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EXPLORING COMIC RESEARCH IN MALAYSIA: OPPORTUNITIES, CHALLENGES, AND SCHOLARLY IMPLICATIONS

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ABSTRACT

This article explores the trajectory of comic-based educational research in Malaysia, focusing on its pedagogical potential, prevailing challenges, and broader implications. Drawing on a systematic thematic analysis of locally published academic articles, the study highlights a growing recognition of comics as legitimate tools for enhancing conceptual understanding, student motivation, literacy, and character development across diverse disciplines. Despite this progress, research in Malaysia remains constrained by conservative perceptions, limited funding, a lack of interdisciplinary collaboration, and the absence of dedicated publication platforms. The study identifies key thematic gaps—particularly in inclusive education, vocational training, and alternative assessment—and proposes strategic interventions to strengthen the national research ecosystem. These include expanding institutional support, fostering interdisciplinary networks, and promoting visual narrative pedagogy through targeted academic programmes and journals. Overall, the findings underscore the need to reposition comics as reflective, inclusive, and contextually relevant pedagogical media aligned with 21st-century educational goals.

KEYWORDS: Educational comics, inclusive education, interdisciplinary approaches, Malaysian education research, multiple intelligences theory, student-centred learning, visual narrative pedagogy.

INTRODUCTION

Reading materials are broadly classified into two principal categories, namely scholarly and non-scholarly texts, both of which play a pivotal role in enriching intellectual development and fostering a culture of reading within society. Scholarly texts are characterised by systematic structure, formal language, and reliance on credible research sources, encompassing academic journals, theses, monographs, and research reports that primarily aim to advance knowledge and provide authoritative references in academic discourse. Conversely, non-scholarly texts serve more general purposes, focusing on entertainment, informal information dissemination, or social commentary, and include

newspapers, magazines, blogs, novels, comics, and social media content that typically employ accessible language and a flexible structure. Within this category, comics have gained increasing recognition as an educational medium capable of delivering information through visual narratives that are engaging, comprehensible, and pedagogically effective. Once perceived merely as light entertainment, comics are now acknowledged for their potential to convey moral, social, and cultural values in a reflective and impactful manner. Consequently, the legitimisation of comics as valuable and high-impact reading materials within the education system is imperative, aligning with contemporary efforts to promote inclusive, contextual, and multimodal pedagogical approaches. Despite their differing objectives and methodologies, both scholarly and non-scholarly texts remain indispensable in advancing literacy, deepening comprehension, and sustaining reading interest across diverse segments of society.

BACKGROUND OF THE STUDY

Comics are a distinctive form of cartoon media designed to engage readers through illustrated narratives with structured storylines (Ariesta & Kusumayati, 2018; Kartini, 2016; Nugraheni, 2017; Sukartiningsih & Ahmat, 2013; Sukmanasa et al., 2017). In the literature, definitions of comics can be categorised into several thematic perspectives. Eisner (1985) describes comics as “sequential art,” a type of visual storytelling in which a series of images conveys meaning. Similarly, Chute (2008) emphasises comics as narratives told through sequences of images, while McCloud (1993) views them as a deliberate combination of images and other elements arranged to communicate ideas. Alsaç (1994) defines comics more broadly as any story conveyed through pictures or drawings, whereas Platin (1985) highlights the narrative continuity created through a sequence of images. Diegritz (1979) further specifies that comics present a coherent story through four or more consecutive images. Together, these perspectives underscore that comics are a unique medium in which visual sequences construct meaningful narratives. In comic books, storylines are brought to life through artistic elements and characterisation, allowing readers to identify with characters through visual presentation, actions, and interactions across panels.

Despite their narrative richness, comics have historically been perceived as light reading with limited intellectual value. They were often associated primarily with entertainment and regarded as unsuitable for adults or students aiming for academic achievement, largely due to the assumption that comics lack scholarly depth and do not undergo rigorous academic review processes like textbooks or journal articles (Creswell & Creswell, 2018). However, research has shown that comics can make significant contributions across various domains, particularly in education. Educational comics differ from conventional comics in that they focus on delivering knowledge through structured narratives. Unlike general comics, which prioritise entertainment and may include educational elements incidentally, educational comics concentrate on specific topics, often using accessible storytelling combined with light humour. In this sense, educational comics can be regarded as a form of textbook presented through visual and narrative media.

