

Mapping The Use of Generative Artificial Intelligence in Group Creative Processes: A Scoping Review

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Systematic Review

Keywords: Group Creativity, Creative Processes, Generative Artificial Intelligence, Scoping Review

Posted Date: October 23rd, 2026

DOI: <https://doi.org/10.21203/rs.3.rs-10535531/v1>

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Additional Declarations: No competing interests reported.

Abstract

Generative artificial intelligence (GenAI) is finding its way into creative work at a growing pace, yet its specific role within collaborative creative processes, those involving multiple people working together, remains poorly understood and fragmented across the literature. This scoping review maps the empirical research on integrating GenAI into group creative processes, outlining creative domains, tasks, AI tools, AI roles, stages of integration, and reported outcomes. Following PRISMA-ScR and JBI guidance, a systematic search was conducted across Scopus, Web of Science, and PsycINFO. Empirical peer-reviewed studies were included when they involved at least two human participants engaged in a collaborative creative process supported by GenAI. Thirty-eight studies met the inclusion criteria. The majority were conducted in educational and design contexts, with brainstorming, content creation, and design development emerging as the most frequent task types. GenAI was most often integrated as a co-creative partner, typically during the ideation stage or across multiple phases of the creative process. Reported benefits included enhanced ideation, greater efficiency, improved engagement, and stronger collaboration quality, while the main tensions revolved around over-reliance on AI, cognitive offloading, homogenization of ideas, and unresolved questions of authorship and agency. Taken together, the findings suggest that GenAI is becoming an active component of hybrid human–AI creative systems, but whether its benefits are realized depends heavily on how collaborative workflows are designed to preserve human agency, support critical reflection, and maintain diversity of perspectives.

1. Introduction

Over the years, the field of creativity has been transformed by new technologies, from the advent of computers to the rise of artificial intelligence. Generative artificial intelligence (GenAI) is reshaping domains ranging from education to organizations, with the creative sector among the most affected. Unlike earlier technologies such as the internet, GenAI systems can generate original content, including text and images, and actively contribute to the creative process. As a result, these tools no longer merely support human work but have become active contributors to creative processes. Despite extensive research, creativity remains difficult to define. Early research highlighted that originality alone is insufficient for creativity; creative ideas must also be appropriate, adaptive, or valuable within a given context (Barron, 1955; Guilford, 1950). Subsequent work emphasized combining novelty with usefulness or social value (Stein, 1953).

This emphasis on novelty and value has remained stable, although scholars continue to debate how these dimensions should be interpreted, operationalized, and related (Harvey & Berry, 2023). While the originality–usefulness criterion has proven highly valuable for characterizing creative products, it provides a less explicit account of the processes through which creativity unfolds. This has prompted recent calls to complement product-based definitions with process-oriented conceptualizations (Green et al., 2024). Influential theoretical perspectives have consistently defined creativity in terms of originality and usefulness or appropriateness (Amabile, 1983, 1996). Scholarship has progressively converged on defining creativity as the production of outcomes that are both original and useful (Runco & Jaeger, 2012).

Recent reviews have likewise adopted the originality–usefulness criterion while recognizing creativity as a multidimensional construct approached from different theoretical perspectives (Oppert et al., 2023a).

Creativity has also been conceptualized as a multidimensional phenomenon involving interactions among the individual, process, product, and environment (Rhodes, 1961).

This framework was later expanded into a hierarchical perspective distinguishing creative potential from creative performance while incorporating persuasion (Simonton, 1988) and potential (Runco, 2007)

Starting from that definition, creativity has increasingly been conceptualized as a group rather than an individual phenomenon. Since the 1980s, social and contextual perspectives have framed creativity as emerging from interactions among individuals, groups, and cultural contexts (Amabile, 1983, 1996; Csikszentmihalyi, 2014). In this perspective, teams allow individuals to combine complementary competencies and coordinate their efforts through interaction and interdependence toward shared objectives (Cohen & Bailey, 1997; Hackman, 1990).

Sawyer and DeZutter (Sawyer & DeZutter, 2009) introduced the concept of distributed creativity, arguing that creative products emerge from interactive processes involving all group members. This process is characterized by collaborative emergence, in which participants' contributions are interdependent, mutually influential, and continuously re-elaborated throughout the interaction, consistent with sociocultural approaches (Glăveanu, 2015). Creativity therefore involves integrating diverse perspectives into new

possibilities for action. Within this evolving conceptual landscape, Glăveanu (2013) proposed the Five A's framework (actor, action, artifact, audience, and affordances) as a sociocultural alternative to Rhodes' 4P model, replacing the notion of product with that of artifact. This broader conceptualization expands the focus beyond finished products to the material and symbolic entities involved in creative activity. In this sense, technological systems can also be understood as artifacts that become part of the creative process. More recently, AI has prompted scholars to argue that traditional creativity frameworks should be reconsidered, as they were developed assuming humans were the primary creative agents (Moura, 2024).

However, collaboration does not automatically lead to better outcomes. Paulus and Nijstad (2003) noted that groups may experience fixation and reduced persistence, limiting idea production. More original ideas tend to emerge later in the creative process, while alternating individual and group work promotes diverse perspectives and enhances creative output. In multidisciplinary teams, diversity becomes a resource only when supported by adequate coordination and shared understanding (Harms & Van Der Zee, 2013).

Recent evidence also indicates that human–AI collaboration does not automatically lead to superior outcomes. Some criteria must be met. Creative, open-ended tasks appear particularly suitable for human–AI complementarity because humans and AI contribute different but complementary inputs to the creative process (Vaccaro et al., 2024).

The potential of GenAI for group collaboration can be understood through the framework developed by Paulus and colleagues (P. Paulus & Nijstad, 2003) which conceptualizes collaborative creativity as the outcome of interacting cognitive, social, and motivational processes rather than the aggregation of individual ideas. From this perspective, group creativity depends on the extent to which interaction enables cognitive stimulation, exposure to diverse perspectives, associative elaboration, and sustained engagement, while avoiding inhibitory dynamics such as fixation, production blocking, evaluation apprehension, reduced persistence, or premature convergence (Paulus & Brown, 2010; Paulus & Dzindolet, 2008). This framework helps interpret the role of GenAI in collaborative creative processes. If group creativity is shaped by cognitive stimulation, social influence, motivation, and coordination, GenAI can be analyzed according to how it modifies these mechanisms within groups. Viewed through this lens, integrating GenAI into collaborative creativity is not simply adding another digital tool but reconfiguring the cognitive, social, and motivational conditions through which group creativity unfolds. This transformation is particularly relevant from the perspective of distributed and collaborative creativity.

Unlike traditional digital technologies, GenAI systems do not merely support task execution or facilitate communication among individuals (Maier et al., 2022). Instead, they increasingly act as active contributors to collaborative activities, participating in generating, developing, and transforming creative outputs (Seeber et al., 2020).

GenAI systems can participate in collaborative processes through roles ranging from supportive functions to active creative partnerships (Berretta et al., 2023). In this sense, they may influence the creative process in different ways: as idea generators (Petridis et al., 2023), co-creative partners (Memmert & Tavanapour, 2023), supportive tools (Chen et al., 2024), or facilitators of the creative process itself (Chu et al., 2025).

These roles should not be understood as isolated technical functions but as different ways GenAI redistributes cognitive work, interactional dynamics, and decision-making across collaborative creative systems depending on context and stage of integration. Their integration reshapes not only creative outputs but also collaborative dynamics and distributed decision-making, as GenAI increasingly contributes to iterative co-creative workflows (Liu, 2025; Vartiainen et al., 2025).

Several attempts have been made to synthesize the growing body of literature on creativity and artificial intelligence from different perspectives. Existing scoping and review studies have examined the assessment of creativity in educational settings (Bolden et al., 2020), the relationship between physical environments and creativity (Lee & Lee, 2023), the value and functions of creativity across social and organizational domains (Oppert et al., 2023b), and the relationship between nature and creativity across multiple settings (Vella-Brodrick et al., 2024). More recently, reviews have begun to focus specifically on human–AI co-creativity, exploring how AI systems participate in collaborative creative processes, the roles they assume, and the interaction dynamics that emerge between humans and AI systems (Singh & Heylen, 2025).

Despite these important contributions, the existing literature remains fragmented. Previous reviews have either focused on specific domains, theoretical frameworks, educational settings, or general human–AI co-creativity, without systematically examining how generative AI is integrated into collaborative creative processes involving multiple human participants across different contexts. Limited attention has been devoted to mapping the creative domains, task types, stages of integration, AI roles, collaborative

configurations, and reported benefits and tensions associated with GenAI-supported collaborative creativity. Consequently, the following research question guided the review:

How has generative artificial intelligence been integrated into collaborative creative processes involving two or more human participants?

To address the primary research question, the following secondary research questions were formulated:

1. In which creative domains and types of creative tasks has GenAI-supported collaborative creativity been studied?
2. What types of generative AI systems or tools are used in collaborative creative processes?
3. What roles does GenAI perform within collaborative creative processes?
4. At what stages of the creative process is GenAI integrated?
5. What outcome directions, benefits, and tensions are reported in collaborative creative processes involving GenAI?

This scoping review addresses this gap by examining how generative artificial intelligence is integrated into collaborative creative processes involving multiple participants. Specifically, the review maps the creative domains and task types in which GenAI is employed, the tools and systems adopted, the roles assumed by AI within collaborative workflows, and the stages of the creative process in which these technologies are integrated.

