

Research article

Beyond play: A scoping review of innovative applications of tabletop role-playing games

Más allá del juego. Una revisión exploratoria sobre aplicaciones innovadoras de los juegos de rol de mesa

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Abstract

Introduction: Tabletop role-playing games (TRPGs) have transitioned from niche entertainment to powerful tools with applications in education, therapy, and social inclusion. Their unique structure fosters creativity, critical thinking, and collaboration, yet comprehensive studies exploring their potential in diverse contexts remain limited.

Methodology: This scoping review analyzed 110 studies using PRISMA-ScR guidelines, focusing on TRPG applications across education, mental health, advanced technologies, and community building. Data was extracted from academic databases, emphasizing studies in English, Spanish, and Portuguese. **Results:** TRPGs showcased remarkable adaptability, improving learning engagement, cognitive development, and therapeutic results. Systems like Dungeons & Dragons dominate the field, facilitating identity exploration, socio-emotional learning, and collaborative problem-solving. However, linguistic biases, the lack of

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longitudinal studies, and overreliance on specific systems present challenges. Emerging applications include AI-driven storytelling, mixed reality integrations, and tailored educational interventions. **Discussion:** TRPGs offer immense potential for fostering inclusion, equity, and innovative problem-solving. Their adaptability highlights their role as tools for interdisciplinary collaboration and social innovation. Addressing gaps in diversity and quantitative research is critical to realizing their full potential. **Conclusion:** TRPGs are transformative tools for education, therapy, and social engagement. Future research should prioritize inclusivity, explore underrepresented populations, and expand technological integration to unlock broader societal impacts.

Keywords: Tabletop Role-Playing Games; Game-Based Learning; Therapeutic Role-Play; Social Innovation; Identity Exploration; Cognitive and Socioemotional Skills; Participatory Methodologies; Technology Integration in Play.

Resumen

Introducción: Los juegos de rol de mesa (TRPGs) han evolucionado de ser un entretenimiento de nicho a herramientas con aplicaciones en educación, terapia e inclusión social. Su estructura fomenta la creatividad, el pensamiento crítico y la colaboración, aunque los estudios que exploran su potencial en contextos diversos son limitados. **Metodología:** Esta *scoping review* analizó 110 estudios según las directrices PRISMA-ScR, abarcando aplicaciones en educación, salud mental, tecnologías avanzadas y construcción comunitaria. Se priorizaron estudios en inglés, español y portugués. **Resultados:** Los TRPGs mostraron versatilidad, mejorando la participación en el aprendizaje, habilidades cognitivas y resultados terapéuticos. Apoyan la exploración de identidades, el aprendizaje socioemocional y la resolución de problemas. Sin embargo, enfrentan desafíos como sesgos lingüísticos, falta de estudios longitudinales y dependencia de sistemas específicos. Las aplicaciones emergentes incluyen narrativas con IA, realidad mixta e intervenciones educativas personalizadas. **Discusión:** Los TRPGs tienen un gran potencial para fomentar la inclusión, la equidad y la innovación social. Su adaptabilidad los posiciona como herramientas clave para la colaboración interdisciplinaria. Abordar las brechas en diversidad y fortalecer la investigación cuantitativa permitirá maximizar su impacto. **Conclusión:** Como herramientas transformadoras, los TRPGs pueden promover cambios significativos en educación, terapia e interacción social.

Palabras clave: Juegos de rol de mesa; Aprendizaje basado en juegos; Rol terapéutico; Innovación social; Exploración de la identidad; Habilidades cognitivas y socioemocionales; Metodologías participativas; Integración tecnológica en el juego.

1. Introduction

1.1. Rationale for the topic and context

Tabletop role-playing games (TRPGs) have evolved over the past four decades from niche entertainment to tools with diverse applications that extend beyond leisure. These games immerse participants in collaborative storytelling within shared imaginary worlds, fostering creativity, problem-solving, and teamwork (Brown, 2018). Recent research has highlighted their potential in fields such as education, therapy, and social inclusion, showing how their unique structure promotes both cognitive and socio-emotional development (García-Soriano, Faret, & Gonzalez, 2023).

Scholars like Sarah Lynne Bowman (2010, 2024) have emphasized the transformative potential of TRPGs, analyzing how character embodiment, emotional immersion, and shared narrative agency contribute to processes of identity exploration, personal growth, and communal bonding. Her work explores TRPGs not only as artistic expressions but also as powerful tools for transformative play and emotional safety (Bowman, Diakolambrianou & Brind, 2024). Through strategic decision-making and cooperative challenges, TRPGs provide a dynamic platform for fostering practical and interpersonal skills.

In therapeutic contexts, TRPGs have proven effective in addressing mental health issues. They have been used to help individuals with autism spectrum disorder practice social interactions and have provided a safe space for people with anxiety or depression to explore emotions and build self-esteem (Mendoza, 2020; Goodall & Truong, 2021). Additionally, their collaborative nature fosters social bonds, offering marginalized individuals a sense of belonging and acceptance within a community (Romero, 2019). This ability to address individual and collective needs demonstrates the versatility and depth of TRPGs as tools for personal growth and social connection.

Despite these promising applications, the body of research on TRPGs remains fragmented. Many studies focus on specific interventions without integrating insights across disciplines or contexts. A comprehensive theoretical framework is necessary to consolidate these findings, guide interdisciplinary collaboration, and explore the full potential of TRPGs. By synthesizing existing knowledge, researchers and practitioners can identify gaps and develop innovative approaches that maximize the societal contributions of TRPGs in areas such as education, therapy, and social innovation.

Through strategic decision-making and cooperative challenges, TRPGs offer a dynamic platform to develop practical and interpersonal skills. In contrast to digital games, TRPGs emphasize face-to-face interaction, player agency, and open-ended creativity, allowing participants to co-create narratives and explore problem-solving in imaginative settings (Dyson et al., 2016; White et al., 2018). This flexibility enables tailored applications across diverse contexts, enhancing their relevance and adaptability (Boysen et al., 2023). Furthermore, TRPGs are accessible and cost-effective, requiring only basic materials like dice and paper, making them inclusive tools that can engage diverse audiences without technological barriers (Kilmer et al., 2023; Otani et al., 2024). By fostering collaboration, TRPGs naturally align with key principles of social innovation, such as equity, inclusion, and sustainability.

