenting instructions, and collaboration modes that facilitate group building tasks.

Yet, as Nebel et al. observe in their literature review, most studies of Minecraft in education focus on general populations of learners, address motivational and cognitive outcomes, and pay limited attention to disability or accessibility in a systematic way (Nebel et al. 2016). Accessibility is sometimes mentioned in passing, for example in relation to the game's visual style or to reading load, but rarely assessed through established frameworks such as GAG. This gap is striking given how prominently Minecraft Education features in discourses of inclusion and creativity in schools,

including in settings where disabled students are present and where institutional constraints, assessment regimes, and classroom dynamics shape what participation can look like.

Evaluating Minecraft Education against the Game Accessibility Guidelines, while keeping in view the kinds of pleasures, frustrations, and exclusions described in community spaces like CIPT, provides a way to ask whose accessibility counts when a game is adopted as a supposedly inclusive educational platform. This background motivates the project's dual focus on mapping community accessibility discourse to GAG and conducting a detailed heuristic evaluation of Minecraft Education for use in classroom contexts.

METHODOLOGY Research Design

The study adopts a mixed design that combines corpus-based content analysis of accessibility reviews with a guideline-driven heuristic evaluation of a single educational title. The first strand treats Can I Play That? (CIPT) reviews as a corpus of situated accounts of accessibility and codes them against the Game Accessibility Guidelines (GAG), following procedures from qualitative content analysis and coding-based text analysis (Krippendorff 2018). The second strand applies the GAG as a heuristic framework in an in-depth inspection of Minecraft Education, in line with established approaches to guideline-based usability and accessibility evaluation (Grammenos et al. 2009; Nielsen and Molich 1990; Yuan et al. 2011). The two strands share a common coding vocabulary and scoring framework, which makes it possible to compare how guideline domains appear in community discourse and how they are implemented in an institutional game.

Corpus: Can I Play That? Accessibility Reviews

The corpus consists of accessibility reviews published on CIPT that use the site's structured review format devoted to access, rather than news posts, opinion pieces, or guides. Only reviews explicitly labelled as accessibility reviews were included. Each review was associated with one primary game title. Reviews from 2019 to 2025 (n = 479) were collected from the public website in November 2025. This approach reflected and expanded on previous studies on Can I Play That? (Di Leo 2025). Drawing on content-analytic practice (Krippendorff 2018), each review was treated as a document in which reviewers describe the presence, absence, and quality of accessibility features from their own standpoint. These textual descriptions provided the basis for mapping review content onto GAG items.

Case Study: Minecraft Education

Minecraft Education was selected as a single embedded case because it is widely promoted for classroom use with diverse learners and has been discussed as supporting creativity, collaboration, and problem solving in formal education (Checa-Romero 2016; Di Leo and Traetta 2025; Nebel et al. 2016). The evaluation focused on the latest release as of November 2025 and considered both individual play and typical classroom configurations, including the dedicated classroom tools that distinguish Minecraft Education from the commercial version. Two other versions of Minecraft (Bedrock and Java[4]) were compared to the Education version during the analysis, in an effort to highlight similarities and differences between them. Play sessions engaged with core activities such as building, navigation, interaction with non-player characters, and the use of world templates and classroom management features. Alongside play, the analysis systematically traversed configuration menus and online documentation to locate accessibility-relevant options and behaviours.

Coding and Analysis of Can I Play That? Reviews

For the CIPT corpus, each Game Accessibility Guideline was analyzed across all reviews. All GAG entries were stored in a tabular format, with each row corresponding to a single guideline and including the original wording.

Coding proceeded at the level of review–game pairs. For each game, the coder read all associated CIPT accessibility reviews in full and, for every guideline, judged whether the review text provided evidence that the game satisfied the guideline, failed it, or did not address it. If the review explicitly stated that a corresponding feature was present and usable, the game–guideline pair received a positive tag ("yes"). If the review explicitly described the absence of that feature or criticised its implementation as ineffective for accessibility, the pair received a negative tag ("no"). If the review did not discuss the feature at all, or if the available evidence did not support a clear judgement, the cell remained empty. This approach treats guidelines as theory-informed categories through which experiential accounts are interpreted (Schreier 2012).

The resulting coded data were stored in a single comma-separated file. Each row corresponds to one guideline. One column contains the textual description of the guideline. Each subsequent column corresponds to a game and contains a cell value of "yes", "no", or empty for that game-guideline pair.