In addition, the review synthesizes the reported benefits, tensions, and outcome directions associated with GenAI-supported collaborative creativity across heterogeneous contexts. By doing so, the review not only provides an overview of current empirical evidence but also contributes to a broader understanding of how GenAI may reshape collaborative creativity by influencing idea generation, interaction dynamics, distributed contributions, and co-creative processes. Finally, it contributes to the growing literature on human–AI collaboration by positioning GenAI not simply as a supportive technology, but as an active actor able to collaborate with humans.

2. Materials and Methods

This scoping review followed the PRISMA extension for scoping reviews (PRISMA-ScR) guidelines (Tricco et al., 2018). The methodological approach followed Joanna Briggs Institute (JBI) guidance, and the PCC (Population–Concept–Context) framework defined the eligibility criteria.

The review protocol was registered on the Open Science Framework (OSF) on May 7, 2026 (https://osf.io/u5fs6/overview?view_only=e8db461cb60545b9a899add3c2ef3d19). Although registration occurred after the review had commenced, eligibility criteria and the search strategy were defined before screening. The review commenced in February 2026, with protocol registration completed during the early stages.

2.1 Eligibility Criteria

Eligibility criteria were defined a priori using the PCC (Population–Concept–Context) framework:

Population. Studies were included if they involved at least two human participants engaged in a collaborative creative process. Collaboration required interaction among participants and interdependence in achieving a shared creative outcome.

Concept. The concept of interest was the integration of generative artificial intelligence (GenAI) within creative processes. Eligible studies included GenAI systems capable of producing content (e.g., text, images, audio, or code) and contributing to the generation, transformation, or development of creative outputs. Studies in which AI was used solely for evaluation, automation, or peripheral support were excluded.

Context. Studies from any creative domain or setting (e.g., education, design, business, art, writing, or technology) were considered if they included a creative task requiring outputs characterized by originality and usefulness.

Inclusion Criteria

The inclusion criteria were:

1. Empirical studies, including quantitative, qualitative, or mixed-methods designs.
2. Studies involving at least two participants engaged in a collaborative creative process characterized by interaction and interdependence.
3. Studies including creative tasks requiring outputs characterized by originality and usefulness.
4. Studies involving generative artificial intelligence systems capable of producing content (e.g., text, images, audio, or code) and actively contributing to the generation, transformation, or development of creative outputs.
5. Studies published in peer-reviewed journals or conference proceedings.
6. Studies published in English or Italian.

Collaborative creative processes were defined as processes in which two or more human participants work interdependently toward a shared creative goal through the exchange of ideas and the co-construction of outputs.

Creative tasks were defined as activities requiring outputs characterized by originality and usefulness. Eligible tasks included creative problem-solving (e.g., open-ended problems, ill-defined problems, design challenges), idea generation (e.g., brainstorming, divergent thinking tasks), creative writing (e.g., storytelling, narrative production), design and visual creation (e.g., graphic design, product design, fashion design, digital art), content creation (e.g., multimedia, music, video, digital content), and creative activities in educational or professional contexts (e.g., collaborative projects, design thinking, concept development).

Exclusion Criteria

The exclusion criteria were:

1. Non-empirical studies (e.g., theoretical papers, literature reviews, editorials, or commentaries).
2. Studies focusing on routine or procedural tasks (e.g., text summarization, translation, mechanical completion) or tasks without a creative output (e.g., standard decision-making, classification, or evaluation without creation) were excluded.
3. Studies using non-generative AI systems.
4. Studies involving a single participant or lacking collaboration (e.g., absence of interaction or interdependence).
5. Studies in which AI-generated content was used, but human participants were not actively involved in the creative process.
6. Studies in which AI was used only for evaluation, automation, or peripheral support.
7. Studies where it was not possible to determine the type of task, the role of AI, or the presence of collaboration.
8. Grey literature (e.g., theses, reports, white papers, or non-peer-reviewed preprints).
9. Studies published in languages other than English or Italian

Studies in which AI was used exclusively for evaluation or non-creative support were excluded. However, evaluation and refinement activities were included when they occurred as integral components of a broader creative process. The review included only peer-reviewed journal articles and conference proceedings. Conference proceedings were included because GenAI research is rapidly evolving and relevant studies are frequently disseminated through peer-reviewed conferences. The language restriction to English and Italian reflected the reviewers' linguistic competencies and ensured accurate screening and extraction.

2.2 Search Strategy

A structured search strategy combined terms related to creativity and generative artificial intelligence to identify empirical studies on collaborative creative processes.

Searches were conducted in Scopus, Web of Science Core Collection, and PsycINFO. Searches were restricted to titles, abstracts, and keywords. Filters limited results to English or Italian peer-reviewed journal articles and conference papers. The core search string was:

("creativ*" OR "ideation" OR "idea generation" OR "brainstorming" OR "creative process*" OR "creative task*") AND ("generative artificial intelligence" OR "generative ai" OR "genai" OR "gai" OR "large language model*" OR "llm*" OR "diffusion model*" OR "text-to-image" OR "generative pre-trained transformer*" OR "generative model*" OR "chatgpt" OR "midjourney" OR "dall-e" OR "stable diffusion").

Database-specific search strings are reported in the Appendix.

Collaboration-related terms (e.g., "group", "team", "collaborative") were intentionally omitted. This maximized recall, as several potentially eligible studies describe collaborative settings in the methods section without explicitly indexing collaboration-related terms in the title, abstract, or keywords. Collaboration was assessed during screening using the eligibility criteria. Although the protocol

anticipated citation chasing, this step was not conducted as a systematic additional search strategy. Given the rapid expansion of the literature on generative artificial intelligence and the time constraints associated with completing the review within the planned timeframe, the review team prioritized the completion of the database-based search, screening, and data extraction procedures. Study identification relied solely on database searches. This deviation from the protocol is acknowledged as a limitation.

2.3 Screening process

Study selection followed PRISMA-ScR guidelines using a two-stage process. Records were imported into Zotero 8 for duplicate removal and screened in MyJBI Software through title/abstract and full-text screening. Before screening, a pilot calibration exercise was conducted on five records at the title and abstract stage and on five reports at the full-text stage. The pilot ensured a shared interpretation of the eligibility criteria and refined decision rules for borderline cases. No formal inter-rater reliability coefficient was calculated.

At each stage, two reviewers independently assessed records against the predefined eligibility criteria. Disagreements were resolved through discussion or, when necessary, by a third reviewer. Reasons for exclusion were recorded at the full-text stage. The study selection process is shown in the PRISMA-ScR flow diagram (Fig. 1).

Studies authored by review team members were screened by independent reviewers. When reports were unavailable in full text, additional retrieval attempts were made by searching the publisher's website, Google Scholar, institutional library resources, and bibliographic databases. When the full text could not be located through these sources, the corresponding authors were contacted. Reports were classified as not retrieved when full texts remained unavailable. Importantly, relational configurations should not be understood merely as alternative modes of human–AI interaction, but as qualitatively different conditions under which creative processes unfold. As the degree of cognitive coupling between humans and AI increases, the locus of creativity progressively shifts from the individual creator toward the interaction itself. Creative outcomes therefore become increasingly emergent properties of the human–AI system, arising from reciprocal adaptation, iterative feedback, and the continuous reorganization of shared cognitive resources rather than from the independent contribution of either agent alone. This perspective also provides a useful lens for understanding progressively integrated forms of human–AI creative relations (Gaggioli et al., 2025).

2.4 Data extraction and synthesis

Data were extracted using a review-specific extraction tool. For each included study, we extracted bibliographic information, study characteristics, sample characteristics, creative context, collaboration mode, GenAI tool characteristics, AI role, stage of GenAI integration, creativity assessment, outcome direction, reported benefits, and reported challenges or tensions.

Key variables were coded using predefined categories. Creative domain, creative task, collaboration mode, stage of integration, AI role, and overall outcome direction were each coded as a single primary category. AI tool type, benefits, and challenges/tensions were coded as non-mutually exclusive categories, since a single study could involve multiple GenAI systems or report multiple benefits and challenges. When information was unclear or unavailable, it was coded as "Not reported," and no assumptions were made. The role of GenAI was coded according to its dominant functional contribution within the collaborative creative process, using the following categories: idea generator, co-creator partner, assistant/support, editor/refiner, evaluator, facilitator/process support, other, and not reported. Creative tasks were coded according to the main activity performed in each study: brainstorming/idea generation, creative production/content creation, design development/prototyping, creative problem-solving, revision/refinement, other, and not reported. The stage of GenAI integration was coded as ideation, development, evaluation, multiple stages, or not reported, drawing on stage-based models of the creative process as a theoretical reference rather than as a strict sequential framework.

Outcomes were extracted along three dimensions: overall direction, reported benefits, and reported challenges or tensions. Overall outcome direction was coded as positive, negative, mixed, or not reported based on the original authors' findings rather than an independent re-evaluation. Data extraction was performed independently by two reviewers. Before full extraction, a pilot phase was conducted on five included studies to test the extraction form, refine the codebook, and ensure coding consistency. No formal statistical reliability coefficient was calculated. Discrepancies were resolved through discussion, with a third reviewer consulted when agreement could not be reached. For studies authored by members of the review team, data extraction was carried out by reviewers not involved in the original publications, to minimize potential bias arising from overlapping authorship.

Extracted data were synthesized using descriptive and narrative approaches. Descriptive and narrative synthesis summarized the distribution of studies and recurring patterns of GenAI integration, including reported benefits and challenges. Given the exploratory

nature of this scoping review and the heterogeneity of the included studies.

3. Results

The database search identified 10,774 records. After duplicate removal and screening, 38 studies met the eligibility criteria and were included in the review. The full study selection process is reported in Fig. 1.

