Article

Journal of Interdisciplinary Studies in Education

Volume 15, Issue 8 (2026)
Journal of Interdisciplinary Studies in Education
ISSN: 2166-2681Print 2690-0408 Online | https://ojed.org/jise
https://doi.org/10.32674/tz5rpb44

Employability Development Through Peer Learning and Alumni Engagement: A Bibliometric and Thematic Analysis of Higher Education Research

Era Sood
Amity University, Gurugram, Haryana, India;
Kirloskar Institute of Management, Pune, India
ORCID: 0009-0009-0780-0653

Sanjna Vij
Amity University, Haryana, India
ORCID: 0009-0009-8545-6456

Poornima Gupta
Great Lakes Institute of Management, Gurugram, India
ORCID: 0000-0002-4284-3116

ABSTRACT

This study examines how peer learning, mentoring, and alumni engagement jointly relate to student employability, using bibliometric and thematic analysis of 117 peer-reviewed articles indexed in Scopus (2010–2025). Publications increased markedly after 2019, reflecting growing scholarly interest in this area. Three interdependent thematic clusters emerged: peer learning as a foundation for teaching and learning practice; mentoring and experiential learning as supports for post-graduation career development; and alumni relations as a bridge between universities and workplaces. Based on these patterns, the study proposes a developmental ecosystem model of employability integrating pedagogy, relationships, and experiential learning, and suggests management education is shifting toward experiential, network-based approaches.

Keywords: alumni engagement, bibliometric analysis, employability, higher education, management education, mentoring, peer learning

© Author(s), 2026. Published by Star Scholars Press.
This article is distributed under the Creative Commons Attribution 4.0 International License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. https://creativecommons.org/licenses/by/4.0/

INTRODUCTION

Given the current state of the labor market, management education is increasingly important as a means of preparing graduates for careers that require adaptability and a combination of relational, experiential, and transferable skills that extend beyond technical knowledge. While curriculum design has advanced (Kinash et al., 2018), evidence continues to point to a persistent gap between what graduates learn and their readiness to enter the workplace (Jackson, 2016). Graduates often leave university without practical experience, a professional network, or the adaptability that complex careers demand, raising questions about the sufficiency of traditional, classroom-based teaching techniques (Jackson, 2016).

In response, higher education institutions have placed increasing emphasis on relational and practice-based learning, including structured peer pairing and mentoring as well as alumni engagement. Peer-based learning has long been documented as a developmental process that fosters psychosocial and professional or career-related outcomes (Kram & Isabella, 1985; McDougall & Beattie, 1997). Subsequent research supports the effectiveness of structured peer-based practices, such as peer assessment and peer coaching, in promoting critical thinking, reflective practice, and skill development (Cassidy, 2006; Ladyshewsky, 2006). Structured peer-to-peer mentorship programs illustrate this process in practice: Jaber Chehayeb et al. (2022) documented how a national peer-to-peer mentorship platform for international student applicants improved access to informal guidance and professional socialization otherwise unavailable through formal institutional channels, underscoring peer mentoring's capacity to substitute for, and extend beyond, traditional advising structures. Alumni engagement has similarly evolved from an earlier focus on alumni loyalty toward a broader understanding of alumni as relational stakeholders who support learning, networking, and employability outcomes (Heckman & Guskey, 1998; Iskhakova et al., 2017; Shen & Sha, 2020).

Recent research documents that student-to-alumnus mentoring connects academic experience to career pathways (Vieregger & Bryant, 2020), while alumni networks provide opportunities for networking and labor-market knowledge (English et al., 2021; Larsson et al., 2022). Peer learning continues to promote independence, teamwork, and employability skills among students (Donald & Ford, 2023). Taken together, these strands point to a growing trend toward practice-oriented, network-based learning environments in higher education.

However, existing research remains largely siloed by construct. Peer learning (e.g., Cassidy, 2006; Ladyshewsky, 2006), mentoring (e.g., Kram & Isabella, 1985), and alumni engagement (e.g., Heckman & Guskey, 1998; Iskhakova et al., 2017) have typically been studied separately, providing limited insight into how these areas relate to one another as part of a larger employability-development system. Few studies have used a systematic, data-driven approach to map the intellectual structure of this combined research area or to trace how it has developed within management education.

To address this gap, this study conducts a bibliometric and thematic analysis clarifying how peer learning and alumni engagement jointly contribute to employability outcomes in management education. Scopus serves as the data source, and co-occurrence analysis, overlay visualization, and thematic mapping are used to trace the field's principal developments, thematic clusters, and patterns of scholarly communication over time. This study contributes to the literature in three ways: it provides a comprehensive bibliometric map of the peer learning and alumni engagement literature in management education, it identifies thematic development and emerging research directions, and it frames these themes as parts of a single developmental ecosystem, treating higher education institutions as multi-faceted, transdisciplinary environments that prepare graduates for a rapidly changing workforce.

These contributions translate into three research questions: (RQ1) What is the intellectual structure and thematic composition of the peer learning, mentoring, and alumni engagement literature in management education, as revealed through citation, co-authorship, and co-occurrence analysis? (RQ2) How has this thematic structure evolved over time, and which themes are motor, basic, emerging, or niche within the

field? (RQ3) How can peer learning, mentoring, and alumni engagement be conceptually integrated into a single developmental ecosystem model of employability?

For clarity, this study distinguishes three related but separate constructs. Peer learning is defined, following Topping (2005), as the acquisition of knowledge and skills between peers of equal or similar status through active collaboration, mutual assistance, and shared understanding of one another's work. Peer mentoring refers to a developmental partnership in which a more experienced peer (mentor) provides help, encouragement, and advice to a less experienced peer (mentee) (Kram & Isabella, 1985). Peer coaching is distinct from both in that it involves the structured, goal-oriented development of a peer's skills through feedback, reflection, and skill-building techniques aimed at improving performance (Ladyshewsky, 2006; Parker et al., 2008). Although all three constructs support collaborative development, they differ in structure, purpose, and relational dynamics; this study uses each term consistently according to these distinctions.