Social innovation, defined by its focus on values such as equity, inclusion, and sustainability, aligns closely with the principles embodied by TRPGs. These games facilitate participatory methods that co-create meaningful solutions and foster collaboration, addressing societal challenges through collective learning (Chalmers, 2013; Murray, Caulier-Grice, & Mulgan, 2010). Their adaptability and emphasis on social values make TRPGs a natural fit for initiatives aimed at improving well-being, sustainability, and quality of life in areas such as healthcare and education (Moulaert, Martinelli, Swyngedouw & Gonzalez, 2005).

By framing TRPG applications within a broader theoretical context, this synthesis underscores their transformative potential across multiple domains. These games have the capacity to inspire meaningful change, promote well-being, and creatively address complex challenges. With further research and interdisciplinary exploration, TRPGs can become a recognized and valued tool for learning, therapy, and social inclusion, fostering positive outcomes for individuals and communities alike.

1.2. Objectives of the scoping review

The primary objective of this scoping review is to explore and map the existing literature on innovative applications of tabletop role-playing games (TRPGs), with an emphasis on those that involve social innovation. The scoping review methodology was selected to provide a comprehensive overview of a fragmented and interdisciplinary research landscape.

The specific objectives are:

1. To identify and describe innovative applications of tabletop role-playing games in various contexts, particularly those that contribute to social innovation.
2. To examine trends and approaches in the design and implementation of these innovative applications.
3. To explore how TRPGs have been applied in organizational contexts to address educational, therapeutic, and social challenges.
4. To identify gaps in the literature and areas where additional research is required to understand and maximize the innovative applications of tabletop role-playing games.

2. Methodology

2.1. Protocol and registration

This scoping review followed the adapted PRISMA-ScR methodology for scoping reviews (Tricco et al., 2018). Although no specific protocol was registered for this review, all methodological steps and decisions were documented.

2.2. Eligibility criteria

The research on innovative applications of tabletop role-playing games (TRPGs) encompasses a diverse array of sources: primary studies provide firsthand insights; systematic reviews synthesize broad trends; scoping reviews map the research landscape; meta-analyses offer precise conclusions; theses present cutting-edge ideas; and technical and conference reports reveal the latest findings. The focus areas include education, where TRPGs' role in learning and skill development is explored; therapy, assessing their therapeutic potentials; social inclusion, examining community-building capacities; and technology, considering their digital integrations. The study adopts an inclusive demographic scope – unrestricted by age, gender, or geography – while focusing on literature in English, Spanish, and Portuguese to ensure both accessibility and cultural diversity. This multilingual approach offers a practical yet multicultural perspective on the innovative applications of TRPGs.

2.3. Information sources and search strategy

Searches were conducted in academic databases such as Dialnet, Scielo, Proquest, Web of Science, JSTOR, Scopus and SAGE.

The advanced search formula employed is as follows: “(“tabletop role-playing games” OR “juegos de rol de mesa”) OR (“calabozos y dragones” OR “dungeons and dragons” OR “dragones y mazmorras”)”, with the added condition that the search would be limited to articles with these specific terms present in their titles.

The inclusion of D&D-related terms reflects their dominance in academic literature, serving as a gateway to broader TRPG studies: given its hegemonic position as one of the most well-known role-playing systems, *D&D* is understood to be crucial to understand contemporary TRPGs (Mason, 2004; Sihvonen & Stenros, 2018; Peterson, 2018; White et al., 2018), to the point where *D&D* has become a generic term for all TRPGs (MacCallum-Stewart et al., 2024, pp. 334). The objective of this approach was to ensure that the search is both comprehensive and thorough, with the goal of providing a detailed and insightful analysis of the current state of research within this field. While the decision to include *D&D* directly into the search formula may result in biased results, we chose to do so to more reliably widen the scope of the search into results that are both representative of the object of study and that may not appear otherwise.

2.4. Selection of sources evidence

Two independent reviewers evaluated titles and abstracts for eligibility, with full-text reviews conducted for those meeting the criteria. Studies were included if they:

- Proposed an innovative and practical application of TRPGs aligned with social values, fostering improvement or change.
- Were written in English, Spanish, or Portuguese.

The review prioritized articles from academic journals without restrictions on publication year, aiming for a broad and inclusive scope. Exclusions were limited to studies not meeting these criteria or lacking relevance to practical applications of TRPGs.

Duplicates were eliminated using reference management software. Reviewer discrepancies were resolved through discussion or, if needed, by consulting a third reviewer.

The studies were analyzed based on variables such as the field of intervention, goals, population, strategies, role-playing system, methodology, and results. Data extraction and coding identified key patterns and themes, summarized in tables with relevant citations.

Data was independently extracted using a predefined form and reviewed for accuracy. Discrepancies were resolved through further analysis or consultation with an expert when necessary.

2.5. Data charting process

The studies were analyzed based on variables such as the field of intervention, goals, population, strategies, role-playing system, methodology, and results. Data extraction and coding identified key patterns and themes, summarized in tables with relevant citations.

Data was independently extracted using a predefined form and reviewed for accuracy. Discrepancies were resolved through further analysis or consultation with an expert when necessary.

2.6. Data items

- *Field of Intervention:* Domains where TRPGs are applied, such as education, therapy, healthcare, or entertainment.
- *Goal of the Intervention:* Objectives like improving social skills, fostering empathy, or enhancing decision-making.
- *Population and Sample Characteristics:* Demographics of participants, including age, gender, cultural background, and socioeconomic factors.
- *Intervention Strategies:* Techniques and methods used to achieve the intervention's goals.
- *Role-Playing System:* The TRPG system employed, whether pre-existing (e.g., Dungeons & Dragons) or custom-designed.
- *Methodology for Assessment:* Approaches for evaluating effectiveness, including study design, tools, and criteria.
- *Results:* Findings on effectiveness, skill development, challenges, and overall impact.

2.7. Analysis Methodology

The collected papers were analyzed using a combination of content and thematic analysis. Content analysis, following Krippendorff's (2018) methodology, enabled systematic categorization of data to identify recurring themes and patterns in TRPG research. This process was complemented by Braun and Clarke's (2006) six-phase framework for thematic analysis, which further distilled nuanced themes and sub-themes, providing deeper insights into the trends within each category.

By integrating these two approaches, the analysis offered a comprehensive examination of the multifaceted applications of TRPGs across educational, therapeutic, and social domains, highlighting their adaptability and impact in diverse contexts.

