



| Research Article / Araştırma Makalesi |

The Evolution of Digital Stories: Bibliometric Analysis

Dijital Hikayelerin Evrimi: Bibliyometrik Analiz

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Keywords

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Abstract

Purpose: The present study has been designed to analyse the extant literature on 'digital stories' from a bibliometric perspective, with a view to creating a bibliometric map of studies investigating their use in educational environments.

Design/Methodology/Approach: In this study, a range of analytical methods were employed to analyse studies on 'digital stories'. These methods included publication co-citation analysis, author co-citation analysis and word frequency analysis. Descriptive data on the distribution of studies in the field by country, institution and time were obtained from the Web of Science (WoS) database. The analysis was performed using 'R version 12.0 software' and various libraries including 'bibliometrix', 'wordcloud' and 'ggplot2'.

Findings: A bibliometric analysis of 597 articles on 'digital stories' published in the WoS database since 2005 was conducted, and the results obtained are presented in all aspects. Between 2005 and 2025, 597 articles from 270 sources on 'digital stories' were published, with an average of 29.85 articles published per year. The average number of citations per document for these articles is 15.91, and the total number of references is 19,958. The number of Keywords Plus for these articles is 556, and the number of Author's Keywords is 1,633. The number of authors of single-author documents is 156, and the number of authors of multi-author documents is 1,166. The number of single-authored documents is 168, while the number of multi-authored articles is 429. The average number of co-authors per article is 2.53, and the international co-authorship rate is 10.22%.

Highlights: The findings of this study demonstrate the considerable potential of digital storytelling to align with contemporary educational approaches, its interdisciplinary applicability, and its capacity to promote student-centred teaching methodologies. It was revealed that digital storytelling contributes to the acquisition of 21st-century skills, especially in terms of increasing student engagement, personalising learning, encouraging creative thinking, and developing digital literacy skills.

Öz

Çalışmanın amacı: Bu çalışma, eğitim ortamlarında kullanımlarını araştıran çalışmaların bibliyometrik bir haritasını oluşturmak amacıyla 'dijital hikayeler' üzerine mevcut literatürü bibliyometrik bir bakış açısıyla analiz etmek için tasarlanmıştır.

Materyal ve Yöntem: Bu çalışmada, 'dijital hikayeler' üzerine yapılan çalışmaları analiz etmek için bir dizi analitik yöntem kullanılmıştır. Bu yöntemler arasında yayın ortak atfı analizi, yazar ortak atfı analizi ve kelime sıklığı analizi yer almaktadır. Alandaki çalışmaların ülke, kurum ve zamana göre dağılımına ilişkin tanımlayıcı veriler Web of Science (WoS) veri tabanından elde edilmiştir. Analiz, 'R version 12.0 yazılımı' ve 'bibliometrix', 'wordcloud' ve 'ggplot2' gibi çeşitli kütüphaneler kullanılarak gerçekleştirilmiştir.

Bulgular: WoS veri tabanında 2005 yılından bu yana yayınlanan 'dijital hikayeler' konulu 597 makalenin bibliyometrik analizi yapılmış ve elde edilen sonuçlar tüm yönleriyle sunulmuştur. 2005 ve 2025 yılları arasında 'dijital hikâyeler' üzerine 270 kaynaktan 597 makale yayımlanmıştır ve yılda ortalama 29,85 makale yayımlanmıştır. Bu makaleler için belge başına ortalama atfı sayısı 15,91 ve toplam referans sayısı 19.958'dir. Bu makaleler için Keywords Plus sayısı 556, Yazarın Anahtar Sözcükleri sayısı ise 1.633'tür. Tek yazarlı belgelerin yazar sayısı 156, çok yazarlı belgelerin yazar sayısı ise 1.166'dır. Tek yazarlı doküman sayısı 168, çok yazarlı makale sayısı ise 429'dur. Makale başına ortalama ortak yazar sayısı 2,53 ve uluslararası ortak yazar oranı %10,22'dir.

Önemli Vurgular: Bu çalışmanın bulguları, dijital hikâye anlatımının çağdaş eğitim yaklaşımlarıyla uyum sağlama potansiyelini, disiplinler arası uygulanabilirliğini ve öğrenci merkezli öğretim metodolojilerini teşvik etme kapasitesini ortaya koymaktadır. Dijital hikâye anlatımının özellikle öğrenci katılımını artırma, öğrenmeyi kişiselleştirme, yaratıcı düşünmeyi teşvik etme ve dijital okuryazarlık becerilerini geliştirme açısından 21. yüzyıl becerilerinin kazanılmasına katkıda bulunduğu ortaya çıkmıştır.

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INTRODUCTION

Digital technologies have become pervasive in almost every aspect of social life in recent years, driven by the acceleration of global digitalisation. Education has been particularly impacted by this transformation, with traditional teaching methods being replaced by increasingly digital content, tools and applications. This shift has led to a transformation in teaching environments, making learning processes more interactive, flexible and individualised. The integration of digital tools into learning-teaching processes has become a common practice. Digital stories are a salient example of such innovative and effective forms of expression that are witnessing increasing adoption in educational settings. A digital story is defined as the narration of personal or fictional content through technological means, typically involving the integration of diverse digital media elements such as text, sound, music, photography, video and animation. This form of narration enables individuals to articulate their experiences, reflections, or knowledge-based content, enriching it with multimedia elements. Digital storytelling fosters engagement, both cognitive and affective, among learners, thereby enhancing their learning experience.

The utilisation of digital stories in educational settings has been demonstrated to not only enhance the diversification of content presentation but also to contribute to the cultivation of 21st-century competencies, including creative thinking, problem-solving, collaboration, and digital literacy (Smith, 2020). This pedagogical approach, which has been found to be efficacious across various disciplines, such as language education, history, science, and social studies, can be seamlessly integrated with the overarching objectives of curricula. The evolution of digital stories from past to present, and their functional transformation in education, serve as a valuable reference source for academic researchers, practising teachers, and decision makers who influence educational policies. A deeper understanding of the capabilities offered by these tools in the educational context is essential for enhancing the quality of teaching practices and facilitating the adoption of innovative learning approaches, which are essential in the digital age.

Digital Stories

Digital stories, which have seen increased usage in the field of education in recent years, are classified into three main categories: personal narratives, historical documentaries, and content that aims to inform and educate audiences about various topics and concepts (Robin, 2016). Researchers emphasise that the most basic components of an effective digital story are a strong script and a well-structured narrative (Robin & McNeil, 2012). In this regard, it is asserted that creators of digital stories should prioritise the development of the narrative (Ohler, 2006). The digital storytelling process necessitates not only the effective utilisation of technological tools, but also the aesthetically and pedagogically effective construction of the narrative structure. In this process, individuals aim to create interaction at both emotional and cognitive levels by integrating their experiences or the information they want to convey with multimedia elements (text, visual, audio, music and video) (Sadik, 2008). In this respect, digital stories contribute to the development of 21st century skills such as creativity, critical thinking, communication and collaboration (Barrett, 2006). Furthermore, digital stories offer personalised and meaningful learning experiences by encouraging students' active participation in the learning process (Robin, 2008). In particular, the use of the narrator's voice facilitates an emotional connection between the learner and the content and increases learning motivation (Robin, 2008). Therefore, digital storytelling is considered not only as a technical application but also as a pedagogical strategy.

In the context of education, concrete applications of digital stories manifest in various forms across different disciplines and educational levels. Notably in language education, history, science and social studies courses, students engage in the creation of digital stories, both individually and collaboratively, thereby facilitating active participation in learning processes (Reinders, 2010). For instance, in a foreign language course, students' digital narration of short stories from their own lives in the target language enhances their linguistic competence and fosters cultural awareness.

In history lessons, students have the opportunity to create digital documentary stories accompanied by historical documents, photographs and maps by researching events that happened in the past (Gregori-Signes, 2008). This process supports the development of historical thinking skills. In fields such as science and mathematics, students have the opportunity to visualise and explain their learning outcomes by explaining a scientific process, an experiment result or a concept through digital stories. Furthermore, educators employ digital stories as course materials, utilising these tools for purposes such as conceptualising abstract concepts, creating impactful introductions and fostering emotional engagement among students, thereby enhancing the efficacy of the teaching process and contributing to the establishment of a student-centred learning environment.

The utilisation of digital storytelling in educational settings is not confined to content production; it also emerges as an alternative tool in assessment processes. Digital stories, which exceed conventional assessment and evaluation methods, enable the assessment of students' knowledge levels, skills such as critical thinking, problem solving, creative expression and digital literacy in a holistic manner (Jakes & Brennan, 2005). The process of students creating their own digital stories provides rich data for both product- and process-oriented assessment, thus providing teachers with a more in-depth perspective on the learning process (Jakes & Brennan, 2005).

