

Thank you for your interest in helping us assemble an expansive review of games-based library services (GBLS) literature!

Please review the current draft below and add any comments you have right into this document.

We are looking for three main forms of input:

1. Missing Perspectives or Sources: What projects, studies, papers or insights have been omitted? Please add citations.
2. Erroneous or Arguable Statements: What have we misidentified or misrepresented? What conclusions are problematic or under justified?
3. Structural Issues: Where has our organizational structure caused a problem? Please provide any suggested restructuring.

We will be collecting input over the next few months, then will begin finalizing a separate manuscript for publication. This version of the document will continue to be used as an “encyclopedia” of what we collectively know about the topic, to be used alongside a few other tools that are under development.

Games-Based Library Services

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Abstract

Games are an established cultural media and increasingly visible component of public, school, academic, and special-library service, yet the literature describing game-based library work remains dispersed across programming reports, instructional studies, collection and metadata research, historical accounts, and adjacent games-based learning scholarship. This review synthesizes that literature through the umbrella concept of Games-Based Library Services (GBLS): the interconnected use of games, play, gameful design (the selective use of game-design qualities outside full games), collections, technologies, spaces, expertise, and partnerships to advance library purposes. Across contexts, the literature associates GBLS with equitable media access, information and media literacy, orientation, community formation, cultural stewardship, research, creative production, outreach, and well-being. The strongest findings are conditional rather than universal. Games appear most useful when their affordances (the actions and possibilities a form enables) fit a defined service goal, when participation is supported by skilled facilitation and inclusive access, and when reflection or advisory connects play to broader learning and cultural contexts. Evidence is strongest for selected instructional and orientation interventions, user-centered game metadata, and some community-oriented programs; it remains dominated overall by local case studies, descriptive reports, small samples, and immediate self-report. The review therefore distinguishes demonstrated outcomes from plausible benefits and practitioner knowledge. It concludes that GBLS should be understood not as a catalog of entertaining formats but as a service ecology requiring community assessment, professional preparation, discoverable collections, sustainable operations, and outcome-aligned evaluation. A future research agenda should compare models across library types, assess participation and exclusion more directly, and develop national evidence about institutional capacity and community demand.

Why Games-Based Library Services Matter

Games-based library work raises a question larger than whether a particular title, tournament, or escape room attracts participants: how can libraries engage games as cultural media and forms of social action in ways that advance public access, learning, belonging, stewardship, and inquiry? The literature increasingly treats games as relevant to core library functions, but it also shows that positive outcomes do not arise from the mere presence of play. Across public, school, academic, and special-library contexts, successful services depend on the fit among purpose, audience, format, facilitation, collections, space,

technology, and assessment. This review therefore approaches games not as a novelty category but as a field of service design.

Games as Mainstream Cultural Media

Games have become one of the defining cultural forms of the twenty-first century. While early public discourse often treated games as a niche form of entertainment associated primarily with children and adolescents, contemporary scholarship increasingly recognizes games as a mature cultural medium with social, artistic, economic, and civic significance comparable to film, television, literature, and music (Bogost, 2007; Gee, 2003; Salen & Zimmerman, 2004). The scale of contemporary gaming culture alone suggests that games can no longer be understood as a peripheral recreational activity. Rather, they have become a central component of global media consumption, cultural production, and public life.

The growth of the game industry illustrates this transformation. Recent market analyses estimate global game revenues at approximately \$189–197 billion annually, generated by an estimated 3.6 billion players worldwide (Newzoo, 2025). By comparison, global recorded music revenues reached approximately \$31.7 billion in 2025 (IFPI, 2026), while global box office revenues remain substantially below game industry revenues even when combined with theatrical admissions worldwide. As a result, games now generate more revenue than the global film box office and recorded music industries combined, a position they have maintained for more than a decade. The scale of this market has helped establish games not merely as an entertainment sector but as one of the largest and most influential cultural industries in the world.

Additional market summaries in the coded corpus broaden this scale argument across formats and devices. Statista's video-gaming compendium estimates a global market of \$475.04 billion in 2024, forecasts growth to \$691.31 billion by 2029, and reports that 84.1% of global internet users surveyed in Q2 2024 played games on some device, with smartphones the most common access point; its companion board/card games report estimates global board-game revenue at \$8.3 billion in 2023 and card-game revenue at \$2.75 billion, while also noting that roughly one quarter of U.S. adults ages 18-64 identified board or card games as a hobby in early 2024 (Statista, n.d.-a, n.d.-b). These figures do not evidence library outcomes, but they make clear that both digital and tabletop games are ordinary contemporary media forms rather than marginal youth interests.

Economic indicators, however, tell only part of the story. Games have achieved widespread cultural adoption across demographic groups. In the United States, approximately 60 percent of adults report playing video games weekly, and the average player is now thirty-six years old. Recent surveys estimate that more than 212 million Americans play games regularly, reflecting participation across generations rather than within a narrowly defined youth market. Internationally, gaming has become one of the most common forms of media engagement, rivaling and often surpassing participation in other entertainment activities.

Games as Participatory and Expressive Media

This participatory dimension distinguishes games from many earlier media forms. Salen and Zimmerman (2004) describe games as systems of meaningful play in which significance emerges through the

relationship between player action and system response. Similarly, Gee (2003) argues that games foster “affinity spaces” in which participation is organized around shared interests, expertise, and problem solving rather than traditional social categories. Steinkuehler’s (2006) work on massively multiplayer online games further demonstrates that gaming communities frequently function as sites of sophisticated discourse, collaborative knowledge production, and social organization. In these accounts, the cultural significance of games derives not only from their content but from the communities and practices they generate.

Games have also become an important expressive medium. Bogost (2007) argues that games communicate through procedural rhetoric, representing ideas through systems, rules, and interactions rather than solely through language or imagery. From city-building simulations and historical strategy games to independent narrative experiences and experimental art games, contemporary games increasingly engage political, social, ethical, and cultural questions. Like novels, films, and visual art, games have become vehicles through which societies explore values, identities, and collective concerns. Museums, archives, universities, and cultural institutions now routinely preserve, exhibit, and study games as significant cultural artifacts. Scholars associated with the MacArthur Foundation’s Digital Media and Learning initiative were among the first to recognize the significance of this shift. Rather than treating games as isolated artifacts, researchers such as Gee (2003), Squire (2011), Steinkuehler (2006), Salen (2007), Zimmerman (2008), and Macklin (2016) examined games as participatory cultural systems that support identity formation, community membership, creativity, and civic engagement. Their work emerged alongside broader scholarship on participatory culture (Jenkins et al., 2009), which argued that digital media increasingly blur distinctions between producers and consumers. Games exemplify this transformation. Players do not merely consume content; they create modifications, produce fan works, contribute to online knowledge bases, organize communities, participate in competitive scenes, and increasingly engage in forms of cultural production that extend beyond the boundaries of any individual title.

Squire’s related work sharpens this point for libraries by treating games as designed and ideological worlds rather than neutral containers for content. From this view, game literacy involves reading rules, incentives, representations, omissions, player choices, and community interpretation together, because neither the software artifact nor a single playthrough fully captures what a game means or teaches (Squire, 2006, 2008b).

Zimmerman (2008) famously argued that the twenty-first century is increasingly becoming a “ludic century,” characterized by the growing influence of game-like systems throughout social, economic, and technological life. Whether or not this claim is accepted in its strongest form, there is little doubt that games now occupy a central position within contemporary culture. They shape social relationships, influence popular discourse, generate creative communities, and constitute one of the largest sectors of global media production. Consequently, libraries encounter games not simply as recreational materials but as a major cultural medium that increasingly sits alongside books, film, music, and digital media within the broader information and cultural ecosystem.

Games for Learning, Health and Well Being

In educational settings, games are often described as situated learning environments that allow participants to learn through action rather than observation alone. By placing players inside systems of

goals, rules, tools, and consequences, games can model how practitioners think and work within a domain (Gee, 2003, 2007; Shaffer, 2006). Learning in games is not simply a matter of acquiring information; players test ideas, receive feedback, revise strategies, and experience the consequences of decisions. Meta-analyses generally find positive effects of games on learning outcomes independent of age and topic, but these effects are strongest when gameplay is integrated into broader instructional contexts rather than treated as a stand-alone intervention (Clark et al., 2016; Sitzmann, 2011; Wouters et al., 2013). Earlier synthesis work reached a similar but less methodologically settled conclusion: Vogel et al. (2006) found stronger cognitive and attitudinal outcomes for games and interactive simulations than for traditional teaching, while also documenting weak controls, sparse demographic reporting, and incomplete intervention descriptions. Squire (2007) therefore remains useful methodologically, arguing that experiments, ethnography, design-based research, critical analysis, and practitioner collaboration answer different questions about games, learning, meaning, and implementation.

Continuing this finding of the critical role of facilitation, Asbell-Clarke et al. (2020) describe a framework for what they call “bridging” activities that help learners connect experiences in a game to classroom content, real-world situations, and future learning opportunities. This perspective aligns with Bransford and Schwartz’s (1999, 2001) concept of “preparation for future learning,” which emphasizes helping learners develop the ability to learn from new situations rather than simply master isolated content. From this perspective, games may be most valuable not when they teach specific facts directly, but when they create opportunities for exploration, reflection, and adaptive thinking that can be extended through discussion and facilitation.

Gagnon (In Press) argues that games are uniquely suited as cognitive and affective “rehearsal spaces.”

Beyond formal education, research has identified a range of potential benefits related to well-being. Studies in psychology and health suggest that games can support cognitive development, emotional regulation, resilience, stress reduction, and therapeutic interventions under appropriate conditions (American Psychological Association, 2014; Granic, Lobel, & Engels, 2014). Socially, multiplayer and networked games can facilitate collaboration, identity exploration, friendship formation, and participation in communities of practice (Cole & Griffiths, 2007; Steinkuehler & Williams, 2006). These findings have contributed to a growing view of games as meaningful social and cultural environments rather than merely entertainment products.

Game Evaluations are Not Without Concern

At the same time, the literature documents important concerns. Researchers have examined problematic or excessive play, exposure to harmful content, harassment, exclusionary community norms, and negative psychological or behavioral outcomes under certain conditions (American Academy of Pediatrics, 2016; World Health Organization, 2019). The existence of positive outcomes does not eliminate these risks, nor does game participation guarantee beneficial experiences. Instead, the evidence suggests that games are best understood as a powerful but context-dependent medium. Their effects emerge through the interaction of design, facilitation, player characteristics, social environments, and patterns of use.

Taken together, this adjacent evidence supports a conditional rather than medium-essentialist rationale for library attention. Controlled syntheses generally report modest learning advantages, but effects depend on

comparison conditions, scaffolding, repeated participation, collaboration, supplemental instruction, and the alignment of mechanics with learning goals; motivation does not improve reliably merely because an activity is a game (Clark et al., 2016; Sitzmann, 2011; Wouters et al., 2013). These studies do not establish GBLS outcomes because they examine classrooms and training settings, yet they sharpen a design principle that recurs in the library literature: games are most defensible as components of facilitated service arrangements rather than self-sufficient interventions.

Library-specific evidence further qualifies the cultural argument. A weighted survey of 1,167 U.S. public-library administrative entities found that 65.6% offered games and gaming programs for teens, while also documenting uneven staffing, funding, space, and technology capacity (Public Library Association, 2023). Cultural prominence therefore establishes relevance, not universal demand or guaranteed benefit. The field-level question is how libraries translate a consequential but context-dependent medium into equitable, purposeful, and sustainable public service.

Libraries, Public Knowledge, and the Contemporary Information Environment

The case for GBLS is especially consequential in an information environment marked by abundance, fragmented attention, commercially governed discovery, misinformation, and unequal access to technology and cultural participation. Libraries remain locally embedded institutions where organized knowledge, public space, technology, collections, and human guidance can be encountered without a purchase requirement. Games do not remedy failures of civic trust or public knowledge on their own. They can, however, create bounded environments in which participants investigate claims, coordinate with others, interpret feedback, inhabit unfamiliar roles, and confront the consequences of decisions.

This potential is clearest when play is joined to facilitation. Public-library misinformation escape rooms, for example, use narrative, collaborative investigation, designed failure, and librarian-led debriefing to help participants examine platform tactics, confirmation bias, emotional vulnerability, and social sharing. Games-based orientations ask learners to navigate actual spaces and search systems rather than only receive explanations. Tabletop role-playing programs can organize collective storytelling, rule interpretation, and mutual decision making. These examples differ substantially, but they share an action-feedback-reflection structure. Their value lies less in making information "fun" than in giving people supported opportunities to practice judgment.

The public role of libraries also changes the meaning of access. A game may be nominally available yet remain unusable without hardware, broadband, accounts, controllers, accessible interfaces, translated rules, staff guidance, safe social groups, or time and space to play. Commercial platforms may permit publication while making visibility and continuity dependent on algorithms, monetization, and proprietary infrastructure. GBLS consequently includes not only acquisition or event production but also the public work of lowering material, informational, social, and cultural barriers to participation.

Historical Continuities and the Evolving Library Mission

Contemporary GBLS continues a long history of libraries negotiating the relationship among play, education, recreation, and professional legitimacy. Historical studies document nineteenth-century chess rooms, rational recreation, toys, puzzles, contests, lantern slides, role-play, and child-centered environments, as well as later toy lending, summer-reading challenges, game clubs, and digital-game services (Burek Pierce, 2016; Nicholson, 2013). Early children's librarians used tactile, visual, and social materials to connect curiosity and peer interaction with reading and memory. Later professionalizing movements sometimes treated these practices as distractions from efficiency, uniformity, and the seriousness of book-centered service.

This history is not evidence that current programs produce learning or belonging. It instead establishes two precedents. First, games-based service is not a temporary response to digital media; it recurs whenever libraries adapt collections and environments to changing forms of learning and cultural participation. Second, debates about games often reproduce older tensions over noise, recreation, youth culture, nonbook materials, and the boundaries of professional work. Recognizing that continuity can help libraries assess contemporary services on their purposes and results rather than on inherited assumptions about which media are legitimate.