Theoretical Framework for a Developmental Ecosystem Perspective

Although peer learning, mentoring, and alumni engagement are increasingly recognized as contributors to employability, research on these constructs tends to treat them in isolation, and empirical evidence on how they interact within a broader system that shapes graduate outcomes remains limited. To address this gap, this study views employability through a developmental ecosystem lens, as the outcome of interrelated relational and experiential learning processes.

This perspective draws on three related theoretical foundations. The first is Bronfenbrenner's (1979) Ecological Systems Theory, which offers a multi-level account of human development as shaped by interactions between the individual and the environment. The second is Wenger's (1998) Communities of Practice theory, which underscores the role of social interaction and collaborative learning in skill development. The third is the emerging literature on learning ecosystems (Siemens, 2005; Barber et al., 2013), which conceptualizes a networked education system built on collaboration among stakeholders, including institutions, peers, and external actors such as alumni. Building on these frameworks, this study proposes a conceptual model of employability development operating across three levels. At the micro level, peer learning supports knowledge construction and skill-building through collaboration among individuals at a similar developmental stage.

At the meso level, mentoring relationships provide structured guidance, constructive feedback, and professional socialization. At the macro level, alumni engagement connects students to professional networks, industry knowledge, and career opportunities beyond the institution. These levels interact to produce employability outcomes through cumulative, relational learning.

By treating mentoring, peer learning, and alumni engagement as an interconnected and mutually dependent ecosystem, this study extends prior management education research, which has generally examined these as separate rather than co-dependent constructs, by offering an integrated model spanning pedagogical strategies, relational networks, and experiential learning. This framework serves as the lens through which the bibliometric findings reported below are interpreted.

The developmental ecosystem proposed here comprises three connected components: (1) peer learning, the collaborative environment in which individuals learn and develop together; (2) mentoring, a structured relationship that provides guidance and professional development for mentees; and (3) alumni engagement, an external network that connects students to industry and career opportunities. These components are dynamically interconnected: peer learning builds foundational skills, mentoring refines and directs those capabilities, and alumni networks extend them into professional practice.

LITERATURE REVIEW

The employability literature in management education has shifted from an emphasis on individual characteristics toward an emphasis on relationships and ecosystems. Early foundational work examined peer relationships as an alternative to traditional hierarchical mentoring, showing that peer relationships offer a viable substitute that provides both psychosocial support and career-related development (Kram & Isabella, 1985). McDougall and Beattie (1997) extended this work by describing peer mentoring as a mutual, non-hierarchical form of learning, marking a shift away from expert-led mentoring toward collaborative peer interaction as a driver of development and growth.

In parallel, the alumni relations literature developed an expanded view of institutions as long-term relational ecosystems. Heckman and Guskey (1998) introduced the concept of discretionary collaborative behavior, describing alumni contributions that exceed formal obligation. Subsequent work reframed alumni loyalty and engagement as multidimensional constructs spanning relational, communicative, and affective dimensions (Iskhakova et al., 2017; Shen & Sha, 2020), positioning alumni not merely as institutional supporters but as active participants in knowledge transfer and career development.

During the 2000s, research increasingly examined the formal integration of peer-assisted learning into management education. Evidence indicates that well-structured peer interactions, including peer assessment (Cassidy, 2006) and peer coaching (Ladyshewsky, 2006), improve critical thinking, evaluative judgment, and performance-based skill development. Parker et al. (2008) extended this work by framing peer coaching as a relational mechanism that accelerates career-related experiential learning, while Hall and Jaugietis (2011) showed that both mentors and mentees benefit from peer-assisted mentoring. Collectively, this body of work established peer-assisted learning as a pedagogical technique in its own right rather than an informal support mechanism. During the 2010s, the literature increasingly linked peer-assisted learning to employability outcomes (Jones et al., 2012), with related work examining the roles of industry engagement and stakeholder expectations (Riebe et al., 2013; Tigga et al., 2014). These studies reflect a broader shift toward practice-oriented, relational learning environments in which employability is co-constructed through interaction rather than individual achievement alone.

More recent research integrates peer learning, student-alumni engagement, and employability into a single frame. Vieregger and Bryant (2020) show how student-to-alumni mentorship connects academic experience to career pathways, while English et al. (2021) and Larsson et al. (2022) show that alumni networks strengthen professional connections and workforce preparation. Further work links alumni engagement to the sustainability of higher education systems (Maulana et al., 2024) and to student outcomes, alongside continued evidence that peer learning builds autonomy, social mobility, and skill development (Donald & Ford, 2023). A 2026 systematic review of global evidence similarly finds that mentorship supports employability primarily through psychosocial and identity-related development, such as professional identity, confidence, and career readiness, rather than through direct employment outcomes, reinforcing mentoring's developmental role within the ecosystem proposed below (Ahmed & Osman, 2026).

This study addresses the resulting gap by using a bibliometric approach to examine how peer learning, mentoring, and student-alumni engagement collectively shape employability in management education, conceptualizing these elements as parts of a developmental ecosystem and offering a systematic account of the relational learning processes that support employability.

RESEARCH METHOD

Study Selection and Screening Procedure

To ensure transparency and reproducibility, this study adopted the SPAR-4-SLR protocol (Paul et al., 2021), which is widely used for systematic literature reviews in management and business research (see

also Donthu et al., 2021, on bibliometric methodology). Each candidate record underwent three phases of screening. In Phase 1, 1,607 documents were retrieved from Scopus on April 21, 2026, using a predefined search query. In Phase 2, duplicate records were identified and removed, leaving 1,487 documents. In Phase 3, each remaining document underwent title/abstract screening followed by full-text screening against the inclusion and exclusion criteria in Table 1. This process removed approximately 1,300 documents that lacked conceptual relevance to mentoring, peer learning, alumni engagement, or employability within management education, leaving 187 documents for full-text review and a final analytic sample of 117 documents. Figure 1 and Table 1 summarize this PRISMA-style selection process (Page et al., 2021).

Inclusion and Exclusion Criteria

Table 1 summarizes the criteria used to keep the dataset relevant, focused, and aligned with the study's aims. Only English-language, peer-reviewed journal articles and reviews within the Business, Management and Accounting subject area were retained; conference papers, book chapters, editorials, and notes were excluded, along with studies lacking conceptual relevance to peer learning, mentoring, alumni engagement, or employability in management education. Non-English-language papers were excluded to preserve consistency in analysis and interpretation.