In modern education, comics have evolved from mere entertainment to effective pedagogical tools, enabling students to grasp complex concepts through engaging combinations of visuals and text (Hosler & Boomer, 2011). Tatalovic (2009) asserts that comics stimulate visual thinking and creativity, while Eisner (1985) highlights their strength in merging narrative and illustration to create holistic learning experiences. Mallia (2007) further underscores their role in subtly conveying moral, social, and cultural values. In Malaysia, although public interest in comics as general reading material has grown, their acceptance within academic contexts remains limited. Key contributing factors include a lack of local research, negative perceptions of comics' academic value, and the absence of systematic integration into the curriculum. Therefore, there is an urgent need to strengthen research and application of comics in Malaysian education to fully realise their potential as pedagogical instruments.

LITERATURE REVIEW

In the context of 21st-century education, which emphasises student-centred learning, teaching approaches that are visual, narrative-driven, and contextual have gained increasing traction in the classroom. One medium that is increasingly recognised for its pedagogical effectiveness is educational comics. Comics are not only engaging reading materials but also hold significant potential as pedagogical tools that support students' cognitive, emotional, and social development. They can be adapted across educational levels and disciplines (Aydinoglu & Allard, 2020). Science comics have shown early success in popularising knowledge, particularly in biology, medicine, and physiology. Cheesman (2006) highlights that comic strips help students understand scientific concepts, capture their attention, introduce new topics, and stimulate critical thinking. A team in Korea embedded anatomical knowledge into comics to educate college students about anatomy (Shin et al., 2013), while other studies have explored the use of comics in medical education and patient care, including the field of "image medicine," which uses comics to narrate personal stories about illness and health (Green & Myers, 2010).

At the school level, comics can be effectively used in language teaching and early literacy due to their visual and narrative nature. Comics help pupils intuitively grasp sentence structure, vocabulary, and contextual language use. Illustrated narratives enable younger learners to connect text with meaning, thereby enhancing reading motivation. Studies by Cary (2004) and Freeman & Freeman (2000) show that comics are effective in ESL and EFL classrooms, supporting contextual development of reading and speaking skills. In Moral Education and Islamic Studies, comics can be used to convey values such as empathy, etiquette, social responsibility, and integrity. Comics depicting everyday scenarios allow students to reflect on actions and moral choices. This approach not only makes value education more engaging but also encourages students to create their own comics as expressions of their understanding of ethical and social issues. Such activities support project-based learning and the integration of soft skills.

Comics also hold great potential in science and environmental education. Through visual narratives, abstract concepts such as the water cycle, ecosystems, and climate change can be conveyed more

effectively. Hosler and Boomer (2011) found that comics enhance students' understanding of environmental issues while stimulating critical thinking and emotional engagement. Students can be tasked with creating science-themed comics as formative assignments that combine conceptual understanding and creativity. In history and social studies, comics can reinforce students' grasp of key events and historical figures. Illustrated narratives help students visualise historical contexts, conflicts, and embedded values. Historical comics can also serve as support materials to foster empathy for past generations. Students may produce comics about historical figures or events as assignments that integrate research, narrative writing, and visual design.

At university level, comics can be used in second language and linguistics instruction to explore pragmatics, stylistics, and intercultural communication. Comics allow students to analyse social interactions in various contexts through dialogue and visual expression. Khoii and Forouzesh (2010) found that comics strengthen students' understanding of language structure and contextual usage, supporting reflective and effective language learning. In medical and health education, comics have been used to enhance empathy, clinical communication, and self-reflection. Ronan and Czerwiec (2020) demonstrated that a comic-based curriculum in a neurology residency programme improved students' understanding of neurological symptoms and patient communication needs. Comics have also been used to depict palliative care experiences and ethical dilemmas, which are often difficult to convey through academic text alone. This approach supports the development of emotional intelligence and soft skills among medical students.