The Need for a Field-Level Synthesis

The relevant scholarship is distributed across library programming, information literacy, cataloging, archives, game studies, education, youth development, wellness, and immersive technology. Much of it is organized around formats or individual cases. Practitioner reports offer valuable operational knowledge but are often cited beside experiments and systematic reviews without clear distinction in evidentiary weight. As a result, the field has many examples yet less clarity about what can be generalized across them.

A field-level synthesis must therefore do more than inventory programs. It must distinguish the purposes libraries pursue, compare the affordances and costs of different forms, identify conditions that recur across successful implementations, and state where evidence remains descriptive. The central claim emerging from this literature is that GBLS is best understood as a service ecology. Collections, programs, spaces, staff expertise, technologies, policies, partnerships, and patrons interact; weaknesses in one part can limit the value of the others. The following review develops that claim by defining the field, examining its conceptual terrain, synthesizing its service purposes and program models, and deriving cross-cutting conditions for practice and research.

Scope, Definition, and Review Approach

A field-level synthesis depends on clear boundaries, transparent methods, and a working definition broad enough to connect collections, programs, spaces, technologies, and expertise without collapsing distinct practices. This section defines GBLS, states what the review includes and excludes, explains the human and computational workflow, and calibrates claims to the strengths and limitations of the source base.

Defining Games-Based Library Services

Games-Based Library Services is used here as an umbrella term for library work involving games, gameful systems, and play. It includes collection development, circulation, in-library access, cataloging and discovery, advisory, displays, instruction, orientation, outreach, recurring groups, festivals, tournaments, game creation, research support, preservation, professional education, spatial design, and assessment. This definition is intentionally broader than "gaming programs." It directs attention to the relationships among front-stage experiences and the less visible infrastructure that makes them discoverable, accessible, inclusive, and sustainable.

GBLS does not imply that all playful activity is a game or that all game-related services operate alike. Full games organize participation through interdependent rules, choices, goals, feedback, and consequences. Gamification applies selected game-design elements, such as points, badges, levels, quests, or progress displays, to a nongame activity. Play is broader still and may involve imagination, movement, experimentation, or improvisation without a complete rule system. Maintaining these distinctions matters because each form carries different assumptions about motivation, agency, learning, and evaluation.

Scope and Boundaries of the Review

The review includes analog, digital, immersive, live-action, and hybrid forms across public, school, academic, and special-library contexts. It examines services for children, teens, adults, students, researchers, families, and staff. Historical sources are included to clarify origins and recurring professional debates. Adjacent educational, game-design, and audience research is used selectively when it helps explain mechanisms, accessibility, or cultural context that library studies have not examined directly.

The review does not treat every reward system, contest, or playful display as equivalent to games-based service. Nor does it assume that research conducted in classrooms, laboratories, commercial platforms, or game communities transfers directly to libraries. Adjacent evidence is identified as such. The emphasis remains on practices that involve library purposes, settings, collections, workers, or partnerships, and on implications that can be supported across more than one local example.

Review and Synthesis Approach

This literature review was developed through an iterative process that combined conventional scholarly review, consultation with practitioners and project partners, structured human analysis, and carefully designed uses of large language models (LLMs) for automation of repeatable processes and for auditing. The process began with articles recommended by project partners and members of the American Library Association's Games and Gaming Round Table. This resulted in 250 articles for initial review. The research team conducted a preliminary review of 50 of these to identify recurring topics, establish initial categories, and develop an early structure for the review. These preliminary findings informed a poster presented at the Wisconsin Library Association conference in 2026.

In a second round of searching, the keywords “game” and “library” were used for a search across Scopus and Google Scholar, identifying additional articles for review. The current corpus contains 419 articles. Of these, 85 articles were excluded for one of the following reasons: Not an published text-based article, not library specific (e.g. research about games as an instructional media, or game studies broadly), not game specific (e.g. playful, new media, or broadly constructionist activities in libraries), or was a list of resources instead of a review. An additional 7 articles were excluded because PDFs could not be located. This results in 200 sources that were included in the corpus for full review.

The team then developed a detailed outline and added initial sources, claims, and examples to each section. The outline was revised through multiple rounds of team feedback and expanded into a partial draft representing the intended structure of the full paper. The team then provided feedback on this draft. A second version was prepared with an updated structure. This file is stored as `baseline_structure_and_prose.md`.

To support consistent analysis across a corpus of sources, the team developed a standard article summary metadata framework, stored in `metadata_schema_and_lexicon.md`. This structure was derived from an the initial and the manual application to a sample of 10 random articles. This led to a second version of `metadata_schema_and_lexicon.md` that added additional definitions to address ambiguities and inconsistencies. This human-coded sample provided a reference point for designing and testing prompts that could apply the codebook and metadata framework across the larger collection. Also based on `baseline_structure_and_prose.md`, the team created `explicit_values.md`, a document that makes the review’s interpretive commitments and evaluative assumptions explicit.

The specific workflow was informed by Gagnon’s prior collaborative research on computational and LLM-assisted methods in educational research, including the integration of LLMs and machine learning to parse educational game log data using natural language (Liu et al., 2025) and the use of LLM-assisted content analysis to code educational data (Zambrano et al., 2026). Across these projects, LLMs were treated as analytic supports within a larger research design: prompts were iteratively revised, coding rules were made explicit, human-coded examples were used to calibrate outputs, and results were compared against researcher judgment. This review adapts those practices to literature synthesis by using LLMs to assist with article summarization, thematic coding, cross-source comparison, draft development, and automated review, while maintaining human responsibility for source selection, interpretive framing, citation accuracy, synthesis, and final claims.

After the coding framework had been tested and revised, LLM-assisted procedures were used to generate structured summaries and metadata for the full corpus. To validate the reliability of the summaries and metadata assignments, a web based tool was developed to support independent review by multiple researchers, a rotating coder design. The full article text is displayed. The generated summary is available for rating and suggested edits using a rubric judging *Factual accuracy*, *Coverage and completeness*, and *Clarity and usefulness*. On a different panel, the lexicon is defined and sample passages are displayed that offer potential evidence for or against the application of a given term. Coders were recruited from the research team and from other GBLS librarians. Krippendorff’s Alpha (α) was used to calculate the interrater reliability, for both the summaries and metadata. All reached a score of 0.9 after X

independent coders reviewed Y articles with a Z% overlap. The LLM coder then coded the entire set of articles, reaching a Krippendorff's Alpha (α) score of N when paired with the human coders.

The computationally assisted literature review uses AI to audit quality over multiple phases.

A first pass identifies literature in the corpus that has not been used in the review.

A second pass strengthens transitions and continuity across sections.

A third evaluates and revises the draft using the ALA-derived quality criteria documented in `publishability_rubric.md`.

The draft is then audited for accuracy, consistency, evidentiary support, and alignment with the project's stated values.

This draft was reviewed by each of the authors and a new round of changes were made, focusing the contributions and intellectual merit components. Finally, it was posted online for public comment and to submit any additional articles that had not been considered. XXX individuals have participated in this review process to date.

All sources, versions, tools and prompts used as part of this process are available as a companion resource at <https://github.com/fielddaylab/gameBasedLibraryServicesLiterature>.

Scope of the Review

The review focuses on documented uses of games in libraries or in programs directly connected to library services. It does not attempt to cover broad theoretical arguments about the educational value of games when those arguments are not tied to library practice. It also excludes uses of games outside library or library-connected settings, general reviews or collections of games and gaming events that do not provide specific examples relevant to the review, non-English-language sources, and videos or other non-textual materials. These boundaries keep the analysis focused on a body of evidence that can be examined consistently and that speaks directly to games-based library services.

Characteristics and Limitations of the Source Base

The literature is broad in topic but uneven in method. It contains a substantial professional record of local implementation, especially for youth programs, academic-library orientation, tabletop collections, escape rooms, and immersive technologies. Empirical work includes national and local surveys, interviews with staff and patrons, observations, pre/post studies, usability research, metadata studies, and a smaller number of comparative experiments and systematic reviews. Several particularly useful research programs connect multiple publications around game metadata, public-library virtual reality, misinformation escape rooms, or library orientation.

Nevertheless, most evidence remains descriptive rather than evaluative. Studies often rely on small convenience samples, one institution, immediate satisfaction, self-reported learning, or incomplete reporting of sample size and duration. Attendance and enjoyment are frequently used as proxies for belonging, literacy, retention, or behavioral change. Adult, rural, tribal, and special-library contexts are

less visible than teen public-library and student academic-library settings. Publication also favors successful or novel implementations, leaving failed pilots, discontinued services, and ordinary maintenance underreported.

These limitations shape the claims that follow. The review can identify a coherent field of practice, recurring design principles, and promising outcomes. It cannot establish that games are generally superior to conventional library services or that one format works across communities. The most defensible synthesis is conditional: games can advance library purposes when their affordances are deliberately matched to local needs and supported by facilitation, equitable access, and outcome-aligned assessment. Within research on characteristics and limitations of the source base, Mattson's (2021) review of Crowe and Sclippa's edited volume *Games and Gamification in Academic Libraries* helps characterize the professional source base for academic-library GBLS. The reviewed volume spans game nights, collection development, circulating electronic and tabletop games, information-literacy games, badging, escape rooms, outreach fairs, game jams, accessibility, staff training, student-faculty relationship building, and special-collections orientations; because Mattson is reviewing an edited book rather than reporting a new study, it is best used as a map of professional discourse and as a pointer to underlying chapters rather than as outcome evidence.

Across the same body of evidence, Blummer and Kenton (2019) provide adjacent source-base context by reviewing 174 papers on academic-library outreach from 2008 to January 2019. Gaming appears as one small specialized-program subtheme, alongside instruction, roaming services, orientations, exhibits, makerspaces, and collections; the review is too broad to evidence GBLS outcomes, but it shows that video-game events, information-literacy games, and library-orientation games were being treated as academic-library outreach tools within wider patterns of relevance, collaboration, cultural artifacts, flexibility, marketing, management, and uneven assessment.

Conceptual Terrain: Games, Play, and Library Service

Before comparing services, the review must distinguish the forms of play that libraries collect, design, host, and interpret. This section establishes the conceptual vocabulary of game modalities, games, gamification, analog and digital affordances, and playful space so later claims do not treat unlike practices as interchangeable.

Game Modalities in Library Contexts

Game modality refers here to the form through which play is organized and accessed in library service. The following discussion differentiates tabletop, digital, role-playing, gameful, creative, and hybrid forms while comparing how their material, social, technical, and facilitation demands shape library use. Within research on game modalities in library contexts, Nicholson (2013) also helps define the GBLS service field by distinguishing game collections from gaming programs and by treating games broadly as structured forms of play across board, card, computer, role-playing, console, puzzle, toy, and hybrid formats. His historical survey shows that games can function as materials, programs, research objects, social infrastructure, digital-literacy tools, outreach mechanisms, and collection-development challenges.

Across the same body of evidence, Hill (2016) offers a synthetic professional map of library gaming modalities, grouping digital games, video games, role-playing games, tabletop games, gamification, and game creation across public, school, and academic libraries. Because it is a literature review rather than original assessment, its main value is definitional: it shows how mid-2010s library discourse connected games to access, new literacies, community building, collections, programming, partnerships, orientation, information literacy, and advocacy. At the level of implementation, Elkins (2015) adds a school-library practitioner rationale for gaming as literacy and access work. He connects video games to critical thinking, problem solving, collaboration, information and media literacy, modding, strategy guides, videos, wikis, creative writing, and mathematical modeling, while also treating consoles, controllers, accessories, strategy guides, gaming spaces, and tournaments as practical school-library service decisions.

In a more context-specific account, Storie's (2010) review of Nicholson's *Everyone Plays at the Library* characterizes Nicholson's practitioner framework as one organized around gaming experiences rather than formats alone: knowledge, strategy, action, narrative, and social gaming. The review is secondary rather than empirical, but it helps show why GBLS modality decisions should consider library goals, audience age, cost, player count, complexity, play time, facilitation, marketing, evaluation, and the skills a game invites.

Games, Gamification, and Play

Scholars in game studies and library science draw a clear conceptual distinction between games and gamification, a distinction that has important implications for learning-oriented institutions such as libraries. (Seay, 2018b) argues that gamification involves the application of discrete game elements such as points, badges, leaderboards, and progress tracking to non-game activities in order to motivate participation, whereas games are complete, rule-governed systems that create meaning through sustained play and internal coherence. This position aligns with Ralph Koster's influential definition of games as systems that make learning enjoyable by enabling players to recognize and master patterns within a bounded rule set (Koster, 2003), and with James Paul Gee's account of games as sites of situated, embodied learning in which players adopt identities, test hypotheses, and learn through failure and feedback within meaningful contexts (Gee, 2007). Gee explicitly cautions that extrinsic reward structures alone do not produce deep learning, arguing instead that games teach because they embed knowledge in action and social practice. Similarly, scholars of gamification such as Sebastian Deterding et al. (Deterding et al., 2011) note that gamification abstracts game mechanics from games themselves, often prioritizing behavioral compliance over experiential meaning. Taken together, these authors suggest that while gamification can be effective for short-term engagement or task completion, it risks instrumentalizing play if divorced from the epistemic and social qualities that define games proper. For libraries, institutions historically oriented toward inquiry, intrinsic motivation, and the public good, this literature implies that games-based experiences grounded in play, identity, and collaboration may be more congruent with library values than gamified systems primarily designed to use metrics to influence behaviour.

This distinction is useful but should not become a simple hierarchy in which full games are always preferable. Huizinga's classic *Homo Ludens* (1950) emphasizes the voluntary, bounded, rule-governed

activity that creates temporary social orders, while contemporary library studies show that playful design can also operate through spaces, reading challenges, progress systems, and participatory environments. An analysis of public-library websites and social media found points, badges, progress tracking, rewards, movement, sensory play, and exploratory spaces used to support autonomy, competence, and relatedness, although it only assessed design patterns rather than patron outcomes (Downie & Proulx, 2022). Gamification can therefore be appropriate when its mechanics fit a limited service goal and do not displace intrinsic inquiry, participant agency, or meaningful social practice.