3.1 Study characteristics

As shown in Fig. 2, the literature has grown markedly in recent years, with most included studies published from 2024 onward.

As shown in Fig. 3, the evidence base is geographically concentrated in China, with a small number of countries contributing most of the included studies.

Table 1 Summary of study characteristic		
Category	Sub-category	N %
Publication type	Journal articles	19 50%
	Conference papers	19 50%
Sample	Students	27 71.1%
	Professionals / practitioners	6 15.8%
	General population	3 7.9%
	Mixed (students + professionals)	2 5.3%
Research method	Quantitative	6 15.8%
	Qualitative	13 34.2%
	Mixed-method	19 50%
Research design	Experimental (lab)	8 21.1%
	Experimental (field)	6 15.8%
	Quasi-experimental	6 15.8%
	Case study	16 42.1%
	Observational study	2 5.3%

Table 1 summarizes the main characteristics of the included studies. There is a balanced distribution between journal articles and conference papers. The evidence base is largely built on student samples, with comparatively limited representation of professionals, practitioners, and general population participants. Methodologically, the field is characterized by a strong presence of mixed-method and case study designs.

3.2 Creative context, tasks, and collaboration modes

Table 2
Distribution of creative domains, tasks, and collaboration modes

Category	Sub-category	N	%
Creative domain / context	Education	16	42.1%
	Design	10	26.3%
	General (no specific domain)	3	7.9%
	Art (visual / media / music)	3	7.9%
	Business / innovation	2	5.3%
	Writing / storytelling	2	5.3%
	Technology / coding	1	2.6%
	Multiple domains	1	2.6%
Creative task	Brainstorming / idea generation	14	36.8%
	Creative production / content creation	10	26.3%
	Design development / prototyping	9	23.7%
	Creative problem-solving	5	13.2%
Collaboration mode	Offline	13	34.2%
	Hybrid	11	28.9%
	Online	10	26.3%
	Not specified	4	10.5%

As shown in Table 2, GenAI-supported collaborative creativity has been studied primarily in education and design, while other creative domains are underrepresented. The reviewed studies also focus predominantly on early-stage creative activities, especially brainstorming and idea generation, rather than on later phases such as refinement or evaluation. Collaboration was organized across offline, hybrid, and online settings, suggesting that GenAI is being integrated into both face-to-face and digitally mediated creative workflows.

3.3 Characteristics of the GenAI Systems and Roles

As shown in Fig. 4, text-based systems were the dominant form of GenAI used in the included studies. More specialized systems, including multimodal, audio or music, code, and custom experimental tools, appeared less frequently.

GenAI was most often integrated as a co-creative partner (see Fig. 5) rather than as a peripheral support tool. This indicates that the reviewed studies tend to frame GenAI as an active participant in collaborative creative workflows, especially in iterative processes of idea development and content generation.

3.4 Stages of GenAI integration in the creative process

Most studies integrated GenAI across multiple stages of the creative process, suggesting that GenAI was often used throughout broader collaborative workflows rather than in a single isolated phase (see Fig. 6). By contrast, development-only and evaluation-only uses were rare.

3.5 Outcomes of GenAI-supported Collaborative Creativity

3.5.1 Overall direction

As shown in Fig. 7, the overall direction of findings was generally favorable, although mixed outcomes were also common.

3.5.2 Benefits

Because benefit codes were coded as non-mutually exclusive categories, each study could contribute to more than one benefit code and to more than one broader benefit category. Therefore, frequencies and percentages do not sum to 38 studies or 100%. Table 3 reports the broader benefit categories identified across the included studies, while the frequency of individual benefit codes is reported in Appendix C.

Table 3
Reported benefits in GenAI-supported collaborative creativity

Benefit category	Codes included	Description	N (%)
Ideation & creativity enhancement	Increased idea quantity (fluency); Increased idea diversity (flexibility); Increased idea originality; Increased idea elaboration/detail; Enhanced inspiration/stimulation; Improved idea generation process	GenAI supports idea generation, expands the solution space, enhances originality and elaboration, and helps participants overcome creative blocks	33 (86.8%)
Efficiency & cognitive support	Faster workflow or efficiency; Reduced cognitive effort; Improved task performance	GenAI accelerates task execution, reduces workload, and supports the development and refinement of creative outputs	25 (65.8%)
Collaboration quality	Improved collaboration quality; Increased participation	GenAI facilitates shared understanding, coordination, and group interaction, supporting collective sensemaking and co-creation	15 (39.5%)
Experience & engagement	Increased engagement or enjoyment; Increased motivation; Increased flow or immersion; Improved user experience	GenAI enhances the experiential dimension of collaboration, making creative tasks more engaging, enjoyable, and immersive	12 (31.6%)

As shown in Table 3, the main benefits concerned ideation and creativity enhancement, efficiency and cognitive support, collaboration quality, and experience and engagement. Several studies reported that GenAI-generated outputs supported brainstorming, divergent thinking, and creative exploration, particularly in ideation and design-related tasks (Gonzalez et al., 2024; Tholander & Jonsson, 2023). Efficiency and cognitive support also emerged as recurrent benefits. In these studies, GenAI helped participants accelerate drafting, prototyping, content generation, or the organization of creative work, reducing the effort required for some task components and allowing groups to move more quickly through the creative process (Grange et al., 2026). Benefits related to collaboration quality and engagement indicate that GenAI not only affected the production of creative outputs, but also the way participants experienced and organized the collaborative process. In several studies, AI-generated outputs acted as shared artefacts or reference points around which participants coordinated discussion, established common ground, or developed shared understanding (Houde et al., 2025). Other studies reported increased enjoyment, motivation, positive user experience, and, in some cases, flow or immersion during GenAI-supported collaborative activities, suggesting that AI tools may also sustain participation and creative involvement (Gerardini et al., 2025, 2026).

3.5.3 Tensions and Challenges

The reported challenges and tensions can be grouped into five main categories (see Table 4).

Table 4
Reported challenges and tensions in GenAI-supported collaborative creativity

Challenge category	Codes included	Description	N (%)
Over-reliance & cognitive offloading	Over-reliance on AI; Reduced critical thinking; Cognitive offloading	Users tend to depend on AI outputs without sufficient evaluation, reducing independent thinking and cognitive engagement	19 (50%)
Creativity risks	Reduced originality; Homogenization of ideas; Reduced diversity of ideas	AI-generated outputs may constrain creativity, producing generic, similar, or less diverse ideas	19 (50%)
Agency & authorship	Loss of human agency or control; Authorship/ownership issues; Lack of control over outputs	The integration of AI blurs responsibility and control over creative outputs, raising issues of ownership and decision-making	18 (47.4%)
Skills & interaction challenges	Digital skill limitations or low AI literacy; Prompt difficulty (interaction issues)	Users struggle to effectively interact with AI systems, including prompt formulation, interpretation, and control of outputs	12 (31.6%)
Collaboration tensions	Coordination difficulties; Unequal participation or free-riding	AI may disrupt group dynamics, leading to imbalances in participation, coordination issues, or reduced peer interaction	11 (28.9%)

As shown in Table 4, the main tensions concerned over-reliance and cognitive offloading, creativity risks, and issues of agency and authorship.

Several studies reported that participants may depend excessively on AI-generated outputs, reduce their independent cognitive effort, or engage less critically with generated content, particularly in educational collaborative tasks (Ji et al., 2025; J. Wang & Guo, 2025).

Creativity-related risks were also recurrent. Some studies suggested that GenAI-generated outputs could be generic, shallow, repetitive, or overly similar across users, potentially narrowing rather than expanding the creative search space(e.g., Tholander & Jonsson, 2023; J. Wang & Guo, 2025). Other tensions concerned agency, authorship, and control, including uncertainty over who controlled the creative process, how responsibility should be attributed, and whether AI-generated contributions blurred the boundaries between human and machine authorship (Farah et al., 2025; Gonzalez et al., 2024; He et al., 2024).

Finally, skills and interaction challenges, as well as collaboration tensions, indicate that the use of GenAI may reshape group dynamics in complex ways. Difficulties with prompting, limited AI literacy, lack of control, low-quality or unrealistic outputs, hallucinations, and transparency issues were reported in studies where participants had to actively steer GenAI systems during open-ended creative tasks (Zha et al., 2025). Other studies described coordination difficulties, unequal participation, free-riding, or intrusive AI behaviors during group work (Gerardini et al., 2025; Houde et al., 2025). Detailed frequencies for individual challenge codes are reported in Appendix D.

4. Discussion

This scoping review mapped empirical research on how GenAI is integrated into collaborative creative processes involving two or more human participants. Across the 38 included studies, GenAI supported activities ranging from brainstorming and design development to storytelling, music production, creative problem-solving, and innovation. Overall, GenAI emerged not merely as a content-generation tool but as a component of collaborative workflows supporting idea generation, development, prototyping, reflection, and sensemaking, while also raising concerns about over-reliance, reduced critical engagement, homogenization, authorship, control, and human agency. Taken together, these findings point to a shift toward hybrid socio-technical configurations in which humans and generative systems jointly shape creative processes, with outcomes depending on how AI participation is structured within collaborative workflows.