Quantitative analysis used a simple scoring framework applied symmetrically to games and guidelines. For any item (a given game or a given guideline), let yes be the number of positive tags, no the number of negative tags, and T the total number of tags (T = yes + no). If T = 0, the item was treated as having no data: the positive rate and score were left undefined, and the item was not ranked. If T > 0, the positive rate was defined as yes_rate = yes / T. To avoid over-interpreting items with only a handful of tags, a weight was defined as w = T / (T + 10), where the constant controls the influence of sample size. The main score for the item was then score = yes_rate × weight, yielding a value between 0 and 1 that is high only when an item both performs well when mentioned and is based on a substantial number of tags.

The same formula was applied to compute per-game scores (aggregating across all guidelines for each game) and per-guideline scores (aggregating across all games for each guideline). From these, several descriptive statistics will be commented in the Discussion section.

Using the mapping from guidelines to clusters and levels, the analysis aggregated tags at the level of domain and implementation level. For each combination of cluster and level, it computed how often guidelines in that category were addressed at all in the corpus (representation rate, defined as the ratio between observed and possible tags) and how often they were satisfied when mentioned (positive rate). The same metrics were computed at the level of clusters alone by summing across levels. These aggregates provided a way to compare, for example, how frequently motor or vision guidelines surfaced in CIPT reviews and how often they were described as successfully implemented.

Heuristic Evaluation of Minecraft Education

The heuristic evaluation of Minecraft Education followed established practices in which evaluators inspect an interactive system against a structured set of principles and record problems relative to each one (Nielsen and Molich 1990). Using the full set of GAG items relevant to the game's genre and platform, the evaluator systematically examined the title's menus, in-game interfaces, and classroom tools. For each guideline, the evaluation recorded whether the feature was implemented in a manner that plausibly supports disabled players and students (coded as satisfactory), absent or clearly problematic, or not applicable to the game's mechanics or context. For each

accessibility domain (Vision, Hearing, Motor, Cognitive, Speech, General), the recorded judgements were collated to produce structured tables indicating which basic, intermediate, and advanced items were present, missing, or not applicable. Field notes documented how particular implementations interacted with the pacing, assessment demands, and social organisation of classroom play, building on prior work on game-based learning with Minecraft (Nebel et al. 2016; Checa-Romero 2016; Di Leo and Traetta 2025). These tables and notes serve as the empirical basis for the domain-by-domain analysis in the results section.

RESULTS Corpus-level overview

The coded corpus comprises 472 games with at least one guideline tag and 7 pieces with no tags at all, mostly first-impressions articles rather than full accessibility reviews. Across all game-guideline pairs that received an explicit judgement, the global positive rate is 66.5%, so roughly two thirds of tagged features are described as satisfactorily implemented.

The Game Accessibility Guidelines include 120 distinct items. One hundred are mentioned at least once in the Can I Play That? reviews, while twenty never appear in any tag. For tagged guidelines, the weighted score combines how often games satisfy a guideline when it is discussed with how many games address it at all, following the common practice in content analysis of weighting frequencies by sample size (Krippendorff 2018; Schreier 2012).

Accessibility profiles of games

Table 1 lists the ten games with the highest weighted accessibility scores. All have positive rates above 90% on the guidelines that reviews mention, and their relatively high numbers of tagged items indicate that these scores are not based on isolated successes.

Game	Game score	Positive rate	Represented count
South of Midnight	0.72	0.92	37
Dragon Age: The Veilguard	0.72	0.97	29
Stories of Blossom	0.72	0.92	36
Assassin's Creed Mirage	0.69	1.0	22
The Quarry	0.68	0.93	28
Biomutant — Cognitive	0.68	1.0	21
Diablo IV	0.68	0.93	27
Atomfall	0.68	0.9	30

Until Dawn remake	0.66	0.95	22
Assassin's Creed Shadows	0.66	0.95	22

Table 1: Top games by weighted accessibility score.

These titles include large budget franchises and smaller productions, all of which CIPT reviewers describe as providing broad, consistently usable accessibility features across several domains.

The lowest-scoring items tell a different story. As Table 2 shows, the ten games with the weakest scores all have a positive rate of zero on the guidelines that their reviews discuss.

Game	Game score	Positive rate	Represented count
The Surge 2	0.0	0.0	9
Ghost Recon Wildlands	0.0	0.0	9
Kingdom Come: Deliverance	0.0	0.0	8
Genesis Alpha One	0.0	0.0	8
Hunt: Showdown	0.0	0.0	5
Hello Neighbor	0.0	0.0	5
Below	0.0	0.0	5
Far Cry 5	0.0	0.0	5
Two Point Hospital	0.0	0.0	4
The Outer Worlds	0.0	0.0	3

Table 2: Bottom games by weighted accessibility score.