However, in order to effectively integrate digital storytelling into the teaching process, teachers need to have sufficient knowledge and skills in this field. For this reason, it is of great importance to provide practical training on digital story design, pedagogical use of digital tools and creative expression techniques in teacher education programmes (Yang & Wu, 2012). Teachers' acquisition of these skills not only enriches classroom practices but also plays an important role in increasing students' learning motivation and academic achievement. Digital storytelling has been identified as a transformative pedagogical tool, capable of

enhancing teaching and learning processes (Yang & Wu, 2012). By encouraging students to create meaningful, personal and creative products, this method fosters a more interactive and participatory learning environment. The active involvement of students in the digital story creation process is a crucial component of the learning experience, as evidenced by the digital stories created by students. These stories underscore the importance of participation in the learning process, highlighting it as both encouraging and essential. In this process, students have the opportunity to construct, make sense of and reflect on their learning of the content units through the digital stories they prepare. Furthermore, digital storytelling makes the learning process more systematic and interdisciplinary by requiring students to follow the steps of project development in a planned manner within a specific content context.

The integration of digital stories in programming and IT-based applications has been demonstrated to contribute to the development of students' complex problem-solving and cognitive skills by enabling the use of a large number of commands and functions together (Ohler, 2013; Yang & Wu, 2012). In this context, the process of developing digital stories has been shown to require not only technical knowledge, but also a pedagogical approach that supports students' creative thinking skills (Yang & Wu, 2012). Indeed, a substantial body of research has demonstrated the positive impact of digital story creation on creative thinking (see Ohler, 2013; Yang & Wu, 2012). In the process of digital story creation, visual design elements play a pivotal role in terms of the effectiveness of the learning experience. The conscious and purposeful use of elements such as colour, composition, typography and sound serves to enhance the aesthetic value of the story and enables the message to be conveyed more effectively. Consequently, it is imperative for students to be attentive not only to the content but also to the manner in which the story is presented, thereby fostering the development of contemporary competencies such as digital literacy and media literacy (Hobbs, 2011). In addition, the suitability of the tools used in the digital storytelling process for pedagogical purposes is of great importance. Digital platforms (e.g. Storyboard That, WeVideo, Powtoon, Adobe Express, etc.) should be selected by considering the age level, technological competences and learning objectives of the students, both to increase the functionality of the process and to prevent technical difficulties. In order to facilitate the effective integration of these tools into pedagogical practice, it is recommended that in-service training programmes should include the use of digital tools and story design. Conversely, the integration of digital stories into curricula enables the design of student-centred and creative learning environments. The alignment of learning outcomes in the curricula with digital storytelling facilitates both students' in-depth learning and their emotional connection to the learning process. This approach has been shown to yield highly effective results when integrated with project-based learning models, especially in interdisciplinary projects.

Current studies

In their 2024 study, Manganello and Baldacci examined the efficacy of digital storytelling in fostering inclusivity and enhancing communicative competence, encompassing both linguistic and narrative abilities, within a multicultural primary school classroom in Genoa, Italy. In their experimental study, Ulusoy & Ulusoy (2024) investigated the effects of retelling, reading response and combined retelling and reading response activities on second grade students' reading attitudes and story comprehension levels after watching digital stories. Metin et al., (2024) sought to examine the impact of a digital story design programme, also referred to as the Design-Based Digital Story Programme (DBDS), on the coding and IT skills of 5-year-old children. Similarly, especially in the past (Ramírez Verdugo & Alonso Belmonte, 2007; Valkanova & Watts, 2007) as well as today (Arevalo et al., 2024; Jiang, 2024) there are many studies on digital stories. A bibliometric analysis of digital stories, which are frequently employed in the learning process, has the potential to make a number of contributions to the field.

Focus of this study

A substantial corpus of academic research has been dedicated to the study of digital storytelling, encompassing a broad spectrum ranging from early childhood education to higher education. This research spans a timeframe from the past to the present. A thorough review of these studies has the potential to provide significant academic insights for researchers and practitioners, particularly in the current era of artificial intelligence. Digital storytelling has been identified as a powerful tool with the potential to bring innovative dimensions to the field of education. Indeed, there has been a noticeable increase in the number of studies on the use of artificial intelligence in education in recent years (see Cui, 2022; Hsiao & Chang, 2023; Xu, 2025). A review of studies on digital stories reveals a preponderance of research evaluating articles, books, and papers published at both national and international levels. This situation clearly reveals the need for current and systematic bibliometric studies in the field of digital storytelling. In this context, the present study aims to analyse the extant literature focusing on the use of digital storytelling in an educational context using bibliometric methods, with a view to revealing the structure, trends, and developmental orientations of research in this field. The ultimate objective of this analysis is to map the conceptual and temporal development of academic knowledge on digital storytelling and to establish a comprehensive knowledge ecosystem for the field. In this framework, the following research questions were investigated:

1. Who are the most influential authors on 'digital stories'?
2. Which universities and countries are the most influential in 'digital stories'?
3. What is the status of citations related to 'digital stories' in education?
4. What are the keywords and trending topics related to 'digital stories'?
5. How do clusters emerge according to author matching in journal research on 'digital stories'?

The academic originality of this study lies in its systematic examination of the extant literature on digital storytelling using a bibliometric approach. This has enabled the revelation of the historical development, conceptual structures, research trends, and prominent clusters of work in the field. Despite the long-standing utilisation of digital storytelling as an educational methodology, there remains a paucity of comprehensive and systematic analysis in the extant literature concerning the novel forms of this method in the era of artificial intelligence. The present study provides researchers with guiding thematic foci for future work by presenting citation analyses from both national and international publications, networks of co-occurring key concepts, and visual data on publication densities. Moreover, the study employs bibliometric analysis methodologies to identify influential authors, journals, countries, and collaboration networks, thereby rendering collaboration models and academic centres in the field visible. In this respect, the study not only analyses the past but also provides a strategic literature map that identifies future research opportunities in the field of digital storytelling. In this context, it is expected to contribute to data-driven decision-making processes for policymakers, educational designers, and academics regarding the integrated use of digital stories in educational technologies.

METHOD

The present study was conceived with the objective of undertaking a systematic review of the extant academic literature on digital stories from a thematic perspective. The research process was structured in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement (Moher et al., 2009) and consisted of four main stages: (1) determining inclusion and exclusion criteria, (2) literature review and study selection, (3) data extraction, and (4) bibliometric analysis.

Inclusion and exclusion criteria

In accordance with the objective, a set of scope determination criteria incorporating content and methodological criteria has been formulated. Within this framework, the present study encompasses peer-reviewed journal articles published between 2005 and 2025 (March) that focus on digital stories. In order to enhance the scientific validity and reliability of the study, the selected articles were identified from publications indexed in the Web of Science (WoS) database (Falagas et al., 2008; Mongeon & Paul-Hus, 2016). The incorporation of prominent, internationally renowned academic journals within the Web of Science database has enabled a meticulous and contemporary literature review on the subject (Zupic & Čater, 2015). The present study encompasses articles for which the full text is available. The scope of this study encompasses document types that are not included in the analysis. These include book chapters, conference proceedings, publications without full text, and unpublished documents. This exclusion was applied with the objective of ensuring data integrity and enhancing the comparability of the analysis (Moher et al., 2009).

Literature search and study identification

A literature review was conducted using the Web of Science database. The following keywords were used: TS= ("digital stories" OR "digital story" OR "digital story telling" OR "digital story-telling" OR "digital storytelling" OR "educational digital storytelling"). In the first stage, the obtained records were screened preliminarily based on their titles, abstracts and keywords. The full texts of the appropriate studies were then evaluated. During this process, bibliographic data management was organised using Zotero.

Data screen

A systematic extraction process was applied to obtain bibliographic data such as publication year, author(s), country, institution, number of citations, journal of publication, keywords, and abstracts from the selected studies. The obtained data were transferred to the Bibliometrix (R-Biblioshiny) software for bibliometric analysis. The dataset utilised in the analysis was standardised in plain text format as required by the software (Aria & Cuccurullo, 2017). The data screening and pre-processing process was structured as a systematic narrowing process consisting of several sequential steps to ensure that the literature most relevant to the scope of the study was selected. The objective of these steps was to create a high-quality sample for analysis while preserving the methodological and content integrity of the literature (see Figure 1).