4.1 An emerging and methodologically heterogeneous field

Across the 38 included studies, GenAI-supported collaborative creativity remains an early and exploratory field. The even split between journal articles and conference papers (19 each) reflects rapid interdisciplinary growth and the central role of conferences, while methodological heterogeneity and limited longitudinal validation still constrain firmer conclusions. The geographical distribution also reveals an uneven evidence base. Most studies come from North America, Western Europe, and East Asia, with China and the United States accounting for the largest proportion of studies. At the same time, evidence from the Global South and non-Western socio-cultural contexts remains largely absent. This matters because perceptions of creativity, collaboration, and technological agency vary across cultural and institutional contexts. Consequently, the current literature offers only a partial view of human–AI collaborative

creativity across cultures. The reviewed studies also reveal methodological and sampling imbalances. Student populations account for 71.1% of samples, whereas professionals and practitioners (15.8%), mixed groups (5.3%), and the general population (7.9%) remain underrepresented. This limits generalizability because professional creative work involves domain expertise, organizational constraints, accountability, power dynamics, and time pressures that are difficult to reproduce in short-term academic studies. Methodologically, the prevalence of case studies (42.1%) and mixed-method approaches (50%) reflects the exploratory and context-dependent nature of the field. These approaches provide valuable process-level evidence on interaction, agency, and collaborative organization, although findings may remain context-specific.

However, longitudinal evidence remains scarce. Consequently, little is known about how sustained GenAI use shapes trust, dependency, collaborative norms, agency, and creative expertise over time. The near absence of longitudinal work, then, is not a minor methodological footnote; it is one of the most consequential gaps the field currently faces.

4.2 Collaborative creative contexts and task configurations

The reviewed studies suggest that GenAI's role in collaborative creativity is neither fixed nor universal. Instead, it varies according to domain, task, and collaboration mode. Rather than functioning as a neutral technological layer, GenAI reshapes collaborative dynamics according to the context in which it is introduced. In this sense, the findings lend support to socio-technical perspectives on creativity, according to which creative outcomes emerge from interactions among people, technologies, workflows, and organizational conditions rather than isolated individual cognition (Sawyer & DeZutter, 2009).

Most reviewed studies were conducted in educational settings, typically through activities such as project-based learning (Zha et al., 2025), collaborative brainstorming exercises (Shaer et al., 2024), co-design and creative prototyping workshops (Yu et al., 2025), or AI-supported digital storytelling projects (Wei et al., 2025).

In these contexts, GenAI mainly acts as a pedagogical scaffold supporting idea generation, task initiation, and reflection. For instance, Zha et al. (2025) found that project-based learning supported by large language models enhanced students' creative inspiration and collaborative exploration. Wei et al. (2025) reported similar gains in collaborative problem-solving and team creativity during AI-assisted digital storytelling activities, while Liu et al. (2025) observed that AI-augmented collaborative whiteboards supported student engagement, higher-order thinking, and collaborative coordination in design thinking projects.

In educational settings, GenAI is often described as a “creative companion”, “learning assistant”, or mentoring resource that encourages experimentation where unsuccessful attempts have comparatively limited consequences (Ji et al., 2025; H. Wang et al., 2026). In professional settings instead foreground expertise, accountability, authorship, and organizational coordination. Houde et al. (2025) showed that AI agents in professional brainstorming could become intrusive or disruptive when participants perceived their involvement as excessive. Grange et al. (2026) found that innovation teams resisted fully AI-generated solutions partly because they wanted human involvement in both problem framing and decision-making. Similarly, Tholander and Jonsson (2023) found that designers perceived GenAI outputs as efficient but lacking contextual depth and reflective sophistication. Integrating GenAI into professional environments therefore requires negotiating expertise, responsibility, and decision authority. Brainstorming, idea generation, and creative production remain the dominant applications of GenAI. Several studies describe GenAI as a catalyst for creative divergence. In brainstorming contexts, GenAI tends to contribute through unexpected associations, semantic expansions, visual prompts, or alternative perspectives that teams then collectively refine through interaction. For instance, AI-generated content could support creative engagement, idea elaboration, and collaborative exploration (Gerardini et al., 2025; Shaer et al., 2024). Similarly, text-to-image systems have been observed to support semantic convergence among team members (Lin et al., 2024).

That said, the literature also reveals a clear imbalance between the divergent and convergent phases of the creative process. While several studies report improvements in ideational fluency, elaboration, and inspiration (Catta-Preta et al., 2025; Kim, 2024; H. Wang et al., 2026), far fewer demonstrate effective support for deeper evaluative reasoning or sustained creative refinement. This imbalance aligns with the theory of creativity, because creativity is not reducible to idea generation. Creative work also involves evaluation, elaboration, contextual adaptation, and the transformation of initial ideas into meaningful outputs (Runco & Jaeger, 2012; Wallas, 1926). Similarly, collaborative creativity depends not only on producing many ideas, but also on negotiating, integrating, and refining them through interaction (Paulus & Nijstad, 2003; Sawyer & DeZutter, 2009).

Indeed, several studies identify real risks tied to over-reliance on AI-generated outputs in the later stages of the creative process, most notably, a weakening of critical thinking (Hou et al., 2026; Ji et al., 2025). These findings suggest that GenAI may currently be more effective in expanding the initial solution space than in supporting convergent judgment, critical selection, and collective evaluation.

These tensions become more evident when considering collaboration modes. Educational studies frequently adopt offline or hybrid setups, in which groups interact with GenAI through shared devices and use AI outputs as conversational triggers, for face-to-face discussion (Vartiainen & Tedre, 2023). In these settings, technology tends to strengthen interpersonal negotiation by externalizing ideas into artifacts that the group can collectively examine, question, and build upon. Design and innovation contexts, by contrast, are increasingly relying on fully digital collaborative infrastructures, including AI-enhanced whiteboards, multimodal co-creation platforms, and similar tools (He et al., 2024; Houde et al., 2025). Although these systems facilitate distributed collaboration, they also introduce coordination, attention, and control challenges.

4.3 The evolving role of GenAI in group creativity

The reviewed literature suggests that GenAI is reshaping how collaborative creativity is structured and experienced. Before generative AI, collaborative technologies mainly facilitated communication, coordination, and cooperation rather than contributing directly to creative content (Bannon & Schmidt, 1989; Eseryel et al., 2002).

The included studies indicate that generative systems are increasingly integrated into collaborative workflows, supporting idea generation, content development, prototyping, and iterative refinement. For example, Wei et al. (2025) showed how GenAI supported collaborative narrative development and multimodal digital storytelling, Wang et al. (2026) examined its contribution across multiple stages of creative problem-solving, and Naik et al. (2025) described its role in AI-supported design work.

These findings are relevant because collaborative creativity emerges through dynamic and interdependent interactions among participants rather than isolated individual contributions (Sawyer & DeZutter, 2009). GenAI increasingly becomes part of these interactional dynamics by contributing directly to creative processes. This trend is reflected in the AI roles identified across the included studies. In most cases, GenAI was coded as a co-creator partner rather than as a peripheral support tool or simple idea generator. This suggests that groups increasingly integrate GenAI into iterative cycles of co-creation rather than using it only to retrieve information or automate isolated tasks (Memmert & Tavanapour, 2023; Vartiainen & Tedre, 2023).

However, “co-creator partner” should be interpreted as a functional coding category rather than as evidence of autonomous creative agency. In this review, the category refers to GenAI contributing iteratively to creative outputs through ongoing human–AI interaction. It does not imply intentionality, responsibility, or agency equivalent to that of human participants.

These findings align with sociocultural perspectives in which creativity emerges through interactions among people, tools, and contextual resources (Glăveanu, 2015), positioning GenAI as an active component of the socio-technical creative environment. They also resonate with the extended mind perspective, whereby external tools become functionally integrated into cognition when they reliably support task performance (Clark & Chalmers, 1998). In collaborative settings, GenAI may thus function as a cognitive and representational resource that expands groups’ capacity to generate, organize, visualize, and reinterpret ideas. However, the reviewed studies suggest that the role of GenAI within collaborative creativity remains highly dependent on context, task configuration, and interaction design. In some cases, AI-generated outputs appeared to stimulate discussion, support shared understanding, and facilitate collective exploration. In other cases, however, participants reported tensions related to coordination, loss of control, or reduced interpersonal negotiation. These findings indicate that the integration of GenAI does not automatically improve collaborative creativity but rather reshapes existing interaction dynamics in ways that may create both opportunities and challenges for collaborative work.

Overall, the reviewed literature points toward an emerging model of collaborative creativity in which creative processes are increasingly distributed across hybrid human–AI systems. Rather than replacing human collaboration, GenAI appears to become integrated into the relational and iterative processes through which collaborative creativity is negotiated, developed, and refined. Its contribution depends less on the mere presence of the technology than on how human participants interpret, regulate, and transform its outputs within the collaborative process.

4.4 GenAI as augmentation, efficiency, and creative support

The findings indicate four recurring benefits of GenAI: enhanced ideation, efficiency and cognitive support, collaboration quality, and engagement. AI-generated prompts, images, and text helped participants expand ideas, explore alternative perspectives, and overcome creative blocks during brainstorming and design activities. (Gonzalez et al., 2024; Kim, 2024; Tholander & Jonsson, 2023). Gerardini et al. (2025) showed that DALL-E enhanced brainstorming through visual stimuli, while Wang et al. (2026) found that GenAI supported inspiration, problem clarification, and solution development. Overall, GenAI appears to serve as a source of creative stimulation, introducing unexpected associations and supporting divergent thinking. This pattern is consistent with the predominance of studies

focusing on the ideation stage identified in the present review, suggesting that current generative systems are particularly well suited to supporting the early phases of collaborative creativity.

These findings are broadly consistent with previous research on group creativity, which has shown that exposure to diverse perspectives and external stimuli may facilitate idea generation and creative exploration (Paulus, 2000; P. Paulus & Nijstad, 2003)

Unlike traditional external stimuli, generative systems can dynamically adapt their outputs in response to ongoing interactions, creating a more interactive form of creative support.

