

EXPLORING LEARNING STYLES AMONG BUSINESS STUDIES STUDENTS: A NARRATIVE REVIEW

Ruzana Awang¹
Suzyanty Mohd Shokory^{2*}

¹ Faculty of Management and Economics, Universiti Pendidikan Sultan Idris, Malaysia,
(E-mail: ruzanaawang@yahoo.com)

² Faculty of Management and Economics, Universiti Pendidikan Sultan Idris, Malaysia,
(E-mail: suzyanty@fpe.upsi.edu.my)

*Corresponding author: suzyanty@fpe.upsi.edu.my

Article history

Received date : 3-3-2026
Revised date : 4-3-2026
Accepted date : 10-4-2026
Published date : 15-4-2026

To cite this document:

Awang, R., & Mohd Shokory, S. (2026). Exploring learning styles among business studies students: A narrative review. *Journal of Islamic, Social, Economics and Development (JISED)*, 11 (81), 858 – 868.

Abstract: *This narrative review seeks to understand how learning styles influence the teaching and learning process among business studies students, by integrating existing findings, then highlights any major trends, challenges and relevances to educational practice and research. To be able to improve the effectiveness of teaching, particularly in business education where analytical and experiential, as well as interpersonal skills are important, it is important to know how students learn. Despite key pedagogic paradigms such as Kolb's Experiential Learning Theory and the VARK model informing practice, there remain uncertainties concerning their authenticity and applicability. Increasing diversity in student populations and the proliferation of digital learning settings are making it challenging for educators to make sense of and use theories of learning styles in practice. We carried out an extensive search of the literature on Scopus, Web of Science, ERIC and Google Scholar. A review of the literature from 2020-2026 included quantitative and qualitative studies related to learning styles, instructional tactics, and academic outcomes in business education. Bibliographies of pertinent papers were also reviewed to identify further sources. The review also shows that those in business studies have varied learning preferences but kinesthetic and visual are the most common styles because of the practitioner-oriented case study focus of the field. Although adaptive, multimodal teaching methods promote engagement and learning, emphasis on matching instructional design to particular styles is disputed. Limitations in methods among studies use self-report measures, lack of longitudinal and cross-cultural studies may lead to contradiction results. This review highlights the value of dynamic, evidence-based instruction which values learning diversity and supports learner flexibility and metacognitive awareness. It points to the importance of future investigation combining mixed-method research and new technologies, like adaptive learning analytics, for a more comprehensive picture on emerging learning preferences in the globalized and digitalized business education landscape.*

Keywords: *Learning styles, business education, teaching strategies, learner engagement, higher education, adaptive learning.*

Introduction

Understanding of student learning underpins educational advances, especially in the fast-paced discipline like business both analytical and practical skills are equally important (Ahuja, 2024). In the last two decades, learning styles research individual preferences among students in how they perceive information, process information and store information have risen to prominence in influencing student-centered approaches (Emma, 2024). Nevertheless, although Kolb's Experiential Learning Theory and VARK model (Visual, Auditory, Reading/Writing & Kinesthetic) have been widely accepted there is an ongoing debate on their validity, applicability and effectiveness in enhancing academic performance (Idowu, 2024). For those involved in business education, which should serve to prepare students for theoretical as well as practical balancing of the two (Anderson et al., 2025), appreciation of the various learning styles proves no less difficult and critical. Recent research brings to attention the increasing prevalence of digital orientated learning environments and cross-cultural elements that may have an effect on learning styles, however the results are often contradictory or fragmented (Ali, 2025).

This narrative review sheds light on business studies students learning styles, by discussing evidence pertaining to the ways they express themselves and relate to teaching approaches, learner engagement, and performance. The article also looks at methodologies in vogue and pinpoints areas that have yet to be suitably resourced in this growing area of interest. In synthesizing existing perspectives, the primary contribution of this review is to offer educators and curriculum writers a holistic view of learning diversity in business education an area becoming ever more relevant, given the globalized and technology-mediated nature of contemporary learning.

Methods

This narrative review was envisaged to combine different studies on learning styles in business studies students. Data were collected from various electronic databases, such as Scopus, Web of Science, ERIC (The Education Resources Information Center), and Google Scholar to capture peer-reviewed and scholarly sources. Search of reference lists of relevant journal articles was conducted to capture studies that were not retrieved from the initial database searches.

Search strategies included combinations of the following key words and Boolean operators: "learning style" OR "learning preference" OR "educational style" OR "cognitive style") AND (business studies, business education, business training or management education) AND (student, learner, pupil or trainee) AND engagement, motivation performance or outcome. Filters were established to include studies in English published between 2020 and 2026 that were conducted within the setting of higher education. Both quantitative and qualitative research was included to ensure a range of methodological approaches were represented.