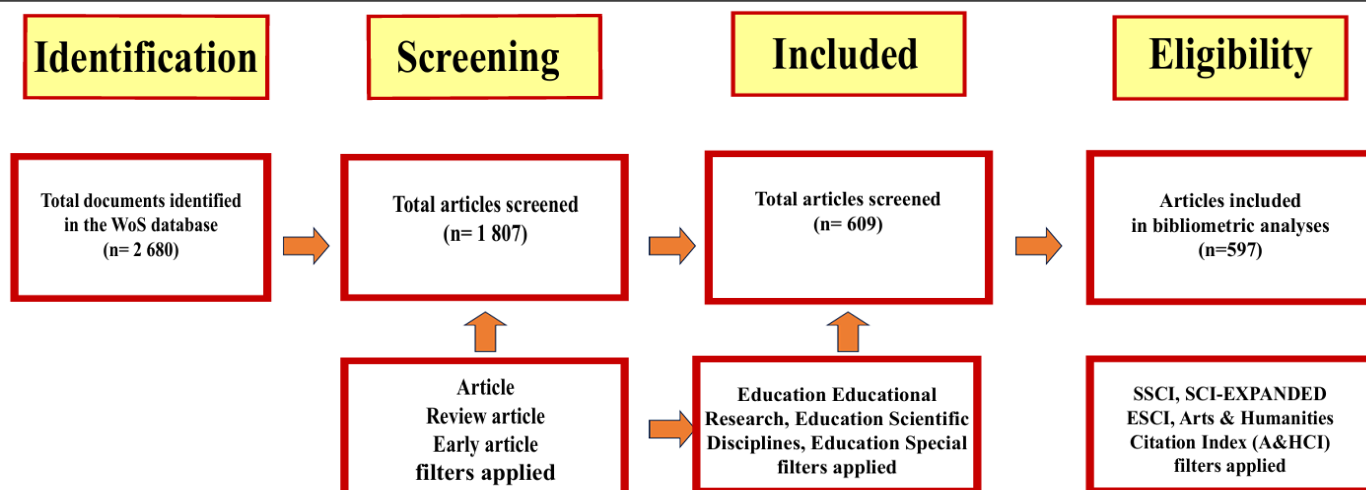


Figure 1. PRISMA flow chart

Data Analysis

During the analysis process, the distribution of publications by year, the most prolific authors and institutions, geographical distribution, frequently used keywords, citation counts, networks of relationships between sources, and academic collaboration models were examined in detail. Conceptual structures were identified using methods such as "synchronisation", "co-citation", and "source matching", and concept maps and collaboration networks were created accordingly. The software tool utilised in the study was employed to evaluate strategic theme maps, theme densities, and time-dependent development trends. This methodological approach facilitates a more comprehensive understanding of the impact of artificial intelligence technologies on STEM education and sheds light on the development process of academic production in this field. The descriptive findings related to the examined publications are presented in Table 1.

Table 1.Descriptive data of Obtained Studies

Description	Results
Timespan	2005:2025 (March)
Sources	270
Documents	597
Annual average number of publications	29.85
Average citations per doc	15.91
Total references	19 958
Keywords Plus (ID)	556
Author's Keywords (DE)	1 633
Authors	1 334
Co-Authors per Doc	2.53
International co-authorships (%)	10.22

FINDINGS AND INTERPRETATIONS

The annual scientific production related to the study is illustrated in Figure 2. A detailed analysis of Figure 2 reveals an average of 12.54 articles on 'digital stories' from 2005 to 2015, including 2015. From 2016 to 2025, this average increases to 45.9. A notable increase in the number of publications was observed in 2024, with 71 articles published in that year alone. The number of citations received by these articles according to the year of publication is illustrated in Figure 3.

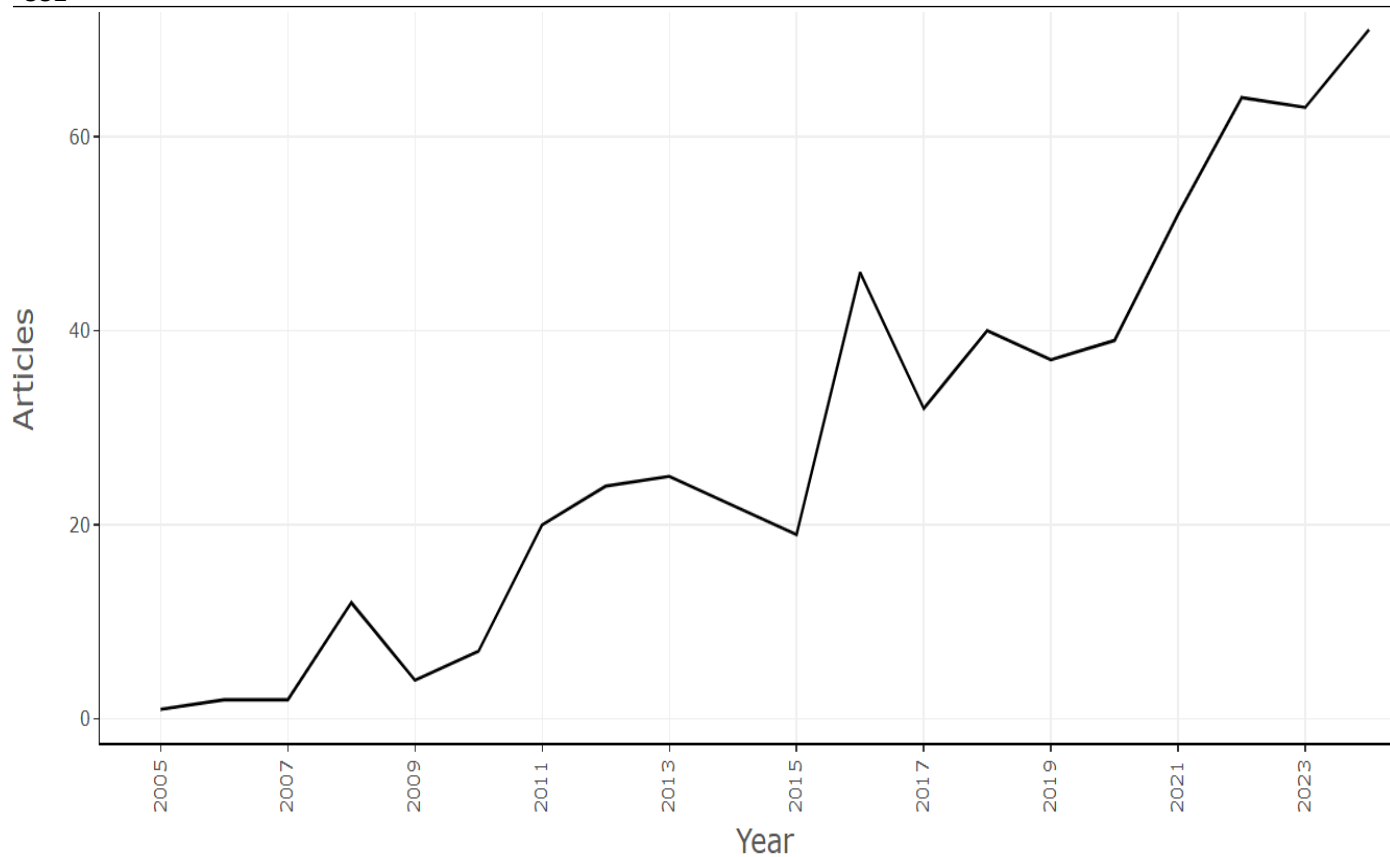


Figure 2. Annual scientific production

As illustrated in Figure 3, the figure for citations of 597 articles published on 'digital stories' from 2005 to 2025 demonstrates a significant increase in the average number of citations per document in 2006. However, in the subsequent years, a decline was observed. Figure 4 presents the three-field plot (author-keyword-affiliation).