A second major area of benefit concerns efficiency and cognitive support. Many studies reported that GenAI accelerated activities such as drafting, prototyping, information organization, and content generation (Chen et al., 2026; Grange et al., 2026; Sandhaus et al., 2025). Participants described AI systems as reducing effort devoted to repetitive or time-consuming tasks, thereby allowing greater attention to be devoted to higher-level decision-making, discussion, and creative refinement. Across the reviewed literature, faster workflows and improved task performance emerged among the most frequently reported benefits.

These findings suggest that GenAI can support collaborative creativity not only by generating content, but also by reducing the time and cognitive resources required to externalize, organize, and develop ideas.

Efficiency gains may also improve the collaborative experience. Several studies reported increased engagement, enjoyment, motivation, participation, and flow during GenAI-supported activities, particularly in educational and design contexts (Gerardini et al., 2026; Kim, 2024; Yu et al., 2025). These experiential benefits can be linked to motivational theories of creativity, which emphasize the role of engagement, intrinsic motivation, and positive affect in creative work (Amabile, 1983, 1996; Amabile et al., 1983). Immediate AI-generated feedback and rapid idea externalization appeared to sustain collaborative momentum. AI-generated outputs also functioned as shared reference points that supported discussion and shared understanding. Accordingly, GenAI may support not only individual cognitive activity, but also the coordination of collective attention and the development of shared understanding.

However, these benefits were strongest during ideation and early exploration; few studies demonstrated clear advantages during evaluation, refinement, or critical assessment stages. This imbalance suggests that current generative systems may be particularly effective in supporting divergent thinking and idea expansion, while their role in convergent evaluation, critical reflection, and collective judgment remains less established.

From an augmentation perspective, GenAI's primary value may lie in extending rather than replacing the cognitive and creative resources available to groups. Benefits emerge most consistently when AI outputs are actively interpreted, negotiated, and refined through human collaboration, preserving human agency. Consistent with extended cognition (Clark & Chalmers, 1998), GenAI may function as an external cognitive resource that expands idea generation, information processing, and creative refinement. However, such integration does not necessarily enhance agency: its effects depend on whether GenAI supports higher-level reflection and decision-making or displaces effortful cognitive participation. Thus, the same mechanisms that increase efficiency may also encourage cognitive offloading or uncritical acceptance of AI outputs.

4.5 Tensions, homogenization, and agency challenges

Despite the reported benefits, the literature also highlights recurring tensions associated with integrating GenAI into collaborative creative processes. These challenges concern over-reliance, cognitive offloading, creative homogenization, agency and authorship, and changes in collaboration. Importantly, many tensions arise from the same mechanisms that generate GenAI's benefits, indicating that advantages and risks are closely intertwined.

A recurring concern is reliance on AI-generated outputs without sufficient critical evaluation (Ji et al., 2025; J. Wang & Guo, 2025; Zha et al., 2025). Several studies described cognitive offloading, with participants delegating ideation, elaboration, or decision-making to AI, potentially reducing critical reflection, cognitive engagement, and independent creative reasoning despite gains in efficiency (Hou et al., 2026). This reflects the comfort–growth paradox (Chiriatti et al., 2025): AI may either extend human cognition or progressively replace cognitive effort. The crucial distinction concerns which forms of effort are delegated. Reducing repetitive workload may support creativity, whereas delegating evaluation, judgment, or problem framing may weaken critical engagement and human creative agency.

The literature also identifies risks for creativity. Although GenAI often supported idea generation and exploration, several studies reported concerns regarding reduced originality, homogenization of outputs, and limited diversity of ideas (Tholander & Jonsson, 2023; Vartiainen & Tedre, 2023; Wang et al., 2026). AI-generated suggestions were sometimes perceived as repetitive or overly similar across

groups, potentially encouraging convergence toward common solutions rather than fostering diverse forms of creative exploration. This is particularly relevant because collaborative creativity benefits from integrating diverse perspectives (Paulus & Nijstad, 2003). If generative systems systematically steer groups toward similar outputs, they may inadvertently reduce some of the diversity that supports collective creativity.

Another recurring issue concerns agency, ownership, and control. Participants expressed uncertainty about authorship boundaries and the status of AI-generated contributions within human creative processes (Farah et al., 2025; Grange et al., 2026; Shaer et al., 2024). As GenAI becomes embedded in collaborative workflows, distinguishing human and machine contributions becomes increasingly difficult, challenging traditional assumptions about creative responsibility, ownership, and attribution. From a hybrid intelligence perspective, if creativity is distributed across people, artefacts, and generative systems, agency and authorship likewise become increasingly distributed and negotiated. The reviewed studies also indicate that the integration of AI systems may influence group interaction dynamics in complex ways. In some cases, AI-generated outputs facilitated shared understanding and discussion; in others, participants reported coordination difficulties, unequal participation, or reduced direct peer interaction (Houde et al., 2025; Zha et al., 2025). Particularly in digitally mediated settings, collaborative attention sometimes appeared to shift from interpersonal negotiation toward parallel interactions between individual participants and the AI system. This finding raises important questions regarding whether AI may alter the social processes through which collaborative creativity traditionally emerges. From a socio-technical perspective, GenAI changes the conditions of collaboration by introducing new coordination demands, expertise, and dependencies (Seeber et al., 2020).

These tensions are not inevitable consequences of GenAI but depend on workflow design, regulation of AI participation, and negotiation of human agency. Successful collaboration appears more likely when AI outputs remain subject to active human evaluation, discussion, and revision. Overall, GenAI-supported collaborative creativity depends on the social, cognitive, and organizational conditions of human–AI collaboration, highlighting the need to preserve human agency, critical reflection, and diversity of perspectives.

4.6 Practical implications

The findings of this review have important implications for the design and implementation of GenAI in collaborative creative settings, including education, organizations, and design. Overall, GenAI appears most effective when integrated into human-led workflows rather than used as a substitute for human creativity and judgment.

In education, GenAI can support brainstorming, creative problem-solving, storytelling, and project-based learning by facilitating participation and engagement. However, these benefits coexist with risks of over-reliance, reduced critical thinking, and insufficient AI literacy. Consequently, educational use should emphasize not only productivity but also the ability to engage with AI critically.

AI literacy should therefore include not only the technical ability to use generative systems and formulate effective prompts, but also the capacity to evaluate AI outputs critically, recognize their limitations, reflect on authorship, and determine when AI support is appropriate.

AI system design is equally important. Successful collaboration requires meaningful human participation, opportunities for reflection and reinterpretation, and control over AI contributions. Iterative interaction, shared steering, and transparency can support these processes, whereas intrusive, unpredictable, or difficult-to-control systems may disrupt collaboration. Future systems should therefore prioritize controllability, transparency, adjustable AI participation, and traceability of human and AI contributions to clarify authorship, responsibility, and decision-making. In organizational settings, GenAI can accelerate ideation, prototyping, and knowledge sharing, but it may also encourage premature convergence around AI-generated ideas. Preserving opportunities for independent thinking, critical debate, and human reinterpretation of AI outputs therefore remains essential for sustaining innovation. One possible workflow is to encourage participants to first generate or discuss ideas independently, then compare them with AI-generated alternatives, and finally evaluate and refine the resulting options collectively. Such procedures may reduce fixation and premature convergence while preserving the efficiency benefits of GenAI.

More broadly, the success of human–AI creative collaboration appears to depend less on AI capability than on how collaboration is designed. Effective workflows require appropriate organization, clear norms for evaluating AI contributions, well-defined decision authority, and opportunities for reflection. As GenAI becomes increasingly embedded in creative work, process design, interaction norms, and reflective practice may become as important as the technical capabilities of the technology.

4.7 Limitations and future research

Several limitations should be considered when interpreting the findings of this review. First, the evidence base was highly heterogeneous in terms of creative domains, task types, GenAI tools, collaborative configurations, research designs, and creativity assessment methods. Although this heterogeneity reflects the exploratory nature of the field, it limits the comparability of findings across studies.

Second, the reviewed literature was concentrated in educational contexts and student samples. While these studies provide valuable evidence on learning-oriented collaborative creativity, they may not fully capture professional creative work, where domain expertise, organizational constraints, accountability, intellectual property, and stakeholder expectations play a central role. Future research should therefore include more professionals, practitioners, multidisciplinary teams, and organizational settings in which creative outcomes have real-world consequences.

Third, most studies examined short-term interventions, workshops, or isolated tasks, leaving limited evidence on the long-term effects of GenAI on collaborative creativity. Longitudinal research is needed to examine how sustained interaction with GenAI shapes creative expertise, dependency, trust, collaborative norms, authorship perceptions, and the balance between human and AI contributions, as well as whether initial benefits, such as engagement or efficiency, remain stable over time or change with increasing experience.

Fourth, creativity assessment varied substantially across studies, including expert ratings, self-report measures, qualitative reflections, peer evaluations, computational indicators, and task-specific measures. This variability limits comparability and highlights the need for more transparent and theoretically grounded approaches to assessing collaborative creativity in human–AI contexts. Future studies should distinguish more clearly between dimensions of creativity, including originality, usefulness, elaboration, flexibility, and process-related outcomes, while giving greater attention to group-level creativity, since measures developed for individuals may not adequately capture interaction, integration, and collective emergence.

This review also has methodological limitations. The search was restricted to peer-reviewed journal articles and conference papers published in English or Italian, excluding grey literature and potentially relevant emerging studies. Because citation chasing was not conducted systematically, additional eligible studies may have been missed. Furthermore, the review relied on the information reported in the included studies, and incomplete information was coded as "not reported" rather than inferred.