The inclusion criteria stipulated that the studies explicitly studied learning styles or learning preferences within a business or management school context. Studies were defined as eligible in this review if they examined connections between learning styles and one of the following: academic achievement, teaching strategies, or student engagement. Exclusion criteria were applied to remove studies that are not focused on business education, non-empirical research which did not interpret outcomes with data and publications that were only in partial text. This

process helped to guarantee that the sources chosen were topical, credible and shed some light on how learning styles impact upon teaching and learning within business studies.

Discussion

Synthesis Analysis

The Definition and Conceptualisation of Learning Styles

Learning styles are the approaches individuals always utilize to relate to new knowledge (Ramakrishna, 2025). Business education models, such as Kolb's Experiential Learning Theory (Kolb, 1984) and the VARK model (Fleming & Mills, 1992), are frequently cited. Kolb's model originated as a four-stage experiential cycle of concrete experience, reflective observation, abstract conceptualization, and active experimentation, making it especially compatible with experiential learning styles found in business programs. In contrast, the VARK framework classifies learners as visual, auditory, reading/writing, or kinesthetic, based on the sensory mode that is presumed to be the most effective for sensory modality rather than cognitive processes (Beltran et al., 2025; Vas, 2025). Recent literature suggests some disagreement about the validity of these models. Some studies acknowledge that they are helpful in creating learner-centered instruction, others contend that the idea of a static learning styles approach creates a convoluted picture of learning and lacks scientific validity (Fallace, 2025). A common belief is that learning styles are not only mutable but also dependent on discipline, cultural milieu, and technology use, thus indicating that prescriptive models in teaching require careful consideration and the development of adaptive teaching models instead (Abu-Rasheed et al., 2023; Ajani, 2024; Benkhalfallah et al., 2024; Krishnannair & Krishnannair, 2025).

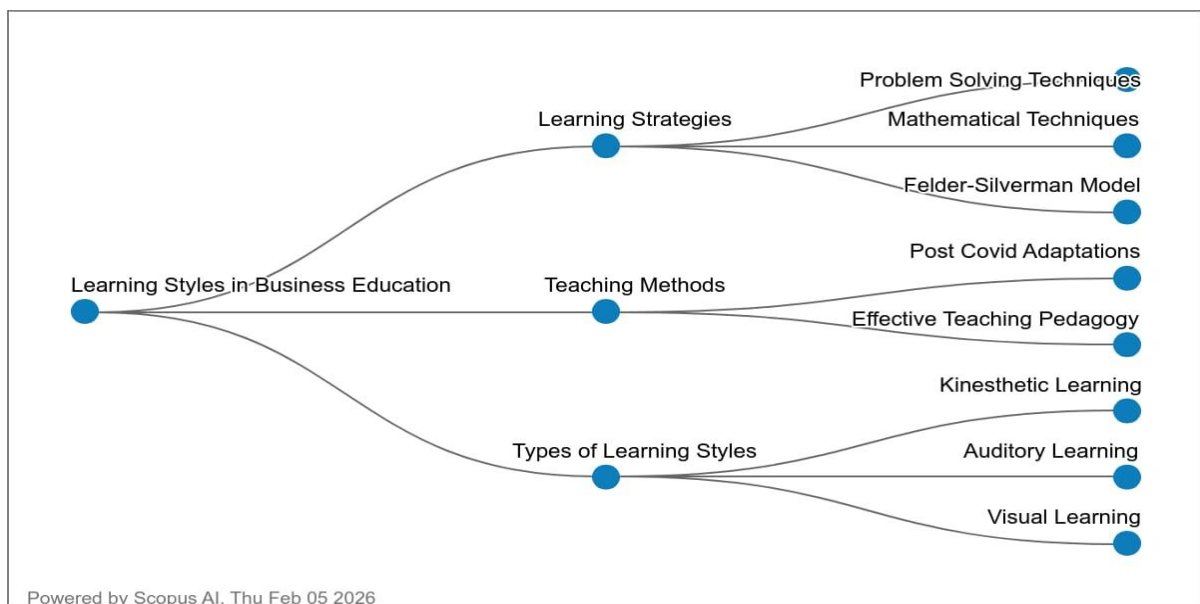


Figure 1: Learning Styles in Business Education generate by Scopus AI

Scopus AI generated a summary of the major themes that emerged from this research (Figure 1). These three dimensions are represented in the visualization under headings for the learning strategies, teaching, and types of learning styles. Learning strategies are linked with the ways of problem-solving and mathematical techniques such as those mentioned above as well as general frameworks such as the Felder–Silverman Model. Teaching methods focus on effective pedagogy and post-COVID pedagogical shifts, all of which have shifted as business education

has evolved recently. Compared to the types of learning styles aspect, which focuses on visual, auditory, and kinesthetic preferences, this approach is central to principles utilized in learning research to gain insight into the information processing of the learners. In aggregate, Figure 1 shows that research on learning styles in business education comprises learner characteristics, pedagogical approaches and strategic learning processes.

