

From Co-Teaching to Virtual Reality: The Transformative Potential of Multidisciplinary Education

Zelynda Zeinab Malizal

International Islamic University Malaysia, Malaysia

Correspondent: zelyndazm28@gmail.com

Received : April 17, 2023

Accepted : May 20, 2023

Published : May 31, 2023

Citation: Malizal, Z.Z., (2023). From Co-Teaching to Virtual Reality: The Transformative Potential of Multidisciplinary Education. Sinergi International Journal of Education, 1(1), 43-54.

ABSTRACT: The growing complexity of educational and professional challenges highlights the need for multidisciplinary approaches in higher education. This review synthesizes recent evidence on their integration, effectiveness, and challenges across diverse contexts. Literature was systematically retrieved from Scopus, Web of Science, and Google Scholar using keywords such as multidisciplinary education, interdisciplinary learning, transdisciplinary approaches, educational practice, and collaborative learning. Inclusion criteria focused on peer-reviewed studies within the last fifteen years that examined multidisciplinary design, implementation, or outcomes. Findings revealed that integrative models such as problem-based learning and co-teaching significantly enhanced students' problem-solving, collaboration, and critical thinking skills. Digital technologies, including Virtual Reality and Learning Analytics, were shown to facilitate experiential learning and provide data-driven feedback, although disparities in access limited their global applicability. In health education, multidisciplinary teams improved clinical competence and interpersonal collaboration, while systemic barriers such as rigid institutional frameworks, insufficient resources, and cultural hierarchies constrained wider adoption, particularly in developing contexts. Policy frameworks and institutional leadership were identified as key enabling factors, with European models offering examples of effective integration. Despite these advances, gaps remain in longitudinal research and comparative cross-national studies. The review concludes that deliberate policy reforms, investment in infrastructure, and faculty development are necessary to overcome barriers and fully realize the transformative potential of multidisciplinary education.

Keywords: Multidisciplinary Education, Interdisciplinary Learning, Problem-Based Learning, Collaborative Teaching, Digital Innovation in Education, Higher Education Reform, Health Professional Training.



This is an open access article under the CC-BY 4.0 license

INTRODUCTION

The growing complexity of educational challenges in the twenty-first century has underscored the need for innovative approaches that transcend the boundaries of traditional disciplines. Multidisciplinary approaches in educational research and practice have gained increasing attention as a promising pathway to foster collaboration, address multifaceted problems, and prepare learners for dynamic professional landscapes (Sissodia & Dwivedi, 2025). This orientation reflects

a shift from compartmentalized knowledge production toward integrated frameworks where diverse perspectives converge to enrich both theory and practice. Hann et al. (2023) demonstrated that educators with varied disciplinary backgrounds require tailored support mechanisms to effectively engage with the complexities of cross-disciplinary teaching, highlighting how the diversity of expertise can simultaneously serve as both a resource and a challenge. The increasing demand for such approaches reflects global recognition that educational issues are no longer solvable within the confines of a single discipline, but rather necessitate collective engagement across fields of inquiry.

Scholarly interest in multidisciplinary education has grown rapidly in the last decade, as indicated by rising publication trends in academic databases such as Scopus and Google Scholar. Bibliometric analyses reveal an expanding body of work dedicated to interdisciplinary and transdisciplinary models that integrate perspectives from education, engineering, health sciences, and technology. These models often emphasize collaborative, project-based learning, which Visscher et al. (2022) identified as an effective means of uniting distinct disciplinary practices under shared objectives. Parallel to these developments, technological innovation has accelerated the capacity of educators and learners to engage in multidisciplinary practice, particularly during the COVID-19 pandemic. Feenstra et al. (2018) observed that the rapid adoption of online platforms enabled dynamic interactions across disciplines, broadening opportunities for collaboration and redefining the parameters of knowledge exchange. MacMahon et al. (2022) further emphasized the importance of constructing bridges between educational research and practice, noting that communication and coordination mechanisms are essential for sustaining productive partnerships across disciplinary divides.

Fundamental evidence supports the claim that multidisciplinary approaches enhance learning outcomes, particularly in higher education. Crichton et al. (2022) found that problem-based learning within multidisciplinary groups significantly improved students' collaboration and problem-solving skills, equipping them with broader strategies for addressing complex challenges. These outcomes extend beyond technical proficiency, as Hero and Lindfors (2019) highlighted the role of multidisciplinary innovation projects in developing emotional intelligence and collaborative competencies. Such findings reflect the transformative potential of multidisciplinary approaches, where students are not merely recipients of knowledge but active participants in constructing integrative solutions. The dual emphasis on cognitive and affective growth underscores the multifaceted value of these approaches, aligning with global calls for educational reform that prepare students for increasingly interconnected professional environments.