This pattern indicates that, while the global positive rate is relatively high, there remain games where accessibility is effectively absent, echoing earlier surveys that describe continuing structural barriers in commercial titles (Yuan et al. 2011).

Accessibility profiles of guidelines

Across all games, the ten guidelines with the highest weighted scores tend to be features that have become common in contemporary production pipelines, such as support for multiple input devices, assist modes, and flexible audio controls, as shown by Table 3.

Guideline	Guideline score	Positive rate	Represented count

Support more than one input device	0.86	0.96	91
Include assist modes such as auto-aim and assisted steering	0.85	0.91	132
Include tutorials	0.84	0.91	115
Provide separate volume controls or mutes for effects, speech and background/music	0.83	0.92	89
Provide subtitles for all important speech	0.8	0.83	312
Provide an autosave feature	0.79	0.98	42
Offer a wide choice of difficulty levels	0.79	0.85	122
Include contextual in-game help/guidance/tips	0.77	0.85	101
Indicate / allow reminder of current objectives during gameplay	0.76	0.85	82
Ensure subtitles/captions are or can be turned on before any sound is played	0.73	0.89	46

Table 3: Most often satisfied guidelines (by weighted score).

By contrast, the guidelines with the lowest weighted scores either receive consistently negative tags, or they are implemented in very few games and poorly rated when present. Table 4 presents them.

Guideline	Guideline score	Positive rate	Represented count
Allow for varied body types in VR	0.0	0.0	1

Ensure that subtitles/captions are cut down to and presented at an appropriate words-per-minute for the target age-group	0.0	0.0	2
Avoid placing essential temporary information outside the player's eye-line	0.05	0.11	9
Avoid any sudden unexpected movement or events	0.06	0.14	7
Keep background noise to minimum during speech	0.07	0.25	4
Avoid VR simulation sickness triggers	0.08	0.33	3
Make interactive elements that require accuracy (eg. cursor/touch controlled menu options) stationary	0.08	0.5	2
Provide a voiced GPS	0.08	0.5	2
Provide pre-recorded voiceovers for all text, including menus and installers	0.09	0.17	12
Use symbol-based chat (smileys etc)	0.09	1.0	1

Table 4: Least often satisfied guidelines (by weighted score).

That said, guidelines with very low represented counts (typically fewer than three to five tags) should be interpreted with particular caution: with such small samples, a single review can swing the positive rate from 0 to 1, so these entries may reflect idiosyncratic cases rather than generalisable patterns. While they are retained in Table 4 for transparency, readers are advised against drawing strong conclusions from items

tagged only once or twice in the corpus, and future iterations of the coding matrix may benefit from applying a minimum-count threshold for ranked comparisons.

The most represented guidelines, in terms of how many games mention them at all, cluster around audiovisual redundancy and legibility. “Provide subtitles for all important speech” appears in 312 games, “Allow controls to be remapped” in 268, “If any subtitles are used, present them in a clear, easy to read way” in 253, and “Ensure no essential information is conveyed by sounds alone” in 233. Font size controls, caption customisation, and high contrast between text and background are also in the ten most represented items. This aligns with the longstanding emphasis in both practice and scholarship on alternative presentations of auditory information and on flexible text rendering for different visual needs (Yuan et al. 2011; Archambault et al. 2008).

At the other end, several guidelines are practically absent from the review corpus. Items such as “Use symbol-based chat”, “Provide signing”, “Solicit accessibility feedback”, “Include every relevant category of impairment amongst play-testing participants”, “Ensure screenreader support for mobile devices”, “Simulate binaural recording”, and “Allow settings to be saved to different profiles” are each mentioned in at most two games. Other guidelines, including portrait/landscape play, input cool-down periods, screenreader-friendly manuals, preferences for playing with or without voice chat, and the internal design of speech recognition vocabularies, are never mentioned at all.

Cluster- and level-level patterns

Aggregating guidelines by accessibility domain shows that Hearing guidelines have the highest representation rate overall, at 19.2% of all possible tags, followed by Motor at 11.4%. Vision and Cognitive clusters sit around 8.4–8.5 per cent, General at 6.7 per cent, and Speech at 1.3%. When a guideline is mentioned, General items have the highest positive rate (84.0%), with Cognitive (73.3%) and Speech (72.7%) following, and Motor the lowest (58.2%).

Figures 1 and 2 summarise these patterns by level. Basic Hearing guidelines show both high representation and relatively strong performance, while advanced items in several clusters appear rarely and, when they do, often receive mixed or negative tags.