Evidence also cautions against treating engagement as learning. A randomized fraction-training study found that integrated game elements improved practice accuracy and increased response time but did not produce larger pre-post learning gains than a matched non-game condition (Ninaus et al., 2023). Although this experiment was not library-based, it sharpens an important GBLS distinction: attendance, enjoyment, persistence, task performance, retention, and transfer are different outcomes. Libraries should evaluate gameful systems according to the outcome they are designed to produce rather than assuming that visible participation demonstrates deeper learning.

Analog, Digital, and Hybrid Affordances

Analog, digital, and hybrid formats create different possibilities for access, interaction, embodiment, scalability, and institutional support. This subsection compares those affordances without treating any format as inherently superior, emphasizing how libraries should match form to purpose, audience, and local capacity. Within research on analog, digital, and hybrid affordances, Seay (2018) offers a practitioner argument for analog, co-present game forms as distinct from many screen-based educational games. Although not an empirical study, the column usefully frames escape rooms, educational live-action role-playing games (Edu-LARPs), and large-scale multiplayer simulations known as megagames as collaborative, multiplayer, immersive activities whose value lies in real-time social interaction, role assumption, communication, and problem solving, reinforcing the GBLS principle that libraries should match game form to learning and community goals rather than treating digital novelty as inherently superior.

Seay's later "Space Guardians" column adds a complementary practitioner rationale for analog game services: board games, books, makerspaces, and physical library spaces can answer a longing for tactile, face-to-face, slower social interaction amid digital overload. The essay is speculative rather than evidentiary, but it helps explain why analog GBLS formats may be valuable precisely because they gather bodies, materials, attention, and conversation in shared public space.

Seay's tabletop-resurgence column similarly frames board and card games as "high touch" responses to high-tech life. As a practitioner essay, it is not outcome evidence, but it helps name the service affordances of tabletop GBLS: face-to-face communication, nonverbal cues, tactile pieces, shared tables, low-tech access, and social community, with escape rooms, live-action role-playing (LARP), and megagames appearing as extensions of the same analog/immersive impulse.

Libraries as Playful Spaces and Service Environments

The literature also shifts attention from games as objects or scheduled events to playfulness as a quality of the library environment. Comparative observations and staff interviews in public libraries show that architecture, furnishings, acoustics, children's zones, gaming rooms, makerspaces, outdoor connections, and daily rhythms can make exploratory and social behavior more legitimate (Wyatt & Leorke, 2024). A study of Play-and-Learn installations in Philadelphia branches similarly associated redesigned spaces with longer visits, more child and caregiver interaction, more spatial and letter-related talk, more laughter, and less child technology use, although it did not measure long-term learning (Hassinger-Das et al., 2020). Place-based library research helps explain why this matters beyond games alone. Fisher et al. (2007) describe the Seattle Central Library as a physical, social, and informational place where architecture, civic identity, free access, community interaction, staff help, and lifelong learning were intertwined; for GBLS, playful space should therefore be evaluated as part of an information environment, not only as ambiance or recreation.

These findings complicate a program-centered model of GBLS. A playful library may support spectators, caregivers, casual participants, and patrons who would not enroll in a formal event. At the same time, spatial play creates tensions involving noise, visibility, privacy, safety, age zoning, and the coexistence of quiet and social uses. Treating space as part of the service ecology makes these tensions design questions rather than evidence that play does not belong in libraries.

Service Purposes and Library Functions

Games-based library work becomes coherent when organized by the library purposes it serves rather than by novelty or format. This section examines how GBLS contributes to access, discovery, instruction, belonging, cultural stewardship, scholarship, creation, and outreach, while distinguishing plausible service value from demonstrated outcomes.

Collections, Circulation, and Equitable Access

Library game collections are most consequential when understood as access infrastructure rather than as isolated inventories. Across public, school, and academic contexts, collections can reduce the cost of participation, provide access to hardware and media that patrons cannot readily obtain, support coursework and research, and create pathways into advisory, programming, and community activity. Practitioner accounts consistently connect selection to local audience, durability, circulation rules, liability, replacement cost, platform support, and staff capacity, while stronger user-centered studies show that discoverability determines whether access is meaningful (Boyle, 2018; Elkins, 2015; Lee et al., 2013, 2015). Equitable access therefore depends on the whole service ecology: acquisition, description, lending policy, equipment, space, facilitation, and the ability to identify games suited to a patron's needs.

Existing Library Information Systems

Existing data structures such as Machine-Readable Cataloging (MARC) are flexible enough to store useful data about games, even though they do not supply a game-specific descriptive grammar. For

example, McCulloch (2017) suggests treating board games as realia—the cataloging category for three-dimensional objects—with Leader/06 coded as “r,” and using Library of Congress Genre and Form Terms (LCGFT), such as “Board games,” within the 655 field, detailed physical inventories of parts within the 300 field, and key attributes such as the number of players and duration of play within the uncontrolled 500 notes. Hobart (2024) focuses on three-dimensional, physical game artifacts held in a special collections context, such as paper toys, card games, and boxed games from the 19th and early 20th centuries. The article demonstrates a pragmatic hybrid descriptive approach by using Resource Description and Access (RDA) and MARC as the structural framework for item-level records while selectively incorporating Online Audiovisual Catalogers (OLAC) object-cataloging guidance and the principles of Descriptive Cataloging of Rare Materials (DCRM) to meet special collections needs. In practice, this means treating games as three-dimensional artifacts (e.g., Leader/06 is coded as “realia” as with McCulloch), providing detailed physical component inventories, and relying heavily on notes to document copy-specific features, supplied information, and evidence-based conjecture. Because no single standard adequately supports games, Hobart supplements underdeveloped vocabularies (such as LCGFT) with additional genre terms and adjusts the discovery layer to collocate games and toys meaningfully.

Challenges to Cataloging Games

A substantial body of library and information science research shows that existing cataloging systems struggle to describe games adequately. These systems were developed primarily for printed texts, audiovisual materials, and other relatively stable objects, while games are often multi-component, interactive, platform-dependent, and versioned. Tabletop role-playing games may include rulebooks, supplements, dice, maps, miniatures, adventures, and setting materials, while digital games may combine physical carriers, software, audiovisual content, interfaces, online services, updates, downloadable content, and platform dependencies (Chapman, 2021; Smith, 2024).

Genre is one of the most persistent cataloging problems. Standard library vocabularies provide only limited and often imprecise terms for games, while industry, fan, and platform-based systems use far more granular but inconsistent language. Smith (2024), for example, shows that controlled vocabularies often collapse tabletop role-playing games with fantasy games, computer role-playing games, live-action role-playing games, board games, wargames, individual franchises, or works about games. Similarly, Lee, Karlova, Clarke, Thornton, and Perti (2014) argue that video-game genre labels often combine gameplay, narrative, theme, mood, setting, point of view, target audience, presentation, artistic style, purpose, and endings. A single flat genre term is therefore insufficient for discovery, comparison, or advisory.

Lee and colleagues at the University of Washington Information School have produced a sustained body of research demonstrating that video games require metadata models designed for interactive media. Their work with the Seattle Interactive Media Museum used domain analysis, user-centered schema design, and empirical cataloging exercises to identify metadata elements needed for access to games as cultural and scholarly objects (Lee et al., 2012; Lee et al., 2013; Lee et al., 2015). This research shows that traditional standards have difficulty representing unstable or conflicting title information, developer and publisher roles, release dates, region and language differences, features, platforms, versions, and relationships among related works.

Relationship modeling is especially important because games are rarely isolated objects. A game may exist across arcade, console, computer, handheld, and digital releases; it may be patched, remastered, expanded, localized, bundled, or reissued; and it may be connected to franchises, adaptations, strategy guides, soundtracks, art books, fan communities, and development artifacts. Existing bibliographic models such as Functional Requirements for Bibliographic Records (FRBR) provide useful starting points, but they do not fully capture the levels of variance, entity boundaries, and relationships that characterize games and interactive media (Jett et al., 2016; Lee et al., 2014).

These limitations affect public access. Games often lack stable “chief sources of information,” universal identifiers, reliable publication data, or clear authorship categories. Traditional cataloging systems also struggle to represent gameplay characteristics, interactivity, player experience, technical dependencies, and change over time. As a result, games may be poorly described, inconsistently grouped, or confused with adjacent materials such as fiction, criticism, tabletop role-playing materials, or video-game RPGs. For GBLS, cataloging is therefore not a back-end technical concern alone; it directly shapes discovery, advisory, preservation, research support, and patrons’ ability to find games that meet their needs.

The strongest convergence across this literature is that game description must support playability and selection, not merely identification. User-centered metadata studies combine domain analysis, interviews, cataloging tests, and a 1,257-participant survey to identify recurring needs for platform, gameplay, genre, narrative, theme, mood, visual style, point of view, online capability, hardware, price, series, technical requirements, and relationship data (Lee et al., 2013, 2015). These studies provide stronger evidence than local implementation reports because they test schemas against both cataloger practice and heterogeneous user needs. They also show why proxy users matter: parents, educators, librarians, and researchers often select games for purposes other than their own immediate play.

For GBLS professionals, collection development and technical services should be designed together. Even modest collections benefit from consistent data on player count, duration, age, language, accessibility, platform, required accounts or base games, components, mechanics, and cooperative or competitive mode. Research and heritage collections require deeper version, relationship, provenance, creator, development, and preservation metadata. The literature does not identify a single sustainable universal schema; instead, it supports a shared descriptive core with locally justified depth, linked to catalogs, guides, displays, and staff advisory.

Description, Discovery, and Games Advisory

Game collections become public services only when patrons can discover and select materials that are usable to them. Across user studies and metadata research, game seekers ask questions poorly served by title, subject, and platform alone. They want to know:

What do players do?

What is the game “about?”

What other games are similar?

Is it multiplayer or single-player?

How long does play take?

Is the experience cooperative, competitive, solitary, narrative, strategic, intense, humorous, or frightening?

What hardware, subscriptions, or downloadable content are required?

The literature consistently suggests that games advisory and description must represent the entire experience as well as the object. User-centered research provides the strongest foundation for this conclusion. Interviews, personas, domain analyses, and a survey of 1,257 participants produced schemas and appeal vocabularies covering gameplay, narrative, theme, setting, mood, visual style, point of view, challenge, fellowship, exploration, expression, mastery, and learning (Lee et al., 2013, 2017). Follow-up interviews with gamers, parents, collectors, educators, scholars, and information professionals showed that users occupy fluid and proxy roles: an adult may select for a child, a librarian for a program, or a researcher for a historical question. Genre remains useful, but participants repeatedly needed technical, relationship, content, accessibility, review, and appeal information that broad commercial categories could not supply.

Several studies converge on faceted rather than singular description. Analyses of genre labels separate gameplay from narrative genre, purpose, audience, presentation, artistic style, temporal structure, point of view, theme, setting, mood, and ending (Lee et al., 2014). Controlled vocabularies for mood, visual style, and plot demonstrate that affective atmosphere, graphical technique, and what a game is "about" can support browsing and advisory across conventional genre boundaries (Keating et al., 2017; Rossi et al., 2014; Welhouse et al., 2015). Steam user-generated tagging systems, or folksonomies, reinforce the relevance of player language for mechanics, pacing, relationships, production context, and evaluative appeal, but their ambiguity also shows why crowdsourced tags require curation rather than direct adoption (Windleharth et al., 2016).

Relationship and version metadata are equally central because games are unstable, networked works. Series, franchise, universe, collection, port, remake, reboot, sequel, side story, crossover, and spiritual successor describe different intellectual and technical relationships (Lee et al., 2014). Downloadable content, mods, patches, editions, regional releases, and platform dependencies complicate the boundary of the work and determine whether a patron can actually play what a record describes (Lee et al., 2015). Comparisons among library, archival, commercial, and community schemas therefore converge on medium-specific elements for platform, developer, publisher, release and update history, additional content, and granular genre while retaining the value of crosswalks to RDA and broader standards (Chapman, 2021).

Tabletop collections surface parallel needs in more visible physical form. Patrons select by player count, duration, age, complexity, components, social mode, and type of play, yet these data often remain buried in uncontrolled notes. Local vocabularies, MARC fields, and discovery layers at institutions such as the University of North Texas and the University of Idaho demonstrate how cataloger-entered characteristics can become usable facets, cards, category pages, and multi-field search (Dong et al., 2025; Robson et al., 2019). Classification experiments such as ClaG similarly organize games by space, materials, setting, outcome, genre, and age. These projects are implementation cases rather than outcome studies, but they consistently connect technical description to actual patron choice.

Research and heritage collections require even more relational detail. Interviews with creators, archivists, and scholars show that development artifacts are fragmented across physical and digital formats, weakly documented production systems, inconsistent terminology, corporate restrictions, and disconnected museum, archive, and library catalogs (Lee et al., 2020; McDonald et al., 2021). Digitally distributed independent games raise additional problems of creator visibility, version stability, interactive-fiction terminology, and access conditions (Hobart, 2024; Post et al., 2023).

The field diverges less over the need for richer metadata than over how much detail can be sustained. Highly granular schemas support scholarship and precise advisory but require expertise, authority work, local systems capable of expressing relationships, and decisions about subjective or changing attributes. Commercial databases and community tags offer scale but may be unstable, inconsistent, or governed by market priorities. Local spreadsheets and enhanced interfaces are practical but can duplicate catalog labor and become difficult to maintain. The evidence therefore supports optional depth: shared core elements for playability and selection, with richer description where local audiences and collections justify it.

For GBLS professionals, description and advisory should be treated as public-facing access work. A modest collection benefits immediately from consistent data on player count, duration, age, language, accessibility, platform, dependencies, mechanics, and social mode. Larger or research-oriented collections need version, relationship, creator, development, and preservation metadata. In both cases, records should feed interfaces, guides, displays, and staff conversations rather than remain invisible technical accomplishments. This discovery infrastructure connects collections to the instructional, cultural, and community uses examined in the next section.