In the fields of art and design, comics serve as a medium for visual and narrative expression, supporting courses in illustration, animation, and visual communication. Students can study panel structure, narrative tempo, and visual techniques as part of artistic analysis. Comics can also be used to explore issues of identity, culture, and visual representation in contemporary art contexts. Comic creation activities allow students to integrate technical and narrative skills into reflective and creative projects. In professional education and soft skills development, comics can simulate ethical dilemmas, workplace communication, and cultural diversity. Chute and DeKoven (2006) found that comics are effective in addressing identity and representation issues in social and professional contexts. Students can analyse workplace scenarios through comic narratives and produce visual responses to issues such as discrimination, value conflict, and intercultural communication. This approach supports reflective learning and the development of social competencies relevant to industry needs.

Overall, the use of comics in school and university teaching offers diverse pedagogical benefits across disciplines. Comics function not only as engaging visual aids but also as narrative media capable of delivering content in contextual, reflective, and meaningful ways. This potential should be strategically harnessed by educators and policymakers to enrich learning experiences, support multidimensional literacy development, and cultivate soft skills essential for contemporary education and careers. Nevertheless, comics remain an underexplored field, with current academic research—particularly on

conceptual aspects of comics—still requiring further development. As Farinella (2018) notes, comics are not only an effective form of communication but also a resource with vast untapped potential.

THEORETICAL FRAMEWORK

Howard Gardner's Theory of Multiple Intelligences (1983) posits that every individual possesses a unique combination of intelligences or learning modalities, and that traditional IQ-based assessments are insufficient to fully evaluate a person's potential. Gardner identifies at least eight types of intelligence: linguistic, logical-mathematical, visual-spatial, musical, kinaesthetic, interpersonal, intrapersonal, and naturalistic. In educational contexts, this theory encourages the use of diverse teaching strategies to meet the varied needs of learners (Armstrong, 2009). The theory can be effectively applied through comic-based learning, as comics integrate visual, linguistic, and narrative elements that stimulate multiple intelligences. Comics activate visual-spatial intelligence through illustrations, panel layout, and narrative imagery that intuitively support abstract concept comprehension. Text and dialogue reinforce linguistic intelligence by enhancing language mastery, vocabulary, and sentence structure. Moreover, moral or social narratives and character interactions stimulate interpersonal and intrapersonal intelligences by enabling students to evaluate actions, reflect on themselves, and understand others' perspectives. Additional activities such as comic creation or illustration interpretation can activate kinaesthetic intelligence, while sound or music elements in digital comics support musical intelligence. Thus, comics are not merely entertainment media but serve as pedagogical tools that support holistic learning, enabling students to engage cognitive, emotional, and creative dimensions simultaneously, in alignment with the principles of Multiple Intelligences Theory.

RESEARCH PROBLEM AND AIMS OF STUDY

In Malaysia, research on the use of comics in education remains limited, despite the medium's long-standing international recognition as an effective pedagogical tool. Local studies have predominantly focused on comics as entertainment or elements of popular culture, with insufficient exploration of their potential as formal teaching instruments. This scarcity of local literature hampers the systematic integration of comics into the curriculum and reinforces perceptions of their limited academic value. In response, this study aims to identify the number of comic-related articles published in academic journals over the past decade and to analyse the key themes emerging from these publications. Specifically, it seeks to (i) identify publication trends in local academic journals, (ii) classify the main themes based on educational domains, pedagogical approaches, and social contexts, and (iii) evaluate underexplored thematic areas to propose future directions for comic-based educational research that are more reflective, inclusive, and aligned with contemporary pedagogical needs. Expanding empirical inquiry in this area is essential to fully harness the strategic and transformative potential of comics in enhancing conceptual understanding, student motivation, cognitive development, and character formation within the Malaysian educational context.