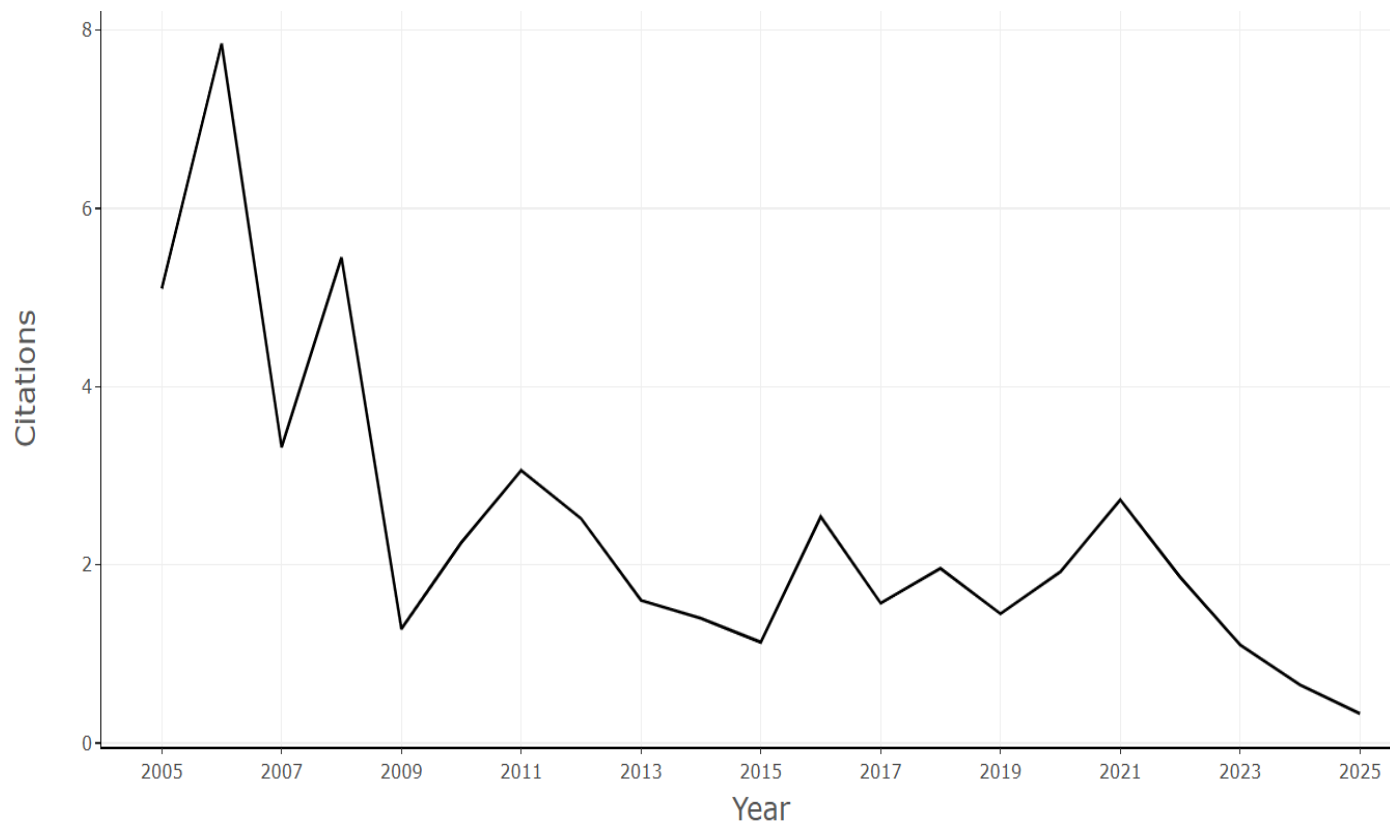


Figure 3. Annual citations production

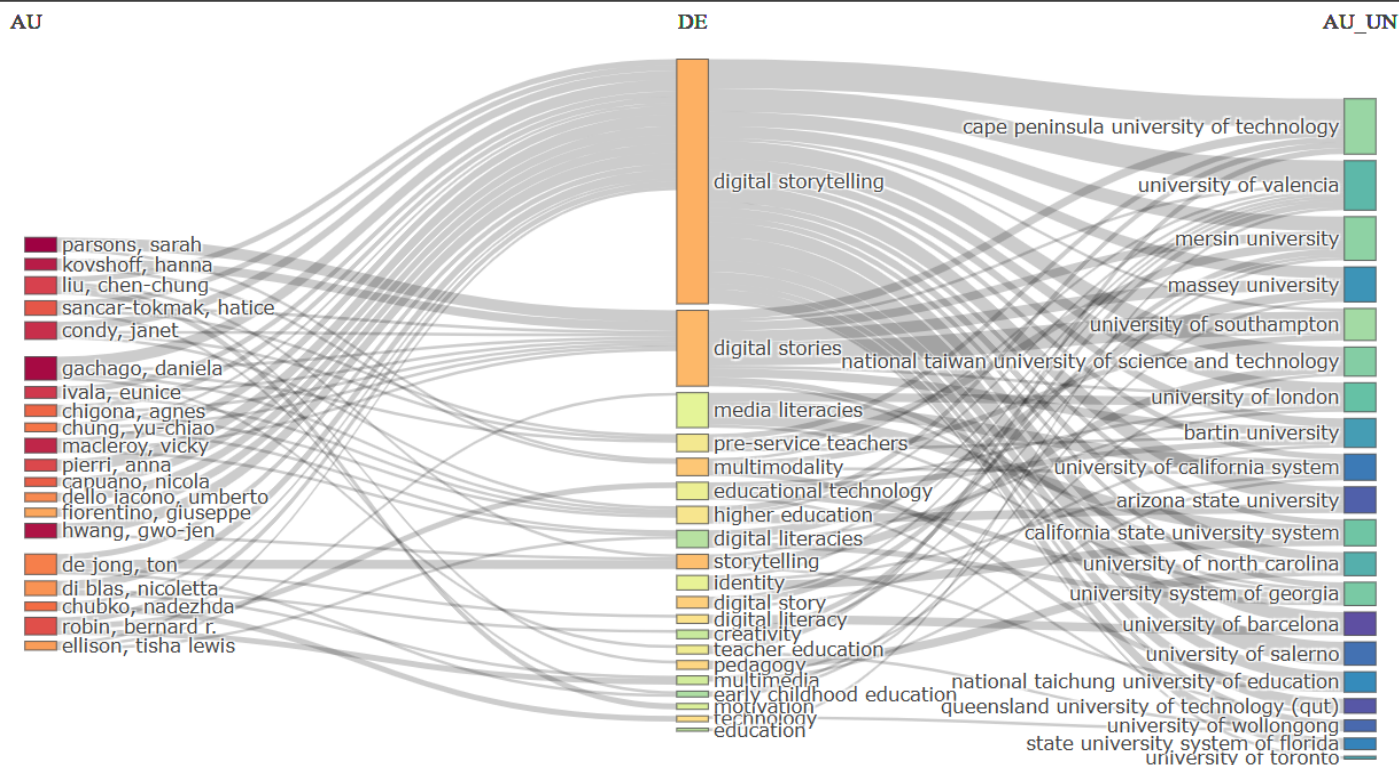


Figure 4. Three-field plot (keyword-author-affiliation)

A total of 270 sources pertaining to 'digital stories' were identified in the Web of Science database. The 10 sources with the highest number of publications in the journal are illustrated in Figure 5. Upon analysis of Figure 5, it is evident that Education and Information Technologies ranks first with 17 studies. Digital Education Review, Education Sciences, Educational Technology & Society ranked second with 11 studies, while Computers & Education ranked third with 10 studies.

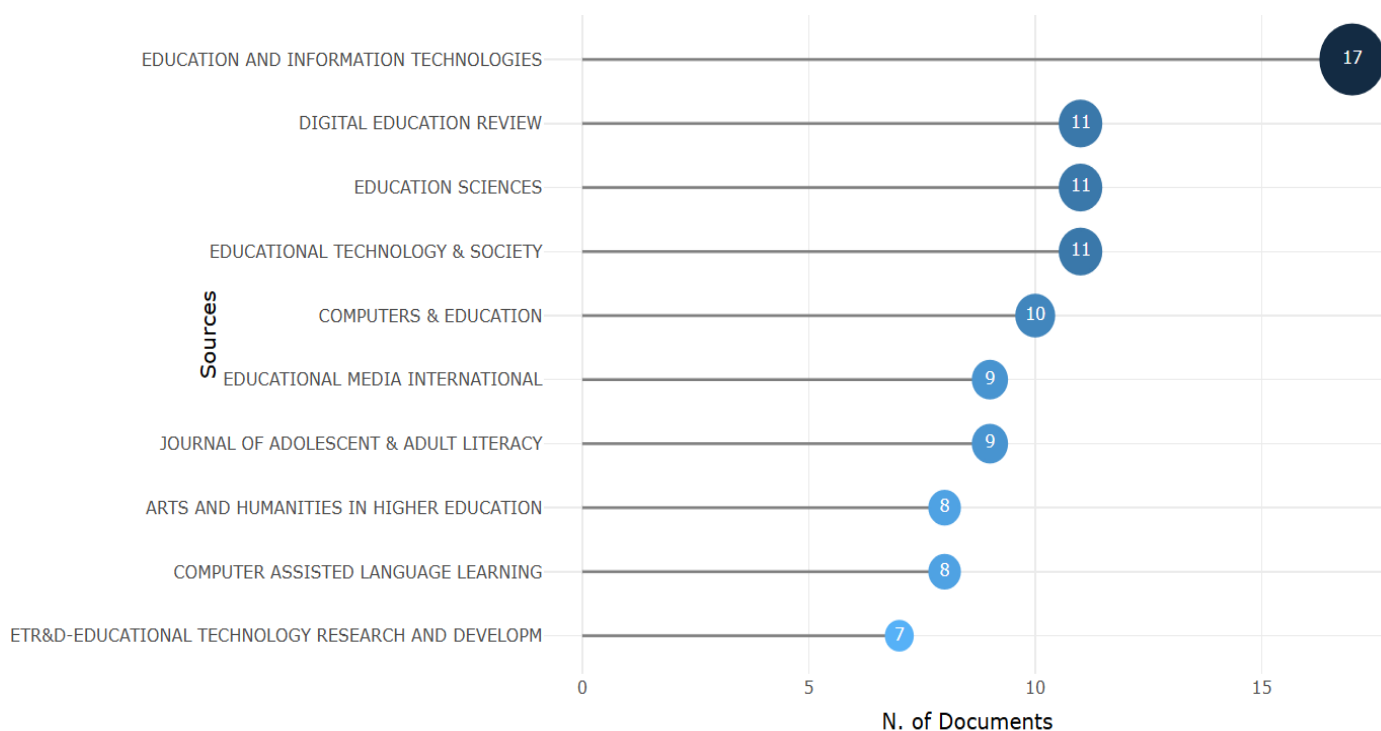


Figure 5. Most Relevant Sources

A total of 1,334 researchers who have published on the subject of 'digital stories' are listed in the Web of Science database. The 10 authors with the highest number of publications in the journal are illustrated in Figure 6. When Figure 6 is subjected to analysis, Parsons, Sarah is ranked first with eight studies. Gachago, Daniela; Hwang, Gwo-Jen; Kovshoff, Hanna are ranked second with six studies, while Macleroy, Vicky is ranked third with five studies.