Table 1
Inclusion and Exclusion Criteria

Criterion	Included	Excluded
Document type	Peer-reviewed journal articles and reviews	Conference papers, book chapters, editorials, notes
Language	English	Non-English
Subject area	Business, Management and Accounting (Scopus)	All other Scopus subject areas
Topical relevance	Peer learning, mentoring, or alumni engagement in higher education/management education	Conceptually unrelated to management education or employability (by title/abstract screening)
Time frame	2010–2025	Pre-2010

Data Collection and Search Strategy

This study uses bibliometric analysis to map the intellectual structure of the peer learning and alumni engagement literature in management education. Bibliometric methods are well suited to identifying research trends and the conceptual structure of a field (Donthu et al., 2021). Data were collected from Scopus using a structured TITLE-ABS-KEY search combining three term groups: peer-learning terms (peer learning, peer mentoring, peer coaching, peer-assisted learning), alumni-engagement terms (alumni engagement, alumni mentoring, alumni networks), and higher-education terms (higher education, university, business school, management education). The exact query was:

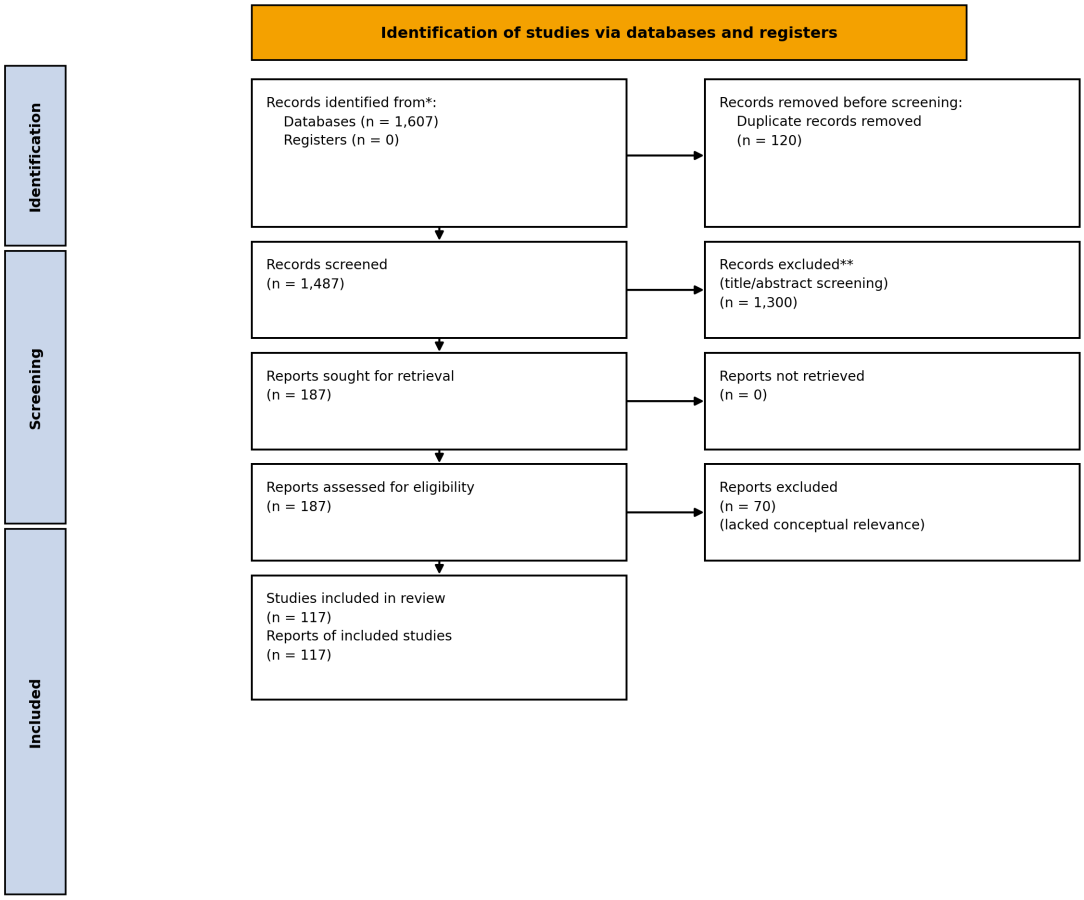
TITLE-ABS-KEY(("peer learning" OR "peer mentoring" OR "peer coaching" OR "peer-assisted learning" OR "alumni engagement" OR "alumni mentoring" OR "alumni networks") AND ("higher education" OR university OR "business school" OR "management education")) AND PUBYEAR > 2009 AND PUBYEAR < 2026 AND (LIMIT-TO (SUBJAREA,"BUSI")) AND (LIMIT-TO (DOCTYPE,"ar") OR LIMIT-TO (DOCTYPE,"re"))

Data Analysis Tools

Two complementary tools were used for analysis. VOSviewer (version 1.6.19) was used for keyword co-occurrence analysis, using author keywords with a minimum occurrence threshold of five and association-strength normalization; clusters were generated using VOSviewer's default resolution parameter,. The bibliometrix package (version 4.x) for R, accessed through the Biblioshiny interface, was used for descriptive statistics, co-authorship network analysis, and thematic mapping. The thematic map follows the density-centrality strategic-diagram approach developed by Cobo et al. (2011), in which callon centrality indexes a theme's relevance to the field and callon density indexes its internal development, jointly positioning themes as motor, basic, emerging/declining, or niche. Together, these tools support an integrated understanding of the domain's intellectual structure, its evolution over time, and directions for future research (Donthu et al., 2021). This combination of systematic screening and bibliometric mapping mirrors recent large-scale applications of the same approach to adjacent higher-education literatures (e.g., Bulut, 2026).

Figure 1

PRISMA-style flow diagram of study selection (adapted from Page et al., 2021), corrected to show the intermediate full-text screening stage (n = 187 → n = 117) reported in the Study Selection and Screening Procedure section.