Business Studies students learning style distribution

However, empirical studies have consistently shown that business students are heterogeneous in their learning style preferences (Ashraf et al., 2023; Martinez & Gomez, 2023; Masa'deh et al., 2023). Research in Europe, Asia, and North America reveals a significant number of kinesthetic, as well as visual learners, as business-oriented curricula are typically applied/case-based (Aguma, 2025). But there are differences depending on context; cultural (Grillitsch et al., 2025) and institutional (Koellner & Roth, 2025) contexts. For example, in Western contexts learners can be expected to prefer active experimentation style than collective reflection (Ji, 2025). Other research indicates gender differences, indicating that boys are more likely to favour visual-spatial and girls reflective or verbal (Liu, 2025). However, these results are inconclusive because of small samples and methodological inconsistencies (Romo et al., 2025). While the literature concurs that flexible instructional design is needed to account for heterogeneity in learning preferences, it also warns against forming an exaggerated stereotype of the abstract learner based on the typical styles of learners who fall into categories based on learning styles (Hattie & O'Leary, 2023; Makrooni et al., 2023; Schaper et al., 2023; Zhang et al., 2023).

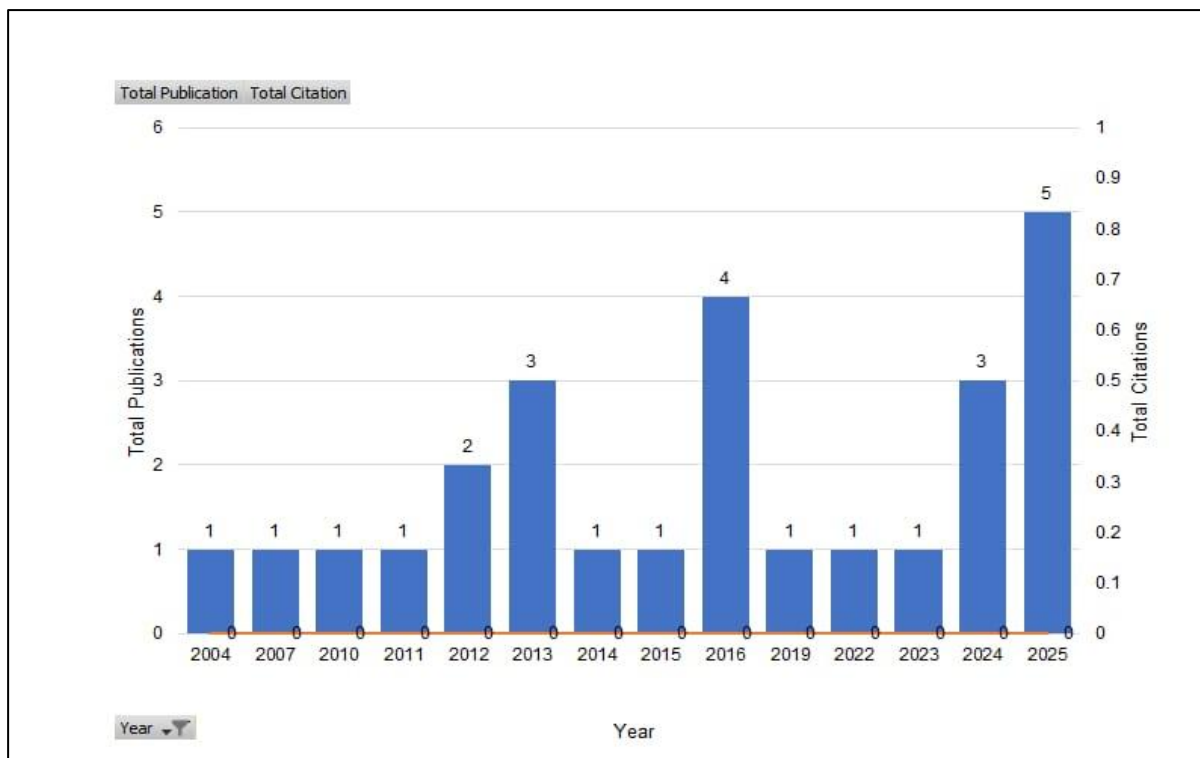


Figure 2: Trends in Total Publications and Citations (2004-2025)
 Source: (Ruzana, 2026)

The trends of total records and citations from 2004 to 2025 are shown in Figure 2. As illustrated by the figure, the number remains low with low variability between 2004 and 2011 with only

one publication recorded in most years [10]. From 2012 onwards, there is a clear increase, especially in the years 2013 and 2016, which denotes also a growing interest of the scientific community. The largest increase is taking place in the last years with publications starting in 2024 and peaking in 2025. By contrast, citation counts remain very low across the whole period, indicating that, although research output has increased in recent years, citation impact is not yet established. In any case, the figure shows that there is a slow but steady increase in research activity coming out, particularly from more recent years, which seems to have an increasing momentum for publications.