2.8. Selection of sources of evidence

The initial sweep accumulated 903 articles. Scopus was searched using terms like "Roleplay," "tabletop role-playing games" and "Dungeons & Dragons" and their Spanish equivalents, yielding 150 results. ProQuest was queried for similar terms, resulting in 394 entries. The Web of Science provided 99 articles, while SciELO, using a narrower range of terms, offered 18. JSTOR and SAGE were also searched, contributing 115 and 205 results, respectively.

721 articles remained after removing duplicates. Further scrutiny to ensure relevance led to the exclusion of articles not specifically about role-playing games, reducing the count to 402. Finally, articles not related to specific applications of role-playing games were eliminated, leaving 110 pertinent studies.

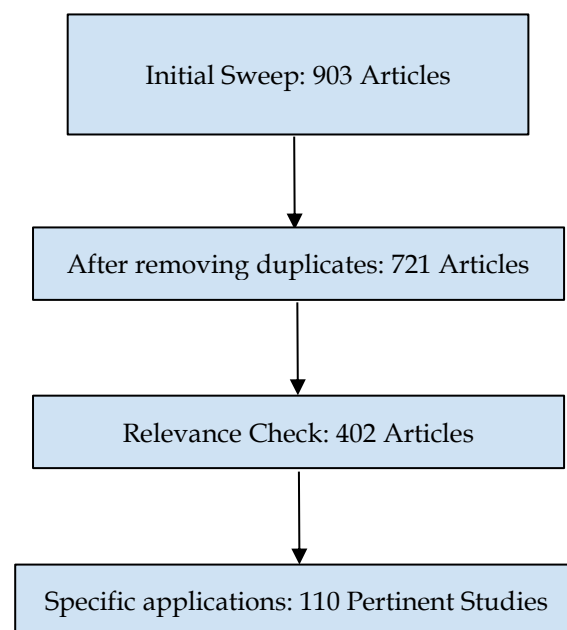
2.9. Synthesis of results

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Figure 1.

Flow Diagram of Article Selection Process



Source: Own elaboration based on scoping review (n=110).

2.10. Characteristics of sources of evidence

Table 1.

Characteristics and Distribution of Publications

Type of publication	Count	%	Description
Journal Articles	62	56%	Peer-reviewed academic articles presenting original research or reviews.
Conference Papers	27	25%	Papers from academic conferences, often featuring preliminary findings or exploratory ideas.
Theses	20	18%	Detailed research papers associated with master's or doctoral degrees.
Books	1	1%	Comprehensive texts on specific topics, often used as reference material.
Publication Dates	Count	%	Description
1980-1999	5	5%	Articles published during this period, reflecting early interest in the field.
2000-2009	7	6%	Articles from this decade indicating early developments in the research area.
2010-2017	19	17%	Showing growing research activity during these years.
2018-2023	79	72%	Significant recent surge in publications during this period.
Languages	Count	%	Description
English	84	92,31%	English, highlighting its dominance as a research language.
Portuguese	3	3,3%	Portuguese, reflecting regional interest.
Spanish	4	4,4%	Spanish, indicating smaller regional focus.

Source: Own elaboration based on scoping review (n=110).

3. Results

3.1. Results of sources of evidence²

3.1.1. Field of intervention

Table 2.

Field of Intervention and Thematic Distribution in TRPG Applications

Theme	Total Cases	%	Categories
Education	55	41%	Soft Skills (11), Educational Methods (9), Language Skills (8), Ethics and Social Responsibility (5), Community Participation and Social Learning (5), STEM Education (4), Creativity (3), Environmental Education (3), Medical Education (3), Business and Professional Skills (2), History and Classics (2)
Psychology and Mental Health	17	12,8%	Psychotherapy (12), Personal Development (5), Autism (3), Perceptions (2), Supervision (1)
Artificial Intelligence and Technology	26	19,5%	AI and Robotics (13), Story Generation (8), Mixed Reality and Online (5)
Game Design and Digital Interactive Media	18	13,5%	Game Design Tools (8), Creativity in Design (4), Mixed/Virtual Reality (3), User Experience (3)
Identity and Community	17	12,8%	LGBT Identity (5), Community Participation (5), Environmental and Urban Management (4), Women's Experiences (3)

Source: Own elaboration based on scoping review (n=110).

The discussion provides an in-depth interpretation of these results, situating them within the context of the existing body of knowledge. It examines the implications of the findings, how they contribute to or challenge prior theories, and their practical or theoretical relevance to the field. Additionally, this section critically addresses the study's limitations, discussing how these may influence the interpretation of the results and suggesting areas for future research to overcome these limitations or explore new questions emerging from the current study.

² While each of the 110 articles was analyzed individually, the paper will present only the aggregated general results. This approach is chosen to maintain clarity and conciseness in our presentation. The detailed analysis of every article, though comprehensive, would be impractical for inclusion in the main text due to space and readability considerations. By focusing on the general results, we aim to highlight the overarching trends, commonalities, and significant findings across the entire dataset, providing a synthesized and strategic overview of the research landscape.

3.1.2. Goal of the intervention

Educational applications, identified in 31 cases, demonstrate TRPGs' effectiveness in enhancing critical thinking, engagement, and skill acquisition across disciplines such as language, history, ethics, and computer science. Their immersive storytelling approach fosters interactive and engaging learning experiences, significantly improving students' motivation and academic performance.

Game design and technology integration, explored in 25 cases, emphasize innovations enhancing TRPG experiences through AI, computational tools, and virtual or mixed reality. These advancements support Game Masters, enrich narrative possibilities, and create engaging environments that facilitate smoother gameplay.

Therapeutic uses, highlighted in 22 cases, reveal TRPGs as valuable resources for mental health support. These games effectively help individuals facing depression, anxiety, autism, and chronic illnesses by providing safe spaces to build social skills, foster emotional resilience, and encourage meaningful personal exploration.

Social skills and community building, addressed in 13 cases, underscore TRPGs' role in cultivating interpersonal skills, social interaction, and inclusive community-building. They particularly benefit marginalized groups by fostering empathy, strengthening social connections, and promoting inclusive environments.

Game design and technology integration, covered in 25 cases, focus specifically on how innovative technological tools can enhance the TRPG experience. AI-driven systems, computational tools, and interactive digital environments help streamline gameplay and improve narrative engagement.

Finally, TRPGs contribute significantly to professional training and community engagement. Libraries utilize them in 6 cases to promote literacy and storytelling, fostering social interactions and educational activities. Meanwhile, professional contexts such as business and urban planning, covered in 5 cases, employ RPG-based simulations to develop essential competencies like leadership, teamwork, strategic thinking, and problem-solving.