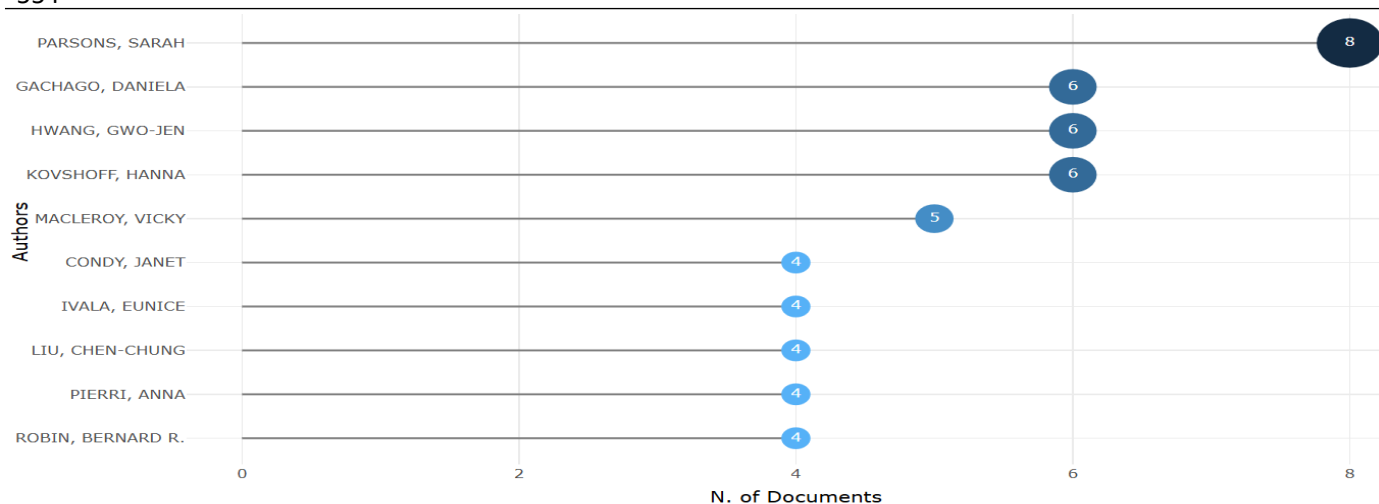


Figure 6. Most relevant authors

The most globally cited articles concerning 'digital stories' are enumerated in Table 2. The first article is 'Digital Storytelling: A Powerful Technology Tool for the 21st Century Classroom.' by Bernard R. Robin in 2008 with 524 citations. The second most frequently cited article is 'Digital storytelling: a meaningful technology-integrated approach for engaged student learning' by Sadik, A. in 2008, with 332 citations. The third most frequently cited article is 'Digital storytelling for enhancing student academic achievement, critical thinking, and learning motivation: A year-long experimental study' by Yang, Y. T. C., & Wu, W. C. I. in 2012 with 328 citations.

Table 2. Most Global Cited Documents

Document	DOI	Total Citations	T C Per Year
Robin Br, 2008, Theor Pract	10.1080/00405840802153916	524	29.11
Sadik A, 2008, Etr&D-Educ Tech Res	10.1007/s11423-008-9091-8	332	18.44
Yang Ytc, 2012, Comput Educ	10.1016/j.compedu.2011.12.012	328	23.43
Huh Ga, 2006, Res Teach Engl	https://doi.org/10.58680/rte20065995	226	11.30
Hafner Ca, 2011, Lang Learn Technol	http://lt.msu.edu/issues/october2011/hafnermiller.pdf	201	13.40
Hung Cm, 2012, Educ Technol Soc	https://www.jstor.org/stable/10.2307/jeductechsoci.15.4.368	168	12.00
Haigh C, 2011, Nurs Educ Today	10.1016/j.nedt.2010.08.001	145	9.67
Robin Br, 2016, Digit Educ Rev	NA	144	14.40
Benmayor R, 2008, Arts Hum High Educ	10.1177/1474022208088648	142	7.89
Agbo Fj, 2021, Smart Learn Environ	10.1186/s40561-020-00145-4	134	26.80
Barkhuizen G, 2016, Tesol Quart	10.1002/tesq.311	129	12.90
Phan T, 2016, Comput Educ	10.1016/j.compedu.2015.11.015	123	12.30
Jernigan Vbb, 2012, Health Educ Res	10.1093/her/cyr089	113	8.07
Ohler J, 2005, Educ Leadership	NA	107	5.10
Verdugo Dr, 2007, Lang Learn Technol	NA	103	5.42
Yang Ytc, 2022, Comput Assist Lang L	10.1080/09588221.2020.1750431	100	25.00
Xu Y, 2011, Educ Technol Soc	NA	96	6.40
Nelson Me, 2006, Lang Learn Technol	NA	88	4.40
Falloon G, 2010, Brit J Educ Technol	10.1111/j.1467-8535.2009.00991.x	86	5.38
Kim S, 2014, Lang Learn Technol	NA	75	6.25
Hava K, 2021, Comput Assist Lang L	10.1080/09588221.2019.1650071	72	14.40
Niemi H, 2016, Technol Pedagog Educ	10.1080/1475939X.2015.1074610	72	7.20
Sarica Hc, 2016, Comput Educ	10.1016/j.compedu.2015.11.016	72	7.20
Castañeda Me, 2013, Calico J	10.11139/cj.30.1.44-62	70	5.38
Christiansen A, 2011, Nurs Educ Today	10.1016/j.nedt.2010.10.006	68	4.53

The word cloud obtained from published articles on the topic of 'digital stories' is presented in Figure 7. This word cloud reveals the main themes that digital storytelling studies focus on. The most frequently occurring concepts include technology, education, literacy, language, and learning motivation. This finding indicates that digital storytelling is characterised by a structured framework encompassing educational, technological and linguistic components. Furthermore, the concepts of 'students', 'stories', 'pedagogy' and 'engagement' indicate an emphasis on student-centred and pedagogical approaches. The visual depiction is indicative of the conceptual density and prevailing research trends within the field, thereby supporting the objective of mapping the structural landscape of the literature within the scope of bibliometric analysis.



Figure 7. WordCloud

Figure 8 provides a visual representation of the trending topics of the articles published on 'digital stories' by keywords over the years. The visualisation presented here depicts the distribution and intensity of concepts related to digital storytelling over time. In particular, concepts such as 'technology', 'education', 'students', 'learning motivation' and 'science' have assumed particular significance in the post-2020 period. This situation demonstrates that digital storytelling has rapidly evolved in the context of technology-supported education in recent times, shifting towards student-centred applications. Furthermore, it is acknowledged that concepts such as 'framework,' 'design,' and 'experience' were addressed to a greater extent in previous years. However, these concepts have gradually been superseded by more practical and output-oriented approaches. The visual reflects the temporal development of the field, thereby contributing to the study's aim of 'temporal development'.