The classification of AI roles, creative tasks, stages of integration, benefits, challenges, and overall outcome direction also required interpretive coding. Although coding was conducted independently by two reviewers, these categories inevitably simplified complex and context-dependent forms of human–AI interaction. Similarly, assigning one primary AI role and one overall outcome direction may not fully capture studies in which GenAI performed multiple functions or produced different effects across participants, outcomes, or stages of the creative process.

Future research should move beyond comparisons between human-only and human–AI conditions by examining how creative contributions are negotiated within hybrid groups. Greater attention should be devoted to group composition, expertise diversity, leadership, conflict, participation, prompting practices, and the distribution of agency within human–AI creative systems. Future studies should also investigate how different AI roles, levels of autonomy, and interaction modalities influence distinct stages of the creative process, from ideation to evaluation and refinement.

Finally, because GenAI technologies evolve rapidly, current findings may quickly become outdated. Future research will therefore need to continuously adapt theoretical frameworks and methodological approaches to increasingly multimodal, agentic, and embedded AI systems in collaborative creative practice.

Conclusion

This scoping review mapped the emerging body of empirical literature examining how generative artificial intelligence is integrated into collaborative creative processes involving multiple human participants. Across the reviewed studies, GenAI emerged as an increasingly present component of collaborative creativity across domains such as education, design, storytelling, innovation, and creative problem-solving.

Overall, the findings suggest that GenAI is most integrated as a co-creative partner within iterative collaborative workflows, particularly during ideation and early creative exploration stages. The reviewed literature highlights several potential benefits associated with

GenAI-supported collaborative creativity, including enhanced idea generation, increased efficiency, improved engagement, and support for collaborative exploration. At the same time, important tensions also emerged, particularly regarding over-reliance on AI systems, reduced critical reflection, homogenization of outputs, authorship ambiguity, and changes in collaborative interaction dynamics.

More broadly, the reviewed studies suggest that the integration of GenAI may gradually reshape collaborative creativity itself. In line with perspectives on distributed creativity (R. K. Sawyer & DeZutter, 2009), collective intelligence (Woolley et al., 2023), and hybrid intelligence (Dellermann et al., 2019), creative processes increasingly appear to emerge through hybrid socio-technical interactions in which human and artificial agents jointly contribute to ideation, exploration, refinement, and decision-making activities.

At the same time, the findings indicate that the effectiveness of GenAI-supported collaborative creativity depends not only on the capabilities of AI systems themselves, but also on how collaborative environments, workflows, and interaction practices are structured around human–AI participation. As generative AI technologies continue to evolve, understanding how to preserve meaningful human agency, diversity of perspectives, and collaborative negotiation within hybrid creative systems will likely become an increasingly important challenge for both research and practice.

Declarations

Author Contribution

K.G. conceptualized the study, developed the methodology, conducted study screening and data extraction, analyzed and interpreted the data, prepared the figures and tables, and wrote the original draft of the manuscript. E.D.S. contributed to the study screening and data extraction. I.V. contributed to conceptualizing the study. A.G. critically revised the manuscript. A.C. contributed to the conceptualization, methodology, and data validation of the study, supervised the research, and critically revised the manuscript. All authors reviewed and approved the final version of the manuscript.

Acknowledgement

The authors wish to thank Mariaconcetta Lombardo

Data Availability

Data Availability. The detailed eligibility criteria, coding framework, operational definitions, and data extraction grid are provided in the Supplementary Information accompanying this article. Additional screening and extraction records supporting the review were made available to the editors and reviewers for the purposes of peer review. Further supporting materials are available from the corresponding author on reasonable request.