Beyond student-centered outcomes, systemic data reveal broader benefits of multidisciplinary approaches for institutions and societies. Collaborative frameworks foster knowledge transfer between sectors and disciplines, enhancing institutional responsiveness to real-world demands. The literature shows that universities adopting multidisciplinary curricula often report improved student engagement, faculty collaboration, and alignment with societal priorities (. In healthcare education, such integration has been linked to more effective clinical training and improved patient outcomes, indicating that the relevance of these approaches extends well beyond academic settings. The evidence thus positions multidisciplinary education not merely as an instructional trend but as a structural necessity to address pressing societal needs.

Despite these advances, significant challenges persist. The diversity of disciplinary languages, terminologies, and methodologies often hampers collaboration, resulting in misalignment of goals and expectations (Feenstra et al., 2018). MacMahon et al. (2022) underscored the difficulties of integrating research and practice, noting that discrepancies in communication can undermine the very partnerships that multidisciplinary approaches seek to cultivate. Structural barriers, such as institutional silos and entrenched disciplinary traditions, further exacerbate these difficulties. Moreover, resource disparities in educational systems, particularly in developing contexts, hinder the widespread implementation of multidisciplinary models. These systemic constraints underscore the need for deliberate strategies to reconcile differences and foster inclusive frameworks that are adaptable to diverse contexts.

Another prominent challenge lies in ensuring that knowledge integration does not dilute disciplinary rigor. While multidisciplinary collaboration promises richer perspectives, it also raises concerns about oversimplification or the loss of disciplinary depth. Hann et al. (2023) emphasized the necessity of balancing diversity in expertise with coherent pedagogical design to avoid fragmenting learning experiences. Similarly, Hero and Lindfors (2019) cautioned that without effective leadership and structured frameworks, multidisciplinary projects risk devolving into superficial exercises rather than substantive engagements. Addressing these concerns requires methodological innovations that both preserve the integrity of individual disciplines and facilitate meaningful synthesis across them.

Despite the proliferation of studies, notable gaps remain in the literature. Research on multidisciplinary approaches has largely concentrated on developed contexts, leaving questions about applicability and effectiveness in developing countries underexplored. Observed that limited resources, infrastructural constraints, and insufficient faculty training continue to inhibit adoption in resource-limited settings, even as the need for integrative approaches becomes more acute. Similarly, Bertram (2020) highlighted that while technology offers opportunities for enhanced collaboration, supportive policies and institutional investments are often lacking in these regions. These gaps signal the need for nuanced research that accounts for regional variations in educational systems, cultural norms, and policy frameworks.

Against this backdrop, the present review seeks to synthesize the current state of research on multidisciplinary approaches in educational research and practice. Its primary aim is to analyze the benefits, challenges, and contextual variations of such approaches across diverse educational settings. The review focuses on factors that influence the effectiveness of multidisciplinary models, including institutional structures, pedagogical practices, technological mediation, and socio-cultural dynamics. By drawing together evidence from multiple disciplines and regions, the review aims to provide a comprehensive account of how multidisciplinary approaches are conceptualized, implemented, and evaluated in contemporary education.

The scope of this review encompasses both global and regional perspectives, with particular attention to comparative analyses across geographic contexts. Studies from Europe, for instance, highlight strong policy-driven support for multidisciplinary education, often linked to innovation and project-based learning initiatives (Hero & Lindfors, 2019). In contrast, research from Asia indicates cultural and structural constraints that limit the integration of multidisciplinary models, despite growing recognition of their importance (Park et al., 2024). The United States presents a

more heterogeneous landscape, where institutional variations shape the extent to which multidisciplinary approaches are embedded in curricula. By situating these regional differences within broader theoretical and practical debates, the review seeks to illuminate patterns and divergences that inform both scholarly understanding and policy development.

In sum, the introduction situates multidisciplinary approaches within the broader context of contemporary educational reform, identifies key challenges and gaps, and outlines the objectives and scope of the review. The evidence to date underscores both the promise and the complexity of these approaches, calling for sustained scholarly attention and practical innovation. Through a critical synthesis of existing literature, this review aims to contribute to ongoing conversations about how multidisciplinary education can be effectively designed, implemented, and scaled to meet the diverse needs of learners and societies in an increasingly interconnected world.