3.1.3. Population and sample characteristics:

Research on tabletop role-playing games (TRPGs) spans a wide variety of participant groups, exploring their diverse applications and benefits. Players, the focus of 27 cases, are analyzed in terms of their motivations, identity exploration, social skills development, and community dynamics, particularly within Dungeons & Dragons contexts.

Higher education students frequently participate in innovative interventions across disciplines like Computer Science, Nursing, and Business. TRPGs in these contexts enhance learning, foster engagement, and help develop professional skills through interactive methodologies. Similarly, secondary and high school students benefit from TRPGs in subjects like Literature, History, and Ethics, where gamified approaches improve language proficiency and engagement.

Game Masters are a key area of study, with research exploring their narrative techniques, preparation processes, and challenges in facilitating immersive gaming sessions. Parallel to this, educators use TRPGs to innovate teaching methodologies and support professional development, integrating them into classrooms across various educational levels.

In therapeutic contexts, adults with mental health conditions engage in TRPGs to improve social skills and support recovery from anxiety, depression, or severe mental illness. Similarly, adolescents in therapy and special education use these games to enhance communication and behavioral outcomes. Studies also highlight TRPGs as structured and safe spaces for LGBTQIA+ individuals, supporting identity exploration and personal development.

Other studies examine professionals applying role-playing methodologies in fields like Social Work, Psychiatry, and ICT for training and skill development. Libraries and their users incorporate TRPGs to promote community engagement and enhance educational initiatives through creative programming. Online communities provide insights into digital interactions on forums and TRPG platforms, while diverse backgrounds and gender studies focus on female players and gender representation in gaming. Lastly, TRPGs support social and cognitive development for children with special needs, particularly those with Autism Spectrum Disorder.

These diverse participant groups highlight the flexibility of TRPGs in catering to varying educational, therapeutic, and social needs.

3.1.4. Intervention strategies

Role-playing games (RPGs) have proven to be effective tools across various fields, offering innovative approaches to education, therapy, professional training, and social inclusion. These interventions capitalize on the creative and interactive nature of RPGs to address complex challenges.

Examined in 33 cases, leverage RPGs to enhance critical thinking, communication skills, and motivation in disciplines such as literature, history, and business. For instance, a study using Pathfinder in an online English course reported a 25% increase in student engagement and language retention rates. Techniques include adapting systems like Pathfinder for collaboration, using RPGs in online English courses, and incorporating role-playing assignments to build community and language skills.

Covered in 30 cases, research on RPGs delves into their narratives, gameplay, and social effects. Studies examine remote play, Dungeon Master skills, and player socialization. They also assess RPGs' roles in mental health and provide historiographic insights into their development and cultural impact.

Appearing in 19 cases, therapeutic interventions integrate RPGs to support mental health and personal growth. Participants create characters, engage in storytelling, and explore emotions in guided sessions. These strategies enhance problem-solving, empathy, and self-management skills in a safe, collaborative environment.

Addressed in 7 cases, professional training applies RPGs to simulate real-world scenarios, improving decision-making and resilience in fields like business, disaster response, and environmental governance. These exercises connect theory with practice, building competencies through participatory models.

Discussed in 5 cases, RPGs serve as platforms for fostering identity exploration and promoting inclusivity among marginalized groups. Research examines how these games help women and queer individuals challenge societal norms, build supportive communities, and gain empowerment.

3.1.5. *Role-playing system employed or adapted:*

Dungeons & Dragons (D&D), highlighted in 40 cases, remains the most studied system, particularly for its mechanics, narrative depth, and character development. Studies investigate how D&D enhances interpersonal and leadership skills, facilitates coping, and integrates technology, such as automated music systems, to enrich gameplay. Its flexible design makes it a preferred tool for education and personal growth.

Appearing in 35 cases, some studies do not specify a role-playing system, instead employing general role-playing scenarios or simulations. These focus on disaster response, ethical discussions, or speculative frameworks for skill development. By removing the constraints of a specific system, these cases explore role-playing elements as a versatile model for diverse applications.

Covered in 15 cases, other specific role-playing systems, such as Pathfinder, GUMSHOE, and Apocalypse World, are also explored. These studies examine how unique mechanics, beginner-friendly gameplay, and real-time interaction foster storytelling, collaboration, and learning. These systems provide alternative approaches to engaging players and achieving educational or therapeutic outcomes.

Discussed in 13 cases, custom-designed or proprietary systems are developed to meet specific research or intervention goals. Examples include AI-driven TRPGs, mixed reality environments, and original games like *New School* for educator training. These tailored systems create targeted experiences to support learning, reflection, and therapeutic interventions.

Addressed in 4 cases, a few studies focus broadly on TRPGs without specifying a system. These highlight general characteristics like collaborative storytelling, narrative development, and educational potential. Such research emphasizes the universal benefits of TRPGs, including co-design in digital environments and enhanced player communication.

3.1.6. *Methodology for assessing the effectiveness of the intervention*

Featured in 29 cases, qualitative research utilizes interviews, observations, and case studies to investigate motivations, challenges, identity exploration, and therapeutic effects. These studies provide an in-depth understanding of RPG experiences, involving players, Game Masters (GMs), educators, and patients. For example, a study analyzing identity formation in long-term RPG campaigns found that players developed stronger narrative agency and emotional resilience through character interactions.

Appearing in 19 cases, mixed methods research combines qualitative and quantitative approaches, including surveys, interviews, and statistical analyses. These studies assess learning outcomes, program effectiveness, and intervention impacts, drawing on participants from educational, professional, and gaming contexts to generate comprehensive insights.

Engaging educators, students, and game designers, action research and participatory design, examined in 14 cases, employ iterative cycles of design, implementation, and evaluation. These collaborative approaches refine narratives, pedagogical strategies, and therapeutic models to improve outcomes. A notable case involves a co-designed RPG curriculum where teachers and students adjusted game mechanics to better align with learning objectives.

Addressed in 12 cases, game design and playtesting evaluate RPG tools through user studies and participant feedback. These sessions assess usability, enjoyment, and cognitive development, helping refine game mechanics and enhance user experience. A study on role-playing simulation for medical training, for instance, found that iterative playtesting significantly improved scenario realism and decision-making processes.

