



Student-Led Digital Ecosystems in Humanities: A Mixed-Methods E-Learning Study

Prasanth Arokia Samy D.* Alagu Revathi L., Cohiran J.

St. Joseph's College, India

Email : prasanthdavidraj@gmail.com, alagurevathi2309@gmail.com, cohiranjey@gmail.com

Keywords:

Higher Education India; E-Learning Ecosystems; Digital Humanities; Participatory Learning; Digital Pedagogy; Technology-Enhanced Learning; Student-Generated Content.

Abstract

The rapid advancement of digital technology has transformed higher education by creating new possibilities for student-centred and participatory learning environments. However, humanities education continues to face challenges related to student engagement, digital adaptation, and the relevance of traditional learning approaches in the digital era. This study aims to examine how a student-led digital ecosystem functions as a technology-enhanced learning environment and how participation in digital platforms contributes to students' learning outcomes. This research employed a convergent mixed-methods design involving both quantitative and qualitative data collection. The participants consisted of 50 undergraduate and postgraduate students selected through purposive sampling from the PG and Research Department of English at St. Joseph's College (Autonomous), Tiruchirappalli, India. Data were collected through structured questionnaires, open-ended feedback, and platform engagement records, which were analysed using descriptive statistics and thematic analysis. The findings indicate that student-led digital platforms, including digital publishing, podcasts, mobile applications, and social media, effectively support learning through content creation, collaboration, and active participation. Students reported improvements in communication skills, digital literacy, creativity, confidence, and teamwork. The study concludes that student-driven digital ecosystems can serve as sustainable and inclusive models of technology-enhanced learning, particularly in resource-constrained higher education contexts. This research contributes to digital pedagogy by demonstrating that meaningful digital transformation depends not only on technological infrastructure but also on student agency, collaborative practices, and contextually relevant learning design.

INTRODUCTION

In recent years, humanities education, particularly in disciplines such as English literature, has faced persistent concerns regarding its relevance, employability, and student enrolment trends (Tushar & Sooraksa, 2023; McCormack & Baron, 2023). Across many higher education institutions in India, especially in semi-urban and rural regions, literature programmes are increasingly perceived as lacking direct professional pathways. This perception has contributed to a gradual decline in enrolment and student engagement, raising critical questions about the future of humanities education within an increasingly digital academic landscape (Selfa Sastre & Falguera Garcia, 2022).

At the same time, the ways in which literature is produced, accessed, and consumed have undergone significant transformation (Martens et al., 2022; Dera, 2024). Literary engagement is no longer confined to printed texts or classroom discussions (Cope & Kalantzis, 2020).

Instead, it increasingly takes place through digital platforms such as online magazines, podcasts, social media, and multimedia storytelling environments (Gunderson & Cumming, 2022; Razmi & Afzali, 2021; Chubko et al., 2020). Today's students interact with literary content through dynamic, participatory, and multimodal forms, indicating a shift from passive reading practices toward active digital engagement (Ruslan et al., 2025). This transition presents both a challenge and an opportunity: while traditional pedagogical models may struggle to sustain student interest, digital environments offer new possibilities for reconfiguring literary learning.

Within the broader discourse of higher education, this shift aligns with the growing emphasis on Technology-Enhanced Learning (TEL), where digital tools are not merely used for content delivery but function as integrated environments for learning, interaction, and knowledge production. However, much of the existing implementation of e-learning remains centred on formal systems such as Learning Management Systems (LMS), which often replicate conventional teaching structures in digital formats (Gros et al. 2016; Munna et al. 2024; Wu 2025). Comparatively limited attention has been given to student-driven, multi-platform ecosystems that operate beyond formal curricular boundaries and function as organic learning spaces (Chtena 2019; De Feo 2025).

Within this context, the present study examines the emergence of a student-led digital literary ecosystem within the PG and Research Department of English at St. Joseph's College (Autonomous), Tiruchirappalli. Rather than functioning as a single platform, this ecosystem comprises multiple interconnected digital initiatives, including online publishing platforms, podcasts, mobile applications, and social media channels, all developed and managed by students under faculty guidance. Importantly, these platforms are not treated as supplementary activities but operate as active learning spaces where students engage in writing, editing, content production, and digital dissemination (Arruabarrena et al. 2019; Barbetta 2023; Johinke 2020; Moore 2024; Poore 2015).