Instruction, Orientation, and Information Literacy

Games-based instruction is one of the most developed areas of GBLS, particularly in academic libraries, but its evidence supports a narrower conclusion than simple claims that games improve learning. Across orientations, scavenger hunts, mysteries, escape rooms, mobile applications, and immersive environments, games consistently increase opportunities for active practice, immediate feedback, collaboration, and memorable encounters with library spaces or systems. They do not consistently outperform well-designed conventional instruction on immediate knowledge. Their distinctive value appears in motivation, delayed retention, reduced anxiety in some contexts, formative assessment, and the ability to place information tasks inside meaningful action.

The Association of College and Research Libraries (ACRL) Framework for Information Literacy for Higher Education helps clarify what games-based information literacy should seek beyond task completion. Its frames define information literacy through inquiry, contextual authority, information creation and value, scholarly conversation, strategic searching, and reflective participation. Games can support those practices when participants must formulate questions, evaluate sources, revise search strategies, make ethical choices, or explain decisions. They are less convincing when points and narrative merely decorate a tour or quiz. The recurring design principle is alignment between the activity players perform and the information practice the library intends them to learn.

The Framework itself provides the baseline for this alignment because it defines information literacy through authority, information creation, information value, inquiry, scholarly conversation, strategic

exploration, knowledge practices, and dispositions rather than through isolated tool use (Association of College and Research Libraries, 2016).

Orientation studies illustrate both the promise and the limits. Physical mysteries, card games, augmented-reality tours, and mobile location games have taught navigation, call numbers, service points, catalog use, and basic searching with relatively low staff burden. Local evaluations commonly report greater comfort and positive reactions, but many rely on self-assessment or small samples (Giles, 2015; Giles et al., 2019; Smith & Baker, 2011). More comparative work produces mixed results. A Pokémon Go-style mobile orientation did not clearly exceed e-learning on immediate knowledge but produced better one-month retention and interest (Intawong et al., 2023). A gamified metaverse, a persistent shared virtual environment, and traditional librarian-led orientation generated similar knowledge gains, while the human-led program reduced more dimensions of library anxiety (Sureephong et al., 2024). A small virtual reality (VR) game experiment suggested engagement and connection benefits but produced nonsignificant differences in knowledge and encountered technical access problems (Valenti et al., 2020).

These studies demonstrate that libraries should use immersive media when spatial embodiment contributes to the learning goal, not as a technologically elaborate replacement for ordinary guidance. Augmented reality (AR) is well matched to physical and spatial activities within libraries and makerspaces, especially when embedded in scheduled instruction. As a standalone drop-in activity, participation may be weak (Chen & Yang, 2024; Jedlicka & Eaton, 2024). VR and metaverse environments can provide remote presence, spatial rehearsal, or access to otherwise unavailable experiences, but headsets, nausea, development expertise, and limited human responsiveness constrain their value.

Escape rooms and alternate-reality formats offer a different instructional strength: they integrate searching, interpretation, communication, and failure within a shared problem. Health-sciences escape rooms have embedded PubMed, patient/problem, intervention, comparison, and outcome (PICO), Medical Subject Headings (MeSH), full-text access, interlibrary loan, and impact-factor tasks, while academic alternate reality games (ARGs) have used call numbers, databases, citation, and search construction. Public-library misinformation escape rooms provide some of the strongest GBLS evidence because collaborative play is followed by structured debriefing about confirmation bias, emotional vulnerability, platform infrastructure, and sharing behavior (Cho et al., 2023; Wedlake et al., 2024). Across these studies, narrative creates stakes, but facilitator reflection turns an experience into information-literacy learning.

Broader reviews confirm the pattern while exposing weak assessment. A synthesis of 49 studies on gamification for media and information literacy found a field dominated by academic-library orientation and instruction, using role-play, narrative, cooperation, exploration, feedback, points, levels, time pressure, and competition (Manso Rodriguez, 2022). A systematic review of 13 assessed academic-library scavenger hunts found that most publications emphasized fun and implementation; few reported sample sizes and timeframes clearly, and none used validated measures (Stark et al., 2021). International descriptive reviews show that citation, plagiarism, catalog, and database games are widely recognizable formats, but prevalence should not be mistaken for effectiveness.

Games-based instruction also extends beyond teaching library tools. Videogame and transmedia literacy includes reading rules, navigating multimodal systems, consulting wikis and strategy guides, producing fan texts, coordinating with others, and interpreting identities and communities. School-library and public-library writers connect these practices to reading, writing, media literacy, problem solving, and information seeking, although much of this evidence remains advocacy or observation. Commercial investigative games have likewise been proposed as simulations for abductive and deductive reasoning in reference education. These sources broaden what counts as learning but require direct assessment before claims about transfer can be made.

Adjacent privacy and online-safety research suggests one route for extending library digital-literacy programs. Henriksen-Bulmer et al. (2024) created a low-tech board game for young adults about managing information, identity, cyberbullying, relationships, reputation, privacy, and security; focus-group participants reported higher confidence across the topic areas, though the small university-based sample and immediate self-report make it suggestive rather than direct GBLS outcome evidence.

Across formats, several design principles converge. Begin with observable learning objectives and work backward into actions and feedback. Keep narratives simple enough that players can understand the task. Pilot for ambiguity, pacing, accessibility, and technology failure. Permit hints and safe failure. Use teams deliberately so that roles and knowledge are distributed rather than dominated by experienced players. Build debriefing into the experience, and connect the game to subsequent searches, discussions, or assignments. Most importantly, assess knowledge, confidence, retention, behavior, motivation, and anxiety separately rather than allowing enjoyment to stand for all of them.

For library professionals, games are best understood as supplements, rehearsals, and formative environments rather than universal replacements for instruction. Their strongest contribution is to make practice visible while there is still time for feedback and revision. Conventional teaching may equal or exceed them when the goal is efficient information delivery or responsive human support. The question is therefore not whether games-based instruction is categorically better, but whether a particular game creates useful action, feedback, reflection, and agency for the learners and information practices at hand.

Community, Belonging, Wellness, and the Public Commons

Community-oriented GBLS treats play as social infrastructure through which patrons may form relationships, claim space, experience low-stakes participation, and find respite or support. This subsection examines belonging, the library's possible role as a “third place” or informal social setting outside home and work, wellness claims, partnership, and the limits of assuming that attendance alone demonstrates inclusion. Within research on community, belonging, wellness, and the public commons, Littman et al. (2024) extend the third-place argument through games-based inquiry with recently housed young people who had experienced chronic housing instability. In the *Future of Third Places Game*, participants used worldbuilding cards, community request cards, and craft-based design to imagine spaces that offered agency and individualization, met everyday needs, and were explicitly inclusive. For GBLS, the study shows that library-as-third-place programs cannot rely on nominal openness or neutrality; youth-centered game spaces should actively address privacy and connection, free amenities, food and rest,

under-21 social life, portable or adaptable space, supportive adults who are not simply "in charge," and practices that subvert rather than reproduce hostile or exclusionary public-space norms. Across the same body of evidence, Giles et al. (2019) also show how orientation games can address belonging, not only information transfer. For transfer students who may arrive with uneven library preparation and weak social ties at the new institution, the card game created structured conversation, laughter, peer contact, and a less anxious first encounter with the library; 86% of survey respondents said it helped them feel more comfortable in the library.

At the level of implementation, Monnier and Winters (2022) extend belonging from orientation events to everyday academic-library thresholds. At Pittsburg State University, puzzles, coloring pages, LEGO, card games, Dungeons & Dragons (D&D), International Games Week activities, and writing-center conversation games helped students treat liminal areas between the library, writing center, coffee shop, and student services as acceptable places for relaxation, language practice, social interaction, and low-stakes service discovery. In a more context-specific account, Boyle (2018) adds an urban academic-library version of the belonging claim: video games can give commuter students a low-stakes reason to enter and remain in the library, meet peers with shared interests, collaborate through group play, and interact with staff outside formal research-help encounters. The article is advocacy rather than assessment, but it names why urban campus libraries may need game collections and events as community infrastructure, not only curriculum support. Vanden Elzen and Roush (2013) also make the belonging claim concrete for a residential academic campus. In Mudd Library surveys, 50% of first-tournament respondents reported meeting new people with similar interests, and 76.9% of later respondents selected that gaming events added to their sense of belonging in the Lawrence University community; the events also helped catalyze a campus Gaming Club and made the library more visible as a welcoming second place.

Within this broader pattern, Bremer (2017) gives a small academic-public library partnership example of tabletop games as community bridges. By moving a University of Minnesota Morris game program to the Morris Public Library, the partners used a more accessible civic venue, shared game collections and staff expertise, food, broad publicity, and simple family-friendly board and card games to bring together college students, adults, families, and children, while also identifying teens as a still-unreached audience.

Across the same body of evidence, Nelson and Matthews (2025) also frame public-library D&D as a democratic third-place practice. Players balance individual self-expression, hero moments, moral choices, and character attachment with party decision-making, mutual aid, shared storytelling, and respect for the DM as facilitator; because the library draws from a broader public than private friend groups or game stores, it can keep the 'tavern door' open for a more diverse community of players.

Similarly, Maranchak and Maranchak (2023) extend library gamification into Web 2.0 marketing and user-generated content, arguing that comments, reviews, photos, videos, Reels, TikToks, podcasts, ratings, creative designs, hashtags, tags, and other patron-created content can function as social proof for library trust and visibility. Their article is practical and conceptual rather than evaluative, but it usefully identifies lightweight GBLS mechanics outside formal programs: social-media challenges, polls, quizzes, AR filters, stickers, status rewards, creative prompts, reposts, collaborative posts, photo zones, art

installations, and platform-specific calls to action that invite patrons to create content about library spaces, books, services, and events.

Khademi Zare, Varnaseri, and Bayati (2024) extend public-library gamification from individual activities to audience attraction as a whole-library strategy. Through interviews with 13 gamification experts, they identify applications for events, reading habits, interactive spaces, lending, visits, program awareness, user experience, education, brand loyalty, volunteering, skill development, book searching, timely returns, marketing, and knowledge-production activities, showing how gameful design can be imagined across the public-library service ecology.

In a more context-specific account, Wyatt and Leorke (2024) make the public-library commons spatial: gaming rooms, console rooms, VR play, tabletop spaces, Minecraft areas, children's play zones, playful interiors, and porous links to plazas and parks change how patrons gather, watch, move, make noise, dwell, and understand who the library is for. Their cases show that GBLS can transform the atmosphere and civic meaning of the library, not just its program calendar.

Wellness claims extend this community argument but require a particularly careful evidentiary boundary. Lee et al. (2024) studied a multi-site public-library project in which teens co-designed VR spaces for mental health and well-being. Staff moved from anxiety about "mental health" as crisis response toward a broader view of everyday wellness, stigma reduction, safe conversation, and belonging, while still recognizing the limits of library clinical expertise. Brennan (2023) similarly describes games, chess, film, environmental changes, staff training, and a Reading Well collection as parts of a school-library well-being ecology. Nance (2022) identifies coloring, construction materials, puzzles, video games, therapy-animal events, and mini-golf as low-barrier micro-breaks within academic-library student support. These accounts suggest that play can normalize rest, conversation, and help-seeking, but most are practitioner descriptions rather than tests of mental-health outcomes.

The strongest caution comes from a three-month team-based wellness game for health sciences library employees (Casucci et al., 2020). Participants valued socializing and recognition, yet the intervention did not significantly reduce burnout or improve job satisfaction. The divergence is important: playful services may support respite, collegiality, and perceived belonging without changing structural causes of distress such as workload, leadership, or insecurity. Libraries should therefore treat human flourishing, connection, and restorative participation as legitimate service purposes while avoiding therapeutic claims that their evidence and professional role cannot sustain.

Games as Cultural Media and Heritage

Libraries have long collected, organized, interpreted, and preserved cultural materials that help communities create meaning, share knowledge, and participate in public life. Library scholarship increasingly describes libraries not simply as repositories of information but as cultural, social, and civic institutions that connect people with ideas, media, heritage, and one another (Fisher et al., 2007; Council on Library and Information Resources, 2005). From this perspective, the question is not whether games resemble books closely enough to justify library attention, but whether games have become significant

cultural media through which contemporary communities learn, communicate, create, remember, and participate in culture. Increasingly, the literature suggests that they have.

Games are now widely recognized as cultural artifacts, expressive media, and sites of community participation. Like books, films, music, and other media forms, they communicate values, narratives, identities, histories, and ways of understanding the world. They also generate communities of practice, fan cultures, creative production, and shared forms of cultural memory. As libraries have historically adapted to new forms of cultural participation and media production, games increasingly fall within existing library commitments to access, interpretation, preservation, representation, and public engagement (Nicholson, 2013; Wood & Carter, 2018).

Noorda and Inman Berens (2021) provide audience-level evidence for treating games as part of a broader library media ecosystem. Their survey of book, game, and TV/movie engagement shows that patrons discover stories and formats across channels: substantial shares of respondents discover games through books, books through TV/movies, and other media through games, with cross-media discovery especially pronounced among millennials. For GBLS, this supports collection development, readers' advisory, displays, and programming that connect games to books, fandoms, genres, authors, and other cultural media rather than treating games as a separate recreational category.

Inman Berens and Noorda (2023) update this media-ecosystem argument for Gen Z and millennials in public libraries. In a nationally representative survey and branch observations, they find that 54% of Gen Z and millennials visited a physical library in the prior year, 53% identified as gamers, 52% as fans, and 57% as readers; avid crossmedia discoverers identified even more strongly across reader, fan, gamer, writer, livestreamer, and podcaster categories. For GBLS, the report shows that gaming, fandom, manga and graphic formats, social media, makerspaces, teen lounges, digital collections, and shelf browsing are intertwined rather than competing service domains, and that library game programs can help connect books to the social, identity-based media practices younger patrons already use.

Within research on games as cultural media and heritage, Tanaka (2022) gives the cultural-media argument a decolonial and Indigenous Futurisms focus, arguing that Indigenous-created and collaboratively developed video games such as *When Rivers Were Trails*, *Never Alone*, and *Terra Nova* should be represented in library collections and spaces. The article treats Indigenous video games as media for sovereignty, language, relationality, storytelling, education, and creative production, while warning that digital-only indie distribution may require installed access stations, programming, partnerships, and active promotion rather than ordinary circulation alone.