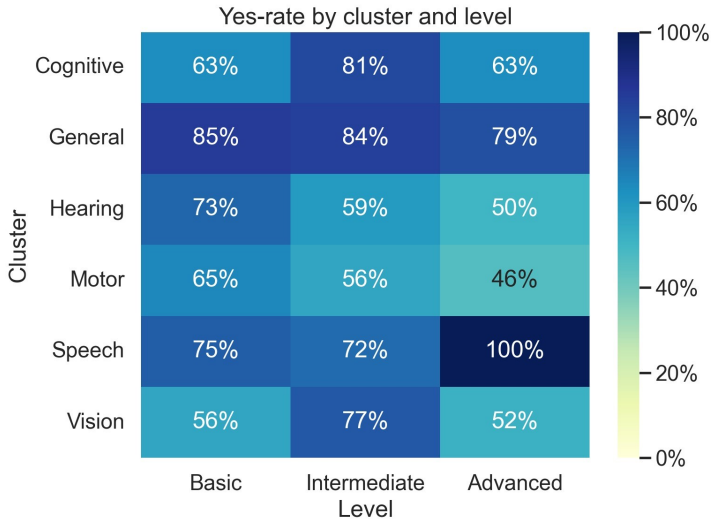

Figure 1: Yes-rates by cluster and level.

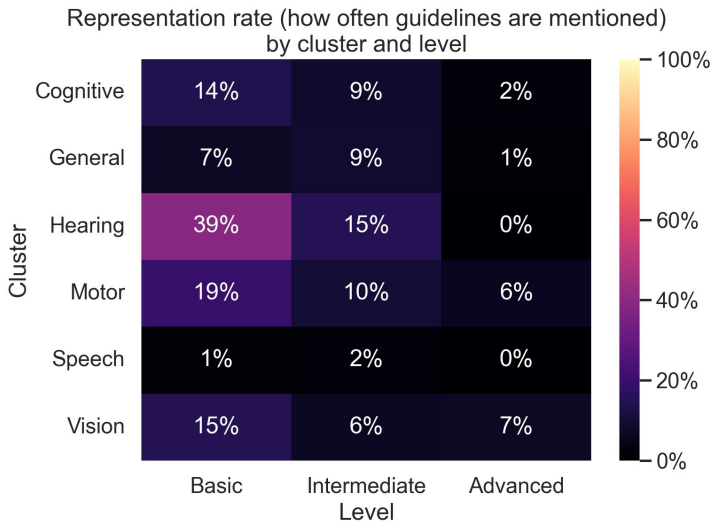

Figure 2: Representation rates by cluster and level.

Basic Hearing and Motor items are comparatively well represented, consistent with the prominence of audio and control concerns in CIPT's review categories. Advanced guidelines across clusters, such as VR-specific recommendations or sonar-style audio maps, are seldom mentioned in reviews at all.

Taken together, these cluster-level patterns from the CIPT corpus provide a community-grounded baseline against which the following heuristic evaluation can be read. If disabled reviewers gravitate toward basic hearing provisions, motor remapping, and visual legibility, then a test of Minecraft Education along the same axes offers a concrete measure of whether titles deployed at institutional scale meet the accessibility threshold that players have come to expect from contemporary games.

Heuristic evaluation of Minecraft Education

The heuristic evaluation of Minecraft Education against the GAG matrix paints a picture of broad, though uneven, compliance. Across domains, many basic and intermediate guidelines are fully or partially satisfied, while several advanced items remain unimplemented.

In the Motor cluster, Minecraft Education supports extensive control remapping on keyboard, mouse, controller, and touch, in line with the guideline on configurable controls. It also supports multiple input devices and allows adjustment of camera and cursor sensitivity across input modes. Touch interfaces expose on-screen controls that can be resized and repositioned, although inventory and some menus rely on more general GUI scaling rather than per-element controls. At the same time, some essential actions still require holding a button or screen press, with no alternative activation mode, and there is no built-in macro system, input cool-down, or option to play in portrait orientation. Camera control continues to depend on continuous analogue-style input with no discrete "step turn" mode. This pattern mirrors the CIPT corpus, where basic motor items enjoy high representation and high positive rates while advanced items, such as macros and input cool-downs, remain underserved in both community discourse and in Minecraft Education itself.

Cognitive and General guidelines reveal a similar mix. The game can be launched with minimal menu navigation, offers tutorials and in-world practice spaces, and provides contextual help, classroom settings that remove many failure conditions, and manual and automatic saving. There is some support for adjusting pacing through commands that alter tick rate or pause the world for all players, although no user-friendly global speed slider exists. Many narrative-oriented guidelines are partly out of scope for a

sandbox title without a fixed overarching story, such as summarising long narratives or providing audio description tracks.