Covered in 11 cases, experimental studies use pretest-posttest designs and control groups to measure RPG effects on variables such as social skills, learning outcomes, and moral reasoning. Statistical analyses determine the significance of these interventions. One study investigating cooperative role-play in ethics education found measurable improvements in students' moral reasoning skills after structured gameplay sessions.

Discussed in 11 cases, theoretical analysis and literature reviews examine game mechanics, historical evolution, and cultural influences. These studies analyze existing literature and frameworks to provide insights into RPG development and theoretical applications. For example, a review of RPG historiography highlighted the medium's transition from wargaming roots to diverse narrative-driven experiences.

Interpreted in 6 cases, thematic and content analysis processes data from interviews, online posts, and game materials to identify patterns and themes in RPG experiences, attitudes, and dynamics. These studies focus on subcultural insights and player interactions. One study analyzing online RPG communities found recurring themes of collaborative storytelling and emergent leadership structures.

Featured in 5 cases, quantitative surveys and questionnaires measure perceptions, emotional impacts, and learning outcomes using statistical tools. Participants include students, teachers, and professionals, providing data-driven evaluations of RPG interventions. A survey of corporate role-playing training programs, for instance, identified significant improvements in participants' teamwork and problem-solving abilities.

Explored in 3 cases, AI evaluation and machine learning investigate the application of AI in RPG contexts. These studies develop and assess models for storytelling and generating game responses, enhancing AI performance through reinforcement learning and other techniques. One study on AI-assisted Game Mastering demonstrated how adaptive storytelling algorithms can create more immersive and responsive player experiences.

3.1.7. Applications of TRPGs in Organizational Contexts

Encompassing 28 cases, studies on learning and engagement demonstrate that RPGs significantly enhance creativity, critical thinking, language proficiency, and narrative comprehension. While challenges like teacher training persist, evidence confirms their effectiveness in boosting student engagement and academic performance. For instance, a study integrating RPGs into language courses reported notable improvements in student participation and retention.

Examined in 22 cases, psychological and therapeutic benefits highlight how RPGs help manage mental health issues such as anxiety and depression. Participants develop empathy, social skills, and coping mechanisms. *Dungeons & Dragons*, in particular, fosters safe emotional exploration, supporting recovery and well-being through structured role-play.

Addressed in 12 cases, social dynamics and identity exploration reveal RPGs as inclusive spaces for identity expression and challenging societal norms. Examples include queer youth envisioning utopian futures and addressing sexism in gaming, promoting personal growth and community inclusion. A study on RPGs in LGBTQ+ support groups found that role-playing facilitated self-expression and strengthened social connections.

Covered in 8 cases, Game Master tools and processes focus on supporting creativity and improvisation. Customizable and computational tools enhance storytelling and session management, addressing the unique challenges faced by GMs. One study examined how digital aids streamline game mechanics while preserving narrative flexibility.

Appearing in 8 cases, AI and computational models in RPGs explore AI-generated storytelling and character dynamics. While promising for enhancing gameplay and assisting GMs, AI still falls short of human creativity and adaptability. Research on AI-driven NPCs, for example, found that while AI enhances immersion, human improvisation remains irreplaceable.

Featured in 8 cases, professional development and training highlight RPGs' effectiveness in skills development for fields like emergency management, urban planning, and UX design. Simulation exercises enhance critical thinking and practical knowledge application. A case study on RPG-based emergency drills demonstrated improved crisis response and decision-making skills.

Discussed in 8 cases, challenges and considerations note barriers such as stakeholder reluctance, improvisation difficulties, and concerns about historical inaccuracies. Proper training and thoughtful design mitigate these issues, ensuring successful integration into education and therapy. One study on historical RPGs emphasized the importance of balancing engagement with factual accuracy.

In 5 cases, RPGs in libraries and literacy show their role in fostering literacy and storytelling. By integrating RPGs into library programs and using children's literature as a guide, these initiatives enhance learning and creativity. A case study on RPG workshops for young readers highlighted increased reading motivation and narrative comprehension.

Addressed in 4 cases, research methodologies demonstrate RPGs' potential as research tools, engaging participants and providing reliable data on social dynamics and behaviors. Meanwhile, proposals with limited results, also appearing in 4 cases, highlight potential applications but call for more empirical evidence to confirm their effectiveness.

Finally, examined in 1 case, a study on improvisational skills development showcases live-action RPGs' (LARP) ability to enhance improvisation through a structured developmental process. These findings emphasize RPGs' broad utility while identifying areas for future research and improvement.

3.2. Synthesis of Results

The synthesis of results underscores the versatility and expanding influence of tabletop role-playing games (TRPGs) across a range of educational, therapeutic, social, and professional domains. These findings reveal both innovative uses and ongoing challenges, offering a comprehensive view of how TRPGs are transforming education, therapy, social inclusion, and professional development.

In education, TRPGs are proving to be powerful tools for enhancing learning and engagement. They immerse students in dynamic scenarios, fostering critical thinking, creativity, and communication skills. Notably, Dungeons & Dragons (D&D) has been employed to teach language, STEM, and history through role-playing, enabling students to assume the roles of characters or historical figures while tackling complex challenges. Future research could explore scalable frameworks for integrating TRPGs into standardized curricula, addressing these challenges and maximizing their impact on student engagement and academic outcomes.

Therapeutic applications demonstrate TRPGs' unique capacity to address mental health challenges. These games offer structured and imaginative environments where participants can safely express emotions, practice social interactions, and develop coping mechanisms. For individuals with social anxiety, autism, or depression, TRPGs provide a supportive framework for self-reflection, skill-building, and personal growth. By blending narrative exploration with therapeutic goals, they enable participants to navigate emotional and social complexities with increased confidence and empathy.

TRPGs also offer valuable opportunities for identity exploration and social skill development, particularly among marginalized groups. LGBTQIA+ youth use these games to experiment with aspects of identity in supportive environments, while others role-play scenarios that confront societal norms. Such experiences promote inclusivity, encourage critical reflection, and enhance collaborative decision-making, enabling participants to build meaningful connections and address social challenges with greater confidence.

The dominance of D&D as a research and application tool reflects its flexibility and accessibility. Its robust framework supports diverse uses, from teaching narrative analysis in literature to providing therapeutic avenues for emotional expression. The vast community and resources surrounding D&D make it a go-to platform for educators and therapists, though its prevalence also points to the need for exploring other systems to diversify approaches.