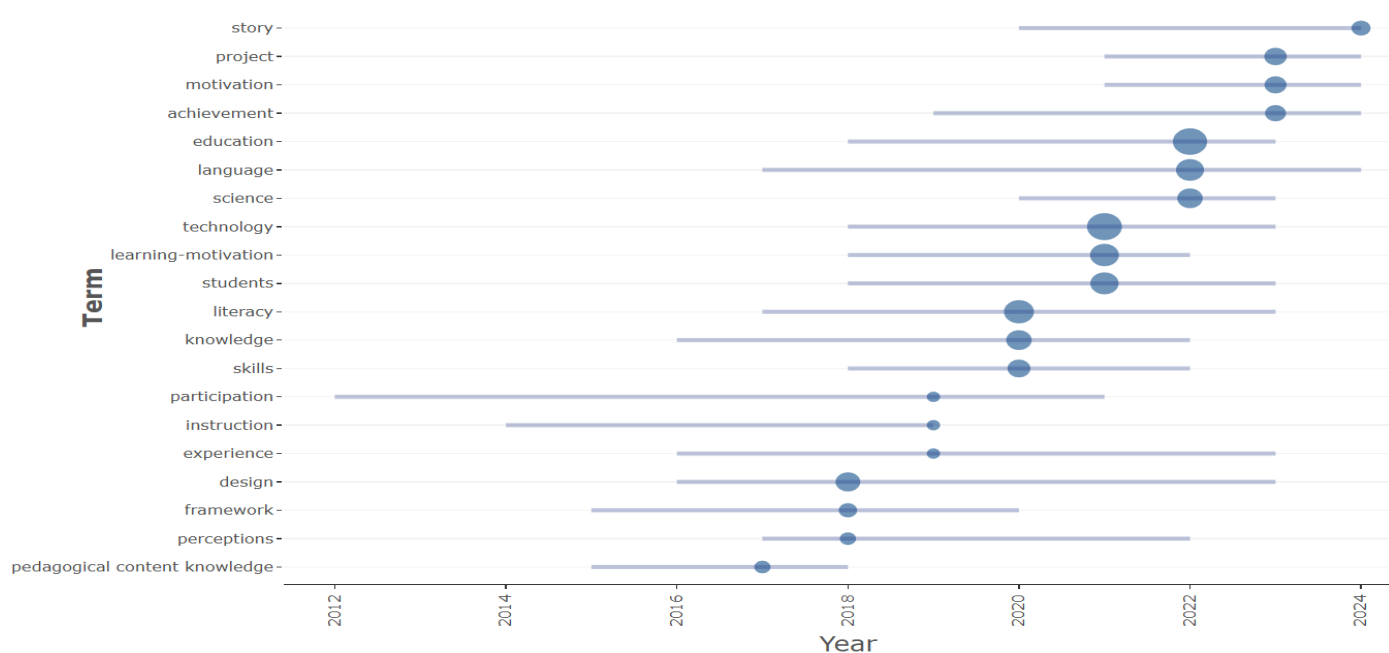
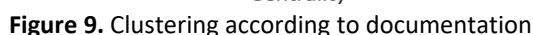


Figure 8. Trend topics (keywords)



The co-occurrence network formed by the articles published on 'digital stories' according to keywords over the years was analysed and presented in Figure 10. The following keyword co-occurrence network is intended to visualise the relationships between fundamental concepts in the field of digital storytelling. The concept of 'technology' is particularly salient, exhibiting robust interconnections with concepts such as 'students,' 'science,' 'design,' and 'education.' This finding suggests a strong correlation between digital storytelling and technology-centred educational applications. The clusters of 'literacy,' 'language,' 'English,' and 'stories' on the left side of the network represent language and literacy-focused themes in the field, while concepts such as "pedagogy" and 'multiliteracies' in the lower left corner are more peripheral and have less central relationships. The overarching structure of the network indicates that digital storytelling research is predominantly focused on technology-based education, student experience, language learning, and literacy development. Consequently, this contributes substantially to the conceptual mapping objective of this study.



The thematic evolution of articles published on 'digital stories' according to keywords over time was analysed and presented in Figure 11. The thematic evolution diagram illustrates the changes and transformations in key concepts in digital storytelling between 2005–2015 and 2016–2025. The concepts that were most salient in the first period include 'education', 'English', 'technology', 'instruction' and 'pedagogy'; the majority of these concepts are also evident in the second period, thereby demonstrating the continuity of the field. In particular, the concept of 'technology' has become more central in the 2016–2025 period while maintaining its connection to different themes from the previous period. The concepts of 'instruction' and "pedagogy" also demonstrate continuity; however, this period sees the addition of more specific and practical themes such as 'model,' 'pedagogical content knowledge,' 'diversity,' and 'children' to the literature. This transition signifies a shift in the focus of digital storytelling research from general themes to more specialised, pedagogical, and inclusive topics. The visual representation provides a clear illustration of the temporal transformation and thematic orientations of the literature, thereby directly contributing to the objective of this study.

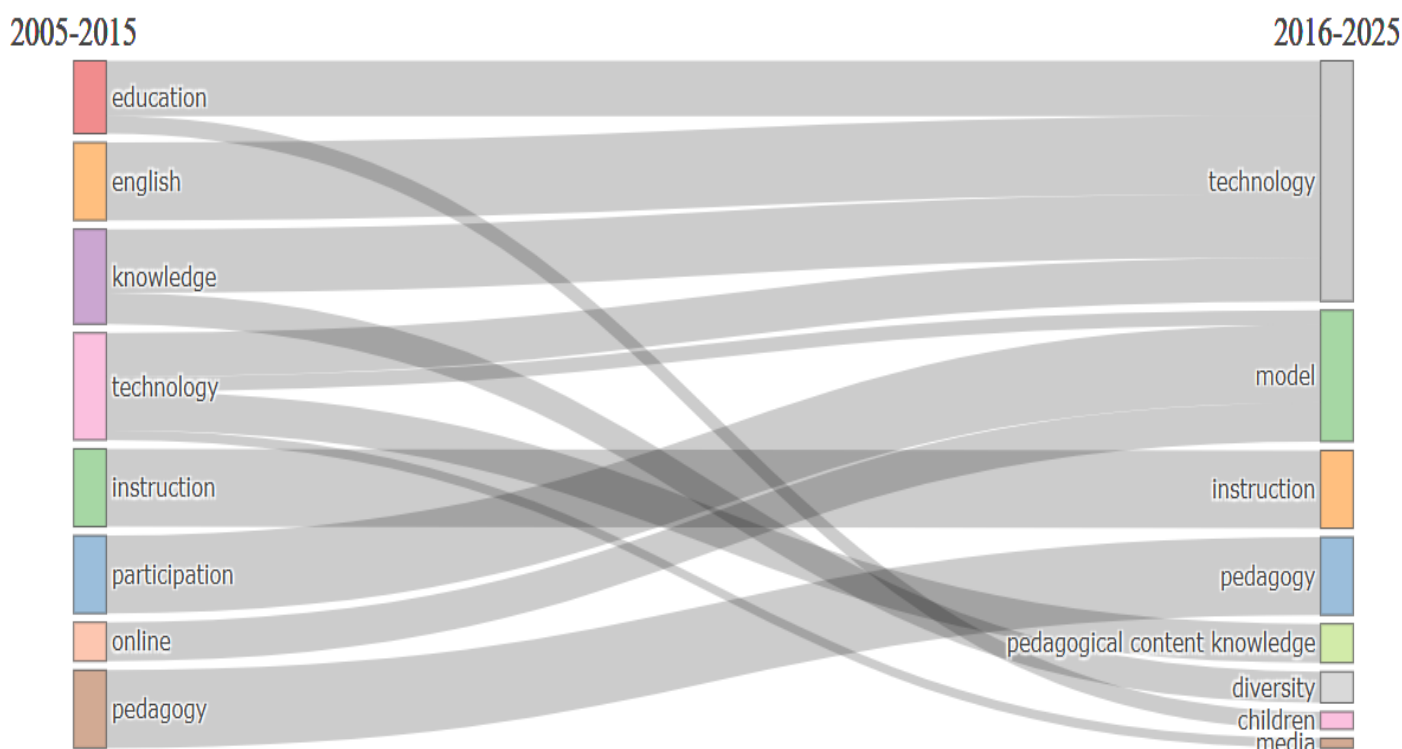


Figure 11. Thematic evolution by keywords

The collaboration networks of the organisations formed by the published articles on 'digital stories' were examined and presented in Figure 12. The visualisation depicts the corporate collaboration networks in the domain of digital storytelling. One of the pre-eminent centres on the map is the University of London, which has established strong links with Goldsmiths University London and the University of Southampton in particular. This finding indicates that institutions within the United Kingdom are playing an active role in advancing this field through collaborative initiatives and joint authorship. A similar phenomenon is evident in the extensive network of collaboration that exists among US-based universities, including prominent institutions such as the California State University System, Arizona State University, and the University of California System. The University of Houston System and the University of Georgia System also demonstrate notable distinction within their respective clusters. The National Taiwan University of Science and Technology has been identified as a key centre of collaboration in Asia, having established strong collaborative relationships with numerous academic institutions in Taiwan. In addition, the presence of three Turkish universities, namely Mersin University, Necmettin Erbakan University and Bartın University, serves to emphasise Turkey's significant contributions to the field. This visualisation contributes to the study's objective of mapping the international collaboration structure by demonstrating how digital storytelling research establishes networks at the global level and which universities are at the centre of these networks.