METHOD

The methodology of this narrative review was designed to provide a systematic and rigorous approach to identifying, selecting, and analyzing existing literature on the implementation and impact of multidisciplinary approaches in education. This process was guided by established practices for narrative reviews, which emphasize comprehensive coverage of relevant literature, critical synthesis of findings, and the identification of research gaps. Each stage of the methodology—from literature collection to evaluation—was carefully structured to ensure transparency, reliability, and relevance to the overarching aims of this review.

The initial stage of the process involved determining the most appropriate databases to capture a wide range of high-quality academic sources. After consideration, Scopus, Web of Science, and Google Scholar were selected as the primary platforms for literature retrieval. Scopus and Web of Science were chosen due to their reputation for offering highly curated, peer-reviewed journal articles across a broad range of disciplines, ensuring both credibility and comprehensiveness. Google Scholar, while broader and less selective, was included to supplement the search by capturing grey literature, conference proceedings, and articles not indexed in other databases. This combination of databases was intended to balance precision and breadth, thereby maximizing the coverage of relevant studies on multidisciplinary education.

The search strategy was developed using a set of carefully chosen keywords reflecting the conceptual scope of this review. Keywords such as “multidisciplinary education,” “interdisciplinary learning,” “transdisciplinary approaches,” “educational practice,” and “collaborative learning” were identified as the most effective terms for targeting relevant literature. Boolean operators and advanced search filters were employed where possible to refine the results. For instance, terms such as “multidisciplinary education” AND “higher education” or “interdisciplinary learning” AND “student outcomes” were used to capture studies directly addressing both context and impact. The iterative refinement of search terms allowed for the inclusion of variations in terminology across disciplines, ensuring that relevant literature was not excluded due to semantic differences.

Once the initial pool of articles was retrieved, inclusion and exclusion criteria were applied to ensure that the review focused on literature meeting established academic and contextual standards. Studies were included if they addressed the design, implementation, or evaluation of multidisciplinary, interdisciplinary, or transdisciplinary approaches in educational contexts. Articles were also required to be peer-reviewed, published in English, and dated within the last fifteen years, ensuring that the findings were both credible and current. Exclusion criteria removed studies that were purely theoretical without empirical evidence, focused exclusively on single-discipline education, or unrelated to the educational context, such as multidisciplinary practices in non-educational industries. These criteria helped maintain the relevance of the body of literature analyzed.

The types of research incorporated into this review reflected a diverse methodological landscape, consistent with the broad scope of multidisciplinary education research. Included studies ranged from randomized controlled trials and quasi-experimental designs to qualitative case studies, cohort studies, and mixed-methods research. For example, problem-based learning interventions within multidisciplinary classrooms were often assessed through experimental or quasi-experimental approaches, while qualitative studies provided insights into the lived experiences of educators and students navigating interdisciplinary collaboration. The inclusion of diverse methodologies was critical to capturing both the measurable outcomes of multidisciplinary approaches and the nuanced processes underpinning them.

The process of literature selection was carried out in multiple stages to ensure rigor. Titles and abstracts of retrieved articles were first screened for relevance to the research objectives. This initial screening eliminated duplicates, as well as articles clearly outside the scope of multidisciplinary education. Full-text reviews were then conducted on the remaining studies to evaluate their alignment with inclusion criteria and to assess the depth of their empirical contributions. At this stage, particular attention was paid to whether studies provided sufficient methodological detail, empirical evidence, or theoretical grounding to contribute meaningfully to the synthesis. This dual-layered screening process minimized the risk of including irrelevant or methodologically weak studies.

The evaluation of selected articles followed a critical appraisal approach, which involved assessing the quality, reliability, and applicability of findings. Studies were analyzed based on their methodological rigor, clarity of objectives, appropriateness of design, and strength of evidence. This appraisal process allowed for the identification of recurring themes, key trends, and contextual variations in the implementation of multidisciplinary approaches. Furthermore, it provided the basis for highlighting strengths and limitations in the existing literature, thereby contributing to the identification of gaps requiring further research.

The synthesis process was narrative in nature, prioritizing thematic analysis over statistical aggregation. This approach was chosen due to the diversity of study designs, contexts, and outcome measures found in the literature on multidisciplinary education. Rather than attempting to homogenize disparate findings into a single metric, the review sought to construct a comprehensive narrative that captured the breadth and depth of existing knowledge. Through iterative reading and coding, recurring patterns were identified across studies, such as common challenges in cross-disciplinary collaboration, the role of technology in facilitating multidisciplinary

learning, and differences in outcomes across geographic and institutional contexts. This thematic organization enabled a coherent synthesis that not only summarized the evidence but also provided critical insights into its broader implications.