Recent research has demonstrated that Technology-Enhanced Learning can improve student engagement and learning outcomes when digital tools are integrated with appropriate pedagogical strategies. Bates (2019) argues that effective digital learning requires a shift from technology adoption toward technology-supported learning design. Similarly, Selwyn (2016) emphasises that educational technology should be understood not merely as a technical instrument but as a social and pedagogical process involving interaction, participation, and institutional culture. Research by Bolliger and Martin (2018) found that student engagement in online environments is strongly influenced by meaningful interaction, collaborative activities, and learner-centred approaches. These studies indicate that successful digital education depends not only on technological availability but also on how learners participate in and construct knowledge within digital spaces.

Furthermore, the emergence of digital humanities has expanded possibilities for integrating technology into humanities education. Scholars such as Berry (2012) and Fitzpatrick (2011) argue that digital humanities enables students and researchers to engage with literature and cultural studies through digital production, collaboration, and public dissemination. Rather than positioning students solely as readers and interpreters of texts, digital humanities encourages them to become creators of digital content through activities such as online publishing, multimedia storytelling, and digital archiving. Previous studies on

participatory culture have also highlighted that students develop stronger ownership, motivation, and digital literacy when they actively contribute to knowledge production (Jenkins, 2006; Bruns, 2008). These perspectives suggest that student-generated digital activities can become meaningful learning environments, particularly for disciplines traditionally perceived as less connected to technological innovation.

Despite increasing interest in Technology-Enhanced Learning and digital humanities, existing studies reveal several limitations. Much previous research has focused on formal digital learning systems, such as Learning Management Systems (LMS), Massive Open Online Courses (MOOCs), and institutionally controlled online platforms. While these studies provide valuable insights into digital education implementation, they often overlook informal and student-driven digital ecosystems that develop organically within academic communities. In addition, previous research frequently examines individual digital activities, such as blogging, online discussions, or multimedia assignments, rather than analysing interconnected ecosystems involving multiple platforms and forms of participation. This limitation creates a research gap regarding how student-led, multi-platform digital environments function as integrated learning ecosystems.

Addressing this gap is important because digital transformation in education should not be measured solely through technological adoption but also through meaningful changes in learning practices. A student-led digital ecosystem represents a shift from teacher-centred digital instruction toward participatory learning, where students become writers, editors, designers, producers, and managers of digital knowledge spaces. The present research is conducted within the PG and Research Department of English at St. Joseph's College (Autonomous), Tiruchirappalli, India, where students participate in digital publishing platforms, podcasts, mobile applications, and social media initiatives under faculty guidance. This context provides an opportunity to examine how digital participation operates as a learning process and how students develop academic, creative, and technological competencies through authentic digital practices.

The novelty of this research lies in proposing and examining a student-led digital ecosystem model that integrates Technology-Enhanced Learning, experiential learning, participatory culture, and digital humanities perspectives. Unlike previous studies that primarily evaluate specific digital tools or formal online learning systems, this research examines a distributed ecosystem in which multiple platforms interact to support learning activities. The study contributes a contextualised understanding of how students in semi-urban higher education environments can utilise accessible digital platforms to develop communication skills, digital literacy, collaboration, confidence, and creative expression. By focusing on students as digital producers rather than technology consumers, this research extends current discussions on learner agency and participatory digital pedagogy.

Based on these considerations, this study aims to examine how student-led digital platforms function as Technology-Enhanced Learning environments within humanities education. Specifically, the research objectives are to analyse the relationship between digital ecosystem engagement and student participation, identify learning outcomes emerging from digital content creation and collaboration, and develop a context-sensitive model of digital learning applicable to resource-constrained higher education settings. The study contributes theoretically by extending discussions on digital pedagogy and participatory learning while

practically providing insights for educators and institutions seeking sustainable approaches to digital transformation. The findings are expected to benefit higher education stakeholders by demonstrating that effective digital learning ecosystems can emerge through student initiative, collaborative practices, and strategic pedagogical support rather than relying exclusively on expensive technological infrastructure.