Across the same body of evidence, Taylor and Liew (2024) add a specifically game-studies account of why video games matter as library cultural media. In a qualitative content analysis of 15 games, they find that fictional library users visit libraries to solve immediate problems, improve themselves, bond with companions, access local histories, and move from outsider status toward fuller immersion in a game world. For GBLS, this supports collecting, interpreting, and programming games as texts that represent library use, information behavior, belonging, anxiety, guidance, and community memory, while also suggesting practical design moves such as onboarding support, conversational library spaces, displays that surface local history, and programming that lets patrons reflect on how games imagine libraries.

Research, Scholarship, and Creative Production

Supporting research, scholarship, and knowledge creation has long been a core function of libraries. Contemporary library scholarship increasingly characterizes libraries not simply as repositories of information but as institutions that provide the infrastructure, expertise, collections, technologies, and spaces through which new knowledge is produced (Borgman, 2007; Lankes, 2011). This perspective is reflected in calls to rethink libraries as flexible scholarly environments that support collaboration, experimentation, and access to specialized resources rather than merely housing collections (Council on Library and Information Resources, 2005). Similarly, the Association of College and Research Libraries (2016) frames learners and researchers as active participants in scholarly conversations who engage in inquiry, create new information, and contribute to evolving communities of knowledge.

Games-based library services extend these broader library missions into the domain of games and play. As games have become important objects of scholarly inquiry, cultural heritage, technical analysis, and creative practice, libraries have increasingly assumed responsibility for preserving, providing access to, and supporting the use of games and game-related materials. The literature reviewed in this section demonstrates how libraries contribute to research and creative production by developing specialized collections, preserving game artifacts, providing access to hardware and software, supporting interdisciplinary scholarship, and enabling the creation of new games and game-related works.

Wood and Carter (2018) make research and creative production a concrete GBLS service area through their case study of the University of Michigan Computer & Video Game Archive, which housed nearly 8,000 games across more than seventy systems alongside secondary sources, tabletop games, ephemera, hardware, staffed access, and in-house play. Their account shows that university game collections support game studies, art history, film and media studies, music, history, computer science, engineering, language instruction, and creative game design, while also requiring preservation choices about playable access, fragile media, controllers, repair, replacement hardware, cataloging, and visual-resource metadata.

Farrell, Neeser, and Bishoff (2017) add a needs-assessment layer to academic game services through 30 semistructured interviews with University of Minnesota faculty, staff, and graduate students who used video games in research or teaching. Their findings show that games supported development, instrumentation, textual/cultural analysis, social-impact research, educational technology, course materials, game design, and classroom discussion across arts and humanities, social sciences, STEM, and health sciences; they also caution that collections should reflect local disciplinary needs, including PC games, peripherals, software, game manuals, trade magazines, collaborative networks, and graduate-student funding barriers rather than defaulting to console collections alone.

Across the same body of evidence, Nyitray (2019) adds a reference and special-collections perspective to game research support. Her curated guide to video game history treats games as complex artifacts made of source code, ROM cartridges, platforms, controllers, circuits, corporate records, developer papers, box art, manuals, trade materials, emulated experiences, and digital collections; for GBLS, the column is not outcome evidence, but it shows why game collections support historical research, platform studies, preservation, media archaeology, art and music studies, industry history, and critical game historiography.

At the level of implementation, Buller (2017) also links game hardware lending to academic creative production. Because students in game design courses needed to compare how games used different console affordances, the library treated PlayStation, Xbox, and Nintendo systems as mission-aligned curricular resources analogous to other hardware needed to access specialized media.

Outreach, Participation, and New Audiences

Outreach is not a separate benefit added after a game service is designed; in much of the literature, it is the mechanism through which GBLS becomes connected to library purposes. Games provide low-stakes reasons to cross a library threshold, remain in a space, encounter staff, or discover collections and services indirectly. Academic tournaments, transfer-student card games, public-library clubs, fandom festivals, and social-media challenges all use participation to change the perceived relationship between an institution and audiences who may associate libraries only with books, assignments, or rules.

Across these models, outreach succeeds when it creates a pathway rather than an isolated spectacle. Vanden Elzen and Roush (2013) connected tournaments with student workers, gaming organizations, collections, and later campus participation. Werner (2013) traced a patron-requested card-game gathering into youth programs, advisory-board participation, volunteering, and summer reading. Bishoff et al. (2015), by contrast, found little sustained use for well-promoted Wii events and responded by shifting toward partnerships with student game communities, researchers, and creators. The outlier is instructive: general gamer demographics and event publicity do not establish local demand.

The literature therefore supports a participatory rather than promotional conception of outreach. Patrons can select games, teach rules, facilitate tables, create media, design events, and move into leadership. Libraries contribute space, legitimacy, collections, accessibility, safeguarding, and continuity. This reciprocal model is more likely to produce durable relationships than programming conceived only as a device for increasing foot traffic, and it provides a bridge from service purposes to the concrete formats through which they are enacted.

The movement from service purposes to programming formats requires one final distinction: a format describes how a service is delivered, not what value it necessarily produces. A tournament may function as outreach, community infrastructure, or competitive learning; a circulating collection may support equity, advisory, coursework, or cultural stewardship. Across the literature, format-level evidence is most informative when interpreted through its purpose, audience, facilitation, and institutional conditions.

Programming Formats and Service Models

Program formats are best understood as bundles of affordances and requirements rather than as interchangeable containers. Festivals produce visibility and broad entry points but require complex logistics; recurring groups develop relationships but depend on sustained facilitation; escape rooms concentrate collaborative inquiry but need testing and debriefing; immersive technologies can provide access to novel experiences while introducing cost, privacy, and accessibility barriers. The literature

rarely supports ranking one format above another. It instead supports selecting a model according to audience, purpose, available infrastructure, and the kind of participation the library seeks to sustain.

Fandom Festivals and Pop-Culture Events

As mentioned above, Library events are often associated with libraries attempting to bring in new audiences. One category of event, Fandom festivals, position games within broader cultures of comics, cosplay, performance, making, and shared fandom identity. Within research on fandom festivals and pop-culture events, Virello (2019) shows how a public library can scale a fandom event from a passive Free Comic Book Day program into a full library comic con. Southington Library ComiCon combined comic giveaways, cosplay, storytimes, crafts, scavenger hunts, video game tournaments, tabletop gaming, themed displays, performers, community partners, traffic planning, costume and prop rules, food logistics, and rotating activities; attendance grew from about thirty people in the initial FCBD program to nearly nine hundred at the first full ComiCon, making the case useful for GBLS as an access-oriented pop-culture festival model rather than a stand-alone game night. Across the same body of evidence, Varsa (2022) offers a smaller local-talent version of the same fandom-festival model. Oconee County Library's free all-ages FanFest used a partner civic-center venue, Friends support, local authors, artists, musicians, vendors, food trucks, cosplay, acting workshops, a library-system podcast tie-in, high-school volunteers, and a University of Georgia Student Board Game Club gaming table to draw more than 350 participants, showing how gaming can be one activity within a broader community creativity festival.

Circulating and In-Library Game Collections

Collection-based service models provide games, hardware, components, and spaces for borrowing or on-site use. This subsection compares circulation and in-library access, processing and maintenance choices, licensing and platform constraints, curricular use, wellness, and the operational conditions that make collections sustainable. Within research on circulating and in-library game collections, Forsythe (2021) gives a practical academic-library model for board games as a non-traditional collection and recurring program. Her community-college case links needs assessment, language-independent selection for international students, BoardGameGeek-informed criteria, box and component preservation, in-library tracking, student feedback, partnerships, and pandemic-era virtual options, showing that tabletop collections require the same policy, maintenance, marketing, and facilitation infrastructure as other library services.

Slobuski, Robson, and Bentley (2017) provide the baseline survey context for tabletop collections. In responses from 119 libraries, they found that tabletop games were being purchased, donated, cataloged, barcoded, bagged, circulated, used in-house, renewed, placed on hold, inventoried, and programmed in highly varied ways, with many libraries still lacking catalog records, subject/genre standards, processing guidance, and shared circulation practices. Their findings also reduce a common barrier: loss and damage were generally less severe than expected, suggesting that libraries can pilot discoverable and borrowable tabletop collections while professional standards continue to mature. Robson, Phillips, and Guerrero (2018) provide strong operational evidence for circulating tabletop collections. In a University of North Texas study of differently preserved and processed copies of *Ticket to Ride* and *Betrayal at House on the Hill*, they found that fully preserved copies reduced loss and damage but usually did not justify the labor

cost; their resulting practice favors card sleeves for vulnerable or high-use games, cloth-reinforced box corners, bagged components, catalog records, a single barcode/item record, and minimal processing that keeps games circulating without overwhelming staff.

At the level of implementation, Buller (2017) extends circulating game collections from software and tabletop materials to console hardware. At the University of Denver, console lending supported an interdisciplinary game design curriculum by giving students access to multiple platforms and generations, portable screens, controllers, holds, renewals, component checklists, serial-number verification, profile logout procedures, and privacy protections; the case shows that game collections often require lending the access infrastructure around games, not only the games themselves.

Cross, Mould, and Smith (2015) broaden the academic-library collection model through Carleton University Library's mix of board games, console games, Steam-based PC games, and a dedicated gaming lab. Their case shows why GBLS collections must account for format-specific access models: board games have many parts and pieces, console games circulate easily but require platform and replacement decisions, PC/indie games may require lab access because digital rights management (DRM) and non-transferable licenses break ordinary lending, massively multiplayer online games (MMOs) patrons to establish accounts, and mobile games may not fit library access at all. The article explores the components of library operations visible, including challenged-materials policies, staff resistance, nuances of digital subscriptions, preservation, MARC/RDA cataloging, browsable shelving, replacement fees, room bookings, acceptable-use rules, computing support, and the need for senior-management backing.

Clubs and Recurring Play Groups

Recurring groups differ from one-time events because their value develops through continuity, shared norms, peer expertise, and evolving participant roles. The literature below examines clubs as community infrastructure while considering scheduling, facilitation, youth leadership, progression, and adaptation to local demand. Within research on clubs and recurring play groups, Copeland et al. (2013) show that tabletop gaming in school libraries can follow multiple service paths: curriculum-integrated role-play, after-school board game clubs, shared standards-aligned game collections, life-skills programming, and tabletop game design workshops. Their practitioner cases emphasize affordability, portability, rule reading, social interaction, cross-age friendship, curricular alignment, flexible facilitation, and post-game reflection, making tabletop games a practical bridge between recreation and instruction. Across the same body of evidence, Maluck (2013) provides a public-library youth counterpart through Richland Library Northeast's Play It Loud program, a recurring Wii and tabletop gaming series that averaged twenty-one participants and became a weekend fixture. The case shows how recurring play groups depend on local demand signals, multiplayer-friendly game selection, room acoustics, regular scheduling, staff facilitation, teen volunteers, age boundaries, and links to adjacent programs such as Go instruction, anime club, volunteering, and Teen Advisory Board participation. At the level of implementation, Alvarez (2017) adds a youth-agency rationale for recurring tabletop play in a public-library media center serving students whose schools lacked libraries. Her practitioner account describes modern tabletop games such as *Splendor*, *Dominion*, *Star Realms*, *Zombicide*, *Descent*, *Mysterium*, *Pandemic*, *Pathfinder*, *Agricola*, and *Mansions of Madness* as sequenced tools for building rule reading, strategic reassessment, cooperation, leadership, resilience, and student moderation; the evidence is observational, but it shows why game

selection and facilitation should scaffold participants from approachable games toward more complex, skill-based play.

In a more context-specific account, Werner (2013) gives a public-library youth-services implementation guide rooted in Benton Harbor Public Library's gaming afternoons, which grew from a patron request for *Yu-Gi-Oh!* space into separate children's and teen programs with card games, board games, RPGs, video games, tournaments, Teen Advisory Board links, book-group links, volunteering, and summer-reading participation. The article is descriptive rather than evaluative, but it makes recurring gaming visible as a flexible service pipeline: start with local demand, involve teens in selection, consult local game expertise, plan for noise and theft, create game-selection policies, and let the program change with its participants.

Tournaments and Esports

Vanden Elzen and Roush (2013) provide a practical academic-library tournament model from Lawrence University's Seeley G. Mudd Library, where *Super Smash Bros. Brawl* tournaments, open gaming, retro systems, board games, and Magic: The Gathering events were planned with student workers and gaming clubs. Their advice foregrounds local game knowledge, standard rulesets, unlocked content, equipment, noise, timing around the academic calendar, casual alternatives for noncompetitive players, and marketing through the channels students actually use.

Escape Rooms and Breakout Games

Escape rooms and breakout games use timed, collaborative puzzles and narrative constraints to structure inquiry and problem solving. The discussion compares physical and digital implementations, instructional alignment, debriefing, reusable design, and the difference between thematic entertainment and demonstrated learning. Within research on escape rooms and breakout games, Lewallen (2019) gives the school-library breakout-box service model in practitioner form: reusable kits with reprogrammable locks can be lent to teachers, adapted across subjects and grade levels, used for library orientation, offered during lunch or after school, extended into breakout clubs, or used in summer camps where students design their own games. The article is not assessment evidence, but it connects breakout boxes to American Association of School Librarians (AASL) inquiry and collaboration goals and shows how librarians facilitate by offering hints, curating games, supporting reflection, and letting students control the play.

Across the same body of evidence, Cho et al. (2023) provide one of the strongest empirical examples of an escape-room format in public-library information literacy. In 17 sessions across five Washington public-library systems, *The Euphorigen Investigation* used collaborative play, a fictional misinformation scenario, a designed deepfake failure, and librarian-led debriefing to increase awareness of misinformation tactics, prompt reflection on confirmation bias and vulnerability, and encourage more cautious attitudes toward sharing information online.