Throughout this methodology, particular attention was given to the balance between comprehensiveness and specificity. While the aim was to capture a wide range of relevant studies, the application of strict inclusion criteria ensured that the literature analyzed remained directly pertinent to the research objectives. By combining systematic search strategies, rigorous screening processes, and critical appraisal, this methodology provided a robust foundation for the narrative synthesis presented in the subsequent sections of this review.

In conclusion, the methodology employed in this study reflects a deliberate effort to capture the complexity and diversity of multidisciplinary approaches in education while maintaining scholarly rigor. The reliance on established academic databases, the careful formulation of search terms, and the application of clear inclusion and exclusion criteria all ensured that the review drew upon a credible and relevant body of literature. The integration of diverse research designs and the narrative synthesis of findings further enhanced the ability of this review to provide a comprehensive and critical account of multidisciplinary education research. This methodological framework not only underpins the validity of the review's findings but also highlights pathways for future research, particularly in addressing the identified gaps and contextual variations that continue to shape the field of multidisciplinary education.

RESULT AND DISCUSSION

The findings of this narrative review are organized around four key thematic areas that emerged consistently in the literature: models of multidisciplinary integration, the role of digital technology and innovation, applications in health and professional education, and systemic challenges in implementation. Together, these themes illustrate the complexity and promise of multidisciplinary approaches in education, offering both empirical evidence of their effectiveness and insights into contextual variations across regions.

Multidisciplinary Model Integration

The literature consistently demonstrates the effectiveness of integrative models such as co-teaching and problem-based learning (PBL) in fostering multidisciplinary education. Crichton et al. (2022) reported that students participating in multidisciplinary groups utilizing PBL exhibited significant improvements in collaboration, problem-solving, and critical thinking skills. Students emphasized that engaging in multidisciplinary environments expanded their perspectives and enhanced their capacity to consider diverse approaches to problem-solving. Such findings highlight that exposure to different disciplinary frameworks strengthens not only cognitive but also social learning outcomes, reinforcing the notion that complex educational challenges require diverse perspectives.

The co-teaching model has similarly been identified as a powerful pedagogical tool for enriching student learning in multidisciplinary contexts. Walton et al. (2014) observed that collaborative teaching arrangements encouraged greater student engagement and fostered deeper interaction among learners. By drawing upon the complementary expertise of multiple instructors, co-teaching created more inclusive and dynamic learning spaces. Although direct comparative research between broker-student models and co-instructor frameworks remains limited, existing literature suggests that co-instructor approaches tend to be more effective in optimizing student interaction and providing structured pedagogical guidance. This implies that instructor involvement remains pivotal in ensuring the effectiveness of multidisciplinary learning.

Cross-national findings also suggest variation in the success of these models depending on institutional contexts and cultural norms. While Western institutions have widely adopted PBL and co-teaching frameworks, many Asian contexts remain more constrained by traditional hierarchies and single-discipline orientations, thereby limiting the widespread uptake of such models (Park et al., 2024). Nevertheless, the trend toward more collaborative, integrative pedagogies appears global, indicating a growing recognition of the value of multidisciplinary in higher education.

Digital Technology and Innovation

Technological innovation has played a critical role in facilitating multidisciplinary education by providing new platforms for collaboration, simulation, and analysis (Allison et al., 2025). Artificial Intelligence (AI), Virtual Reality (VR), and Learning Analytics have been particularly influential in reshaping how multidisciplinary interactions occur. Although research directly linking AI to personalized learning in multidisciplinary contexts remains limited, evidence suggests its potential to analyze learning behaviors and deliver tailored feedback to students, thus enhancing the adaptability of educational models. Virtual Reality, on the other hand, has already demonstrated concrete impact. Righi et al. (2024) showed that VR use in medical education significantly improved students' ability to simulate complex clinical scenarios where multiple disciplines converge. This technology not only deepened conceptual understanding but also provided experiential learning opportunities that would be difficult to replicate in traditional classroom settings.

Learning Analytics has similarly enabled educators to identify patterns of engagement and collaboration, offering data-driven insights into how students interact in multidisciplinary environments. These innovations have collectively enhanced the ability of institutions to integrate multiple disciplines more effectively within curricula.