METHOD

The study employed a convergent mixed-methods research design, in which quantitative and qualitative data were collected simultaneously, analysed separately, and integrated during the interpretation stage. This approach was selected to examine both measurable patterns of student engagement within digital platforms and students' learning experiences. The research was conducted at the PG and Research Department of English, St. Joseph's College (Autonomous), Tiruchirappalli, Tamil Nadu, India, focusing on a student-led digital literary ecosystem comprising digital publishing platforms, podcasts, mobile applications, and social media channels. The research population consisted of undergraduate and postgraduate students who participated in these digital learning initiatives. A purposive sampling technique was used to select 50 student participants who were directly involved as digital content contributors or active participants within the ecosystem.

Data were collected using a structured questionnaire, open-ended feedback responses, and platform engagement records. The questionnaire measured students' digital ecosystem engagement, participation frequency, perceived skill development, confidence, and learning experiences. The open-ended responses explored students' perceptions of the benefits, challenges, and educational impacts of participating in the digital ecosystem. The research instruments were developed based on relevant concepts in technology-enhanced learning, participatory learning, and digital pedagogy. Quantitative data were analysed using descriptive statistics, including frequency distributions, percentages, and cross-tabulation, to identify patterns of student engagement. Qualitative data were analysed through thematic analysis to identify recurring themes related to student experiences, learning outcomes, and digital participation.

The integration of quantitative and qualitative findings provided a comprehensive understanding of how student-led digital ecosystems contributed to engagement, digital literacy, creativity, collaboration, and confidence development within humanities education. The mixed-methods approach enabled the study to capture both measurable participation patterns and students' perspectives regarding the role of digital platforms in supporting technology-enhanced learning.

RESULTS AND DISCUSSION

This presents the findings derived from quantitative survey data and qualitative feedback responses. The results are organised to reflect the structure of the conceptual framework, focusing on platform engagement, participation patterns, role distribution, skill development indicators and thematic observations. The presentation remains descriptive and data-driven, without interpretative inference.

Platform Engagement: Technology Centrality

Analysis of platform usage indicates that text-based platforms recorded the highest level of engagement, followed by social media and audio-based platforms. Students showed a clear preference for writing-oriented participation, with a gradual decline observed toward more technically demanding formats such as podcast production.

Table 1. Platform-wise Engagement Distribution

Platform Type	Percentage of Engagement (%)
E-magazine / E-newspaper	38%
Social Media Platforms	26%
Podcast Platforms	18%
Mobile Application	12%
Website Development	6%

The data shows that 38% of participants were actively engaged in digital writing platforms, making them the most accessed learning spaces. Social media platforms accounted for 26% engagement, primarily for content promotion and interaction. Podcast participation stood at 18%, indicating moderate involvement in audio-based learning activities. Lower engagement levels were observed in mobile application use (12%) and website development (6%), suggesting that technical complexity and skill requirements may influence participation levels.

Role Distribution: Students as Digital Producers

Participants reported involvement across multiple roles within the digital ecosystem. The distribution reflects a multi-functional participation structure, where students contribute in varied capacities.

Table 2. Role-Based Participation

Role Category	Percentage (%)
Writing (Poems, Articles)	34%
Editing & Review	18%
Podcasting	16%
Content Design	14%
Social Media Management	12%
Technical Development	6%

The data indicates that 34% of participants were involved in writing, making it the dominant form of contribution. Editorial roles accounted for 18%, reflecting peer-based review practices within the ecosystem. Podcasting and content design contributed 16% and 14% respectively, indicating engagement in multimedia production. Social media management (12%) and technical development (6%) show that a smaller segment of students engaged in platform maintenance and digital infrastructure activities.

Participation Levels: Contributors vs Subscribers

The data distinguishes between active contributors and passive participants (subscribers) within the ecosystem.

Table 3. Participation Categories

Category	Percentage (%)
Active Contributors	42%
Subscribers	58%

A total of 42% of participants were actively contributing, while 58% were engaged as subscribers or audience members. This indicates that while a significant proportion of students are involved in content creation, a larger group participates through consumption and observation. Further analysis suggests that some participants transitioned from subscribers to contributors over time, though this pattern is not quantified in the current dataset.

Skill Development Indicators

Participants were asked to report perceived improvements in various skills as a result of their engagement with the digital ecosystem.

Table 4. Reported Skill Development

Skill Area	Percentage of Students Reporting Improvement (%)
Communication Skills	72%
Digital Literacy	68%
Confidence	64%
Creative Expression	70%
Teamwork & Collaboration	61%

The data indicates that 72% of participants reported improvement in communication skills, followed by 70% in creative expression. Digital literacy improvements were reported by 68% of students, suggesting exposure to new tools and platforms. Confidence and teamwork were reported by 64% and 61% respectively, indicating that participation extends beyond technical skill acquisition to include personal and interpersonal development.