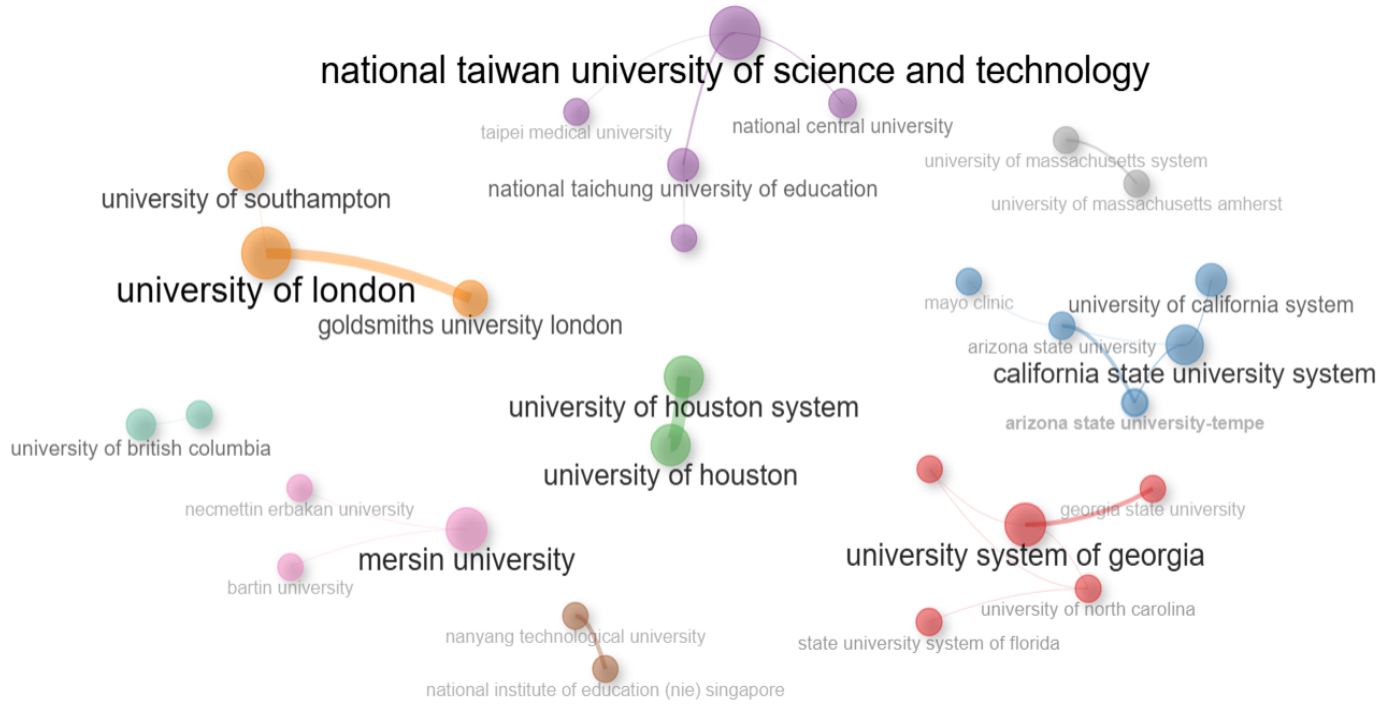


Figure 12. Institution-collaboration network

The countries' collaboration network formed by the published articles on "digital stories" was analysed and presented in Figure 13. The visualisation under consideration offers a representation of international scientific collaborations in the domain of digital storytelling. The United States (USA), located at the centre of the network, is the country with the highest number of connections and is therefore the focal point of global collaboration. The USA has cultivated robust diplomatic relations with numerous nations worldwide, notably Sweden, Germany, South Africa, Turkey and Ireland. The robust connections between the United Kingdom, Canada, and Indonesia suggest a substantial exchange of information between Western Europe and Southeast Asia. Furthermore, the establishment of regional cooperation networks between countries, including Australia, China, Korea, and Belgium, is a notable development. It is evident that smaller clusters, such as those comprising Malaysia and Pakistan, Japan and Norway, and Spain and Italy, serve as exemplars of regional cooperation. Turkey's direct connection with the United States demonstrates that our country is integrated into the global research network in this field. The visual representation provides a clear illustration of the geographical distribution of international partnerships and hub countries in the digital storytelling literature, thereby offering a substantial contribution to the study's objective of global network mapping.

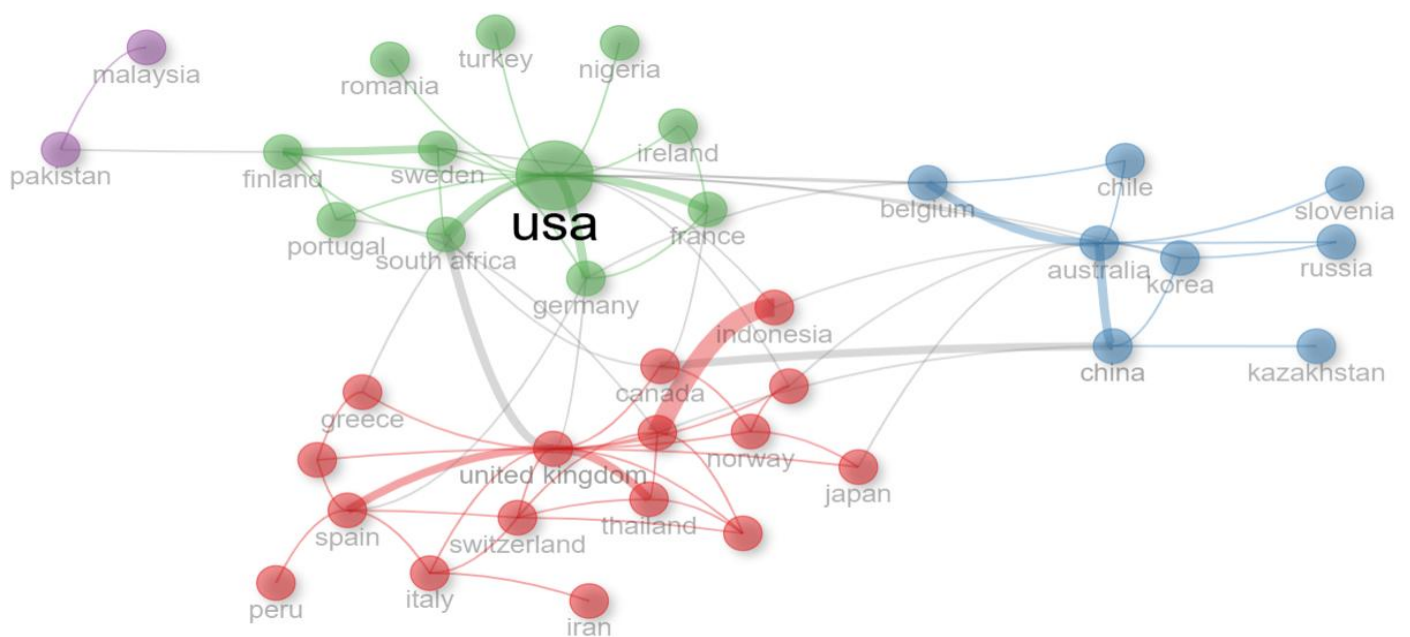


Figure 13. Countries-collaboration network

A thorough analysis was conducted on the 'Countries' collaboration world map', which was created by the countries that have published 'digital stories' over the years (see Figure 14). The world map presented here illustrates international scientific collaborations in the domain of digital storytelling. The United States, indicated on the map in dark blue, has both the highest number of publications and functions as a global hub, with active collaborations with numerous countries. In addition to the United States, strong connections have been established with countries such as the United Kingdom, Australia, China, Turkey, South Africa, India, and Indonesia. The presence of connections with numerous countries in Europe, Asia, Africa, and Oceania serves to illustrate that digital storytelling research is characterised by a multinational network structure that spans continents. This visual depiction underscores the global dissemination of digital storytelling, its collaborative production paradigm, and the geographical dimension of scientific interaction, thereby complementing the study's map of international collaboration and knowledge flow.