Pedagogical Implications and Teaching Strategies

This is evident because a judicious use of learning styles into business education increases engagement and motivation (Fatima et al., 2024; MCall, 2024; Xiong, 2025; Yousaf et al., 2023; Zahidin, 2024). Blended learning, simulation exercises, and case-based teaching are pedagogical approaches found to accommodate various modalities while also reflecting the experiential nature of studies in business ((Korfiatis, 2024; Muhuro & Kang’ethe, 2025; Puri, 2025). Teaching methods that combine visual aids, discussions, and hands-on projects not only receive greater feedback but also help students learn more deeply (Adera, 2025; Amirova, 2025; Javed, 2023; Kim et al., 2022; Ma, 2023). Nevertheless, it is argued that focusing too strongly on the correspondence of teaching to learning styles can restrict pedagogy (McConville et al., 2025; Oladele, 2024; Singh, 2025). Encouraging metacognitive awareness that is, the process wherein students are helped to identify their learning styles and then adjust them as needed may be more beneficial (Silver et al., 2023) This evolution is indicative of an emerging view, wherein the optimal teaching is that which balances diversity in the teaching approach with learner independence, rather than adherence to conjectured style groups (Emma, 2024; Mohammadi et al., 2024; Hattie & O; Leary, 2025).

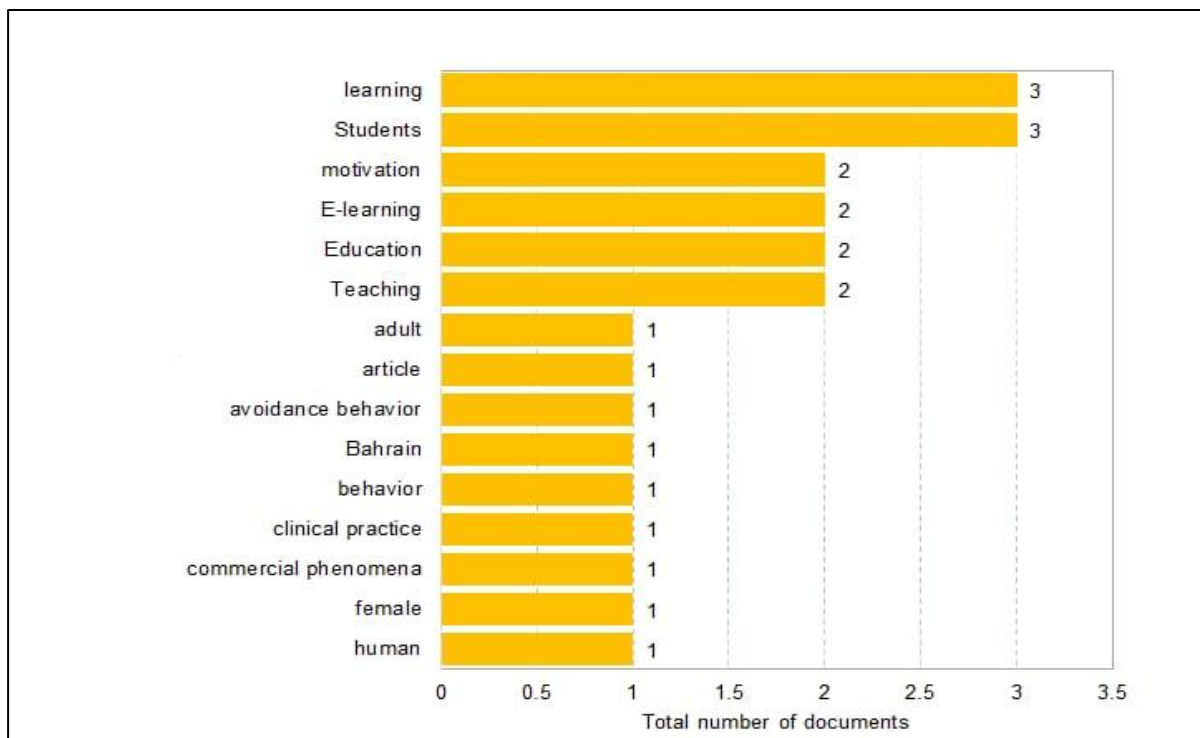


Figure 3: Keyword Impact and Citation Density in Learning Styles in Business Education