SIGNIFICANCE OF THE STUDY

In line with its stated aims and objectives, this study holds significant value in strengthening academic discourse on comics as a pedagogical medium. Firstly, it provides an empirical overview of publication trends in local academic journals, enabling an assessment of the current level of acceptance and development in this field. Secondly, the thematic analysis facilitates the mapping of educational areas that have been explored, while identifying dominant pedagogical approaches and social contexts. This, in turn, assists researchers and policymakers in recognising both the strengths and limitations of existing scholarship. Thirdly, the identification of underexplored thematic gaps offers strategic insights for broadening the scope of comic-related research towards more reflective, inclusive, and responsive approaches that address the evolving needs of contemporary education—particularly among the millennial generation. Overall, this study serves as a foundational reference for building a more robust comic research ecosystem and supports pedagogical innovation grounded in visual narrative within the Malaysian educational landscape.

METHODOLOGY

This study adopts a qualitative research design in the form of a systematic literature review, aimed at examining and analysing previous research on the use of comics in education. This approach was selected as it enables the researcher to collect and evaluate existing data from a range of scholarly sources to identify patterns, themes, and key findings relevant to the research topic (Creswell & Creswell, 2018). Data were obtained from academic journal articles, conference proceedings, scholarly books, and official websites of educational institutions and organisations. Source selection was conducted using purposive sampling, with inclusion criteria covering studies published between the years 2000 and 2025.

DATA ANALYSIS

This study employs thematic analysis as a qualitative method to identify, categorise, and interpret the main themes found in articles related to the use of comics in education. Thematic analysis was used to determine dominant themes emerging from the literature, including subject areas where comics are most frequently utilised as pedagogical tools—such as science, mathematics, language education, and Islamic studies (Braun & Clarke, 2022; Creswell & Creswell, 2023). Through coding and thematic grouping, the study not only identifies active educational domains but also evaluates writing trends, levels of acceptance, and the potential and limitations of comic-based pedagogy within the Malaysian educational context (Flick, 2023; Silverman, 2024).

SCOPE OF STUDY

The scope of this study focuses on analysing the number and nature of articles discussing the use of comics in education, specifically those published in local academic journals over the past ten years. The study excludes articles from international databases such as Scopus or Web of Science, unless they were also published by Malaysian institutions. This defined scope allows for a more accurate assessment of the potential, trends, and constraints surrounding the use of comics in Malaysian

education, while supporting efforts to compile data that are systematic, relevant, and grounded in local educational needs.

ANALYSIS

A total of 36 articles were identified as having been published between 1999 and 2025. However, the actual number of relevant publications is likely to exceed this figure. Efforts to obtain full-text access to all articles encountered several limitations, including restricted access to subscription-based databases, institutional publishing barriers, and the absence of complete versions in open-access repositories. The distribution of publication years is detailed in Table 1, which presents the breakdown of references according to publication period.

Table 1: Number of Comic-Related Publications by Period

Publication Period	Number of Articles
1999s	1
2010–2015	6
2016–2020	10
2021–2025	19

Percentage analysis reveals a consistent and significant growth in research related to the use of comics in education over the period from the 1990s to 2025. In the 1990s, only one article was recorded, representing 2.8% of the total, marking the initial emergence of scholarly interest in this field. Between 2010 and 2015, six articles were published (16.7%), reflecting an early rise in interest toward visual pedagogical approaches. This was followed by a further increase between 2016 and 2020, with ten articles (27.8%), indicating a strengthening of research and broader academic acceptance. The most notable surge occurred between 2021 and 2025, with 19 articles published (52.7%), signalling the maturation of the field and the growing recognition of comics as a relevant and impactful educational medium.

Comparative analysis across periods shows an increase of 13.9% from the 1990s to 2010–2015, 11.1% from 2010–2015 to 2016–2020, and the highest jump of 24.9% from 2016–2020 to 2021–2025. This progression reinforces the justification for using comics as pedagogical tools that support multiple dimensions of learning, in alignment with holistic education principles and Gardner’s Theory of Multiple Intelligences.