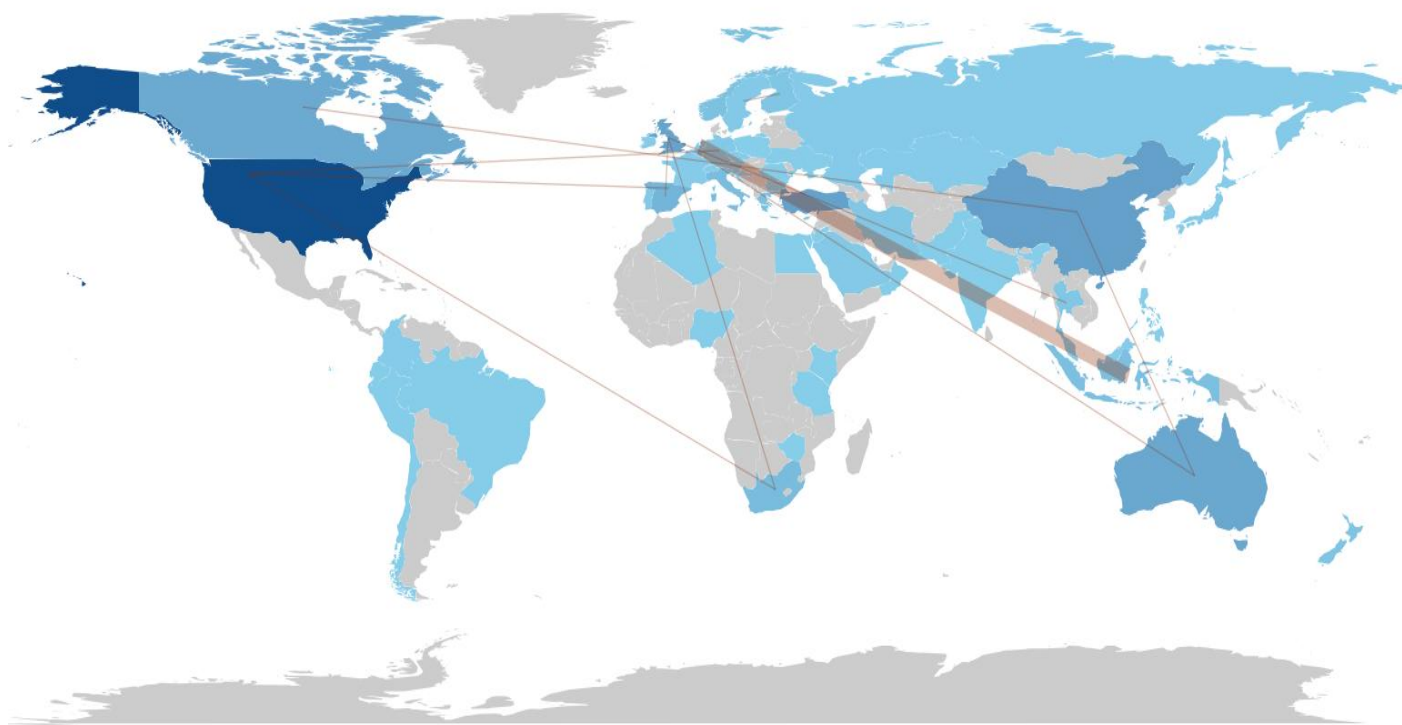


Figure 14. Countries' collaboration world map

CONCLUSION AND DISCUSSION

A bibliometric analysis of 597 articles on 'digital stories' published in the WoS database since 2005 was conducted, and the results obtained are presented in all aspects. Between 2005 and 2025, 597 articles from 270 sources on 'digital stories' were published, with an average of 29.85 articles published per year. The average number of citations per document for these articles is 15.91, and the total number of references is 19,958. The number of Keywords Plus for these articles is 556, and the number of Author's Keywords is 1,633. The number of authors of single-author documents is 156, and the number of authors of multi-author documents is 1,166. The number of single-authored documents is 168, while the number of multi-authored articles is 429. The average number of co-authors per article is 2.53, and the international co-authorship rate is 10.22%.

An examination of the annual distribution of academic studies published on 'digital stories' reveals a marked increase in scientific production in this field over the years. The annual average of studies published with the keyword 'digital stories' was approximately 12.54 between 2005 and 2015. However, it is noteworthy that this average has shown a significant increase since 2016, rising to 45.9 over the period 2016-2025. The year 2024 saw a particularly notable peak in the publication of studies on digital stories, with 71 articles being published. The quantitative data clearly reveal that the digital storytelling approach has been met with increasing interest in the field of education from past to present. This trend is further substantiated by recent studies in the literature (Barber, 2025; Karlin & Kang, 2025; Tsankov & Levunlieva, 2024). The primary factors contributing to this surge include the rapid advancements in digital technologies, the increased adoption of interactive digital tools in educational settings, and the rise in student-centred learning methodologies in contemporary educational practices. Furthermore, the capacity of digital stories to engage multiple senses, their adaptability to individual learning requirements, and their capacity to stimulate creative thinking, have led to sustained interest among researchers in this field.

In this direction, it has been observed that the increasing academic interest in digital storytelling involves not only a quantitative growth but also a qualitative deepening (Jones, 2023). Recent studies have further enriched the literature by focusing on the pedagogical effects of digital storytelling, its interdisciplinary application possibilities and its effects on learning outcomes (Smith et al., 2022). Especially in the context of learner autonomy, motivation and meaningful learning concepts, the contributions of digital stories are frequently emphasised by researchers (Brown, 2021). Consequently, digital storytelling is regarded not solely as a pedagogical instrument but also as a comprehensive learning strategy that is compatible with contemporary learning theories.

However, the practical potential of digital stories also offers significant opportunities for restructuring curricula and transforming teacher training processes. The effective and sustainable integration of this method into classroom practices can be facilitated by supporting teachers in digital story design, media literacy and pedagogical use of multimedia tools (Robin, 2016; Sadik, 2008). Furthermore, the utilisation of digital stories as a pivotal instrument in cultivating adaptable and creative learning environments that are receptive to students' individual differences is anticipated to contribute to the propagation of an inclusive and student-centred educational paradigm. These developments collectively underscore the escalating significance of digital story-based learning in both academic and practical contexts in the future. In this context, further research is expected to provide more in-depth and comparative data on how digital storytelling can be effectively applied in different age groups, disciplines and cultural contexts.

A combined evaluation of thematic maps and thematic evolution analyses derived from the titles, keywords and abstracts of academic studies published on digital stories between 2005 and 2025 reveals a significant increase, particularly after 2020. This phenomenon can be attributed, at least in part, to the global impact of the pandemic caused by the novel coronavirus (SARS-CoV-2), which had consequences for all regions of the world in 2020. This assertion is corroborated by numerous academic studies on educational technologies conducted during and following the pandemic (Chiu, 2020; Guoyan et al., 2021; Roque-Hernández et al., 2021). The rapid proliferation of distance education applications during the pandemic has precipitated a substantial surge in the utilisation of online learning platforms, thereby engendering an augmented demand for digital educational materials. These developments have been effective in increasing interest in the use of digital stories and accelerating research in this field. Digital stories have come to the forefront as tools that offer alternative and innovative solutions to the pedagogical challenges faced by teachers and students under pandemic conditions; in this respect, they have attracted scientific interest.

In the period following the pandemic, there has been an ongoing interest in the digital storytelling approach, with this method being adopted as a permanent pedagogical tool rather than a temporary solution (Jones, 2023). In the process of restructuring education systems, digital stories have been identified as a powerful learning strategy that encourages students' active participation, facilitates emotional connection and supports subjective learning experiences (Smith et al., 2021). In the context of hybrid and online learning environments, studies have demonstrated that digital story-based activities have a positive impact on students' motivation and attitudes towards learning (Yang & Wu, 2022; Barber, 2025). Furthermore, digital stories have been found to make significant contributions to instructional design. These activities have been shown to enhance learning by presenting information in meaningful contexts (Barber, 2025), enriching the learning process with appealing content that engages multiple senses (Yang & Wu, 2022), and providing students with personalised narrative opportunities (Barber, 2025). Consequently, digital storytelling aligns well with contemporary educational theories such as constructivist learning theory, multiple intelligence theory and affective learning approach. Furthermore, the guidance provided by educators during the production of digital stories fosters the development of students' technical abilities and creative thinking capacities. Concurrently, students engage in multifaceted skills such as content research, scriptwriting, and visual and auditory arrangement, thereby engaging in a comprehensive learning process that encompasses both cognitive and affective domains.

This study provides a comprehensive discussion on the place, development and usage potential of digital storytelling in education. A review of the literature reveals that digital stories have gained significant momentum since 2020, a development that is directly related to the increased interest in digital tools in education during the pandemic. Digital stories are regarded as a multifaceted pedagogical tool that enhances learning processes and fosters students' affective and cognitive engagement, transcending its role as a technology-based narrative form. The findings of this study substantiate the considerable potential of digital storytelling in aligning with contemporary educational approaches, its interdisciplinary applicability, and its capacity to promote student-centred teaching methodologies. It has been demonstrated that digital storytelling contributes to the acquisition of 21st-century skills, particularly in terms of enhancing student participation, personalising learning, encouraging creative thinking, and developing digital literacy skills. In this regard, the following recommendations can be put forward:

- The integration of digital storytelling processes into teacher education will enable pre-service teachers to utilise this method effectively for pedagogical purposes. In-service training can encompass topics such as digital story design, scenario creation and digital tool use.

- The integration of digital story applications into various academic disciplines, incorporated within existing curricula, has the potential to facilitate both content learning and the development of students' creative and critical thinking skills.
- It is recommended that further qualitative and quantitative research be conducted on the effects of digital storytelling. Its applicability in different age groups, disciplines and cultural contexts can be systematically examined.
- The provision of technological equipment to educational institutions to facilitate digital story production has the potential to encourage active student and teacher participation in this process.

In conclusion, the digital storytelling approach continues to consolidate its position within educational settings as a flexible and creative teaching strategy that is compatible with the learning styles that are required in the digital age. It is imperative that both teachers and educational policymakers take deliberate steps to ensure the effective and sustainable implementation of this method.

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Statements of publication ethics

We declare that the study has no unethical issues and that research and publication ethics have been observed carefully.

Ethics Committee Approval Information

The data for this study were obtained from the WoS database. The sample does not include human participants. A bibliometric analysis was conducted on the literature. Therefore, it is not subject to Ethics Approval.

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