Key works in terms of learning styles in business education and their impact as represented in terms of the number of citations (each dot represents one representative of the word; after Hu et al. (2019) edited) created the scale which is presented in the figure; up to October 2023). This suggests that the literature is very much student learning focused, with “learning” and “students” the most common keywords appearing in three documents. In this area if research motivational factors, e-learning environments and pedagogical practices are often repeated that are reflected by keywords like, motivation, e-learning, education and teaching appear two times. Keywords like of with a broader connotation of adult, behavior, avoidant behavior, and contextual keywords like Bahrain occurred in fewer articles indicating a narrower scope of research. In sum, the figure shows that learning styles in business education research mainly focuses on learner-centered themes, with less attention paid to instructional approaches, motivation and emerging educational settings.

Challenges, Gaps, and Emerging Trends

While learning styles constitutes one of the most well-known areas of study within business education, numerous methodological and conceptual issues continue to plague research on this topic (Hattie & O’Leary, 2025; Parusheva et al., 2025; Rakhimova et al., 2025). Many studies use psychometrically weak self-report questionnaires, resulting in divergent findings (Lazdauskas & McDevitt, 2025). Additionally, the increased digitalization of business education is adding new elements of e-learning preference (e. There is a dearth of longitudinal and cross-cultural research describing how learning styles transition with the advent of hybrid or online learning (Yu et al., 2026). In addition, intersection of learning styles with emotional intelligence, leadership development and key employability outcomes in business programs have also not been sufficiently researched (Chakkaravarthy & Bhaumik, 2025). We encourage future research to use mixed-method and translational designs, as well as to integrate novel frameworks (e.g., adaptive learning analytics) to work towards a broader model of how diverse learners succeed in contemporary business education environments.

Practical and Research Area Impact

Last is that knowing learning styles in business student is not just an academic exercise but it serves as a foundation for the improvement of curriculum development, innovative teaching, and success of learners (Huang & Wang, 2025). Multimodal strategies that offer a variety of instructional and assessment options to ensure they remain inclusive, and prompt flexibility and critical thought processes by educators. The body of research and the insights derived from it can help policymakers and institutions to adopt practices that are evidence-informed and inclusive (Miller et al., 2025). Descriptive accounts must be extended to understand the dynamics between beliefs, pedagogical interventions and learning outcomes in future research (Hattie & O’Leary, 2025). Business education will need to rectify itself for a new future: integrating technology-enabled personalization and global, digital, and cross-disciplinary perspectives (Grego et al., 2025).

Limitations

Search groups Eight distinct search groups were conducted with the first group accessing foundational theories and business-specific applications, the second searching for alternative terminology with the third offering critiques, while the fourth and fifth looked for adaptive technology and cross-disciplinary insights respectively with the sixth extending the results using citation graph exploration.

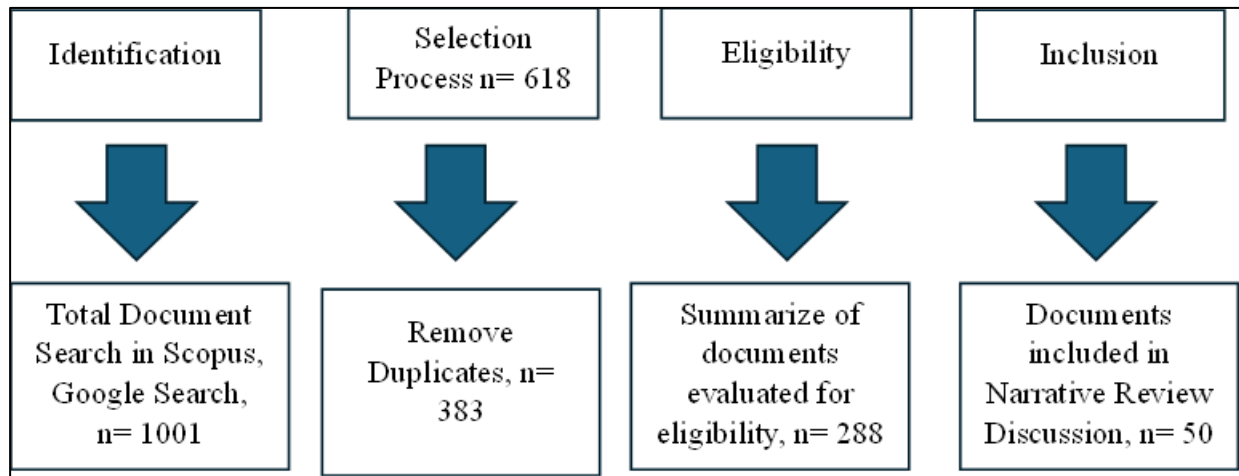


Figure 4. PRISMA-based Flow Diagram of Document Selection Process for Narrative Review