Summary of Findings

The results indicate that:

1. Engagement is highest in accessible, text-based platforms
2. Students participate in multiple roles, with writing as the dominant activity
3. A balance exists between active contributors and passive participants
4. Students report improvements across skills, confidence and engagement
5. Qualitative responses highlight creation, collaboration and ownership as key learning dimensions

The discussion foregrounds three central arguments that run consistently across this study: technology as a pedagogical environment, students as digital producers and the department as a case of digital transformation. These are examined in relation to existing literature, with attention to the specificities of the semi-urban Indian context.

Technology as a Pedagogical Environment

One of the most significant findings of this study is that digital platforms within the ecosystem function not merely as supplementary tools, but as primary sites of learning. The observed engagement patterns—particularly the high participation in digital publishing

platforms—indicate that students interact with these platforms as learning environments rather than external add-ons.

This aligns with contemporary understandings of e-learning, where technology is conceptualised as an integrated pedagogical space rather than a delivery mechanism. Unlike traditional Learning Management Systems, which often replicate classroom hierarchies in digital form, the ecosystem examined here operates as a distributed and participatory environment, where learning is embedded in practice.

The gradual decline in engagement from text-based to technically intensive platforms further reveals that accessibility plays a crucial role in shaping digital learning participation. This suggests that in semi-urban contexts, effective e-learning design must prioritise low-barrier entry points, allowing students to gradually transition into more complex forms of digital engagement.

Students as Digital Producers: Reframing Participation

The findings demonstrate a clear shift in student roles—from passive recipients of knowledge to active producers of content. The dominance of writing-based contributions, coupled with meaningful engagement in podcasting, editing and design, indicates that students are not merely consuming information but are actively generating, curating and disseminating knowledge.

This reflects the principles of participatory culture, where individuals contribute to shared knowledge systems through creative and collaborative practices. The presence of diverse roles—writers, editors, designers and digital managers—suggests that learning occurs through multi-modal participation, rather than through singular academic tasks.

Importantly, the distinction between contributors (42%) and subscribers (58%) highlights a layered participation structure, where not all students engage at the same level. However, this should not be viewed as a limitation. Instead, it reflects a legitimate participation trajectory, where students may initially engage as observers before transitioning into active contributors. Such patterns are consistent with participatory learning models, where engagement evolves over time.

Digital Ecosystem as a Model of Institutional Transformation

The results also indicate that the digital ecosystem extends beyond individual learning outcomes to reflect a broader institutional shift in pedagogical practice. The integration of multiple platforms publishing, audio production, mobile access and social media demonstrates a movement from content-centered teaching to ecosystem-based learning.

This transformation is particularly significant within the context of humanities education, which has traditionally relied on textual analysis and classroom discussion. The emergence of a multi-platform ecosystem suggests that literary education can be reconfigured to include production, dissemination and public engagement, without losing its disciplinary core.

In this sense, the department functions as a micro-level model of digital transformation, where innovation is driven not by external technological imposition, but by student participation and faculty facilitation. This bottom-up approach contrasts with large-scale institutional reforms and highlights the potential of localized innovation in higher education.

Linking Findings to Theoretical Frameworks

The findings of this study can be meaningfully interpreted through three intersecting theoretical lenses:

Experiential Learning (Kolb) emphasis on content creation—writing, podcasting, editing—demonstrates that students learn through direct engagement and reflective practice. The reported improvements in communication, creativity and confidence align with the experiential learning cycle, where knowledge is constructed through action and reflection.

Participatory Culture (Jenkins) as the collaborative and production-oriented nature of the ecosystem reflects a participatory learning environment, where students are contributors to a shared cultural space. The sense of ownership reported in qualitative responses further supports this interpretation, indicating that learning is socially embedded and collectively sustained.

Digital Humanities is the transition from textual study to digital production illustrates a shift toward applied literary engagement, where students use digital tools to reinterpret and disseminate literary content. This expands the scope of humanities education by integrating technology, creativity and public communication.

Together, these frameworks provide a coherent explanation of how digital ecosystems facilitate learning, reinforcing the validity of the conceptual model proposed in this study.