As with any co-occurrence and citation-based method, these analyses describe patterns of scholarly attention, collaboration, and thematic proximity in the published literature; they are not a direct test of causal relationships between peer learning, mentoring, alumni engagement, and individual employability outcomes. Findings are therefore interpreted as evidence of how the field has organized its attention around these constructs, and the developmental ecosystem model proposed is offered as a conceptual synthesis of that pattern rather than as an empirically tested causal model.

RESULTS

Descriptive Analysis of the Dataset

The final dataset contains 117 documents published between 2010 and 2025. Annual scientific production shows a consistent increase since 2019, reflecting growing scholarly interest in employability, experiential learning, and education-based networking. This pattern suggests that the research area is moving from an early, exploratory stage toward a recognized area of inquiry within management education, with contributions spanning multiple disciplines and geographic regions and providing further justification for integrating peer learning, mentoring, and alumni engagement into higher education research.

Citation Analysis

Citation analysis identifies the most influential works and authors in this research area and shows that the field's knowledge base is concentrated around a relatively small set of highly cited studies (Table 2). Castleman and Page (2014), cited 251 times, shows that behavioral interventions and peer-mentor outreach play an important role in students' transition between educational phases, underscoring the value of relational support mechanisms such as mentors and teachers in shaping student outcomes. Heslin et al. (2019) extends this relational emphasis by linking adaptability across learning environments over the lifespan to sustained employability, framed as an evolving capability rather than a fixed state. Shahin et al. (2021) and Pandit and Agrawal (2022) reflect the field's responsiveness to changing educational and societal conditions, particularly entrepreneurship education and the rapid expansion of digital learning during the COVID-19 period. English et al. (2021) demonstrates that professional networking is significantly related to graduate employability, reinforcing the role of relational capital in higher education, while Bhatia and Amati (2010) and Vickers et al. (2017) show that peer mentoring supports skill development within collaborative learning environments. Ladyshewsky and Flavell (2011), Hartman et al. (2019), and Tomkins and Ulus (2015) broaden the scope of employability research to leadership development, diversity, and reflective learning, together indicating that employability depends on multiple, interdependent capabilities rather than a single discrete skill set. Overall, the citation landscape reflects a shift away from traditional, classroom-based employability models toward diversified, relational and networked approaches, consistent with the developmental ecosystem framing proposed in this study.

Table 2
Citation Analysis

Author	Year	Title	Total Citations	TC/Year
Castleman & Page	2014	Summer nudging: Can personalized text messages and peer mentor outreach increase college going among low-income high school graduates?	251	20.92
Heslin et al.	2019	How being in learning mode may enable a sustainable career across the lifespan	113	16.14
Shahin et al.	2021	The impact of a STEM-based entrepreneurship program on the entrepreneurial intention of secondary school female students	54	9.00
Pandit & Agrawal	2022	Exploring Challenges of Online Education in COVID Times	49	9.80

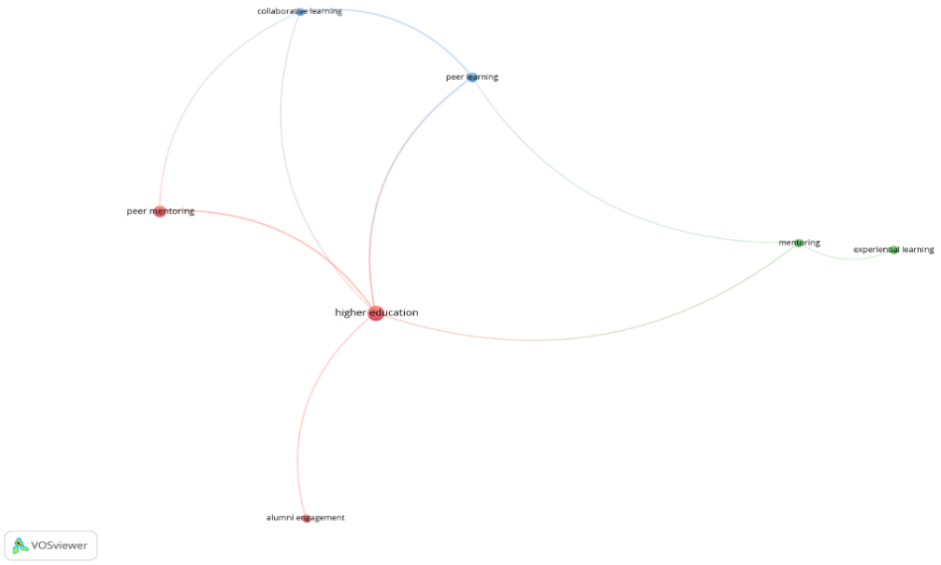
Author	Year	Title	Total Citations	TC/Year
English et al.	2021	Developing professional networks: the missing link to graduate employability	42	7.00
Bhatia & Amati	2010	"If these women can do it, I can do it, too": Building women engineering leaders through graduate peer mentoring	41	2.41
Ladyshewsky & Flavell	2011	Transfer of training in an academic leadership development program for program coordinators	41	2.73
Vickers et al.	2017	Peer mentoring and intercultural understanding: Support for refugee-background and immigrant students beginning university study	41	4.10
Hartman et al.	2019	Strategies for Improving Diversity and Inclusion in an Engineering Department	37	4.63
Tomkins & Ulus	2015	Is narcissism undermining critical reflection in our business schools?	36	3.00

Co-occurrence Analysis

Keyword co-occurrence analysis in VOSviewer identified the conceptual structure of the field and revealed three key thematic clusters. The first cluster centers on higher education institutions as the context in which peer mentoring and alumni engagement operate as complementary relational mechanisms, linking internal developmental processes to the external connections that alumni engagement provides for career pathways. The second cluster centers on peer learning and collaborative pedagogy as core approaches within management education, supporting student-centered environments and a shift from instructor-led teaching toward improved critical thinking, communication, and active participation. The third cluster centers on mentoring and experiential learning as mechanisms that bridge academic knowledge and real-world application, supporting the development of transferable skills such as problem-solving, leadership, and professional competence. Together, these clusters point to an integrated structure in which peer learning, mentoring, and alumni engagement operate within the higher education context to support employability, consistent with the emergence of a developmental ecosystem in which pedagogical practice, relational networks, and experiential learning are jointly associated with career readiness.