Limitations of this narrative review should be pointed out when interpreting its findings. The methodological design of a narrative review is not, firstly, characterized by the systematic rigor that is typical of quantitative meta-analyses. The choice and combination of literature were based on the author's judgement, which means there is a potential bias mainly through selection of studies, priority and analysis. Despite our attempts to transparently define exclusion criteria and search multiple databases, selection bias may not be completely excluded.

Secondly, the range of evidence on learning styles in business education is inconsistent. Kolb's Learning Style Inventory and the VARK model are among several self-reported questionnaires employed by many studies, but these questionnaires have been inflicted with a limited reliability and reproducibility. Furthermore, the lack of consensus on the definitions, measurements, and populations hampers cross-study comparisons. This limitation is compounded by our finding that the majority of studies employed cross-sectional designs, thus making it impossible to draw causal inferences between learning styles and academic performance.

Finally, differences in quality of studies included, geographical diversity and level of reporting detail limited the synthesis process. The vast majority of included studies were with undergraduates in Western settings, imposing limitations in terms of generalisability, particularly to non-Western, non-undergraduate groups and online learning contexts.

Further research may also employ a mixed-method or longitudinal design to identify if learning preferences are stable or stabilize over time and across a number of delivery modes. Cross-cultural comparisons and learning related to standard assessment frameworks will help in its evidence development and in making evidence findings more useful for business education.

Conclusion

This narrative review demonstrates that while learning styles have an important, yet complex influence on business education in particular, they do interact with teaching and learning outcomes. Research confirms that business students exhibit different learning styles, and the kinesthetic and visual modalities are the most dominant, given the application-oriented, experiential nature of the discipline. Although Kolb's Experiential Learning Theory, VARK model, etc., provide notionally appealing theoretical underpinnings, questioning the validity of

Heer et al findings across context is common. It concluded that best practice is not connecting instruction to static profiles, but multimodal, dynamic pedagogy that develops metacognitive awareness and learner agency. Continuing gaps are excess reliance on self-report measures, little longitudinal research, and insufficient investigation of cultural, technological, and affective variables related to choice in learning modalities. Closing these gaps will need mixing more as they are mixed methods and mixed cultures with some new tools that are starting to turn up on the horizon of adaptive learning analytics. Such a research agenda builds the foundation for targeting how learning diversity naturally contributes to engagement and performance elements critical to successful learning in increasingly digital and globalized learning contexts. In conclusion, this review highlights the importance of delivering inclusive, evidence-informed pedagogy to business students that will provide them with the flexibility and reflexive capabilities they require to flourish within contemporary professional environments.

Acknowledgements

The author wishes to express sincere gratitude to the supervisor for invaluable guidance, critical feedback and sustained support throughout the course of this study. Appreciation is also extended to the university and faculty for the institutional support provided. The author further acknowledges all individuals who contributed, directly or indirectly, to the completion of this article.