For Vision, Minecraft Education offers a field-of-view slider, options to adjust FOV effects and world brightness, UI and chat scaling, text background opacity, and, on some platforms, a high-contrast resource pack. Heads-up display elements represent key status values using shape and iconography as well as colour, in line with GAG's recommendation to avoid colour-only communication. Touch controls can be enlarged and spaced out. However, there is no in-game crosshair customisation, and there is no comprehensive photosensitivity mode that reliably removes all flashes or high-intensity visual events.

In the Hearing domain, the title provides separate volume controls for multiple sound categories and robust text chat, including text-to-speech for chat on supported platforms. Java Edition's subtitles provide detailed captions for sound events, but Bedrock and Education do not yet share this implementation for general audio. There is no built-in voice chat, and therefore no need for preferences concerning voice-only play, signing, or captioning of live speech.

Speech-specific guidelines are mostly satisfied by absence: Minecraft Education does not require speech input in any context, so players who cannot or do not wish to use voice are not excluded at the interaction level. Advanced speech recognition guidelines are not implemented.

Finally, General guidelines dealing with documentation and disclosure are addressed through an in-game accessibility menu and online accessibility documentation for Minecraft Education. Difficulty and world behaviour can be tuned through classroom settings, as discussed in educational studies of Minecraft use in schools (Nebel et al. 2016; Checa-Romero 2016; Di Leo and Traetta 2025). At the same time, there is no in-client mechanism for saving multiple named profiles of settings or for expressing preferences about the use of accessibility features in matchmaking.

Overall, Minecraft Education aligns well with many basic and intermediate GAG items that CIPT reviewers often discuss, such as control remapping, multiple input support, subtitles and text-to-speech for chat, tutorials, and separate audio channels. It falls short or remains partially compliant on several advanced items, for example those concerning macros, input cool-downs, fine-grained control of motion and flash, VR embodiment, or symbol-based communication.

DISCUSSION

The combined analysis of CIPT reviews and the Minecraft Education case study illuminates how formal accessibility frameworks and community discourse intersect, and where they diverge.

First, the aggregate picture from CIPT suggests a kind of informal hierarchy among GAG items. Hearing guidelines, especially basic ones such as "Provide subtitles for all important speech" and "Ensure no essential information is conveyed by sounds alone", are both frequently discussed and relatively often satisfied. This resonates with long-standing advocacy and design attention to captioning and audio redundancy for Deaf and hard of hearing players. The bottom-ranked games record almost complete absence of such provisions, echoing concerns in accessibility research that many titles remain effectively unplayable without hearing even when they offer otherwise flexible interfaces (Yuan et al. 2011).

Visual legibility and text configuration form another dense cluster of attention. Guidelines concerning readable default font sizes, adjustable chat and caption text, and high contrast between text and background appear in a large number of games and have moderately high positive rates. This pattern is consistent with work on accessible interfaces that foregrounds scalable text and contrast controls as core design strategies for low-vision users (Archambault et al. 2008). In contrast, more

specialised visual guidelines, such as customisable crosshairs or voiced GPS navigation, have extremely low representation rates. They are rarely encountered in commercial titles to begin with and therefore seldom become topics in reviews.

Motor guidelines show a different profile. Basic items about remapping and supporting multiple input devices are talked about frequently and satisfied in many games, perhaps reflecting the gradual diffusion of remappable controls from specialised accessibility practice into mainstream design (Grammenos et al. 2009). Advanced motor items, such as global input cool-down periods, macro systems, or very simple control schemes tailored to switch devices, are seldom implemented and thus rarely mentioned, despite their importance for players with severe motor impairments. The low yes-rates for motor guidelines when they are discussed suggest that, at least in the games that reviewers select, fine-grained motor accessibility remains uneven.

The guidelines that never appear in any review illustrate the limits of what CIPT's genre of accessibility reviewing can reasonably cover. Items about including disabled players in play-testing, publishing manuals in screenreader-friendly formats, or configuring speech recognition vocabularies speak to internal development practices and ancillary documentation. Reviewers typically lack direct visibility into these processes and artefacts, and their situated accounts therefore focus on features and barriers that manifest during play itself. This maps onto Haraway's description of situated knowledges as partial and embodied perspectives that show some parts of a system more clearly than others (Haraway 1988). CIPT reviews make vivid how particular implementations feel in use, yet they cannot easily speak to whether studios followed inclusive testing protocols.