COMIC ARTICLE CATEGORIES BY THEME

Based on the analysis conducted, the collected articles can be categorised into several key themes: academic achievement and conceptual understanding; student attitudes, motivation, and literacy; critical thinking and creativity; cultural identity and social representation; moral values and social intervention; and the use of comics in Islamic and science education. This thematic diversity reflects the broad applicability of comics in educational contexts—not merely as visual aids, but as pedagogical media that support multiple dimensions of learning. Comics have been shown to stimulate cognitive, emotional, social, and spiritual development simultaneously, in line with holistic educational approaches that emphasise the integration of knowledge, values, and lived experience.

Table 2: Comic Article Categories by Theme

Theme	Lead Authors (et al.)
Academic Achievement and Conceptual Understanding	Abdullah, et al., (2018); Affeldt, et al., (2018); Azamain, et al., (2020); Johar, et al., (2023); Krishnan, et al., (2016); Majlan, & Abdul Raji (2025); Raja Krishnan, et al., (2022)
Student Attitudes, Motivation, and Literacy	Ain Najwa, et al., (2024); Azman, & Ismail, (2024); Jian, (2022); Nurazreen, et al., (2024); Osman, & Lee (2022)
Critical Thinking, Creativity, and 21st Century Learning	Ahmad, et al., (2022); Fahrudin, et al., (2022); Lee, et al., (2023); Shaafi, et al., (2025)
Comics, Culture, and Social Identity	Azman, et al., (2015); Chang, (2014); Dahlan, (2020); Hamid, & Ghazali (2021); Ismail, (2022); Lee, et al., (2017); Roslina Mamat (2019); Roslina, et al., (2014)
Comics as Social Intervention and Moral Education	Ismail, & Abdul Rahman (2022); Tan, & Rahim (2018)
Concept Cartoons and Comics in Science Education	Clair, (2018); Jamal, et al., (2019); Keogh, & Naylor, (1999)
Comics in Islamic and Qur’anic Education	Mohd Zainadi, &Ismail (2023); Yusof, et al., (2025)

1. Academic Achievement and Conceptual Understanding

This theme refers to studies that examine the effectiveness of comics as a learning medium in helping students grasp abstract concepts in a visual, accessible, and meaningful way, while also enhancing academic performance in subjects such as Science, Mathematics, and STEM. Seven key studies

support this theme. Abdullah et al. (2018) developed STEM comics for Year One pupils, successfully delivering science and mathematics concepts interactively. Affeldt et al. (2018) demonstrated that comic-based experimental instructions in informal chemistry education improved students' understanding of scientific procedures. Azamain et al. (2020) confirmed the effectiveness of comics in helping students interpret distance–time graphs, while Johar et al. (2023) highlighted the role of mathematics comics in developing logical–mathematical intelligence among secondary school students. In the context of higher-order thinking, Krishnan and Othman (2016) found that comics in science instruction enhanced both academic achievement and critical thinking skills. A comic module developed by Raja Krishnan et al. (2022) proved effective in strengthening students' mastery of Business Studies, and this finding was supported by Majlan and Abdul Raji (2025), who created an e-comic on the topic of nutrients that successfully improved students' understanding of Home Science reflectively and contextually.

2. Student Attitudes, Motivation, and Literacy

This theme encompasses studies that investigate the impact of comics on fostering positive attitudes, increasing learning motivation, and engaging students in science and language literacy. Five journal articles support this theme. Osman and Lee (2022) emphasised that comics serve as a bridge to overcome literacy barriers in science education. Jian (2022) employed eye-tracking methods to demonstrate the relationship between reading science comics and students' comprehension performance and reading attitudes. Azman and Ismail (2024) highlighted the role of comics in promoting inclusivity within diverse classrooms. Nurazreen et al. (2024) integrated comics and artificial intelligence in physics instruction, showcasing the potential of visual technology to enhance student engagement. Ain Najwa et al. (2024) supported these findings through a systematic review, showing that comic-based learning in science has positive implications for teaching and learning strategies more broadly.