Figure 2

Co-occurrence network of key thematic clusters (VOSviewer)



Thematic Map

A thematic map was constructed in bibliometrix using co-word analysis, positioning research themes by density (development degree) and centrality (relevance degree) across four quadrants: motor, basic, emerging/declining, and niche.

Motor themes (upper-right quadrant) are the most developed and central attributes in the field, centered on student engagement, university context, and student mentoring, with a visible imprint from the COVID-19 period reflecting adaptive, flexible, and resilient learning environments. These themes propel the field by linking student engagement and interaction with institutional support to shape student outcomes.

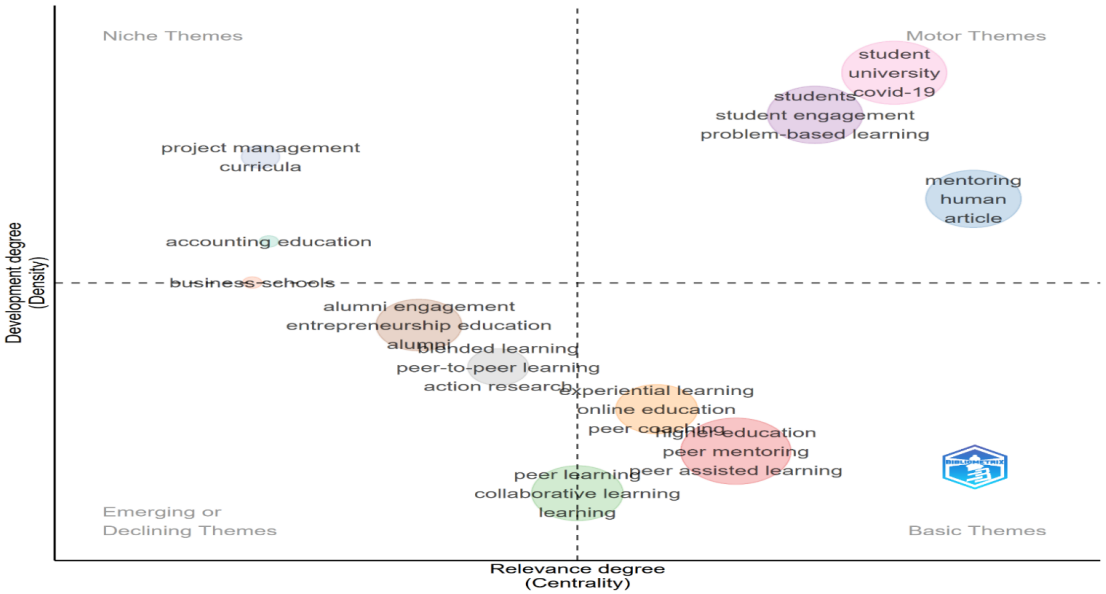
Basic themes (lower-right quadrant), including higher education, peer mentoring and assisted learning, experiential learning, and distance/online learning, are highly central to the field but less developed theoretically, indicating a need for a more comprehensive theoretical framework connecting these themes to employability and career-readiness outcomes.

Emerging or declining themes (lower-left quadrant), including alumni engagement, entrepreneurship education, peer-to-peer learning, blended learning, and action research, reflect shifting research priorities. Alumni engagement, in particular, remains underdeveloped relative to its potential and represents a priority area for future research linking alumni associations more directly to student learning and career pathways.

Niche themes (upper-left quadrant), including project management, curricula, and accounting education, show a higher degree of conceptual maturity but limited centrality within the broader peer-learning and employability literature, suggesting opportunities for cross-disciplinary collaboration.

Figure 3

Thematic Map (bibliometrix/Biblioshiny)



Main Contribution (Synthesis)

The developmental ecosystem framework presented in this study is not an externally adopted model; it is this study's own synthesis, built inductively from the co-occurrence network and the thematic map, and interpreted through the theoretical lenses introduced in the theoretical framework (Bronfenbrenner, 1979; Wenger, 1998; Siemens, 2005). Across these analyses, scholarly attention within

this literature is shifting away from traditional, isolated instructional approaches toward integrated, practice-oriented learning: peer learning and higher education form the backbone of the field, while alumni engagement and experiential learning are emerging themes consistent with a developmental ecosystem perspective. This pattern describes how the field has organized its attention around these constructs rather than a tested causal account of how employability is produced; it treats peer interaction, mentoring, alumni networks, and real-world experience as plausibly interrelated contributors to employability, and it suggests that future research should test whether moving from isolated pedagogical approaches toward holistic, networked models improves students' transition from education to employment.

DISCUSSION AND CONCLUSIONS

Read against Bronfenbrenner's (1979) ecological systems theory and Wenger's (1998) communities-of-practice theory, the three clusters identified in the co-occurrence analysis map onto three levels of a single ecosystem: peer learning as a micro-level process for building knowledge and adaptability (Topping, 2005), mentoring as a meso-level mechanism for guidance and professional socialization (Kram & Isabella, 1985; McDougall & Beattie, 1997), and alumni engagement as a macro-level bridge to professional networks and career opportunities (Heckman & Guskey, 1998; English et al., 2021). This is consistent with the networked-learning-ecosystem view advanced by Siemens (2005) and Barber et al. (2013), and it is this correspondence between the bibliometric clusters and an existing multi-level theory, rather than the clusters alone, that supports treating peer learning, mentoring, and alumni engagement as interdependent rather than as three separate pedagogies.