The Minecraft Education case study exemplifies how these emphases play out in an institutional context. Many of the features that GAG and CIPT treat as hallmarks of good accessibility are indeed present: extensive control remapping, support for keyboard, controller, and touch, tutorials and practice spaces, multiple audio sliders, and, on some platforms, subtitles and text-to-speech for chat. These provisions mean that, when Minecraft Education is evaluated using the same guideline vocabulary as the CIPT corpus, it scores well on a large fraction of basic and intermediate items across Motor, Hearing, Vision, Cognitive, and General clusters.

At the same time, the evaluation points to forms of effort and exclusion that sit at the edges of both GAG and CIPT discourse. Camera control remains continuous and analogue, with no discrete turning mode for players who cannot perform fine-grained movements, even though movement and looking are central classroom activities.

Some essential interactions on touch platforms still require holding or dragging, which can be fatiguing. There is no in-game way to turn off all sudden flashes or intense visual events, despite concerns from photosensitive players, and there is no built-in captioning of general sound events on the Bedrock-based Education client comparable to Java subtitles. From the perspective of disability and affect theory, these gaps matter because they shape who can participate in the shared pleasures of classroom play without paying disproportionate costs in fatigue, pain, or anxiety (Ahmed 2010; Berlant 2011; Kafer 2013; Ruberg 2015).

Educational deployments complicate the picture further. Studies of Minecraft in classrooms describe how teachers value the platform for its flexibility, capacity to support constructionist or inquiry-based activities, and apparent inclusiveness (Nebel et al. 2016; Checa-Romero 2016; Di Leo and Traetta 2025). Minecraft Education's classroom settings strengthen this impression, since they allow educators to suppress hostile mobs, remove damage, stabilise time and weather, and pause the world for all students. These tools align with GAG recommendations about bypassing non-core obstacles and allowing low-failure practice spaces. Yet they are largely teacher-facing, not learner-facing. This asymmetry surfaces a well-documented tension in human–computer interaction and educational technology research, in which platforms designed around institutional stakeholders can inadvertently displace accessibility

labour onto intermediaries rather than empower end users directly. In Minecraft Education, many provisions that appear inclusive at a platform level, such as suppressing hostile mobs, pausing the world, or adjusting difficulty, are surfaced through the teacher interface rather than the student client. A disabled learner's access to a 'safe' configuration therefore depends on an educator's awareness and willingness to enact it, which can paradoxically make the game less accessible to the individual player than its commercial counterpart, where the same settings are self-administered. This trade-off between environmental control and personal agency deserves more explicit attention in accessibility evaluations of educational titles, and it marks a boundary that GAG, originally formulated around a player-game dyad, does not fully capture. Disabled students depend on educators to configure worlds in accessible ways and may still encounter barriers within supposedly safe sessions, for instance when reading-intensive instructions on boards and NPCs are not complemented by audio support, or when group activities amplify social pressures to keep up despite fatigue or sensory overload (Gray 2014; Shaw 2015).

The combined mapping of CIPT discourse, GAG, and Minecraft Education therefore supports Ellcessor's argument that accessibility is better understood as an assemblage of policy, technology, and everyday practice than as a simple binary status (Ellcessor 2016). GAG codify a broad design space; CIPT reviewers, writing from situated standpoints, pay attention to the subset of that space that is both present in the games they play and narratable within review conventions; institutional adopters such as schools select titles like Minecraft Education partly because they appear to meet widely recognised accessibility markers. Within that assemblage, some forms of discomfort and exclusion become highly visible, while others remain muted.

Methodologically, the study demonstrates the value of bringing guideline-driven heuristic evaluation into conversation with large-scale analysis of player-produced texts. The scoring framework, which weights positive rates by the number of tags, allows titles like South of Midnight or Diablo IV to be compared with much smaller productions on a common scale, while still acknowledging differences in how extensively reviews engage with their features. Similar weighted approaches are recommended in content analysis to avoid over-interpreting patterns based on very small numbers of observations (Krippendorff 2018).

Future work could extend this approach in several directions. One would be to trace how specific guideline domains enter or leave community discourse over time, for instance as subtitles and remapping have shifted from rare features to standard expectations, while advanced items around VR embodiment or sonar-style navigation remain exceptional. For institutional titles, sustained collaboration with disabled students and educators could help surface accessibility concerns that neither formal guidelines nor review genres presently foreground.

Furthermore, extending this methodological framework to other games and datasets is relatively straightforward, because it rests on a simple input format and a transparent scoring procedure rather than on opaque modelling. Any corpus that can be brought into the "guidelines × games" matrix structure, with cells tagged yes/no or left empty, can be processed with the same pipeline. This includes other accessibility review outlets, publisher documentation, or even structured crowdsourced audits, provided that coding rules for what counts as satisfaction or failure of a guideline are made explicit.