Global Comparison: Developed vs Semi-Urban Contexts

A key contribution of this study lies in its contextual specificity. Much of the existing literature on e-learning is based on well-resourced institutional environments, where access to infrastructure, funding and technological expertise is assumed.

In contrast, the present study demonstrates that meaningful digital learning environments can emerge even within resource-constrained, semi-urban settings. The relatively lower engagement in technically demanding areas such as app development and website management reflects structural limitations, including limited access to devices and training.

However, the strong engagement in accessible formats such as writing and social media indicates that innovation in such contexts is adaptive rather than resource-intensive. This challenges the assumption that effective e-learning requires high-end technological infrastructure, suggesting instead that pedagogical design and student agency are equally critical factors.

Theoretical Contribution: A Micro Digital Ecosystem Model

The study contributes to e-learning research by proposing a micro-level digital ecosystem model, characterised by:

1. Multi-platform integration rather than single-system dependence
2. Student-driven participation as the core pedagogical mechanism
3. Process-oriented learning, emphasising creation, collaboration and engagement
4. Context-sensitive adaptability, particularly in semi-urban settings

This model extends existing frameworks by demonstrating that e-learning environments can be decentralised, participatory and practice-oriented, rather than centrally controlled and content-driven. Furthermore, the identification of mediating variables—content creation, collaboration and participation—provides a structured pathway linking digital engagement to learning outcomes, offering both theoretical clarity and empirical relevance.

Synthesis of Core Arguments

Across the discussion, three interrelated conclusions emerge:

1. Technology functions as an environment, shaping how learning is organised and experienced
2. Students act as producers, engaging in meaningful, practice-based learning
3. The department represents a case of digital transformation, achieved through participatory innovation

These findings collectively reinforce the central argument of this study: that student-led digital ecosystems can serve as viable and effective models of technology-enhanced learning in higher education.

Challenges and Limitations

While the findings of this study indicate the potential of student-led digital ecosystems as effective e-learning environments, the implementation and analysis of such a model are accompanied by a range of structural, pedagogical, technological and methodological challenges. Acknowledging these limitations is essential for ensuring academic transparency and for situating the study within realistic institutional contexts.

Structural and Infrastructural Constraints

One of the most significant challenges relates to limited infrastructural support, particularly within semi-urban higher education institutions. Unlike technologically advanced campuses, access to high-end devices, licensed software and stable internet connectivity remains uneven. Much of the digital production within the ecosystem depended on personal devices, including student-owned laptops and mobile phones.

This constraint directly influenced participation patterns, especially in technically intensive activities such as audio production, application development and website management, which require both hardware capability and specialised software. The relatively lower engagement observed in these areas reflects not a lack of interest, but restricted access to technological resources.

Digital Skill Inequality and Learning Curve

The participant group included a substantial number of first-generation learners from rural and semi-urban backgrounds, many of whom had limited prior exposure to digital tools. This created a steep initial learning curve, particularly in areas requiring technical proficiency.

While the ecosystem enabled gradual skill acquisition, disparities in digital literacy levels affected the speed and depth of participation. Students with prior exposure to technology were able to engage more actively in advanced roles, whereas others remained confined to entry-level contributions, such as writing or basic content handling.

This uneven distribution highlights the need for structured digital training interventions within e-learning ecosystems.

Time Constraints and Academic Workload

Participation in the digital ecosystem occurred outside formal classroom hours, requiring students to balance academic responsibilities with extracurricular engagement. This resulted in time-related constraints, particularly during examination periods and intensive academic schedules.

Unlike structured coursework, participation in the ecosystem was self-regulated, which, while fostering autonomy, also led to inconsistencies in engagement. Students reported difficulties in sustaining regular contributions due to competing academic priorities, affecting continuity in content production and collaborative activities.

Sustainability and Continuity Challenges

Although the ecosystem is designed as a student-driven model, its sustainability depends on continuous student involvement across academic cycles. Each year, a significant portion of contributors graduate, requiring new participants to be trained and integrated.

This cyclical transition creates challenges in maintaining:

1. Institutional memory
2. Consistency in quality and output
3. Leadership within student teams

While the model encourages renewal and innovation, it also necessitates ongoing mentoring and coordination, placing additional responsibility on faculty facilitators.