Custom-designed TRPG systems are emerging as tailored solutions for specific needs. These bespoke games address goals like emotional regulation in children or environmental education through resource management simulations. By adapting mechanics and narratives to targeted interventions, custom TRPGs showcase the adaptability of the medium to meet specialized requirements, offering controlled and impactful experiences.

Finally, TRPGs are progressively establishing a foothold in professional development, particularly through simulations that replicate real-world scenarios in areas such as emergency management, business, and urban planning. These role-playing exercises enhance strategic thinking, decision-making, and teamwork under pressure. Expanding their application to fields such as cybersecurity, healthcare management, and human resource training could further demonstrate their potential to address sector-specific challenges.

4. Discussion

4.1. Summary of evidence

4.1.1. Identifying and Describing Innovative Applications:

The exploration of innovative applications of role-playing games highlights their remarkable versatility across diverse contexts, addressing complex challenges in education, therapy, and community building.

The following table organizes these applications into key areas, presenting their objectives and representative studies to provide a clear and concise overview of how role-playing games are being leveraged in education, therapy, technology integration, identity exploration, social learning, and community building.

Table 3.

Key Areas and Applications of TRPGs

Areas	Description	Representative Studies
Formal Education	Promote active learning, critical thinking, and professional skills like communication and teamwork.	"A Quest to Engage Computer Science Students: Using Dungeons and Dragons for Developing Soft Skills" (Veldhuis, Koning & Stikkolorum, 2021), "Learning Computer Ethics and Social Responsibility with Tabletop Role-Playing Games" (Zdravkova, 2014), "Training of Medical Students for Mass Casualty Incidents Using Table-Top Gamification" (Delgado, García, Martínez, Álvarez & González, 2023).
Therapeutic Applications	Support mental health and social skill development through safe, structured, and engaging gameplay.	"Roll for Wellness: A Therapeutic Role-Playing Treatment for LGBTQIA+ Identified Individuals in Group Therapy Settings" (Glickman, 2022), "Exploring the Efficacy of Cognitive Behavioral Therapy and Role-Playing Games as an Intervention for Adults with Social Anxiety" (Varrette, Berkenstock, Greenwood-Ericksen, Ortega, Michaels, Pietrobon & Schodorf, 2023).
Advanced Technologies	Enhance gameplay experiences and narrative creation using AI, augmented reality, and procedural tools.	"Towards Computational Support with Language Models for TTRPG Game Masters" (Kelly, Mateas & Wardrip-Fruin, 2023), "Fusion of Mixed Reality Tabletop and Location-Based Applications for Pervasive Games" (Zimmerer, Fischbach & Latoschik, 2014), "Evaluating a Casual Procedural Generation Tool for Tabletop Role-Playing Game Maps" (Crain, Carpenter & Martens, 2022).
Identity and Diversity	Promote inclusivity and self-exploration through narrative role-play, offering marginalized groups opportunities to challenge societal norms and explore identity in supportive environments.	"The Construction of LGBT+ Identities in Tabletop Role-Playing Games" (Davies, 2021), "Queering Critical Literacies: Disidentifications and Queer Futurity in an Afterschool Storytelling and Roleplaying Game" (Storm & Jones, 2021).
Social and Emotional Learning	Develop empathy, emotional regulation, and self-efficacy through character-driven collaborative gameplay.	"Role for SEL: Using Dungeons & Dragons® to Promote Social-Emotional Learning with Middle-Schoolers" (Chilana, 2022), "Can I Level Up to Real Life? A Study of the Effects of Role-Playing Games Combined with Guided Character Development on Goal Attainment and Self-Efficacy" (Mills, 2022).
Community Building	Strengthen social bonds and create persistent communities through shared storytelling experiences.	"Table-top Role-Playing Games as a Therapeutic Intervention with Adults to Increase Social Connectedness" (Abbott, Stauss & Burnett, 2022), "Co-Designers Not Troublemakers: Enabling Player-Created Narratives in Persistent Game Worlds" (Gustafsson, Helmersen, Mackay, 2021).

Source: Own elaboration based on scoping review (n=110).

4.1.2. Trends in RPG Research:

The study of role-playing games (RPGs) has evolved significantly over the years, revealing persistent, emerging, and declining trends in their application and research focus. This section organizes these trends into three categories – persistent, emerging, and declining – providing a snapshot of the field’s current state and its trajectory. Each table below highlights key trends, their descriptions, and representative studies to illustrate the breadth and depth of RPG research.

Persistent trends represent themes that have consistently garnered research interest over decades, underscoring their enduring significance and foundational role in RPG studies. These trends demonstrate how RPGs continue to be pivotal tools in education, therapy, and personal development.

Table 4.

Persistent Trends of TRPGs research

Trend	Description	Representative Studies
Educational Applications	RPGs are consistently used to enhance learning outcomes, creativity, and skills like teamwork and problem-solving.	<i>“Dungeons and Dragons in a Public Library”</i> (Sanders, 1983), <i>“Developing Speaking Proficiency in Online Courses Through Tabletop Role-Playing Games”</i> (McCollum, 2023).
Therapeutic Uses	RPGs remain a prominent tool in mental health and social skill development, fostering personal growth and connection.	<i>“Fantasy Role-Playing for Mutual Aid in Children's Groups”</i> (Zayas & Lewis, 1986), <i>“Roll for Wellness: A Therapeutic Role-Playing Treatment for LGBTQIA+ Identified Individuals in Group Therapy Settings”</i> (Glickman, 2022).

Source: Own elaboration based on scoping review (n=110).

Emerging trends highlight novel directions in RPG research, driven by technological advancements and the evolving needs of diverse communities. These themes have gained prominence in recent years, showcasing the innovative potential of RPGs in addressing contemporary challenges.