References

- Ahuja, V. (2024). Simulations in business education: Unlocking experiential learning. *Practices and implementation of gamification in higher education*, 1-21.
- Emma, L. (2024). The role of learning styles in effective teaching and learning.
- Idowu, E. (2024). Assessment and Evaluation of Learning Styles: A Review of Instruments and Methods.
- Anderson, J., Nguyen, C. A., & Ucock Hughes, M. (2025). Mapping theory to practice: AI-enhanced teaching theories for fostering diverse perspectives in business education. *Journal of International Education in Business*.
- Ali, O. H. (2025). Cultural Influences on Learning Styles and Educational Practices. *European Journal of Education Science*, 1(1), 1-9.
- Abu-Rasheed, H., Weber, C., & Fathi, M. (2023). Context based learning: a survey of contextual indicators for personalized and adaptive learning recommendations—a pedagogical and technical perspective. *Frontiers in Education*, 8, 1210968.
- Adera, N. (2025). Innovative learning spaces and blended learning: Quest for 21st century competency teaching and learning approaches. *Creating Dynamic Space in Higher Education: Modern Shifts in Policy, Competencies, and Governance*, 139–174.
- Aguma, D. (2025). *Mediating Effects of Entrepreneurship Ecosystems on Entrepreneurship Skills and Pedagogy: A Comparative Study Between The United Kingdom and Uganda*. Birmingham City University.
- Ajani, O. A. (2024). Enhancing pre-service teacher education: crafting a technology-responsive curriculum for modern classrooms and adaptive learners. *Research in Educational Policy and Management*, 6(2), 209–229.
- Amirova, N. (2025). Traditional vs. Non-Traditional Teaching in Secondary Education: A Comparative Analysis. *Porta Universorum*, 1(3), 101–109.
- Ashraf, M. H., Özpolat, K., Yalcin, M. G., & Shah, P. (2025). A project-based learning approach to supply chain mapping education. *The International Journal of Management Education*, 23(2), 101128.
- Beltran, K., Abonita, A., Brazal, A., Relente, J., & Relente, J. M. (2025). Visual, Auditory, Read/Write and Kinesthetic (VARK) Model-Based Peer Teaching Approach. *Educative: Jurnal Ilmiah Pendidikan*, 3(1), 17–24.
- Benkhalfallah, F., Laouar, M. R., & Benkhalfallah, M. S. (2024). Examining Adaptive E-Learning Approaches to Enhance Learning and Individual Experiences. *Acta Informatica Pragensia*, 13(2), 327–339.
- Chakkaravarthy, M., & Bhaumik, A. (2025). Impact of Emotional Intelligence and Leadership Styles on Employees' Job Performance: A Review Paper. *Journal of Multidisciplinary Research for SMET (JMR-SMET)*, 1(1), 40–57.
- Fallace, T. (2025). *You Are Not a Kinesthetic Learner: The Troubled History of the Learning Style Idea*. University of Chicago Press.
- Fatima, I., Aslam, A., Babar, H., Kanwal, S., & Khan, M. S. (2024). Impact of learning styles on student's achievement. *International Journal of Contemporary Issues in Social Sciences*, 3(2), 1293–1307.
- Grego, M., Bartosiak, M., Palese, B., Piccoli, G., & Denicolai, S. (2025). Disentangling the 'digital': A critical review of information technology capabilities, information technology-enabled capabilities and digital capabilities in business research. *International Journal of Management Reviews*, 27(2), 238–260.
- Grillitsch, M., Rekers, J., Asheim, B., Fitjar, R. D., Haus-Reve, S., Kolehmainen, J., Kurikka, H., Lundquist, K.-J., Martynovich, M., & Monteilhet, S. (2025). Patterns of opportunity spaces and agency across regional contexts: Conditions and drivers for change.

- Environment and Planning A: Economy and Space*, 57(2–3), 159–183.
- Hattie, J., & O’Leary, T. (2025). Learning styles, preferences, or strategies? an explanation for the resurgence of styles across many meta-analyses. *Educational Psychology Review*, 37(2), 1–26.
- Huang, Y.-T., & Wang, T.-H. (2025). Effect of integrating gamified teaching activities on learning emotions of design students with different learning styles. *Interactive Learning Environments*, 33(5), 3614–3634.
- Javed, M. (2023). The Effectiveness of Different Teaching Methods in Education: A Comprehensive Review. *Journal of Social Signs Review*, 1(1), 17–24.
- Ji, R. (2025). *Relationships between undergraduate students’ mathematics-related beliefs and their influence on intention to continue learning mathematics*. University of Tasmania.
- Kim, M., Knotts, T. L., & Albers, N. D. (2022). Hands-on activity vs. high-tech tools in the higher education classroom to improve student satisfaction and loyalty in professional programs. *Education and Information Technologies*, 27(9), 12147–12177.
- Koellner, T., & Roth, S. (2025). Family businesses and business families in cultural context: interdisciplinary updates for family business research. *Cross Cultural & Strategic Management*, 32(2), 374–392.
- Korfiatis, J. (2024). *The impact of campus climate on community college student motivation*. University of Southern California.
- Krishnannair, S., & Krishnannair, A. (2025). Enhancing the First-Year University Mathematics Practice through Adaptive Learning: A Conceptual Exploration of ALEKS in Blended Learning Environments. *The Focus Conference (TFC 2025)*, 123–143.
- Kyambade, M., & Namatovu, A. (2025). Overcoming barriers to eLearning in business education: a qualitative study from Uganda. *Cogent Education*, 12(1), 2584924.
- Lazdauskas, T., & McDevitt, S. C. (2025). Careless Responding May Reduce Data Quality in Self-Report Questionnaire Research: Evidence From Adult Temperament Samples From Two Cultures. *Psychological Reports*, 00332941251390460.
- Liu, Q. (2025). Theories of Development. *Middle Childhood and Adolescent Psychology*.
- Ma, Y.-C. (2023). Using participatory teaching in hands-on courses: exploring the influence of teaching cases on learning motivation. *Education Sciences*, 13(6), 547.
- Makrooni, G., Kalari, J., Mohammed, W. A., & Lagestad, P. (2025). Teachers’ perceptions and experiences of gender in physical education across diverse cultural contexts. *Frontiers in Education*, 10, 1566231.
- Martinez, M. E., & Gomez, V. (2025). Active learning strategies: a mini review of evidence-based approaches. *Acta Pedagogica Asiana*, 4(1), 43–54.
- Masa’deh, R., AlQudah, M. Z., Shatnawi, A., Samara, H., Ghasawneh, D., Al_Majali, R. T., & Al-Rahamneh, A. (2025). Digital technologies in business education: a hybrid literature review from the Web of Science database. *On the Horizon: The International Journal of Learning Futures*, 33(1), 72–103.
- MCcall, A. (2024). *The Role of Motivation and Engagement in Learning Style Theory*.
- McConville, R., Edwards, M. L. E., & Willis, A. (2025). Learning style preferences of undergraduate dental students in Northern Ireland. *Journal of the Irish Dental Association*.
- Miller, E. K., Franco-Jenkins, X., Duncan, J. T., Reynolds Reddi, A., & Ward, C. (2025). Strengthening education through equitable and inclusive evidence-based teaching practices: A scoping review. *Education Sciences*, 15(3), 266.
- Muhuro, P., & Kang’ethe, S. (2025). Prospects of implementing the flipped classroom blended learning model among lecturers in African universities. *Research in Social Sciences and Technology*, 10(1), 144–158.
- Oladele, O. K. (2024). *Challenges And Limitation Of Implementing Learning Style Theory*.