This ecosystem framing both aligns with and departs from recent bibliometric work on adjacent topics. Wahab's (2025) bibliometric analysis of 2,335 graduate-employability articles (1981–2023) identifies four thematic clusters organized around skills attribution, generic skills, employer engagement, and curriculum design—a structure centered on individual competencies and institutional curricula. The three clusters identified here instead center on relational processes, suggesting that when the search is scoped specifically to peer- and alumni-based mechanisms rather than employability broadly, the field's attention organizes around relationships rather than skills content. Sulistiawan (2025) reaches a related conclusion using a career-capital lens on 468 employability documents (2014–2024), finding a shift from narrow job-attainment outcomes toward long-term career sustainability; the present analysis extends this by showing, through the marked post-2019 increase in annual scientific production reported in the descriptive analysis, roughly when that shift occurred in the peer-learning and alumni-engagement literature specifically—concentrated after 2019 rather than distributed evenly across the study window. Donald et al.'s (2023) Employability Capital Growth Model, built from 42,558 manuscripts, similarly foregrounds relational forms of capital (social, psychological, identity) alongside human capital; the ecosystem model proposed here is compatible with that capital-based account but operates at a different level of analysis, describing the institutional mechanisms through which such capital is plausibly built, rather than the capital itself. This distinction is also visible at the individual level: Niu et al. (2022), studying student veterans' self-perceived employability, measured employability primarily as an individual-level psychological construct shaped by personal characteristics and prior experience. The developmental ecosystem model proposed here complements this individual-level view by locating the relational and institutional conditions, peer learning, mentoring, and alumni engagement, that plausibly shape whether such individual perceptions of employability can be formed and sustained in the first place.

The citation and thematic-map findings also extend the alumni-engagement literature specifically. Mei et al.'s (2025) systematic review of 34 alumni-engagement studies identifies 16 thematic clusters and frames alumni engagement as an ecosystem in its own right, spanning governance, fundraising, and career support. The present analysis, scoped to management education, finds alumni engagement positioned in the emerging/declining quadrant of the thematic map—centrally connected to the field but comparatively underdeveloped—consistent with Mei et al.'s (2025) observation that alumni-engagement research remains

fragmented across disciplines and only recently expanded (2024–2025). This convergence across two independently constructed datasets strengthens the case that alumni engagement is a genuine growth area rather than an artifact of this study's search terms. A third, independently conducted bibliometric study of alumni-giving research reaches a consistent conclusion, similarly finding limited systematic mapping of the alumni scholarly landscape despite growing institutional attention (Glover, 2026), further corroborating that alumni engagement's underdevelopment relative to its centrality is a structural feature of the field rather than a study-specific artifact. On methodology, this study's use of the SPAR-4-SLR protocol (Paul et al., 2021) mirrors Tushar and Sooraksa's (2023) semi-systematic review of employability skills, which used the same protocol; the comparable screening ratios across both studies suggest the exclusion criteria applied here are broadly consistent with accepted practice in this literature, rather than unusually restrictive.

Building on the ecosystem model developed in the theoretical framework and the thematic findings reported in the results, this study advances four theoretical propositions. Each is tied to a specific pattern in the results rather than asserted independently of them.

Proposition 1 holds that peer learning is associated with employability and transferable-skill development. This follows from the centrality of peer learning and collaborative learning in the basic-themes quadrant of the thematic map, and from Topping's (2005) and Donald and Ford's (2023) accounts of peer learning as a skill-building mechanism.

Proposition 2 proposes that mentoring links collaborative-skill development to employability through guidance and feedback. The co-occurrence cluster tying together higher education, mentoring, and experiential learning supports this reading, as does the high per-year citation rate of mentoring-focused studies in Table 2 (e.g., Castleman & Page, 2014; Heslin et al., 2019), read alongside Kram and Isabella (1985) and Parker et al. (2008).

Proposition 3 concerns alumni engagement, which is expected to provide access to professional networks and career support during workforce transition. Support for this comes from alumni engagement's position in the emerging/declining quadrant of the thematic map and its role as a distinct macro-level node in the co-occurrence network, consistent with Heckman and Guskey (1998), English et al. (2021), and Mei et al. (2025).

Proposition 4, that employability is best understood as the product of an integrated ecosystem rather than any single component, follows directly from the interconnection among all three clusters in the co-occurrence network rather than from any one cluster in isolation; this is the study's central theoretical claim, and it is offered as a proposition for empirical testing rather than as a finding the present bibliometric data can, by itself, confirm.

Taken together, these propositions reframe graduate employability as a relational, ecosystem-driven process rather than an individual-traits outcome, while remaining explicit that this reframing is a conceptual synthesis of documented patterns in the literature, to be tested empirically across varied educational settings.

Limitations

This study has several limitations. First, the analysis is limited to Scopus; other databases, such as Web of Science or Google Scholar, may contain relevant studies not captured here, which could affect the completeness of the dataset. Second, the study focuses on publications within the Business, Management and Accounting subject area; relevant interdisciplinary research in education, psychology, or sociology falls outside this scope and may not be reflected in these findings. Third, the bibliometric approach relies primarily on publication metadata and quantitative analysis; while this method is well suited to identifying patterns and trends, it does not capture the contextual depth or qualitative nuance of individual studies. Finally, the study excludes work published before 2010; while this window captures contemporary developments, it may exclude foundational contributions, and reliance on keyword-based search may exclude studies using alternative terminology, which could affect the comprehensiveness of the dataset.

Conclusion

This study presents a bibliometric analysis of the growing literature on peer learning and alumni engagement in management education, showing that the field's structure and dynamics are fluid and continually evolving, and that peer learning, mentoring, and alumni engagement are interrelated components embedded in the higher education environment that the literature consistently links to employability outcomes. The data point to a broader shift away from traditional, classroom-based learning models toward more integrated and practical forms of learning, with the emergence of alumni engagement and experiential learning as focal areas signaling increased attention to networked and experiential learning opportunities. Building on these findings, this study develops a framework, grounded in Bronfenbrenner's (1979) ecological systems theory, Wenger's (1998) communities-of-practice theory, and the networked-learning-ecosystem literature (Siemens, 2005; Barber et al., 2013), that positions pedagogy, relational interaction, and external networks as interdependent elements supporting students' transition from education into employment. Practically, the findings suggest that universities should move away from isolated teaching practices toward a more holistic approach that integrates peer learning, mentoring, and alumni networks into the curriculum, equipping students with the knowledge and skills needed to operate effectively in a complex global workforce. More broadly, this study points to the value of a more integrated and dynamic approach to management education, one in which learning is not confined to the classroom but continues to develop through relationships, professional experience, and professional networks, and in which universities build structured peer-mentorship programs within an integrated alumni network to systematically improve student employment outcomes.