3. Critical Thinking, Creativity, and 21st-Century Learning

This theme highlights the role of comics as pedagogical tools capable of stimulating higher-order thinking, innovation, and skills aligned with the demands of contemporary education. Four journal articles support this theme. Fahrudin et al. (2022) demonstrated that comic-based learning can enhance students' critical thinking by fostering epistemic curiosity. Ahmad et al. (2022) examined trends and challenges in the use of comics within STEM education, emphasising the medium's vast future potential. Lee et al. (2023) underscored the importance of visual narratives in science education as catalysts for creativity and deep understanding. Shaafi et al. (2025) further showed that problem-based learning (PBL) approaches using comics successfully increased student engagement and encouraged constructive reflective thinking.

4. Comics, Culture, and Social Identity

This theme explores the role of comics as narrative media that not only convey educational content but also shape and reflect cultural and social identities. Seven journal articles support this theme. Azman et al. (2015) discussed how educational comics can help overcome the social stigma associated with comic readership in Malaysia. Dahlan (2020) emphasised the importance of producing comics rooted in local cultural frameworks to authentically convey values. Studies by Lee et al. (2017) and Chang (2014) examined Lat's comics as a medium that reflects Malaysia's cultural landscape and multicultural values. Roslina et al. (2014) and Roslina Mamat et al. (2019) compared the influence of Japanese comics and animation on Malay youth culture, highlighting the tensions between popular culture and local identity. Hamid and Ghazali (2021) analysed the e-comic *Hikayat Patani* as a medium of heritage and identity, while Ismail's (2022) visual ethnographic study reinforced the role of comics in shaping Malay youth identity through reflective and contextual visual narratives.

5. Comics as Social Intervention and Moral Education

This theme refers to the use of comics as educational media that promote positive values and address social issues among students. Two journal articles support this theme. Ismail and Abdul Rahman (2022) demonstrated that comics are effective as anti-bullying intervention tools in primary schools, using an action research approach that actively engaged students in understanding and rejecting aggressive behaviours. Tan and Ruhizan (2018) presented a systematic review and meta-analysis supporting the effectiveness of comics in conveying civic and social values such as empathy, responsibility, and mutual respect, thereby strengthening character education in the classroom. Both studies affirm that comics are not merely reading materials but also serve as reflective and impactful tools for shaping students' moral development.

6. Concept Cartoons and Comics in Science Education

This theme focuses on the use of visual elements such as concept cartoons and narrative humour to communicate scientific content in a more accessible, engaging, and effective manner. Three journal articles support this theme. Keogh and Naylor (1999) introduced concept cartoons as effective science teaching tools that help students understand abstract concepts through visualisation and guided discussion. Jamal et al. (2019) supported this approach through a systematic review highlighting the effectiveness of cartoons in problem-based learning (PBL), particularly in enhancing student engagement and understanding of scientific issues. Clair (2018) demonstrated that the use of cartoons in mathematics enriches learning through visual and narrative connections, thereby supporting logical thinking and structured comprehension. Collectively, these studies affirm that cartoons and comics are not merely for entertainment but are pedagogical tools capable of strengthening science learning in reflective and contextual ways.

7. Comics in Islamic and Qur'anic Education

This theme addresses the use of comics as innovative, contextual, and spiritually grounded teaching aids for delivering Islamic educational content more engagingly and reflectively. Two journal articles support this theme. Mohd Zainadi and Ismail (2023) developed a digital comic for the subject of Qur'anic and Sunnah Education, functioning as a visual medium to enhance students' understanding of verses and hadiths through narrative. Yusof et al. (2025) emphasised the development of comic-based teaching aids in Qur'anic Education as an approach that supports reflective learning, internalisation of moral values, and holistic character formation. Both studies demonstrate that comics are not only suitable for general education but also hold significant potential in strengthening Islamic pedagogy that is value-driven, spiritual, and contextually relevant.

Collectively, the findings from diverse thematic strands affirm that comics function as inclusive, reflective, and pedagogically valuable resources across a wide range of educational contexts. Their capacity to enhance academic achievement, foster motivation and literacy, stimulate critical and creative thinking, and support 21st-century learning demonstrates their versatility as teaching tools. Moreover, comics contribute meaningfully to cultural identity formation, moral education, and social intervention, while also proving effective in Islamic and Qur'anic pedagogy through spiritually grounded narratives. The integration of concept cartoons and visual storytelling in science education further reinforces their role in making abstract content accessible and engaging. These multifaceted contributions highlight comics not merely as supplementary materials but as legitimate, context-sensitive instruments for holistic and transformative learning.