Table 5.*Emerging Trends of TRPGs research*

Trend		Description	Representative Studies
Integration of Advanced Technologies	of	The use of AI, AR, and VR is enhancing interactivity and immersion in RPGs, supporting game masters and dynamic gameplay.	<i>"Towards Computational Support with Language Models for TTRPG Game Masters"</i> (Kelly, Mateas & Wardrip-Fruin, 2023), <i>"Evaluating a Casual Procedural Generation Tool for Tabletop Role-Playing Game Maps"</i> (Crain, Carpenter & Martens, 2022).
Exploration of Identities and Diversity	of and	RPGs are increasingly used to explore diverse identities, particularly within LGBTQIA+ communities, fostering inclusivity.	<i>"The Construction of LGBT+ Identities in Tabletop Role-Playing Games"</i> (Davies, 2021), <i>"Magic Circles: Tabletop Role-Playing Games as Queer Utopian Method"</i> (Kawitzky, 2020).
Social and Emotional Learning (SEL)		RPGs promote empathy, emotional regulation, and teamwork, supporting personal and interpersonal development.	<i>"Role for SEL: Using Dungeons & Dragons® to Promote Social-Emotional Learning with Middle-Schoolers"</i> (Chilana, 2022), <i>Juegos de Rol para el trabajo en equipo: Pilotaje de una metodología de desarrollo de habilidades socioemocionales</i> (García-Soriano, Faret & González, 2023).
Therapeutic Interventions for Specific Populations	for	RPGs are tailored for groups like individuals with ASD or social anxiety, combining innovative techniques like AR or CBT.	<i>"Augmented Reality Plus Concept Map Technique to Teach Children with ASD to Use Social Cues When Meeting and Greeting"</i> (Lee, Chen, Wang, Chung, 2021).

Source: Own elaboration based on scoping review (n=110).

Declining trends reflect areas of research that have received diminished attention, typically due to evolving priorities or the resolution of previous concerns within the field. These trends highlight how the field of RPG research has matured and adapted to new challenges.

Table 6.*Declining Trends of TRPGs research*

Trend	Description	Representative Studies
Negative Perceptions and Concerns	Earlier focus on the potential adverse effects of RPGs has diminished as their benefits have become widely recognized.	<i>"Emotional Stability Pertaining to the Game of Dungeons & Dragons"</i> (Simon, 1987), <i>"Psychiatrists' Perceptions of Role-Playing Games"</i> (Lis, Chiniara, Biskin & Montoro, 2015).
RPGs in Libraries and Niche Educational Settings	Interest in RPGs within libraries and specific educational niches has declined, shifting towards broader applications.	<i>"Dragons in the Stacks: An Introduction to Role-Playing Games and Their Value to Libraries"</i> (2008), <i>"Three Different Paths for Tabletop Gaming in School Libraries"</i> (2013).

Source: Own elaboration based on scoping review (n=110).

4.1.3. Applications of TRPGs in Organizational Contexts

The reviewed studies emphasize the versatile use of tabletop role-playing games (TRPGs) across organizational settings, showcasing their potential for professional training, operational resilience, community building, and fostering creativity. Below is an example of how TRPGs have been applied in diverse organizational contexts.

Table 7.*Application Areas of TRPGs in Organizational Contexts*

Application Area	Description	Representative Studies
Professional Training	TRPGs enhance critical thinking, communication, and decision-making, particularly in healthcare and IT.	<i>"Learning Computer Ethics and Social Responsibility with Tabletop Role-Playing Games"</i> (Zdravkova, 2014), <i>"Training of Medical Students for Mass Casualty Incidents Using Table-Top Gamification"</i> (Delgado, García, Martínez, Álvarez & González, 2023).
Operational Resilience	Simulations prepare participants to manage disruptions and improve decision-making under pressure.	<i>"Improving Resilience in Intermodal Transport Operations in Seaports: A Gaming Approach"</i> (Kurapati, Lukosh, Verbreck & Brazier, 2021), <i>"Decision-Making During a Disaster-Scenario Tabletop Exercise by Prelicensure Student Nurses"</i> (Evans, Perks & O'Kane, 2023).
Community Building	TRPGs foster collaboration, strengthen networks, and enhance teamwork through shared narratives.	<i>"Those Who Play, Emerge Together: Toward a Community-Building Framework Through Table-Top Role Playing"</i> (Bennett, 2023).
Creativity and Innovation	TRPGs boost creative potential, divergent thinking, and innovative problem-solving.	<i>"The Effect of Tabletop Role-Playing Games on the Creative Potential and Emotional Creativity of Taiwanese College Students"</i> (Dyson, Chang, Chen, Hsiung, Tseng & Chang, 2021), <i>"Building Creativity Support Tools for Dungeon Design in Tabletop Games: A Participatory Design Study"</i> (Kosof, 2021).

Source: Own elaboration based on scoping review (n=110).

The studies demonstrate the transformative potential of TRPGs when tailored to specific organizational needs. These findings illustrate the potential of TRPGs to facilitate cross-functional collaboration and innovation, particularly in interdisciplinary teams tackling complex organizational challenges. The following table outlines actionable recommendations derived from these studies.

Table 8.

Recommendations for the implementation of TRPGs in Organizational Contexts

Recommendation	Description	Representative Studies
Customize Scenarios to Goals	Design TRPG scenarios that address unique organizational challenges for greater relevance and effectiveness.	<i>"Improving Resilience in Intermodal Transport Operations in Seaports: A Gaming Approach"</i> (Kurapati, Lukosh, Verbreck & Brazier, 2021).
Incorporate Structured Feedback	Use debriefing sessions to consolidate learning and reflect on gameplay experiences.	<i>"Those Who Play, Emerge Together: Toward a Community-Building Framework Through Table-Top Role Playing"</i> (Bennet, 2023).
Develop Support Tools	Invest in tools to streamline game design and management for facilitators.	<i>"Building Creativity Support Tools for Dungeon Design in Tabletop Games: A Participatory Design Study"</i> (Kosof, 2021).
Expand Research Across Sectors	Explore TRPG applications in industries like finance, engineering, and human resources to validate broader utility.	<i>"Juegos de Rol para el trabajo en equipo: Pilotaje de una metodología de desarrollo de habilidades socioemocionales"</i> (García-Soriano, Faret & González, 2023).
Enhance Accessibility and Flexibility	Provide both virtual and in-person TRPG options to accommodate diverse participant needs.	<i>"Can I Level Up to Real Life? A Study of the Effects of Role-Playing Games Combined with Guided Character Development on Goal Attainment and Self-Efficacy"</i> (Mills, 2022).
Promote Cross-Functional Collaboration	Encourage cross-departmental TRPG activities to foster teamwork and break down organizational silos.	<i>"Role for SEL: Using Dungeons & Dragons® to Promote Social-Emotional Learning with Middle-Schoolers"</i> (Chilana, 2022).
Integrate with Existing Training Programs	Blend TRPG activities with traditional training methods for a comprehensive learning approach.	<i>"Learning Computer Ethics and Social Responsibility with Tabletop Role-Playing Games"</i> (Zdravkova, 2014).
Foster a Culture of Continuous Learning	Use TRPGs in professional development to encourage adaptability and lifelong learning among employees.	<i>"Developing Improvisation Skills: The Influence of Individual Orientations"</i> (Mannucci, Orazi & de Valk2021).