Engagement Variability and Participation Gaps

The results indicate a distinction between active contributors (42%) and passive participants (58%), suggesting that a majority of students engage at a consumption level rather than through active production.

This participation gap may be attributed to:

1. Lack of confidence in public expression
2. Limited technical skills
3. Competing academic commitments

From an e-learning perspective, this reflects a broader challenge in achieving deep engagement across all learners, particularly in voluntary, non-assessed environments.

Distraction and Attention Fragmentation in Digital Spaces

Operating within a digital ecosystem also exposes students to the broader challenges of online distraction and fragmented attention. Social media platforms, while useful for dissemination and engagement, are inherently designed for continuous and rapid content consumption, which can reduce sustained academic focus.

Students reported difficulties in maintaining consistency and discipline, especially when academic content competes with entertainment-driven digital environments. This raises important questions about the quality of engagement in open digital systems.

Content Quality, Credibility and Academic Rigour

As the ecosystem encourages open participation and student-generated content, maintaining academic quality and originality becomes a critical concern. Challenges include:

1. Ensuring plagiarism-free submissions
2. Maintaining editorial standards
3. Balancing creativity with academic rigour

Given the absence of advanced plagiarism detection tools and formal editorial infrastructure, quality assurance relied heavily on peer review and faculty guidance, which may not always ensure consistency.

Financial Limitations and Resource Mobilisation

Despite institutional encouragement, the initiative operated with minimal financial support, limiting the ability to:

1. Procure advanced equipment
2. Access premium digital tools
3. Conduct professional-level production

This raises broader concerns about financial sustainability, particularly in scaling such models. Additionally, the absence of formal training in entrepreneurial or funding strategies created uncertainty regarding long-term resource mobilisation.

Contextual Constraints in Semi-Urban E-Learning Models

Finally, the broader socio-educational context presents inherent challenges. Factors such as:

1. Limited exposure to digital culture
2. Language barriers in accessing global digital content
3. Lack of structured digital orientation programmes

Affect how students engage with e-learning environments. These constraints highlight the importance of context-sensitive design, where digital ecosystems are adapted to the realities of local educational settings.

Despite these constraints, the ecosystem demonstrates that meaningful e-learning environments can emerge even within constrained settings, provided there is strong student participation and adaptive pedagogical design.

CONCLUSION

The findings of this study demonstrate that a student-led digital ecosystem can function as an effective technology-enhanced learning environment within humanities education, particularly in a semi-urban higher education context. Through a convergent mixed-methods approach, the study reveals that digital platforms are not merely technological tools for information delivery but can serve as active pedagogical spaces where students engage in content creation, collaboration, and knowledge dissemination. The integration of digital publishing platforms, podcasts, mobile applications, and social media enables students to shift from passive consumers of information to active digital producers. The results indicate that participation in such ecosystems contributes to the development of communication skills, digital literacy, creativity, confidence, and collaborative abilities. Furthermore, the study highlights that meaningful digital transformation does not necessarily depend on sophisticated technological infrastructure but can emerge through student agency, faculty support, accessible platforms, and context-sensitive pedagogical design. Therefore, the student-led digital ecosystem model provides a practical and adaptable approach for enhancing engagement and innovation in humanities education.

Future research should expand this investigation through larger samples, longitudinal approaches, and comparative studies across different institutional and disciplinary contexts to examine the sustainability and scalability of student-led digital ecosystems. Future studies may also incorporate more advanced quantitative analyses, such as structural equation modeling or

predictive analysis, to further examine the relationships among digital engagement, learning processes, and educational outcomes. In addition, research should explore strategies for integrating student-generated digital activities into formal curricula, developing digital competency training, and addressing challenges related to infrastructure limitations, participation inequality, and long-term ecosystem management. By extending empirical evidence across diverse educational settings, future research can strengthen theoretical understanding and provide practical frameworks for developing inclusive, participatory, and sustainable digital learning environments in higher education.