IMPLICATIONS

These findings suggest several directions for future research. First, because alumni engagement remains an emerging concept, future studies should examine how alumni networks can be systematically integrated into learning ecosystems to improve employability outcomes, including empirical analyses of alumni mentoring, alumni networking platforms, and university-industry collaboration. Second, future research should develop and test integrated models spanning peer learning, mentoring, and experiential learning within a single framework, examining how these elements jointly shape skill development, career readiness, and long-term employability. Third, more interdisciplinary research drawing on education, psychology, and organizational behavior is needed to better understand the relational and social dynamics underlying peer-based learning and mentoring. Finally, mixed-method and longitudinal designs are needed to examine the long-term effects of developmental learning ecosystems on students' professional outcomes and to clarify how learning experiences translate into sustained career success.

Author Contributions: Conceptualization, methodology, data curation, formal analysis, and writing—original draft preparation, E.S.; supervision, validation, writing—review and editing, S.V. and P.G. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable, as this study did not involve human or animal subjects.

Acknowledgments: During the preparation of this manuscript, the author(s) used Claude (Anthropic) for editing assistance, reference verification, and formatting support. The authors have reviewed and edited the output and take full responsibility for the content of this publication.

Conflicts of Interest: The authors declare no conflicts of interest.

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of the publisher and/or the editor(s). The publisher and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.

REFERENCES

Ahmed, A. M., & Osman, M. A. (2026). Mentorship and graduate employability: A systematic review of global evidence and emerging trends. *Discover Education, 5, Article 479.* https://doi.org/10.1007/s44217-026-01492-z

Barber, M., Donnelly, K., & Rizvi, S. (2013). *An avalanche is coming: Higher education and the revolution ahead*. Institute for Public Policy Research.

Bhatia, S., & Amati, J. P. (2010). "If these women can do it, I can do it too": Building women engineering leaders through graduate peer mentoring. *Leadership and Management in Engineering, 10*(4), 174–184. https://doi.org/10.1061/(ASCE)LM.1943-5630.0000081

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Harvard University Press.

Bulut, A. (2026). The role of Higher Education journal in shaping global knowledge networks: A bibliometric and thematic analysis. *Higher Education.* Advance online publication. https://doi.org/10.1007/s10734-026-01647-9

Cassidy, S. (2006). Developing employability skills: Peer assessment in higher education. *Education + Training, 48*(7), 508–517. https://doi.org/10.1108/00400910610705890

Castleman, B. L., & Page, L. C. (2014). Summer nudging: Can personalized text messages and peer mentor outreach increase college going among low-income high school graduates? *Journal of Economic Behavior & Organization, 115*, 144–160. https://doi.org/10.1016/j.jebo.2014.12.008

Cobo, M. J., López-Herrera, A. G., Herrera-Viedma, E., & Herrera, F. (2011). An approach for detecting, quantifying, and visualizing the evolution of a research field: A practical application to the fuzzy sets theory field. *Journal of Informetrics, 5*(1), 146–166. https://doi.org/10.1016/j.joi.2010.10.002

Donald, W. E., & Ford, N. (2023). Fostering social mobility and employability: The case for peer learning. *Teaching in Higher Education, 28*(3), 672–678. https://doi.org/10.1080/13562517.2020.1799809

Donald, W. E., Baruch, Y., & Ashleigh, M. J. (2023). Construction and operationalisation of an Employability Capital Growth Model (ECGM) via a systematic literature review (2016–2022). *Studies in Higher Education, 49*(1), 1–15. https://doi.org/10.1080/03075079.2023.2219270

Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research, 133*, 285–296. https://doi.org/10.1016/j.jbusres.2021.04.070

English, P., de Villiers Scheepers, M. J., Fleischman, D., Burgess, J., & Crimmins, G. (2021). Developing professional networks: The missing link to graduate employability. *Education + Training, 63*(4), 647–661. https://doi.org/10.1108/ET-10-2020-0309

Glover, D. (2026). Informing higher education policy and practice through alumni engagement research: A bibliometric study. *Perspectives: Policy and Practice in Higher Education.* Advance online publication. https://doi.org/10.1080/13603108.2026.2673438

Hall, R., & Jaugietis, Z. (2011). Developing peer mentoring through evaluation. *Innovative Higher Education, 36*(1), 41–52. https://doi.org/10.1007/s10755-010-9156-6

Hartman, H., Forin, T., Sukumaran, B., Farrell, S., Bhavsar, P., Jahan, K., Dusseau, R., Bruckerhoff, T., Cole, P., Lezotte, S., Zeppilli, D., & Macey, D. (2019). Strategies for improving diversity and