At the level of implementation, Wedlake et al. (2024) extend this misinformation escape-room evidence through a larger study of *The Euphorigen Investigation* across 10 public libraries, 53 sessions, and 211 players. Framed through a sociocultural perspective on media and information literacy, the study shows

that narrative, collaboration, and librarian-led debriefing helped players reflect on platform infrastructures, emotional and psychological vulnerability, social sharing practices, and their own relationship to misinformation; it also reinforces that assessment should look for reflection and transfer, not attendance alone.

In a more context-specific account, Seay (2019) adds practitioner design reflection to the escape-room literature by asking how a game can actually teach something rather than merely decorate instruction. His Mars survival game is not a library assessment study, but it usefully distinguishes content from experience: participants may learn science, cooperation, and problem solving because those tasks are embedded in role-play, puzzles, pressure, and narrative stakes, suggesting that library escape rooms need designed transfer rather than theme alone.

Within this broader pattern, Helbing et al. (2022) add a concrete health sciences library implementation model, describing optometry, pharmacy, and medicine escape rooms delivered in in-person team, hybrid individual, fully online individual, and later online optometry formats. Their case report ties puzzles to PubMed, PICO, MeSH, full-text access, resource guides, ILLiad, journal impact factors, and help-seeking, and its main contribution is practical design guidance: begin with learning objectives, work backward into clues, test for ambiguity, plan for early finishers, consider team versus individual formats, keep costs low with common tools, and decide carefully whether grading will support or distort learning.

Across the same body of evidence, Kroski (2020) extends the escape-room discussion to digital breakouts, framing them as low-cost online escape-room-like games that libraries can use for information literacy, bibliographic instruction, curriculum support, youth programming, outreach, STEM learning, and staff training. The chapter is a practitioner rationale rather than assessment evidence, but it usefully identifies why the digital format matters: breakouts can be single-player, distributed widely online, built with free web tools, tailored to one subject or skill set, and used to teach catalog searching, database use, fake-news identification, peer-reviewed source recognition, citation, and library services without requiring physical rooms or equipment.

Tabletop Role-Playing and Live-Action Role-Playing Programs

Role-playing programs organize participation through shared narrative, character, rules, improvisation, and facilitated decision making. The evidence below examines literacy, belonging, outreach, youth development, access, gatekeeping, staffing, and the distinct demands of tabletop and live-action forms. Within research on tabletop role-playing and live-action role-playing programs, Watson et al. (2024) show how a tabletop role-playing game (TTRPG) program can be designed as library outreach and library-skills instruction at the same time. Their proof-of-concept one-shot turns an academic library floor into a fantasy adventure space, translating service points into themed rooms and common library tasks into quests such as finding books, using microfilm, scanning and printing, and making a 3D print. Because the module was not playtested before publication, its value is primarily as a design case and implementation model rather than outcome evidence.

Across the same body of evidence, Maxwell's (2023) introductory material for *Let's Roll* positions tabletop role-playing games (TTRPGs) as a practical school- and public-library program format built

around fun, collaborative storytelling, student interest, and beginner-friendly facilitation. The attached excerpt is not the full guide, but it foregrounds several operational themes for GBLS: gaining decision-maker support, articulating literacy and well-being benefits, starting with modest resources, using experienced teens as Game Masters when appropriate, adapting to online platforms such as Teams, Roll20, or Zoom, and treating Session Zero as a way to set expectations before play. At the level of implementation, Anderson (2022) turns public-library D&D into a replicable teen program framework: a one-staff, three- to five-player model for ages 15-18 with an introductory character-creation session, recurring four- to five-hour play sessions, physical and remote tool lists, publicity channels, budget ranges, and informal debriefing. Its developmental-assets rationale links TTRPG play to adult relationships, safety, peer influence, creative activity, reading for pleasure, planning, interpersonal competence, conflict resolution, personal power, and self-esteem, making the format legible as youth-development programming as well as recreation.

In a more context-specific account, Kaylor (2017) strengthens the literacy rationale for teen TTRPG programs through interviews with seven people who played TRPGs as teenagers. Participants reported that play supported speaking, reading, listening, writing, and leisure reading, with long-term players describing broader effects; the study is small and exploratory, but it shows why libraries might treat TTRPG rulebooks, groups, and campaigns as access points to narrative, social, and multimodal literacy rather than as recreation alone.

Within this broader pattern, Torres-Roman and Snow (2014) provide the practitioner handbook behind much teen-library TTRPG work, framing tabletop RPGs as low-cost, literacy-rich, social programs that fit library spaces and teen-service missions. Their guide also makes clear that TTRPG services extend beyond events: libraries must select, collect, catalog, describe, facilitate, promote, and defend RPG materials and groups in ways that welcome new players rather than reproducing gatekeeping from hobbyist cultures.

Across the same body of evidence, Sanders (1982) provides an early public-library precedent for Dungeons & Dragons programming. His account of a Michigan City Public Library club describes peer-led tables, long Sunday sessions, a tournament, strong teen attendance, parent questions, and local controversy; it is not an assessment study, but it shows that libraries have long used TTRPGs as teen outreach, community service, and collaborative story-making spaces. At the level of implementation, Nelson and Matthews (2025) provide a contemporary empirical public-library D&D account through observations and interviews at two Midwestern libraries. Their study shows that library TTRPG programs do more than provide a table: libraries stabilize campaigns through regular schedules, supply or cultivate DMs, provide books, Roll20 access, 3D printing, and staff support, and create a beginner-friendly alternative to game stores where women, LGBTQ+ players, and inexperienced players may feel more welcome.

Virtual Reality, Augmented Reality, and Immersive Technologies

Immersive technologies alter how patrons encounter space, embodiment, simulation, and digital creation. This subsection compares virtual and augmented reality applications while emphasizing learning design, accessibility, privacy, safety, hardware, staff expertise, and whether immersion adds value beyond novelty.

Within research on virtual reality, augmented reality, and immersive technologies, Lee et al. (2024) also complicate the role of VR in library programming: VR attracted some teens, supported technology literacy, and enabled immersive design of supportive spaces, but it also introduced motion sickness, hardware logistics, privacy/account barriers, uneven teen interest, and inclusion concerns. Their recipe-based co-design model is useful for GBLS because it separates core program ingredients, such as youth partnership and design sprints, from adaptable substitutes, local strengths, and optional tools.

Lee, King, Dahya, and Lee (2020) provide a practical baseline for VR programming through 36 interviews with librarians involved in seven Washington State public-library VR sites. Their findings show that VR can support informal learning, social engagement, and equitable access to expensive technology, but only when libraries attend to targeted outreach, public/private setup, accessibility, waiver and account barriers, content quality, and wraparound programming that connects VR to local interests rather than relying on novelty alone.

Across the same body of evidence, Dahya et al. (2019) provide the broader report behind that Washington public-library VR project, adding patron-side and equity evidence from 185 surveys, 39 patron interviews, site observations, and approximately 400 VR users. The report shows that patrons overwhelmingly enjoyed VR and often learned how to use the technology, but it also complicates claims about empathy, content learning, and equity: participation skewed toward gamers, boys, men, and White patrons except where local patron demographics differed, and meaningful learning required clearer outcomes and wraparound pedagogy. Its implementation guidance emphasizes lead time, staff practice, waivers and age restrictions, public versus private setup, safety, themed outreach, adjacent activities, and movement from VR consumption toward creation.

At the level of implementation, Patino et al. (2021) turn those VR implementation lessons into a curriculum model for a highly constrained library-adjacent setting: incarcerated youth in a juvenile rehabilitation school library created 2D/3D art and VR worlds through six modules and then helped shape a public-library exhibit. For GBLS, the curriculum shows how immersive technology can be framed as world-making, art/design, social-emotional learning, and co-curation rather than novelty access; it also foregrounds anti-oppressive planning, trauma-aware spatial setup, consent and safety, choice, spectating, wraparound table activities, and exhibit pathways that preserve youth agency.

In a more context-specific account, Kirsch (2019) adds a concise practitioner checklist for VR services in academic libraries. Drawing on EDUCAUSE sessions and an Oculus Go circulation example, she distinguishes expensive immersive content creation from lower-barrier 360-degree tours, and identifies operational issues that libraries must settle before offering headsets: motion sickness and seizure warnings, sanitation, app updates, passcodes and purchase controls, social-app privacy, the realism of frightening content, and staff or student-worker training. The piece is anecdotal, but it helps translate VR enthusiasm into service policy and support requirements.

Within this broader pattern, Ponto et al. (2023) are not studying a library program, but *Waddle* offers adjacent evidence for how immersive, game-like VR can support informal learning and empathy when embodiment, narrative, gesture congruence, and assessment are designed together. In a 43-student science-festival study, the penguin embodiment experience produced learning gains, a significant increase

in empathy, and a correlation between embodiment and post-experience empathy, making it a useful design reference for libraries considering VR beyond novelty demonstrations.

Across the same body of evidence, Jedlicka and Eaton (2024) show that immersive GBLS can be small, browser-based, and locally built. Their Web AR tour avoided app downloads, minimized Wi-Fi dependence after initial load, used existing LibGuides infrastructure, and published code openly, but it also required JavaScript skill, marker testing, device backup, accessibility workarounds, and ongoing attention to open-source maintainability.

At the level of implementation, Sureephong et al. (2024) also clarify what a library metaverse can and cannot do as a service model. Their digital twin of an academic library used photogrammetry, Unity, Meta Quest 2 headsets, waypoints, non-player character (NPC)-style virtual librarians, quests, points, levels, badges, and leaderboards; students found the platform engaging and motivating, but the authors caution that development expertise, headset cost, accessibility, nausea, dizziness, and lack of real librarian interaction make it better suited as a supplementary tool for specific audiences than as a replacement for in-person service.

In a more context-specific account, Chen and Yang (2024) extend AR service models from orientation to makerspace user education through a games-based augmented reality navigation system built on Octalysis gamification and scaffolding theory. In a small experiment with 24 grade 11 students, GARNs produced significant learning effectiveness, performed comparably to a librarian-guided tour, and outperformed a web navigation system on learning effectiveness and value/expectation dimensions of motivation, suggesting that AR is most useful when guidance is tied to physical equipment, spaces, and procedural tasks.

Game Design Workshops, Jams, and Participatory Creation

Game-making shifts participants from consumers of media to designers who must articulate rules, model systems, anticipate other players, test assumptions, and revise in response to evidence. School-library cases place tabletop design alongside curriculum-integrated role-play and clubs, using low-cost materials and post-play reflection to make mechanics visible (Copeland et al., 2013). Public and academic examples connect creation to makerspaces, game-development curricula, youth leadership, and interdisciplinary research. In immersive settings, youth have built virtual worlds and exhibitions as forms of art, storytelling, and social-emotional expression rather than merely trying commercial hardware (Patino et al., 2021; Lee et al., 2024).

Jams and workshops also expose an important difference between participation and production. Creation requires accessible tools, examples, iterative playtesting, intellectual-property guidance, documentation, and sufficient time for revision. Competitive jam structures may motivate some participants while excluding beginners or people who need more flexible pacing. Libraries can counter these barriers through mixed-skill teams, reusable templates, mentors, low-tech prototyping, multiple contribution roles, and showcases that value process as well as polish. Evidence about long-term learning remains limited, but the recurring design lesson is strong: making games is most educational when participants can explain how their formal and expressive choices shape another person's experience.

Library Services Inside Games and Virtual Worlds

Bell and Trueman's edited volume (2008), represented here through its table of contents and a contemporary book review, marks an early library moment in Second Life and other multi-user virtual environments. The volume maps virtual branch libraries, avatar-based reference, in-world collections, Teen Second Life, HealthInfo Island, historical simulations, speculative-fiction and mystery programming, distance-learning support, and MLIS instruction, showing that game-like virtual worlds were treated as service sites rather than only promotional novelties. Its limits are also instructive for later GBLS: virtual platforms required staff learning, institutional support, etiquette management, hardware capacity, and arguments against the perception that work inside a virtual world was "only a game."

Ryan, Porter, and Miller (2010) add an early academic-library critique of the Second Life boom by evaluating Second Life, Openlife Grid, and Active Worlds against reference, collection access, exhibits/outreach, and instruction goals. They find that ordinary reference, catalog/database access, and real-time instruction often lose value inside virtual worlds because of empty spaces, onboarding time, hardware/software demands, chat limitations, bandwidth, licensing, content-creation labor, commercial platform risks, and safety concerns; immersive exhibits and topical sims are more promising when they do something a website or classroom cannot. For GBLS, the article offers a durable service-design rule: build inside game-like worlds only when the platform's spatial, social, or experiential affordances match a real library purpose.

Within research on library services inside games and virtual worlds, Webber and Nahl (2011) show how the same Second Life moment also became professional infrastructure for library and information science (LIS) education and continuing professional development (CPD). Their Sheffield and Hawaii cases used avatar interviews, information-literacy exhibits, virtual-world librarianship courses, reference shadowing, student-produced professional events, librarian mentors, poster conferences, and in-world CPD to make virtual worlds a laboratory for information behavior, reference, teaching, collaboration, and professional identity; the benefits were international access, social presence, persistent learning objects, and reduced travel, while barriers included broadband, hardware, onboarding time, and the need for active contribution. Across the same body of evidence, Mon (2012) adds a staff-facing account of avatar-mediated professionalism in Second Life. Through participant observation, 12 in-world interviews with librarians and educators, and visits to 50 virtual workplaces, Mon shows that virtual-world library service depended on professional avatar presentation, trust cues, and spatial staging: conservative humanoid avatars and familiar bookshelves or reference desks helped reassure newcomers, while polished avatar appearance signaled credibility to experienced residents. For GBLS, the study explains why services inside game-like worlds require platform fluency, identity management, and credible staff presence, not only a virtual room or collection. At the level of implementation, Bronack et al. (2008) broadened the virtual-platform discussion with AET Zone, a 3D immersive learning world that included a virtual library, Information Gardens, a virtual reference desk, and library science students serving as reference librarian avatars. Their Presence Pedagogy model treats persistent virtual worlds as communities of practice built through co-presence, shared spaces, just-in-time peer and expert support, reusable artifacts, visual metaphors, and exploration; for GBLS, the article is adjacent rather than library-program evidence, but it clarifies why game-like service worlds need social infrastructure and activity design rather than static room replicas. In a more context-specific account, Hedreen et al. (2008)

give the detailed practitioner account behind Second Life Library 2.0, showing how a game-adjacent virtual world became a multi-branch library service ecology rather than a single virtual room. Info Island and related spaces combined avatar reference, linked information objects, in-world books and note cards, information-literacy instruction, anime and manga collections, Mystery Manor reader's advisory, health-information outreach, Caledon special collections for a steampunk role-play community, Teen Grid services, partner islands, tours, events, and volunteer coordination; for GBLS, the case shows that virtual-platform services require translation of library values into platform-specific forms of presence, trust, collections, facilitation, youth safety, and community identity.