Source: Own elaboration based on scoping review (n=110).

4.1.4. Identifying Gaps and Areas for Additional Research

Identifying gaps in the existing research on tabletop role-playing games (TRPGs) is crucial for advancing the field and maximizing their potential applications. Addressing these gaps ensures that underexplored areas are given attention, enriching the understanding of TRPGs and enabling their integration into diverse contexts. Filling these research voids can also promote inclusivity, enhance methodological rigor, and broaden the accessibility of TRPGs for different populations and purposes.

A critical gap in the literature is the limited research on young children and students in special education settings, despite the potential of TRPGs to support early childhood development and tailored interventions. Few studies explore the potential of TRPGs to benefit early childhood development or support children with special needs. Simplified TRPGs could be powerful tools for fostering empathy, communication, and conflict resolution among young children, while structured, tailored versions could help children with autism or learning disabilities practice social and real-world skills in an engaging and controlled environment.

Another critical area is the need for more quantitative and longitudinal studies. Much of the current research relies on qualitative methods, providing rich descriptions but lacking empirical evidence of long-term outcomes. Studies that use quantitative measures and track changes over time could offer more robust data on the impact of TRPGs on academic performance, emotional stability, and problem-solving abilities. This methodological expansion is essential for validating their effectiveness and encouraging their broader adoption.

Lastly, a significant gap exists in examining TRPGs' inclusivity and cultural diversity, particularly in understanding their impact on underrepresented groups. Limited research explores how these games affect diverse demographics, particularly regarding gender representation and cultural contexts. Investigating the experiences of women, non-binary individuals, and players from varied cultural backgrounds could lead to more inclusive and culturally sensitive TRPG designs. Addressing these aspects would not only improve accessibility but also enrich the narratives and dynamics within TRPGs, making them more reflective of the diverse communities they serve.

4.2. Limitations

This study provides significant insights into the innovative applications of TRPGs but presents several limitations that future research must address. Although this review spans publications from 1983 to 2023, the reliance on a limited selection of databases may have excluded key studies, potentially skewing findings toward dominant academic traditions. Similarly, the language bias—with most articles in English—limits the inclusion of non-English perspectives, reducing the global applicability of findings.

A concentration of studies from 2018 to 2023 reveals a temporal bias, with earlier foundational research underrepresented, leaving gaps in the historical understanding of TRPG applications. Additionally, categorization and classification challenges arise from the complexity of organizing diverse interventions, goals, and methodologies, which may introduce overlaps or subjective interpretations.

The predominance of Dungeons & Dragons (D&D), cited in 40 instances, limits the exploration of alternative TRPG systems that may offer unique benefits or applications, reducing the diversity of insights. Methodologically, the reliance on qualitative and mixed methods restricts generalization, as fewer quantitative studies limit statistical validation of trends. Moreover, population representation remains uneven, with limited research on groups like children with special needs, LGBTQIA+ individuals, and diverse professionals.

Rapid technological advancements in AI and mixed reality make findings in these areas prone to quick obsolescence, while the lack of longitudinal data prevents a deeper understanding of sustained impacts. Practical challenges, such as implementation barriers related to resources and facilitator training, are underexplored, weakening the connection to real-world applications.

Finally, geographical and linguistic gaps, alongside potential researcher bias, limit the inclusivity and objectivity of the analysis. Addressing these issues will enhance the robustness, diversity, and global relevance of future research into TRPG applications. Future research should prioritize expanding database coverage, diversifying linguistic inclusion, and conducting longitudinal studies to address these limitations and provide a more comprehensive understanding of TRPG applications.

5. Conclusions

This scoping review has provided a comprehensive overview of the innovative applications of tabletop role-playing games (TRPGs), emphasizing their transformative roles in education, therapy, social inclusion, and professional development. TRPGs, especially systems like Dungeons & Dragons, emerge as versatile tools that enhance cognitive and socio-emotional skills, foster creativity, and support identity exploration. In education, TRPGs have redefined traditional pedagogical approaches by enhancing student engagement, fostering critical thinking, and promoting interdisciplinary collaboration.

In therapeutic contexts, TRPGs create structured environments that facilitate the development of social competencies, help manage anxiety and depression, and improve self-esteem. Moreover, TRPGs foster inclusive spaces that champion equality, diversity, and belonging, particularly for marginalized groups.

The integration of advanced technologies such as AI, augmented reality (AR), and virtual reality (VR) has significantly broadened the scope of TRPG applications, enhancing storytelling dynamics and facilitating personalized interventions. AI-driven tools and mixed reality environments offer immersive gameplay, paving the way for innovative research and practical uses. Emerging technologies also provide opportunities for real-time adaptation of gameplay, enabling facilitators to tailor experiences to participant needs, further amplifying their educational and therapeutic value.

Key challenges persist, such as linguistic bias stemming from the predominance of English-language studies and the disproportionate focus on Dungeons & Dragons as the primary TRPG system. Future investigations should prioritize diversifying TRPG systems and examining underrepresented populations to achieve a more comprehensive understanding of their multifaceted applications.

For instance, studies integrating TRPGs into professional training in fields such as cybersecurity and environmental science could uncover novel applications and expand their societal impact. Rigorous quantitative and longitudinal studies are needed to solidify evidence on TRPGs' sustainability and effectiveness. Research into their capacity to strengthen communities and foster social networks through collaborative gameplay is particularly promising. Additionally, the potential of TRPGs in early childhood education and special education remains underexplored, warranting further investigation into their applicability for young learners and children with diverse needs.

In conclusion, TRPGs offer innovative methods to address educational, therapeutic, and social challenges present innovative and versatile methods to tackle pressing educational, therapeutic, and social challenges. Developing a strong theoretical framework and fostering interdisciplinary collaboration will maximize their potential. As tools for social innovation, they hold the power to drive individual growth and community cohesion while addressing broader societal needs.

Continued research will enhance academic understanding and empower diverse populations, unlocking TRPGs' full potential to create meaningful change. By developing robust theoretical frameworks and fostering interdisciplinary collaboration, their full potential can be maximized. As tools for social innovation, TRPGs possess the capacity to drive individual growth, strengthen community cohesion, and address broader societal needs. Continued research will deepen academic understanding and empower diverse populations, unlocking TRPGs' ability to create impactful and lasting change.

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