inclusion in an engineering department. *Journal of Professional Issues in Engineering Education and Practice, 145*(2), 04018016. https://doi.org/10.1061/(ASCE)EI.1943-5541.0000404
Heckman, R., & Guskey, A. (1998). The relationship between alumni and university: Toward a theory of discretionary collaborative behavior. *Journal of Marketing Theory and Practice, 6*(2), 97–112. https://doi.org/10.1080/10696679.1998.11501896
Heslin, P. A., Keating, L. A., & Ashford, S. J. (2019). How being in learning mode may enable a sustainable career across the lifespan. *Journal of Vocational Behavior, 110*, 220–236.
Iskhakova, L., Hoffmann, S., & Hilbert, A. (2017). Alumni loyalty: Systematic literature review. *Journal of Nonprofit & Public Sector Marketing, 29*(3), 274–316. https://doi.org/10.1080/10495142.2017.1326352
Jaber Chehayeb, R., SenthilKumar, G., Saade, Z., Gallo Marin, B., Aghagoli, G., & Virji, A. Z. (2022). Examining the first peer-to-peer mentorship program (F1Doctors) for international medical students. *Journal of Interdisciplinary Studies in Education, 11*(1), 102–125. https://www.ojed.org/jise/article/view/4263
Jackson, D. (2016). Re-conceptualising graduate employability: The importance of pre-professional identity. *Higher Education Research & Development, 35*(5), 925–939. https://doi.org/10.1080/07294360.2016.1139551
Jones, N., Torezani, S., & Luca, J. (2012). A peer-to-peer support model for developing graduate students' career and employability skills. *Intercultural Education, 23*(1), 51–62. https://doi.org/10.1080/14675986.2012.664755
Kinash, S., McGillivray, L., & Crane, L. (2018). Do university students, alumni, educators and employers link assessment and graduate employability? *Higher Education Research & Development, 37*(2), 301–315. https://doi.org/10.1080/07294360.2017.1368505
Kram, K. E., & Isabella, L. A. (1985). Mentoring alternatives: The role of peer relationships in career development. *Academy of Management Journal, 28*(1), 110–132. https://doi.org/10.2307/256064
Ladyshewsky, R. K. (2006). Peer coaching: A constructivist methodology for enhancing critical thinking in postgraduate business education. *Higher Education Research & Development, 25*(1), 67–84. https://doi.org/10.1080/07294360500453096
Ladyshewsky, R. K., & Flavell, H. (2011). Transfer of training in an academic leadership development program for program coordinators. *Educational Management Administration & Leadership, 40*(1), 127–147. https://doi.org/10.1177/1741143211420615
Larsson, C. F., Marshall, B., & Ritchie, B. (2022). The alumni project: Fostering student-alumni engagement in the curriculum. *Journal of Education for Business, 97*(4), 253–260. https://doi.org/10.1080/08832323.2021.1886765
Maulana, A. E., Patterson, P. G., Satria, A., & Pradipta, I. A. (2024). Alumni connectedness and its role in intention to contribute to higher education institutions. *Journal of Marketing for Higher Education, 34*(2), 1124–1145. https://doi.org/10.1080/08841241.2023.2176543
McDougall, M., & Beattie, R. S. (1997). Peer mentoring at work: The nature and outcomes of non-hierarchical developmental relationships. *Management Learning, 28*(4), 423–437. https://doi.org/10.1177/1350507697284003
Mei, C., Alias, B. S., & Ahmad, J. (2025). Alumni engagement in higher education institutions: A comprehensive systematic literature review (SLR). *Environment and Social Psychology, 10*(12), 4398. https://doi.org/10.59429/esp.v10i12.4398
Niu, Y., Zhu, Y., Xu, X., & Hunter-Johnson, Y. (2022). Exploring self-perceived employability and ambition of student veterans in a higher education institution in the United States. *Journal of Interdisciplinary Studies in Education, 11*(2), 73–94. https://ojed.org/jise/article/view/4528
Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., … Moher, D. (2021). The

PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ, 372*, n71. https://doi.org/10.1136/bmj.n71

Pandit, D., & Agrawal, S. (2022). Exploring challenges of online education in COVID times. *FIIB Business Review, 11*(3), 263–270. https://doi.org/10.1177/2319714520986254

Parker, P., Hall, D. T., & Kram, K. E. (2008). Peer coaching: A relational process for accelerating career learning. *Academy of Management Learning & Education, 7*(4), 487–503. https://doi.org/10.5465/amle.2008.35882189

Paul, J., Lim, W. M., O'Cass, A., Hao, A. W., & Bresciani, S. (2021). Scientific procedures and rationales for systematic literature reviews (SPAR-4-SLR). *International Journal of Consumer Studies, 45*(4), O1–O16.

Riebe, L., Sibson, R., Roepen, D., & Meakins, K. (2013). Impact of industry guest speakers on business students' perceptions of employability skills development. *Industry and Higher Education, 27*(1), 55–66. https://doi.org/10.5367/ihe.2013.0140

Shahin, M., Ilic, O., Gonsalvez, C., & Whittle, J. (2021). The impact of a STEM-based entrepreneurship program on the entrepreneurial intention of secondary school female students. *International Entrepreneurship and Management Journal, 17*(4), 1867–1898. https://doi.org/10.1007/s11365-020-00713-7

Shen, H., & Sha, B. L. (2020). Conceptualizing and operationalizing alumni engagement: When conversational voice matters more than openness and assurances of legitimacy. *Public Relations Review, 46*(5), 101974. https://doi.org/10.1016/j.pubrev.2020.101974

Siemens, G. (2005). Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology and Distance Learning, 2*(1), 3–10.

Sulistiawan, J. (2025). Mapping employability: A decade of trends and insights from higher education through bibliometric analysis (2014–2024). *Global Knowledge, Memory and Communication.* Advance online publication. https://doi.org/10.1108/GKMC-06-2024-0394

Tigga, A. E., Pathak, P., & Kumar, R. V. (2014). Branding of B-schools by understanding the expectations of their three major stakeholders. *Indian Journal of Marketing, 44*(1), 7–23.

Tomkins, L., & Ulus, E. (2015). Is narcissism undermining critical reflection in our business schools? *Academy of Management Learning & Education, 14*(4), 595–606. https://doi.org/10.5465/amle.2014.0107

Topping, K. J. (2005). Trends in peer learning. *Educational Psychology, 25*(6), 631–645. https://doi.org/10.1080/01443410500345172

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

Vickers, M., McCarthy, F., & Zammit, K. (2017). Peer mentoring and intercultural understanding: Support for refugee-background and immigrant students beginning university study. *International Journal of Intercultural Relations, 60*, 198–209. https://doi.org/10.1016/j.ijintrel.2017.04.015

Vieregger, C., & Bryant, A. (2020). Student-alumni mentoring in the business capstone: An opportunity to both cap and bridge the undergraduate experience. *Journal of Education for Business, 95*(5), 335–343. https://doi.org/10.1080/08832323.2019.1646698

Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge University Press.

Wahab, S. A. (2025). Graduate employability: A bibliometric analysis. *Global Business and Organizational Excellence, 44*, 38–57. https://doi.org/10.1002/joe.22267

ERA SOOD is a Ph.D. Scholar at Amity Business School, Amity University, Haryana, India. She has 18 years of work experience in training management students in the area of corporate readiness. Email: erasood232@gmail.com

SANJNA VIJ, PhD, is a Professor at the School of Liberal Arts (ASLA), Director of the Amity Academic Staff College, and Head of the Centre of Excellence for Innovation in Education, Amity University Haryana, India.

POORNIMA GUPTA, PhD, is the Program Director–PGDM at Great Lakes Institute of Management, Gurugram, India.