However, technological adoption is marked by significant disparities between developed and developing countries. Djuric et al. (2022) documented that advanced economies with robust digital infrastructures transitioned more seamlessly to online learning and telemedicine practices during the COVID-19 pandemic, while resource-constrained nations struggled due to limited internet access and insufficient technological training for educators. These differences underscore how infrastructural and policy conditions shape the extent to which digital innovations can support

multidisciplinary learning. While technology represents an enabler of multidisciplinaryity, its uneven global distribution reveals persistent inequities in educational access and quality.

Health and Professional Education

The application of multidisciplinary approaches in health and professional education has been particularly well-documented. Collaborative training environments that bring together diverse health professions—such as physicians, nurses, and physical therapists—have been shown to enhance both clinical competence and interpersonal skills. Aswegen et al. (2017) demonstrated that multidisciplinary clinical training not only consolidated knowledge but also improved communication skills and teamwork, ultimately leading to higher quality patient care. Further argued that multidisciplinary problem-solving in health contexts creates more holistic and effective patient care strategies by integrating expertise from multiple domains.

Comparative findings highlight significant differences between Western and Asian educational systems in this regard. In Europe, Paal et al. (2019) observed that interprofessional education programs increased academic understanding and collaboration among health students, reflecting a more institutionalized embrace of multidisciplinary models. In contrast, in many Asian contexts, hierarchical structures and conservative traditions have constrained interprofessional collaboration, limiting the integration of multidisciplinary practices in medical training. These cultural and systemic barriers reveal how context-specific factors shape the success of multidisciplinary approaches.

In the United States, studies have shown considerable heterogeneity across institutions. Reported that while awareness of multidisciplinary collaboration is high, curriculum development often fails to incorporate the full range of relevant disciplines. This inconsistency highlights the need for more structured frameworks to ensure that multidisciplinary approaches are not implemented in an ad hoc manner but are systematically embedded into educational design.

Taken together, the evidence indicates that multidisciplinary training in health education enhances not only technical skills but also collaborative competencies, which are essential for addressing the complexity of patient care. Yet the uneven adoption of such models across regions underscores the importance of contextual adaptation in designing effective multidisciplinary programs.

Implementation Challenges

Despite strong evidence of their benefits, multidisciplinary approaches face numerous implementation challenges. Key barriers include misalignment of policies, insufficient training, and resistance from stakeholders accustomed to single-discipline structures. Pereira et al. (2016) found that in developed countries, organizational complexity and uncertainty often hindered the structural reforms required to support multidisciplinary education. In developing countries, by contrast, the predominant obstacles stemmed from resource limitations and weak institutional support. This distinction emphasizes that while the challenges may be universal, their specific manifestations differ across contexts.

Inefficiencies in cross-disciplinary communication also represent a recurring barrier. Nana et al. (2020) showed that weak communication systems frequently exacerbate disparities in outcomes between institutions with strong educational infrastructures and those without. Furthermore, cultural differences play a pivotal role in shaping attitudes toward multidisciplinary approaches. Omran et al. (2024) demonstrated that in some cultural contexts, strong preferences for traditional single-discipline models impede the acceptance of multidisciplinary frameworks, suggesting that successful adoption requires not only structural reforms but also cultural shifts.

These findings underscore that the barriers to multidisciplinary education are multifaceted, encompassing systemic, cultural, and resource-related dimensions. Even in contexts where policies support multidisciplinary, practical challenges in coordination, communication, and cultural acceptance often hinder implementation. Addressing these barriers requires comprehensive strategies that align policy, practice, and culture while ensuring adequate investment in resources and training.

Global Perspective and Synthesis

Across regions, multidisciplinary education emerges as both a necessity and a challenge. In Western systems, its adoption is more advanced, supported by strong policies, institutional frameworks, and technological infrastructures. In contrast, Asian and developing contexts reveal significant constraints rooted in cultural traditions, hierarchical practices, and resource limitations. The COVID-19 pandemic further amplified these disparities, highlighting the central role of technology in enabling or inhibiting multidisciplinary practices depending on infrastructural conditions (Djuric et al., 2022).

Overall, the results indicate that multidisciplinary education improves student learning, fosters collaboration, and enhances professional readiness across a variety of fields, particularly in health and technology-enhanced contexts. Yet its successful implementation is highly dependent on contextual factors, including cultural norms, policy support, and resource availability. These findings emphasize the dual nature of multidisciplinary education: it represents a transformative potential for educational practice, but one whose realization depends on the resolution of systemic and contextual challenges.