Within this broader pattern, Chow et al. (2012) provide empirical grounding for this early Second Life moment through a mixed-method usability and needs assessment involving Olathe Public Library, its Second Life branch, other virtual librarians, and 366 total participants. They found a weak match between traditional public-library users and virtual users: local patrons were often unaware of or only modestly interested in Second Life until shown examples, while virtual library visitors were frequently first-time explorers with diffuse information needs who rarely used static resources or spoke with librarians. The study suggests that virtual-world library services work best when they emphasize community, events, exhibits, in-world help, classes, social connection, and experiences not possible in physical branches, while also warning that volunteer labor, limited staff time, platform learning curves, promotion gaps, and the perception that Second Life is "just a game" make sustainability difficult.

Across the same body of evidence, Hollister (2024) updates this virtual-world strand for Meta Horizon Worlds. Through unobtrusive VR-based observation of 44 public worlds with "library" in the title or description, he found art and asset libraries, community libraries, personal libraries, and library-themed game and social spaces; only two appeared connected to real-world libraries, and few provided full digital resources or virtual reference. For GBLS, the study treats virtual libraries as possible service sites and worldbuilding artifacts while flagging platform instability, world-development labor, accessibility, cost, motion-sickness barriers, limited interactive content, and the need for stakeholder partnerships and ongoing assessment.

At the level of implementation, Guo and Lan (2023) provide a more empirical virtual-platform example through two public-library EFL reading projects with 38 children in Taiwan. After a picture-storybook, Q&A, and word-game project improved reading scores but left motivation and anxiety concerns, the revised project added OIV, a desktop 3D virtual-world authoring tool, so learners could plan stories on posters and then build multimodal story worlds with text, objects, spatial cues, and interactive questions. The PB+VR group improved reading, showed higher motivation and lower anxiety, and produced richer multimodal artifacts, suggesting that library virtual-world programs work best when they connect immersive creation to literacy goals, planning, collaboration, feedback, and artifact sharing rather than treating VR as novelty.

Across formats, the most consequential differences concern continuity, facilitation, and infrastructure. Festivals and tournaments can generate visibility quickly but often produce weak evidence of sustained relationships unless they feed recurring groups or other services. Clubs and TTRPG campaigns support deeper social continuity but require dependable schedules, group norms, and facilitator labor. Escape rooms concentrate learning objectives and reflection into bounded sessions, whereas game-design

workshops distribute agency over a longer iterative process. VR, AR, esports, and virtual worlds carry the highest technical, licensing, privacy, and accessibility burdens; analog collections and tabletop groups are often cheaper and more transparent but still require processing, advisory, storage, and inclusive onboarding.

Library type further shapes what counts as success. Academic libraries most often justify games through orientation, information literacy, student belonging, and research support; school libraries connect them to curricular learning, literacy, and youth development; public libraries emphasize equitable access, recreation, community participation, and informal learning; archives and special collections foreground description, preservation, and scholarship. These emphases overlap, but they should not be collapsed. The cross-study lesson is to adapt a format to the institution's mission and community while evaluating the specific outcome claimed, a principle that leads to the cross-cutting conditions below.

Cross-Cutting Conditions for Effective Games-Based Library Services

Across library types and game formats, effective Games-Based Library Services appear to depend less on any particular technology or program model than on a recurring service-design cycle: defining a locally relevant purpose, selecting and making appropriate games accessible, facilitating inclusive participation, building sustainable institutional capacity, and evaluating whether intended outcomes occur. Evidence for these conditions varies. Local adaptation, access infrastructure, facilitation, staff capacity, and assessment recur broadly, while claims concerning transfer, cultural relevance, participant agency, and particular partnership models remain more context-dependent. The lessons below should therefore be read as evidence-calibrated conditions for professional judgment rather than as universal prescriptions.

Ground Services in Purpose, Audience, and Institutional Context

The literature consistently suggests that game services should begin with a defined library purpose and an account of the people and institutional setting involved. Games may support orientation, information literacy, cultural access, research, informal learning, community formation, wellness, creative production, or outreach, but the same format does not serve each purpose equally well. A large survey of U.S. librarians identifies material barriers such as funding, hardware, space, staffing, training, and policy alongside professional beliefs, confidence, and assumptions about patrons (Abrams & Van Eck, 2021). Local fit therefore concerns both community demand and the library's capacity and willingness to recognize particular forms of play as legitimate service.

Cases of underperformance make this principle especially visible. At a large urban commuter university, two promoted Wii events produced weak sustained participation, and a subsequent survey showed only modest demand for library gaming events or circulation. The library's more productive response was not simply better marketing but a shift toward partnerships, scholarly events, game-development support, and uses of game technology that fit existing campus communities (Bishoff et al., 2015). In a different context, an augmented-reality orientation improved completion when moved from an optional drop-in

activity into scheduled instruction (Jedlicka & Eaton, 2024). These findings caution against inferring local need from national gaming demographics or from successful programs at unlike institutions.

Purpose should guide modality. Escape rooms can align with collaborative inquiry, time-bounded problem solving, designed failure, and debriefing; recurring TTRPG groups can support sustained belonging and identity play; collections can advance equitable access, advisory, coursework, and cultural stewardship; immersive technologies are most defensible when spatial experience contributes to the goal. In a multi-site youth co-design project, for example, VR attracted some participants but also introduced motion sickness, account, privacy, hardware, and inclusion barriers; staff often valued the co-design and wellness work more than the technology itself (Lee et al., 2024). This does not establish a simple hierarchy among analog and digital formats. It establishes a design test: what does this form allow participants to do that advances the stated library purpose?

Game studies adds the same caution at the level of form. Squire (2008a) distinguishes targeted games, role-playing games, persistent worlds, and open-ended simulations by their participation structures, time scales, replayability, and opportunities for experimentation and creative expression; GBLS planning should therefore match the interaction structure to the service goal rather than treating all video games or all gameful formats as interchangeable.

Community assessment need not always begin with a formal survey. Strategic plans, circulation and attendance data, partner knowledge, demographic information, patron requests, observation, and small pilots can all reveal local conditions. The strongest practice implication is iterative rather than predictive: articulate the intended value, begin at a scale the institution can support, observe participation and exclusion, and revise the service when the original assumptions do not hold.

Select, Describe, and Provide Access to Appropriate Games

Access is a chain of professional decisions rather than the mere presence of games. Libraries must select, acquire, describe, house, circulate, maintain, interpret, and sometimes preserve materials whose costs, components, platforms, licenses, learning curves, and social demands vary widely. Across school, public, and academic accounts, selection is shaped by audience, play time, player count, curricular or service fit, durability, replacement cost, technical support, age and content information, and whether a game works as an engaging experience before it is asked to perform an instructional function (Copeland et al., 2013). These criteria are primarily practitioner knowledge, but their recurrence across settings makes them a stronger basis for planning than popularity alone.

Inclusive selection requires attention to barriers embedded in the games and surrounding service. Tabletop accessibility frameworks identify visual, physical, cognitive, communicative, emotional, socioeconomic, and intersectional demands involving contrast, component size, memory, hidden information, language, time pressure, elimination, cost, and hobby familiarity (Heron et al., 2018). Because this work is adjacent rather than library-outcome evidence, it should guide preliminary appraisal and accommodation rather than substitute for participation by disabled patrons in collection and program design. Similar caution applies to cultural relevance: scholarship on Indigenous games and culturally situated play shows why local names, histories, creators, and community knowledge should not be flattened into generic genre categories, but direct evaluation of culturally responsive GBLS remains limited.

Description determines whether acquisition becomes usable access. User-centered metadata studies show that patrons and proxy selectors need information about platform, gameplay, narrative, mood, visual style, difficulty, player count, duration, online capability, hardware, versions, series, expansions, and technical requirements (Lee et al., 2013, 2015, 2017). Tabletop implementations demonstrate that local catalog fields can become public facets for age, number of players, and play time, while controlled-vocabulary research shows persistent problems distinguishing TTRPGs from adjacent formats and works about games (Robson et al., 2019; Smith, 2024). The field converges on richer, faceted description, although it remains divided over how much local labor and technical complexity institutions can sustain.

These findings support a scaled approach. A small circulating collection needs reliable core information about playability, audience, components, dependencies, and accessibility. Larger research and heritage collections need version, relationship, provenance, creator, development, and preservation metadata. Advisory, displays, guides, and cross-media connections should translate that infrastructure into patron choice, but cross-media engagement is best understood as one advisory strategy rather than a universal condition of every game service. The practical standard is whether intended users can find, understand, obtain, and participate in the experience the library claims to provide.

Facilitate Inclusive and Meaningful Participation

Libraries often add their greatest value around the game rather than inside its rules. Across clubs, TTRPGs, escape rooms, instruction, tournaments, and co-design projects, facilitators welcome newcomers, teach rules, establish norms, troubleshoot technology, mediate conflict, manage pacing, distribute attention, connect play to collections or learning goals, and make continuation possible. Observations and interviews at public-library D&D programs show that reliable schedules, available game masters, beginner support, and a neutral, welcoming setting can distinguish library play from private groups or commercial venues (Nelson & Matthews, 2025). School-library cases similarly describe facilitation as flexible game mastering, peer teaching, conflict management, and adaptation to student creativity (Copeland et al., 2013).

Facilitation is especially consequential when a service claims educational, civic, or wellness outcomes. In a public-library misinformation escape room, collaborative play created a shared encounter with manipulated evidence, confirmation bias, and a designed deepfake failure, but librarian-led debriefing helped participants connect that experience to real information practices (Cho et al., 2023). Comparable instructional studies suggest that narrative, puzzles, and immersion can motivate active practice, yet learning transfer depends on task alignment, feedback, reflection, and opportunities to explain or revise decisions. Debriefing should therefore be treated as central for programs whose purpose requires conceptual transfer, not imposed mechanically on recreational play or ordinary circulation. Squire's account of designed experience reinforces why reflection is not an optional add-on when learning is claimed: educational value develops through cycles of situated action, feedback, revised performance, identity, and interpretation within a broader social system (Squire, 2006).

Inclusive participation extends beyond selecting accessible titles. Libraries shape who feels entitled to enter a game space, ask for help, watch before joining, take a meaningful role, leave and return, or

challenge harmful behavior. Game formats can privilege prior rules knowledge, technological access, competitive confidence, language fluency, fine-motor skill, sensory tolerance, or uninterrupted time. Practical responses include multiple roles, accessible components and communication, careful scheduling, low-stakes onboarding, cooperative and casual options, explicit conduct norms, flexible rules where appropriate, and consultation with intended participants.

Evidence for participant agency and co-design is promising but narrower than evidence for facilitation generally. Youth co-design studies show that participants can contribute local knowledge and ownership while staff retain responsibility for safety, scope, and implementation (Lee et al., 2024). Partnerships with students, clubs, game stores, teachers, researchers, cultural organizations, and community experts can similarly extend knowledge and recruitment. These are not universally superior arrangements: they work when authority, labor, benefit, and accountability are clear. The broader lesson is that meaningful participation should be designed as a relationship, not presumed from attendance.

Build Institutional Capacity and Sustainable Service Models

GBLS remains vulnerable when expertise and continuity depend on one employee's hobby knowledge. National survey evidence shows that library education and formal professional development account for a relatively small share of preparation for video game programming, while staff confidence and institutional beliefs can constrain adoption alongside budgets and equipment (Abrams & Van Eck, 2021). A survey of LIS educators similarly found limited curricular attention to gaming and uncertainty about relevance and faculty expertise (Elkins & Hollister, 2020). Short workshops can improve self-reported confidence, but evidence about sustained changes in service remains limited (Capdarest-Arest et al., 2019).

Professional preparation should be tied to recognizable library work rather than reduced to game recommendations. Relevant capacities include community assessment, selection and collection development, advisory, rules explanation, facilitation, inclusive group norms, instructional design, debriefing, technology and privacy policy, cataloging, preservation, evaluation, and partnership management. Not every employee must become a specialist. Cross-training, shared scripts and documentation, teen or student leadership, communities of practice, and external partners can distribute expertise, provided the institution retains responsibility for access, safety, and service quality.

Sustainability also depends on operations. Physical games require storage, component control, repair, sanitation, replacement, and circulation policy. Digital games introduce accounts, authentication, licensing, downloadable content, patches, servers, platform generations, privacy, and disappearing storefronts. Immersive programs add hardware support, motion sickness, space, waivers, and staff supervision. Playful environments generate questions about noise, visibility, privacy, spectatorship, age zoning, and coexistence with quiet use (Wyatt & Leorke, 2024). These are not reasons to reject GBLS; they are recurrent service costs that should be considered when choosing scope and deciding whether a model can persist.

Partnerships are most useful when they build durable capacity rather than mask an unsupported service. Cross-library events can combine audience access, staff expertise, locations, and promotion; campus organizations can supply knowledge of local play cultures; developers and researchers can contribute

design expertise; community members can become facilitators and leaders. Yet the literature is dominated by successful local accounts, so partnership should not be treated as an automatic solution. Sustainable models clarify responsibilities, document procedures, compensate or recognize labor where appropriate, plan for turnover, and preserve enough institutional knowledge for a service to continue, adapt, or conclude responsibly.