Such a pipeline could serve as the backbone for a shared, living resource on game accessibility. Rather than remaining a one-off research dataset, the matrix could be opened to contributions from disabled players, accessibility specialists, educators, and developers, with review texts and coding decisions co-produced by those communities (Gray 2014; Haraway 1988; Shaw 2015). An openly maintained repository could track changes across releases, accommodate multiple languages and regions, and host both raw matrices and derived summaries similar to the ones presented here. CIPT and

comparable outlets would then become not only publishers of accessibility criticism but potential data partners in an evolving map of which accessibility practices are becoming standard, which remain rare, and where specific genres or platforms lag behind. Such a resource would not replace situated reviewing or formal guideline work, but it would create a shared evidentiary base on which advocates, researchers, and studios could argue about priorities and progress in accessible game design (Ellcessor 2016; Grammenos et al. 2009; Yuan et al. 2011). Taken together, the results suggest that whose accessibility counts in contemporary game design and deployment is a negotiated question. It is shaped by formal frameworks like the Game Accessibility Guidelines, by community sites such as Can I Play That?, by the infrastructural realities of classrooms and platforms, and by the uneven distribution of comfort and labour across players' bodies and senses.

Limitations and Ethics

The corpus analysis is limited to Can I Play That?, a specific English-language community with its own conventions of review writing and genre coverage, and therefore cannot stand in for all disabled players' experiences. Inferring the presence or absence of particular GAG items from review text is constrained by what reviewers chose to describe; guidelines that mattered to players but were taken for granted or hard to narrate may be under-represented. The study does not include direct user testing with disabled players or students, so experiential claims about Minecraft Education remain mediated by the guidelines and by evaluator judgement.

All CIPT reviews analysed are publicly available texts. Following discussions of internet research ethics, the study treats reviewers as authors who wrote for a public audience, while avoiding unnecessary reproduction of long passages. The heuristic evaluation of Minecraft Education involved only researcher play and did not engage other participants.

CONCLUSIONS

This article examined how a formal accessibility framework and community-based evaluations of games can be brought into a shared analytical frame, and what this reveals when applied to an institutional title. Using the Game Accessibility Guidelines as a reference, the study coded a large corpus of accessibility reviews from Can I Play That? and conducted a heuristic evaluation of Minecraft Education.

Across the CIPT corpus, the analysis shows that some guideline clusters have become central reference points in disabled players' accessibility talk, while others remain marginal. Basic hearing guidelines dealing with subtitles and avoidance of sound-only information appear frequently and tend to receive positive judgements. Visual legibility and text configuration cluster around readable and adjustable text, clear captions, and high contrast. Motor provisions around control remapping and support for multiple input devices are widely discussed, whereas more advanced adaptations, such as macros or input cool-downs, are rarely mentioned and often poorly rated when they do appear. Whole areas of GAG, for example those concerned with development practices, documentation formats, VR embodiment, or detailed speech technologies, hardly surface in reviews at all, either because games seldom implement them or because reviewers lack access to these aspects of production. The heuristic evaluation of Minecraft Education, assessed through the same guideline vocabulary, presents a broadly compliant yet uneven profile. Many basic and intermediate items across vision, hearing, motor, cognitive, speech, and general domains are satisfied. The title supports extensive control remapping, multiple input devices, tutorials and practice spaces, contextual help, separate volume controls, and text chat with text-to-speech where platforms allow. Classroom tools enable teachers to alter difficulty,

remove some failure states, and manage time and world behaviour. At the same time, several advanced or more specialised guidelines remain unmet: continuous or hold inputs are required for some essential actions, comprehensive control of flashes or intense visual events is absent, and some features present in other Minecraft editions, such as detailed sound-event subtitles, are missing from the Education client. Many classroom-oriented accessibility decisions sit with educators rather than students, so disabled learners' experiences depend on institutional configurations and social dynamics in addition to game settings.

Methodologically, the study shows that a guidelines-by-games matrix, populated from player-authored texts and heuristic inspection, can support systematic comparison without effacing the partial and situated character of experience. The same pipeline can, in principle, be applied to other review outlets, genres, platforms, and languages. Future work suggested by the present results includes tracing changes over time in which guideline domains appear in reviews, comparing impairment-specific CIPT categories as distinct standpoints on accessibility, extending the analysis to further institutional games, and developing a shared, openly maintained coding matrix with contributions from disabled players, accessibility specialists, educators, and developers. Across these directions, the central concern remains steady: how frameworks, community discourse, and institutional adoption together shape whose accessibility counts in contemporary game design and game-based learning.