DISCUSSION

The bibliographic analysis reveals a consistent and significant increase in the publication of comic-related articles in academic journals over the past three decades. Beginning with only one reference in the 1990s, the number rose to six between 2010 and 2015, increased to ten between 2016 and 2020, and peaked at 19 references during the 2021–2025 period. This trend reflects a growing research interest in comics as a legitimate, effective, and relevant pedagogical medium aligned with contemporary educational needs. The development is further driven by shifts in millennial learning patterns, which favour visual, narrative, and interactive materials—prompting researchers to explore approaches that better suit modern learning styles. Comics offer visual and narrative strengths that not only capture student interest but also bridge the gap between theory and application, making them effective tools for conveying abstract concepts in contextual and meaningful ways. Accordingly, the recent surge in studies not only indicates growing academic acceptance of comics but also signals a pedagogical paradigm shift towards more reflective, inclusive, and student-centred approaches.

Additionally, limited institutional and funding support for visual arts research, coupled with a lack of interdisciplinary collaboration between education, arts, and communication fields, has further constrained the development of this area. The relatively small number of local academic journals that accommodate research related to comics also presents a significant barrier. Therefore, although interest in comics as educational media is growing, Malaysia's research ecosystem still requires strengthening

in terms of policy, institutional support, and broader academic acceptance to fully realise the potential of comics as progressive and high-impact pedagogical tools.

Thematic Analysis of Comic-Based Educational Research in Malaysia

Comic-based educational research in Malaysia is steadily expanding, with thematic analyses revealing a strong concentration on mainstream areas such as STEM, literacy, and character development (Abdullah et al., 2018; Aydinoglu & Allard, 2020). This growth reflects increasing academic recognition of comics as legitimate and impactful pedagogical tools, capable of supporting diverse dimensions of learning including academic achievement, conceptual understanding, student motivation, and critical and creative thinking. Comics also contribute meaningfully to cultural and social identity formation, moral education, and reflective Islamic pedagogy. These developments align closely with Gardner's Theory of Multiple Intelligences, which supports the use of comics to stimulate various intelligences simultaneously. Visual-spatial intelligence is activated through illustrations and panel design (Gardner, 1983), linguistic intelligence through dialogue and text (Armstrong, 2009), and interpersonal and intrapersonal intelligences through moral narratives and character interactions (Tan & Rahim, 2021). Additionally, creative tasks such as drawing comics engage bodily-kinaesthetic intelligence, while digital formats with sound and rhythm support musical intelligence (Ahmad et al., 2022). In STEM contexts, comics reinforce logical-mathematical and naturalistic intelligences by visualising scientific procedures and phenomena (Abdullah et al., 2018; Aydinoglu & Allard, 2010). Collectively, these findings underscore the potential of comics as holistic, inclusive, and contextually relevant tools for 21st-century education.

Underexplored Dimensions in Malaysian Comic-Based Educational Research

While comic-based educational research in Malaysia is beginning to diversify, several critical areas remain notably underexplored. These include the application of comics in inclusive education for students with special needs, in vocational and technical education and Training (TVET), and as alternative assessment tools. The lack of research in these domains highlights a significant knowledge gap and presents valuable opportunities to extend scholarly inquiry towards more inclusive, context-sensitive, and reflective educational practices (Rohani et al., 2021). Within inclusive education, comics offer potential to support learners with special needs through accessible visualisation and empathetic narrative structures that enhance comprehension and engagement (Mohd Yusof & Siti Khadijah, 2019). Likewise, in vocational and TVET contexts, comics may serve as effective pedagogical instruments for conveying technical procedures in a visually intuitive and practically oriented format, particularly for learners who thrive through skill-based and experiential learning approaches (Ismail et al., 2017). Broadening the scope of comic-based educational research to encompass these underrepresented areas would not only deepen academic contributions but also foster the development of a more responsive and equitable educational framework that accommodates the diverse learning needs across Malaysia.