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Figures

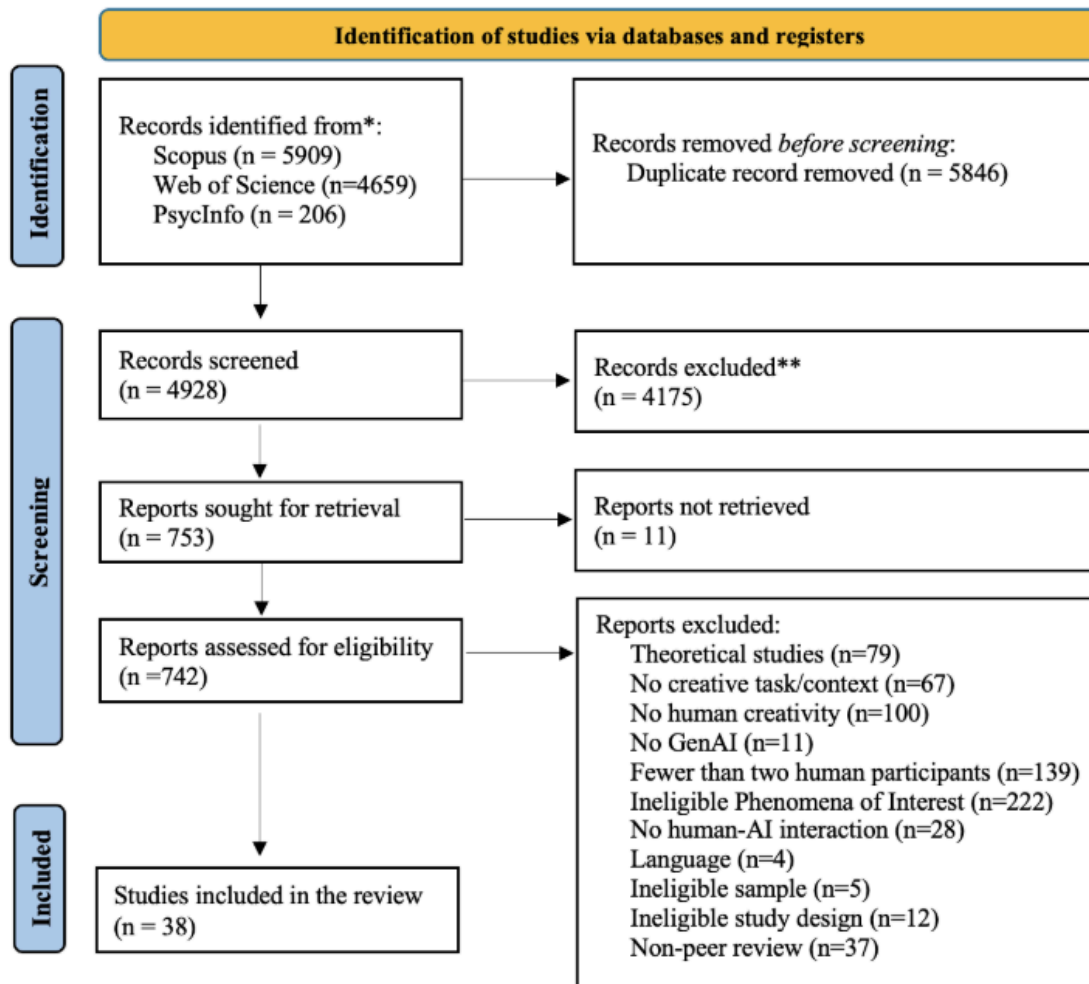


Figure 1

PRISMA-ScR Flow Chart

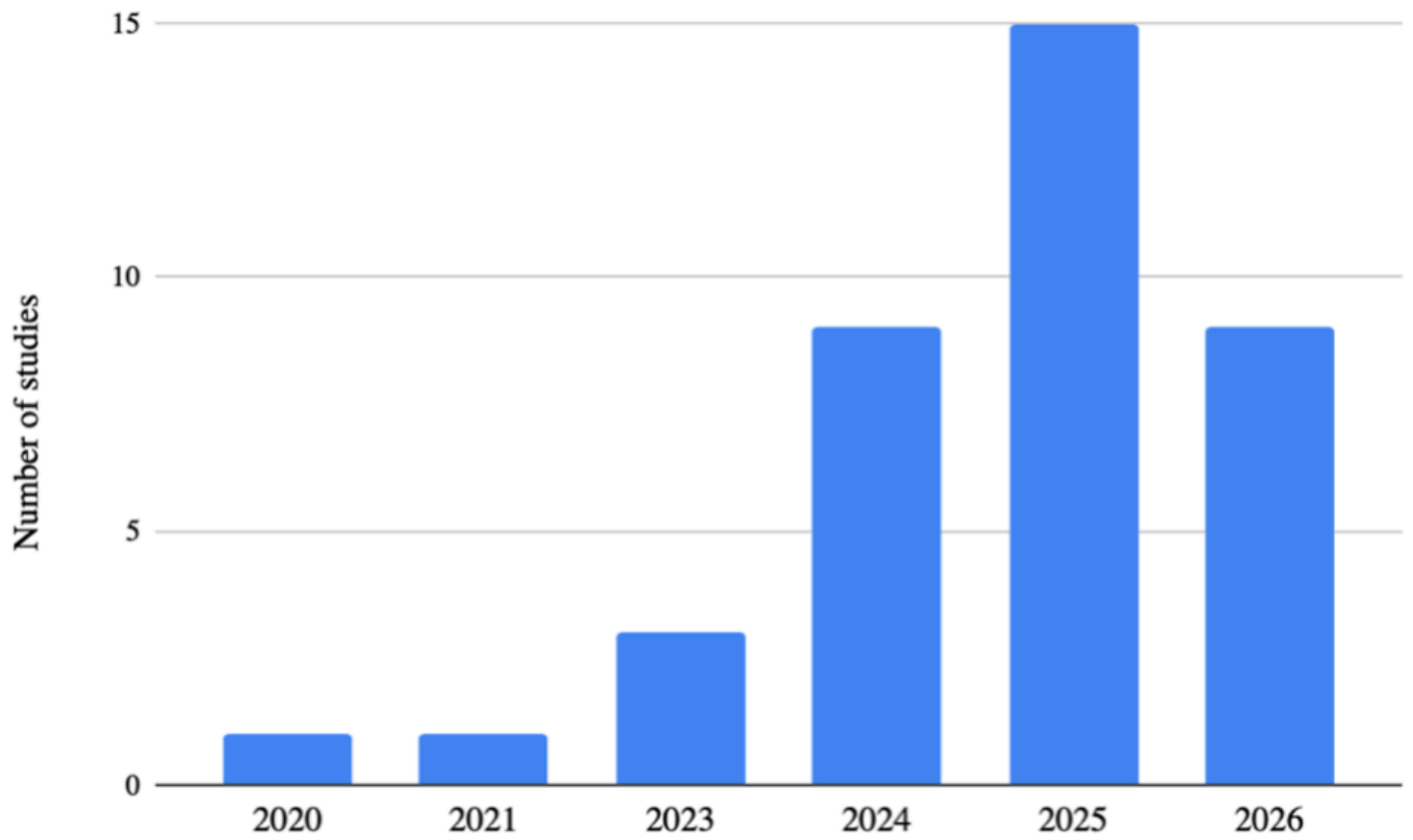


Figure 2
Distribution of included studies by publication year

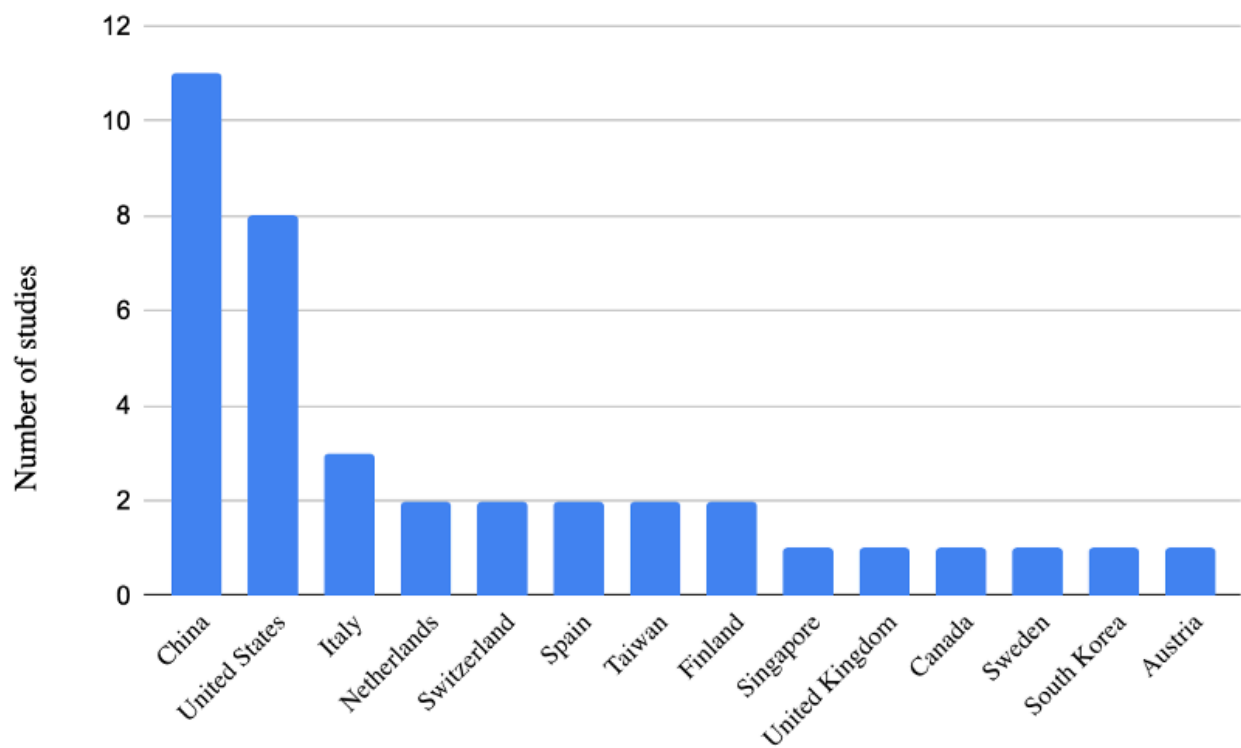


Figure 3

Distribution of included studies by country

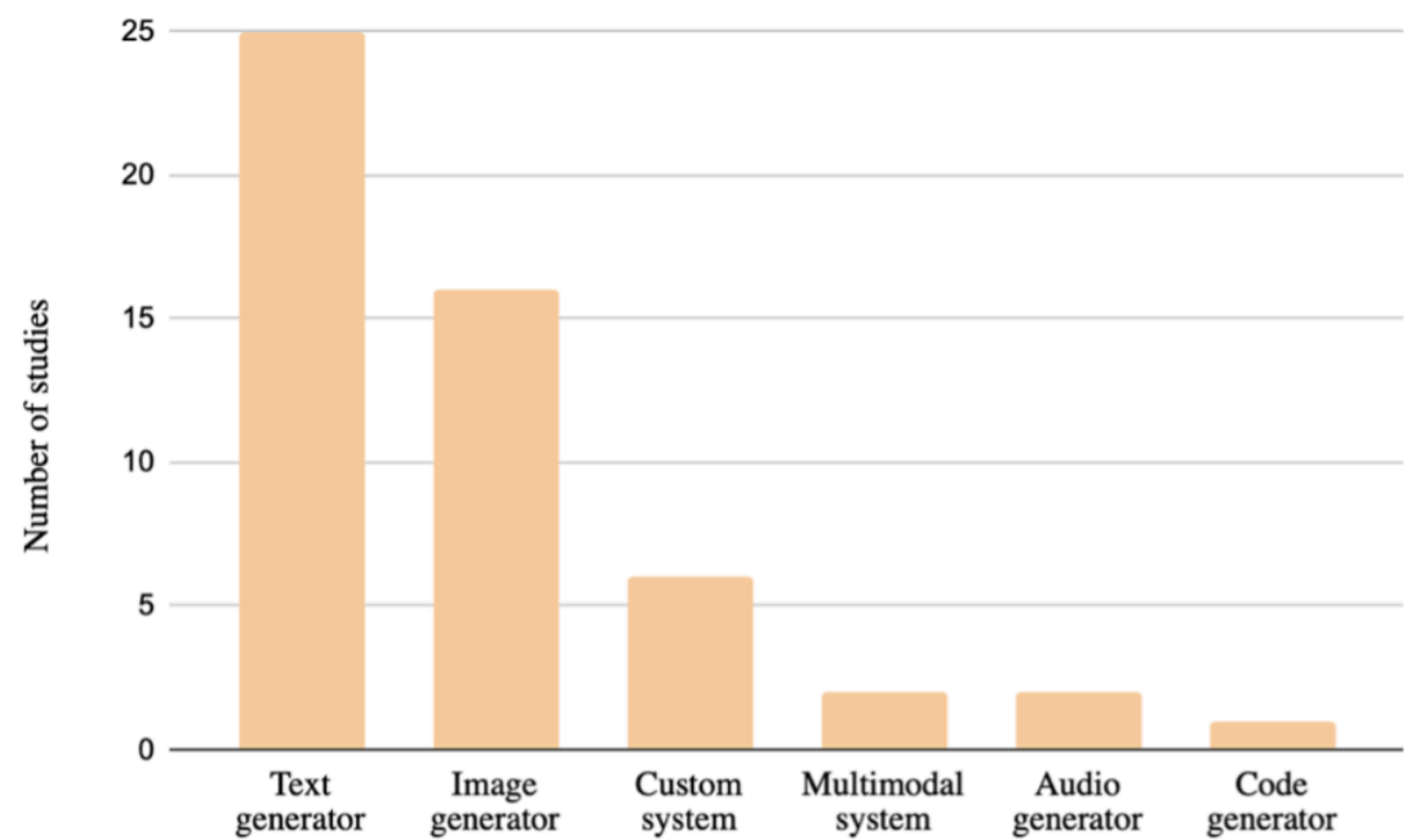


Figure 4
Distribution of GenAI types used across the included studies