Evaluate, Adapt, and Decide What to Sustain

Assessment completes the service-design cycle by testing whether the intended value occurred. Much GBLS literature reports attendance, satisfaction, enjoyment, or staff impressions. These measures can establish reach and acceptability, but they cannot by themselves demonstrate learning, transfer, belonging, equity, wellness, or behavioral change. A systematic review of assessed academic-library scavenger hunts found unclear sample sizes and timeframes, heavy reliance on local measures, and no validated instruments among the included studies (Stark et al., 2021). The field's most consistent assessment lesson is therefore alignment: measure the outcome the service was designed to influence.

This also implies that GBLS studies need mechanism-sensitive accounts, not only aggregate judgments. Squire (2007) argues for explanations of how particular designs and contexts produce outcomes, which aligns with the review's broader call to report implementation conditions, participant meaning, and local adaptation alongside outcome measures.

Comparative and null findings show why separated outcomes matter. Game and conventional orientations sometimes produce similar immediate knowledge gains while differing in delayed retention, interest, anxiety, or perceptions of human connection (Intawong et al., 2023; Sureephong et al., 2024). A workplace well-being game produced valued collegial effects without significantly changing burnout or job satisfaction (Casucci et al., 2020). These are not failed studies. They identify the level at which a service may be useful and prevent engagement from being misreported as broader impact.

Evaluation should also examine implementation and participation. Completion, repeat attendance, observation, interviews, facilitator records, accessibility barriers, technical failures, who declines or leaves, and whether a program reaches beyond already confident players can explain why outcomes vary. Low-burden approaches may combine attendance and demographic information with a small number of outcome-aligned questions, structured observation, participant reflection, and follow-up where retention or sustained relationships matter. More ambitious programs justify stronger comparison, longer timeframes, or validated measures.

Finally, assessment should inform decisions rather than merely defend continuation. Weak turnout may signal poor timing, an unsuitable format, inaccessible design, duplicated community provision, or a purpose patrons do not share. Positive satisfaction may still coexist with unsustainable labor or exclusion. Libraries should use evidence to continue, adapt, scale, partner, pause, or end services. Collectively, the literature teaches that effective GBLS is not a fixed set of recommended programs but a reflective institutional practice: align purpose and form, provide meaningful access, facilitate participation, build capacity, and revise decisions in light of evidence.

Gaps in the Literature and Future Research Agenda

The literature establishes a substantial field of practice but leaves major questions unresolved about effectiveness, equity, context, professional capacity, infrastructure, and sustainability. This section converts those uncertainties into a research agenda spanning stronger outcome measures, broader representation, comparative implementation, and national needs assessment.

Evidence Quality and Outcome Gaps

The central evidence gap is not a shortage of examples but a shortage of comparable, outcome-aligned assessment. This subsection identifies weaknesses in samples, measures, comparison conditions, reporting, and publication patterns while clarifying which claims remain plausible rather than demonstrated. Within research on evidence quality and outcome gaps, Adetayo et al. (2023) illustrate a common evidence gap in GBLS-adjacent literature: a detailed gameful model may be theoretically plausible and locally relevant, but still lack classroom testing, learning-outcome data, cost analysis, and implementation evidence. Their cataloguing and classification proposal is therefore useful as a design agenda, not yet as proof of effectiveness.

Khademi Zare et al. (2024) add a public-library version of the same evidence gap: expert interviews can generate a rich map of possible gamification applications, but the field still needs implemented prototypes, comparison groups, age- or audience-specific testing, and measures of lending, attendance, reading, satisfaction, learning, volunteering, and retention.

Across the same body of evidence, Pervolaraki et al. (2015) identify durable video-game evidence gaps that remain relevant for GBLS: comparatively little library research on adolescents and gaming, limited evidence on adults and gaming in libraries, uneven public-library adoption between the United States and Europe, and a tendency to study game use more than young people's creation of games. Their review also shows why staff training matters, since unfamiliarity and fear of negative effects can prevent educators and librarians from evaluating games-based literacy work on its actual learning design.

Across the corpus, positive claims also outrun the measures used to support them. Enjoyment is taken as evidence of motivation, attendance as evidence of belonging, and task completion as evidence of information literacy. Comparative studies sometimes find that games-based and conventional instruction produce similar immediate knowledge gains while games improve interest or delayed retention. Such results are not failures, but they demonstrate why GBLS research must specify which outcome is expected to change. Stronger studies should distinguish exposure, participation, satisfaction, confidence, knowledge, behavior, transfer, belonging, and well-being; report intervention duration and sample characteristics; and include null or negative findings.

Equity, Accessibility, and Participation Gaps

Equity research must examine not only whether a service is offered but who can enter, participate meaningfully, remain involved, and influence its design. The discussion below identifies missing evidence about disability, language, income, technology, prior experience, identity, nonparticipation, and exclusion.

Within research on equity, accessibility, and participation gaps, Elkins (2015) frames school-library gaming as an access issue: just as libraries provide print materials to support traditional literacy, they may need to provide access to digital games, related media, and mentoring so socioeconomically disadvantaged students can participate in 21st-century literacies that more affluent peers may encounter elsewhere. This argument is practitioner-facing rather than outcome evidence, but it highlights an equity question GBLS studies should assess directly.

A third-place lens also needs empirical restraint. Fisher et al. (2007) found that the Seattle Central Library supported bonding and bridging social capital and functioned as neutral, inclusive ground, but it did not fully meet all third-place criteria; conversation, regulars, newcomer welcome, and a consistently playful mood were uneven. GBLS research should therefore measure belonging and public-space inclusion directly rather than assuming they follow from co-presence.

The literature gives substantially more attention to offering access than to measuring who can use it. Studies rarely report disability, language, income, transportation, technology ownership, caregiving obligations, or previous gaming experience in enough detail to explain participation. Evidence from VR projects shows that expensive public access can still reproduce gendered and racial participation patterns, while TTRPG and tabletop studies suggest that facilitation and beginner-friendly norms can broaden participation beyond commercial hobby spaces. Future work should treat nonparticipation, attrition, spectatorship, and refusal as evidence, not simply as missing attendance.

Library Context, Community Demographics, and Rural Representation

Library type and community context remain unevenly represented. Academic-library studies concentrate on orientation and information literacy, public-library studies on youth programs and community access, school-library reports on literacy and curricular alignment, and special-library work on research collections and professional instruction. These differences are substantive because governance, schedules, audiences, staffing, and measures of success differ. Yet direct comparisons among library types are rare.

Rural, tribal, small, and under-resourced libraries are especially difficult to see in the published evidence. Practitioner examples often demonstrate low-cost ingenuity, but the field lacks comparative knowledge about broadband, travel distance, staffing, regional culture, language, and partnership capacity. Urban or residential-campus successes should not be treated as default models. Research should deliberately sample across geography, institutional scale, and community demographics and should report the local conditions that make adaptation possible.

Professional Practice, Education, and Training Gaps

Within research on professional practice, education, and training gaps, Elkins and Hollister (2020) identify a professional-preparation gap behind GBLS implementation: in a survey of 24 U.S. LIS educators, 41.7% neither used nor discussed gaming in their courses, and many gaming-exclusive respondents cited uncertainty about relevance, integration, knowledge, course-change constraints, or lack of student interest. Their findings suggest that reusable course modules, assignments, best-practices guides, conference workshops, and administrative support are part of the infrastructure needed to make games-based library services teachable in LIS programs. Capdarest-Arest, Opuda, and Stark (2019) make

professional preparation more concrete through a ninety-minute Medical Library Association (MLA) workshop that taught health sciences librarians low-tech game design and design-thinking methods. Participants used ordinary materials to prototype database-instruction games, and self-reported confidence using gamification rose from 28% before the session to 83% after it; the study is short-term and self-reported, but it shows that GBLS training can focus on rapid prototyping, rule testing, shared repositories, and low-cost instructional design rather than only on finished game examples.

Across the same body of evidence, Adetayo et al. (2023) broaden the training gap from practicing librarians to LIS students and faculty. Their proposed gamified cataloging and classification model assumes that students need repeated practice and motivational scaffolding, but it also notes that faculty may need technology training, institutional support, and stakeholder coordination before such systems can be implemented in Nigerian library schools.

Infrastructure, Metadata, Licensing, and Preservation Gaps

de Groat (2015) also clarifies why metadata gaps persist: platform information is often trapped in notes or improvised fields, game genre headings are inconsistent or topical rather than true genre/form access points, "computer games" and "video games" are not cleanly distinguished, franchise and title authority work lacks clear guidance, and the Library of Congress no longer catalogs games within the workflow that generates the policies most U.S. libraries follow. These gaps limit discovery, advisory, preservation, and scholarly use of game collections.

Within research on infrastructure, metadata, licensing, and preservation gaps, Bianchini and Munini (2025) show that infrastructure gaps also include the absence of practical classification systems for analog game collections. ClaG is promising because its facets map to use questions, but it still needs fuller treatment of traditional children's games, sports, mimicry and role-playing games, video games, large-scale field testing, and cross-institutional implementation.

Across the same body of evidence, Hobart (2024) adds a special-collections metadata gap: existing standards help but do not fully cover rare or unique games. RDA disperses three-dimensional-object guidance, OLAC focuses on object best practices rather than rare-materials needs, DCRM guidance is strongest for books and two-dimensional graphics, game genre/form vocabularies remain limited, and detailed bibliographic reference works for games are scarce, forcing local policy decisions for description, facets, provenance, components, and copy-specific notes.

Game services also rely on infrastructures that are often outside library control. Proprietary platforms can change authentication, remove content, end server support, prohibit lending, or make local preservation legally and technically difficult. Physical games may survive while rules, expansions, community practices, or development records disappear. Research is needed on licensing models, emulation, software maintenance, accessibility updates, privacy, server operations, and cooperative preservation, as well as on the labor and cost required to sustain interactive media after acquisition.

Comparative, Longitudinal, and Implementation Research

Most studies capture a pilot, a single term, or immediate post-program response. Longitudinal research could examine whether participants return, form relationships, use other services, retain knowledge, take leadership roles, or continue creative and information practices beyond the intervention. Comparative implementation research is equally important because the key question is often not whether a game can work, but under what staffing, facilitation, policy, and community conditions it can be adopted and sustained.

Future studies should compare games-based services with credible alternatives rather than with no service at all. They should document adaptation, fidelity, staff time, direct and indirect costs, failed recruitment, technical interruptions, and discontinuation. Mixed methods are particularly well suited to GBLS because quantitative outcomes alone may miss how rules, space, identity, conflict, and facilitation produce an experience, while qualitative enthusiasm alone cannot establish scale or durability.

National Survey and Needs-Assessment Agenda

A national needs assessment would connect the field's rich local record to evidence about prevalence, institutional capacity, staff preparation, patron demand, and community variation. This subsection identifies the paired staff and public questions needed to guide strategy, professional development, and future evaluation. Within research on national survey and needs-assessment agenda, Baker (2024) makes the survey agenda explicit by proposing paired staff and patron instruments for a national needs assessment of games-based library services. Although the proposal does not report findings, it identifies the field-level data still needed: which GBLS formats libraries offer, how they are funded and promoted, what implementation barriers staff face, how prepared staff feel, which patrons use or want these services, and how interest varies by community and demographic context.

A national agenda should connect institutional and public perspectives rather than surveying libraries alone. Staff data are needed on collections, programming, budgets, spaces, platforms, partnerships, training, policy, and assessment. Patron data are needed on awareness, use, unmet demand, barriers, format preferences, cultural relevance, and desired roles as players, creators, facilitators, or advisors. Sampling should permit comparison by library type, geography, community size, demographics, and institutional capacity. Repeated at intervals, such a study could distinguish a temporary format trend from the development of durable service infrastructure.

Conclusion

This literature collectively establishes Games-Based Library Services as a recognizable field of library work rather than a loose assortment of entertaining programs. Its activities range from circulation and cataloging to instruction, community formation, cultural stewardship, creative production, preservation, outreach, and spatial design. What unifies them is not a particular game form but the use of games, play, and gameful systems to pursue library purposes. This service-ecology perspective explains why an event cannot be separated from the collections, staff expertise, technologies, policies, partnerships, and discovery systems that make participation possible.

Across contexts, several findings converge. Games can give patrons reasons to enter and remain in libraries, create structured opportunities for interaction, and support active encounters with information and culture. Instructional interventions are most promising when game tasks reproduce meaningful information practices, provide feedback, and include reflection. Community programs become more durable when they recur, welcome beginners, distribute leadership, and connect participants to other library roles. Collections become usable when libraries describe the experiential and technical characteristics that patrons actually need for selection. Immersive technologies offer distinctive forms of access and creation but do not reliably outperform skilled human instruction, and their costs and barriers make novelty an insufficient justification.

The literature also identifies recurring tensions. Competition can energize shared goals or intensify exclusion. Gamification can clarify progress or reduce intrinsic activity to compliance. Open programs can reproduce hobby gatekeeping. Digital services can expand access while imposing accounts, surveillance, licensing, and platform dependence. Playful environments can support belonging while creating conflicts over noise, safety, and spatial ownership. These are not peripheral implementation problems; they are the substance of designing public services around games.

For GBLS professionals, the central lesson is to begin with purpose and community rather than format. Libraries should identify the change they seek, investigate local participation and barriers, select a game form whose affordances fit that goal, and plan the surrounding facilitation and infrastructure. They should make access multidimensional by considering hardware, time, language, disability, prior experience, cultural representation, and social safety. They should treat patrons and partners as potential co-designers and leaders while building enough institutional knowledge that a service does not depend on one enthusiast. Finally, they should evaluate the intended outcome directly and remain willing to revise or end an attractive program that does not serve its audience.

The evidence base supports disciplined ambition rather than either uncritical advocacy or dismissal. Games deserve the same serious cultural and professional attention libraries give other consequential media, and libraries are unusually well positioned to connect public access, trustworthy context, facilitation, creative participation, and preservation. Yet most claims remain local and descriptive, and games are not automatic solutions to learning, isolation, misinformation, or institutional relevance. The next stage of GBLS scholarship must therefore connect the field's rich practitioner knowledge to comparative, inclusive, and longitudinal evidence. That agenda begins with clearer national knowledge of what libraries offer, what communities seek, and which conditions allow games-based services to become equitable and durable parts of library practice.

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