Local Journals and the Growth of Comic Education Research

The publication of comic-based educational research by Malaysian scholars predominantly in international journals reflects a strategic preference for high-impact, globally recognised platforms that offer broader academic visibility and citation potential (Septialti, et al., 2022). While this trend contributes to international recognition, it simultaneously exposes the limitations of local journals in accommodating research situated within visual and narrative pedagogies, particularly those involving comics (Hassan & Nor, 2022). Strengthening the national research ecosystem necessitates greater engagement with local publishing avenues, as these platforms enable researchers to contextualise their findings within Malaysia's unique cultural and educational landscapes. Moreover, local publication enhances the academic legitimacy of comics as pedagogical tools and encourages innovation in the development of visual narrative-based teaching materials that are responsive to national curricula and learner diversity (Abdul Rahman & Wong, 2023). A more balanced publishing strategy that values both international reach and local relevance is essential for advancing comic-based educational scholarship in Malaysia.

Constraints and Strategies for Comic-Based Educational Research in Malaysia

Despite notable progress, comic-based educational research in Malaysia continues to face several challenges. Key obstacles include conservative perceptions of comics as entertainment material, limited research funding, the absence of dedicated local journals, and a lack of interdisciplinary collaboration across education, arts, communication, and psychology (Lee et al., 2020). In addition, there remains a shortage of methodological training in areas such as visual ethnography and narrative analysis—both of which are essential for evaluating the impact of comics on learning and character development (Tan & Rahim, 2021).

To strengthen comic-based educational research in Malaysia, several strategic measures should be implemented. These include expanding research policies and funding schemes to formally recognise visual narrative approaches; establishing interdisciplinary research networks; introducing academic courses on visual literacy and creative pedagogy; and creating dedicated journals or publishing platforms for comic-related educational studies (Ahmad et al., 2022). Hosting conferences, launching community-based comic projects, and recognising innovative research efforts also have the potential to enhance motivation and visibility within the field (Chin & Ibrahim, 2024). Collectively, these strategies can help build a more inclusive, reflective, and contextually relevant research ecosystem that aligns with the demands of 21st-century education in Malaysia.

STUDY LIMITATIONS

This paper represents a scholarly exploration aimed at identifying, compiling, and analysing patterns and trends in the use of comics in education based on published articles in Malaysia. However, several limitations must be acknowledged. Firstly, the literature search was restricted to articles published within the past ten years, which may have resulted in the exclusion of earlier yet relevant and significant studies, thereby limiting the comprehensiveness of the findings. Secondly, the analysis

relies entirely on existing literature, which may be subject to the researcher's subjective bias; although efforts were made to maintain objectivity and rigour, bias in literature selection and thematic coding cannot be entirely avoided. Furthermore, the nature of this literature review means that the conclusions and recommendations presented are largely unsupported by direct empirical data. Future research is therefore encouraged to incorporate empirical studies to validate both theoretical and practical propositions, and to promote the application and development of comics in education. Overall, while this paper offers valuable insights into comic-based pedagogy, its limitations suggest that further research should be expanded and deepened, paving the way for the development of more systematic and interdisciplinary conceptual and methodological frameworks.

CONCLUSION

In conclusion, the growing body of comic-based educational research in Malaysia reflects a gradual shift in pedagogical thinking towards more visual, narrative-driven, and student-centred approaches. Despite facing structural and perceptual constraints—including limited funding, conservative academic attitudes, and a lack of dedicated publication platforms—Malaysian researchers are increasingly recognising comics as legitimate and impactful tools for enhancing conceptual understanding, motivation, and holistic student development. The thematic diversity of recent studies, coupled with rising publication trends, signals a maturing field with strong potential for interdisciplinary expansion. To fully realise this potential, strategic efforts must be made to strengthen institutional support, promote methodological innovation, and cultivate a more inclusive research ecosystem that embraces comics as a reflective and contextually relevant medium for 21st-century learning.

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