REFERENCES

- Arruabarrena, Rosa et al. 2019. "Integration of Good Practices of Active Methodologies with the Reuse of Student-Generated Content." *International Journal of Educational Technology in Higher Education* 16(1): 10.
- Arruabarrena, R., et al. (2019). Integration of good practices of active methodologies with the reuse of student-generated content. *International Journal of Educational Technology in Higher Education*, 16(1), 10.
- Barbetta, P. M. (2023). Technologies as tools to increase active learning during online higher-education instruction. *Journal of Educational Technology Systems*, 51(3), 317–339.
- Bates, A. W. (2019). *Teaching in a digital age* (2nd ed.). Tony Bates Associates Ltd. <https://opentextbc.ca/teachinginadigitalage/>
- Bolliger, D. U., & Martin, F. (2018). Instructor and student perceptions of online student engagement strategies. *Distance Education*, 39(4), 568–583. <https://doi.org/10.1080/01587919.2018.1520041>
- Chtena, A. (2019). *From codex to bits: Discourses, practices and materialities in the open textbook phenomenon* (Doctoral dissertation). University of California, Los Angeles.
- Chubko, N., Morris, J. E., McKinnon, D. H., Slater, E. V., & Lummis, G. W. (2020). Digital storytelling as a disciplinary literacy enhancement tool for EFL students. *Educational Technology Research and Development*, 68(6), 3587–3604. <https://doi.org/10.1007/s11423-020-09833-x>
- Cope, B., & Kalantzis, M. (2020). *Multimodal learning and pedagogy*. Cambridge University Press.
- De Feo, G. (2025). Engaging environmental education for sustainable waste management—The Greenopoli education framework. *Recycling*, 11(1), 2.
- Dera, J. (2024). BookTok: A narrative review of current literature and directions for future research. *Literature Compass*, 21(11), e70012. <https://doi.org/10.1111/lic3.70012>
- Gros, B., & García-Peñalvo, F. J. (2016). Future trends in the design strategies and technological affordances of e-learning. In *Springer*.
- Gunderson, J. L., & Cumming, T. M. (2022). Podcasting in higher education as a component of Universal Design for Learning: A systematic review of the literature. *Innovations in Education and Teaching International*, 60(4), 583–593. <https://doi.org/10.1080/14703297.2022.2075430>
- Johinke, R. (2020). Social production as authentic assessment: Wikipedia, digital writing, and hope labour. *Studies in Higher Education*, 45(5), 1015–1025.
- Martens, M., Balling, G., & Higgason, K. A. (2022). #BookTokMadeMeReadIt: Young adult

- reading communities across an international, sociotechnical landscape. *Information and Learning Sciences*, 123(11/12), 705–722. <https://doi.org/10.1108/ILS-04-2022-0050>
- McCormack, S., & Baron, P. (2023). The impact of employability on humanities, arts and social sciences degrees in Australia. *Arts and Humanities in Higher Education*, 22(2), 164–182. <https://doi.org/10.1177/14740222231156888>
- Moore, T. (2024). Pedagogy, podcasts, and politics: What role does podcasting have in planning education? *Journal of Planning Education and Research*, 44(3), 1134–1147.
- Munna, M. S. H., Hossain, M. R., & Saylo, K. R. (2024). Digital education revolution: Evaluating LMS-based learning and traditional approaches. *Journal of Innovative Technology Convergence*, 6(2).
- Poore, M. (2015). *Using social media in the classroom: A best practice guide*.
- Razmi, M., & Afzali, M. (2021). Digital storytelling as a means of literature learning in online environments. *Computers in the Schools*, 38(1), 73–89. <https://doi.org/10.1080/07380569.2021.1873680>
- Ruslan, M., Lyesmaya, D., Barkah, & Thakur, I. (2025). Reading in the scroll era: Generation Z's digital literacy in a culture of quick forgetfulness. *Tadris: Jurnal Keguruan dan Ilmu Tarbiyah*, 10(2), 637–648. <https://doi.org/10.24042/tadris.v10i1.28690>
- Selfa Sastre, M., & Falguera Garcia, E. (2022). From text on paper to digital poetry: Creativity and digital literary reading practices in initial teacher education. *Frontiers in Psychology*, 13, 882898. <https://doi.org/10.3389/fpsyg.2022.882898>
- Selwyn, N. (2016). *Education and technology: Key issues and debates*. Bloomsbury Academic.
- Tushar, H., & Sooraksa, N. (2023). Global employability skills in the 21st century workplace: A semi-systematic literature review. *Heliyon*, 9(10), e21023. <https://doi.org/10.1016/j.heliyon.2023.e21023>
- Wu, J. (2025). E-learning management systems in higher education: Features of the application at a Chinese vs. European University. *Journal of the Knowledge Economy*, 16(1), 5025–5055.