- Parusheva, S., Klancnik, I. S., Bobek, S., & Sternad Zabukovsek, S. (2025). Enhancing Sustainability of E-Learning with Adoption of M-Learning in Business Studies. *Sustainability*, 17(8), 3487.
- Puri, S. (2025). Teaching with the case method to build and teach management theory in offline and online courses. *Innovations in Education and Teaching International*, 1–12.
- Rakhimova, Z., Topildiev, B., Nazarov, S., Kadirova, M., Sobirova, N., Rustamova, M., & Nusratova, K. (2025). Fostering entrepreneurial competencies in higher education: Trends, challenges, legal issues and impacts on student success. *Qubahan Academic Journal*, 5(3), 114–142.
- Ramakrishna, R. (2025). Exploring the Connection: How Learning Styles Influence Burnout in Medical Students-A Pilot Study. *Authorea Preprints*.
- Romo, J., Pérez, J. C., Cumsille, P., Hollenstein, T., Olaya-Torres, A., Rodríguez-Rivas, M. E., & Melero, J. (2025). Emotion regulation strategies and academic achievement among secondary and university students: a systematic review and meta-analysis. *Educational Psychology Review*, 37(3), 80.
- Schaper, M.-M., Tamashiro, M. A., Smith, R. C., & Iversen, O. S. (2025). Diversity in AI Education: Tailoring students' learning paths for inclusive learning about facial recognition. *ACM Transactions on Computing Education*, 25(2), 1–33.
- Silver, N., Kaplan, M., LaVaque-Manty, D., & Meizlish, D. (2023). *Using reflection and metacognition to improve student learning: Across the disciplines, across the academy*. Taylor & Francis.
- Singh, S. (2025). *Impact of technological teaching aids on learning styles: a survey of university students' perceptions in Finland*.
- Vas, J., & Sharma, A. (2025). Impact of auditory, visual, and kinesthetic learning styles on English achievement in high school students. *International Journal of Advanced Multidisciplinary Scientific Research (IJAMSR)*, 8(3), 31.
- Xiong, X. (2025). Influence of teaching styles of higher education teachers on students 'engagement in learning: The mediating role of learning motivation. *Education for Chemical Engineers*, 51, 87–102.
- Yousaf, Y., Shoaib, M., Hassan, M. A., & Habiba, U. (2023). An intelligent content provider based on students learning style to increase their engagement level and performance. *Interactive Learning Environments*, 31(5), 2737–2750.
- Yu, D., Liu, Y., Lei, X., & Rau, P.-L. P. (2026). A Review of The Evolution of Cross-Cultural Design Research. *International Journal of Human-Computer Interaction*, 1–26.
- Zahidin, N. (2024). Mediating Effect of Learning Style in the Relationship Between Coursework Assessment and Students' Quality Sustainability: A Conceptual Development. *Asia Pacific Journal of Business, Humanities and Education*, 9(2).
- Zhang, S., Liu, Q., Jia, M., Zhang, Q., & Zhang, L. (2025). The predictive roles of self-compassion, perceived social support, and psychological flexibility in early maladaptive schemas among college students: an exploration based on latent profile analysis. *Frontiers in Psychology*, 16, 1619308.