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REFERENCES

Ahmed, S. 2010. *The Promise of Happiness*. Durham, NC, USA: Duke University Press.

Archambault, D., Gaudy, T., Miesenberger, K., Natkin, S. and Ossmann, R. 2008. "Towards generalised accessibility of computer games." *International Conference on Technologies for E-Learning and Digital Entertainment*. 518-527. https://doi.org/10.1007/978-3-540-69736-7_55

Berlant, L. 2011. *Cruel Optimism*. Durham, NC: Duke University Press.

Checa-Romero, M. 2016. "Developing Skills in Digital Media Production through Minecraft." *Games and Culture*. 11 (5). 463-488. https://doi.org/10.1177/1555412015569248

Consalvo, M. 2009. *Cheating: Gaining Advantage in Video Games*. MA: MIT Press.

Crenshaw, K. W. 2013. "Mapping the Margins: Intersectionality, Identity Politics, and Violence against Women of Color." *The public nature of private violence*. Routledge.

Di Leo, N. 2025. "Theoretical Framework for Video Game Accessibility: Bridging User Experiences and Industry Data for Inclusive Design." *Technology for Inclusion and Participation for All: Recent Achievements and Future Directions (AAATE 2025)*. 304–314. Cham: Springer. https://doi.org/10.1007/978-3-03201628-7_37

Di Leo, N. and Traetta, L. 2025. “Crafting Knowledge Block by Block: A Systematic Review on the Educational Potential of Minecraft in Schools.” *Italian Journal of Educational Technology* 33 (1): 67–85. https://doi.org/10.17471/24994324/1379

Ellcessor, E. 2016. *Restricted Access: Media, Disability, and the Politics of Participation*. New York: New York University Press.

Game Accessibility Guidelines. n.d. *Game Accessibility Guidelines – A straightforward reference for inclusive game design*. Game Accessibility Guidelines. https://gameaccessibilityguidelines.com

Grammenos, D., Savidis, A. and Stephanidis, C. 2009. “Designing Universally Accessible Games.” *Computers in Entertainment (CIE).* 7 (1). 1-29. https://doi.org/10.1145/1486508.1486516

Gray, K. L. 2014. Race, Gender, and Deviance in *Xbox Live: Theoretical Perspectives from the Virtual Margins*. New York, NY, USA: Routledge.

Haraway, D. 1988. “Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective.” *Feminist Studies* 14 (3): 575–599.

Juul, J. 2013. *The Art of Failure: An Essay on the Pain of Playing Video Games*. Cambridge, MA: MIT Press.

Kafer, A. 2013. *Feminist, Queer, Crip. Bloomington*, IN, USA: Indiana University Press.

Krippendorff, K. 2018. *Content Analysis: An Introduction to Its Methodology*. Sage publications.

Nebel, S., Schneider, S. and Rey, G. D. 2016. “Mining Learning and Crafting Scientific Experiments: A Literature Review on the Use of Minecraft in Education and Research.” *Educational Technology & Society*. 19 (2): 355–366. https://www.jstor.org/stable/10.2307/jeductechsoci.19.2.355

Nielsen, J. and Molich R. 1990. “Heuristic Evaluation of User Interfaces.” *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 249–256.

Oliva-Zamora, M. A. and Mangiron, C. 2025. “How to create video games with cognitive accessibility features: a literature review of recommendations.” *Universal Access in the Information Society* https://doi.org/10.1007/s10209025-01231-5.

Postigo, H. 2016. The Socio-Technical Architecture of Digital Labor: Converting Play into YouTube Money. *New media & society*. 18.2: 332-349.

Ruberg, B. 2015. “No Fun: The Queer Potential of Video Games that Annoy, Anger, Disappoint, Sadden, and Hurt.” *QED: A Journal in GLBTQ Worldmaking* 2 (2): 108–124.

Schreier, M. 2012. *Qualitative Content Analysis in Practice*. Thousand Oaks, CA: Sage.

Shaw, A. 2015. *Gaming at the Edge: Sexuality and Gender at the Margins of Gamer Culture*. Minneapolis, MN, USA: University of Minnesota Press.

Yuan, B., Folmer, E. and Harris, F. C. Jr. 2011. “Game Accessibility: A Survey.” *Universal Access in the Information Society*. 10 (1): 81–100. https://doi.org/10.1007/s10209-010-0189-5

ENDNOTES

1 https://caniplaythat.com

2 https://education.minecraft.net/

3 https://www.w3.org/WAI/standards-guidelines/wcag/

4 https://www.minecraft.net/it-it/article/java-or-bedrock-edition