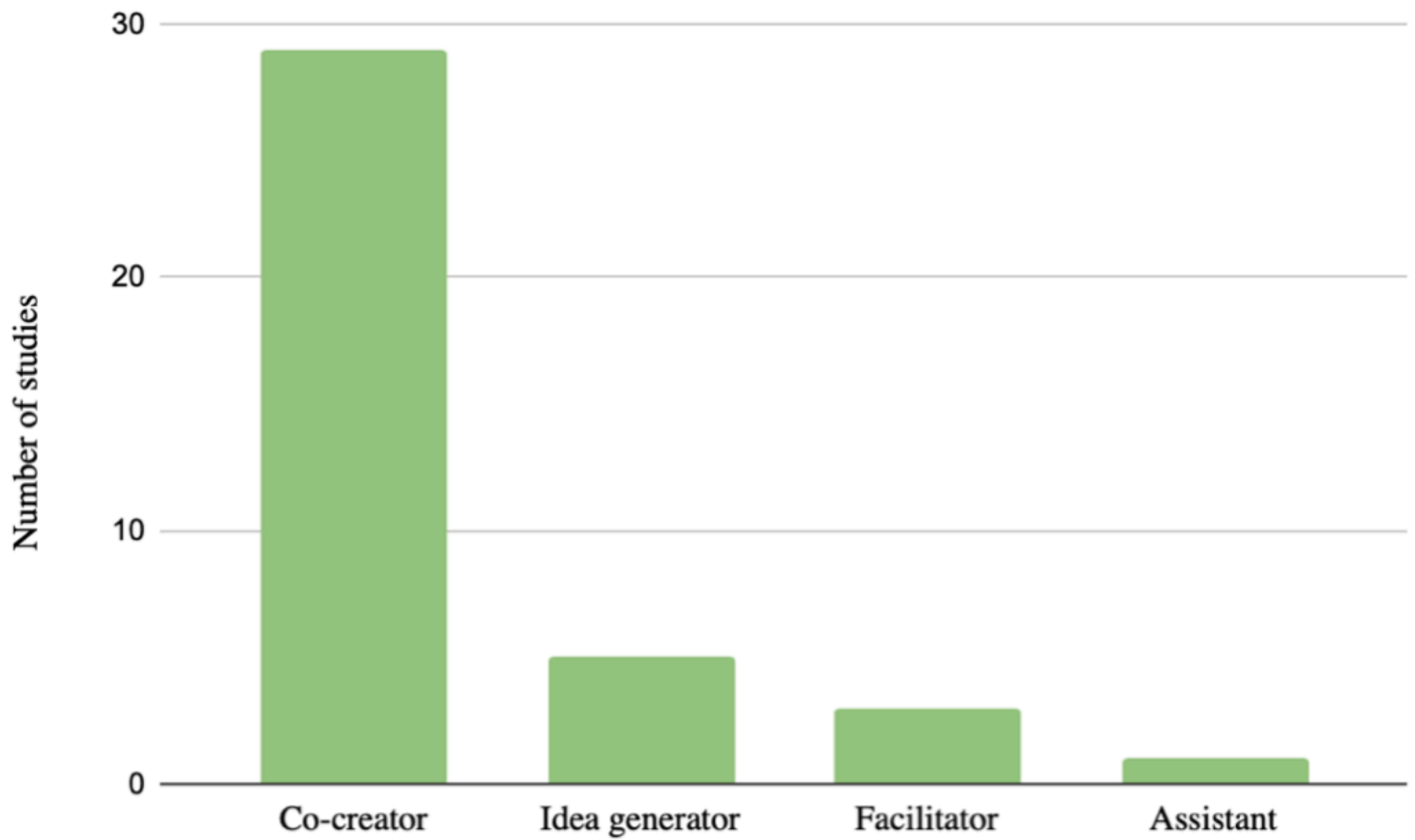


Figure 5

Distribution of GenAI roles across the included studies

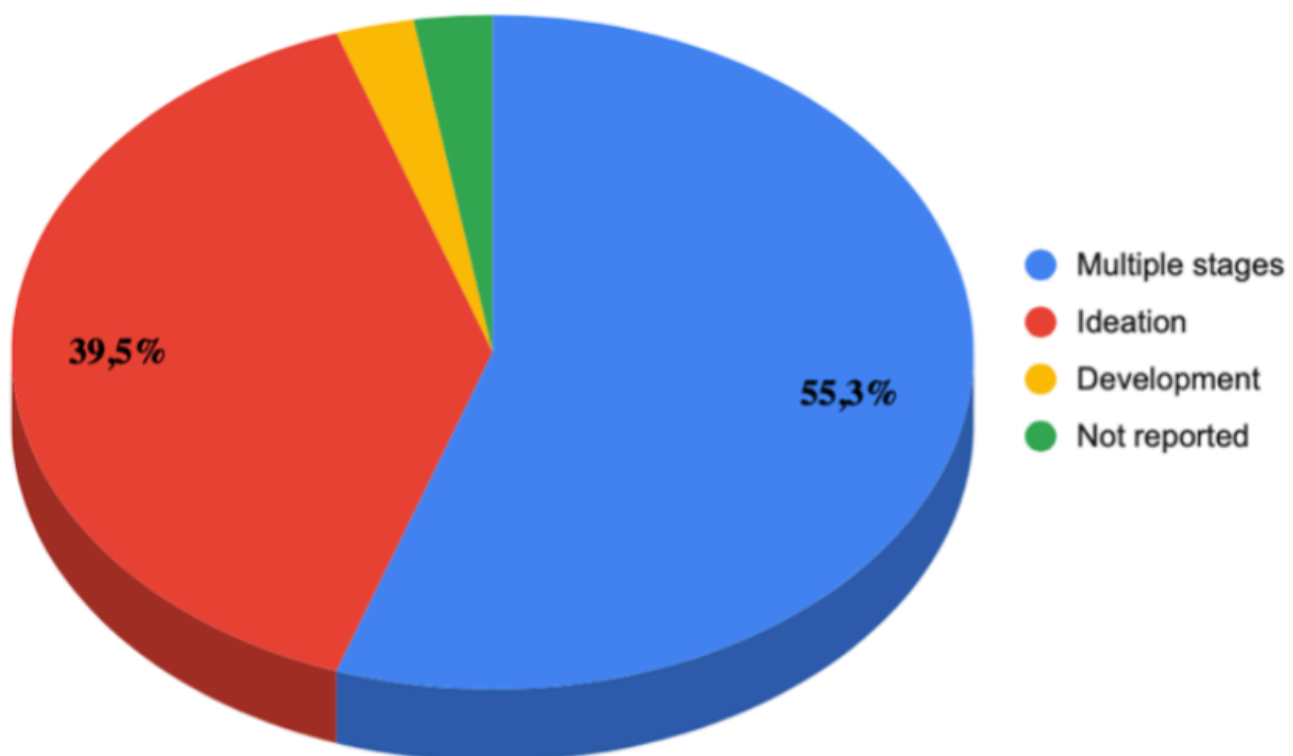


Figure 6

Distribution of AI integration stages across the creative process

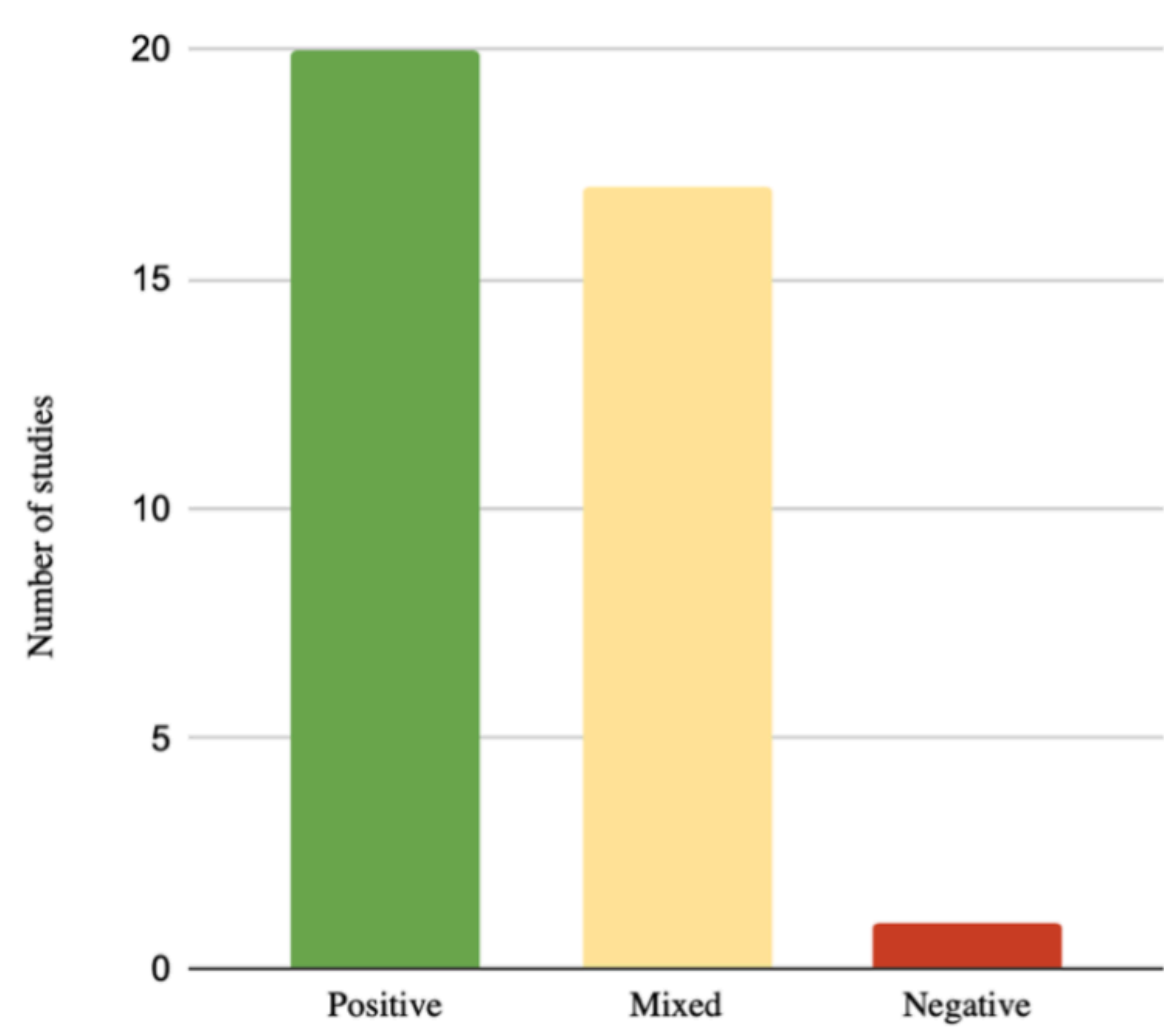


Figure 7

Distribution of overall outcome direction across included studies

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