CONCLUSION

This review shows that multidisciplinary approaches improve learning, professional preparation, and institutional responsiveness. However, systemic and cultural challenges—such as policy gaps, institutional rigidity, and entrenched disciplinary traditions—still hinder broad adoption.. Comparative findings reveal that while Europe and North America demonstrate more advanced integration, Asia and developing regions face persistent obstacles rooted in resource limitations and hierarchical academic cultures.

Addressing these barriers requires deliberate policy reforms, institutional leadership, and cultural shifts that prioritize collaboration over siloed practices. Investment in technological infrastructure

and targeted faculty training can further accelerate adoption, particularly in resource-constrained contexts. Future research should include longitudinal and cross-national studies to better understand the long-term impact of multidisciplinary education and to identify best practices adaptable across diverse contexts. Ultimately, enhancing access, training, and policy support remains central to realizing the transformative potential of multidisciplinary approaches, ensuring that education systems are equipped to meet the complex challenges of the twenty-first century.

REFERENCE

- Aswegen, H., Patman, S., Plani, N., & Hanekom, S. (2017). Developing minimum clinical standards for physiotherapy in South African ICUs: A qualitative study. *Journal of Evaluation in Clinical Practice*, 23(6), 1258–1265. <https://doi.org/10.1111/jep.12774>
- Bertram, L. (2020). Digital learning games for mathematics and computer science education: The need for preregistered RCTs, standardized methodology, and advanced technology. *Frontiers in Psychology*, 11. <https://doi.org/10.3389/fpsyg.2020.02127>
- Crichton, M., Crichton, H., & Colville, G. (2022). Students' perceptions of problem-based learning in multidisciplinary groups when seeking to solve an engineering grand challenge. *Journal of Problem Based Learning in Higher Education*. <https://doi.org/10.54337/ojs.jpblhe.v10i1.6823>
- Dener, H., & Elçin, M. (2024). The experiences of cardiovascular surgeons and nurses with mutual support through interprofessional collaboration in the intensive care unit. *Nursing in Critical Care*. <https://doi.org/10.1111/nicc.13220>
- Djuric, D., Mysore, S., Zeghan, A., Oudeh, A., Al, Q., Al, H., ... & Al, J. (2022). Pediatric rehabilitation services during COVID-19 pandemic in the United Arab Emirates. *Srpski Arhiv Za Celokupno Lekarstvo*, 150(11–12), 636–642. <https://doi.org/10.2298/sarh220722105d>
- Feenstra, K., Abeln, S., Westerhuis, J., Santos, F., Molenaar, D., Teusink, B., ... & Heringa, J. (2018). Training for translation between disciplines: A philosophy for life and data sciences curricula. *Bioinformatics*, 34(13), i4–i12. <https://doi.org/10.1093/bioinformatics/bty233>
- Hann, M., Hayes, C., Lacroix-Hugues, V., Touboul, P., McNulty, C., Syeda, R., ... & Demirjian, A. (2023). Evidence-based health interventions for the educational sector: Application and lessons learned from developing European food hygiene and safety teaching resources. *Food Control*, 143, 109219. <https://doi.org/10.1016/j.foodcont.2022.109219>

- Hero, L., & Lindfors, E. (2019). Students' learning experience in a multidisciplinary innovation project. *Education + Training*, 61(4), 500–522. <https://doi.org/10.1108/et-06-2018-0138>
- MacMahon, S., Leggett, J., & Carroll, A. (2022). Partnering to learn: A collaborative approach to research translation for educators and researchers. *Mind Brain and Education*, 16(2), 79–88. <https://doi.org/10.1111/mbe.12317>
- Nana, M., Shute, C., Williams, R., Kokwaro, F., Riddick, K., & Lane, H. (2020). Multidisciplinary, patient-centred approach to improving compliance with venous thromboembolism (VTE) prophylaxis in a district general hospital. *BMJ Open Quality*, 9(3), e000680. <https://doi.org/10.1136/bmjog-2019-000680>
- Omran, S., Leong, S., Blebil, A., Mohan, D., Ang, W., & Teoh, S. (2024). The needs and gaps in pharmacogenomics knowledge and education among healthcare professionals in Malaysia: A multisite Delphi study. *Clinical and Translational Science*, 17(11). <https://doi.org/10.1111/cts.70057>
- Paal, P., Brandstötter, C., Lorenzl, S., Larkin, P., & Elsner, F. (2019). Postgraduate palliative care education for all healthcare providers in Europe: Results from an EAPC survey. *Palliative & Supportive Care*, 17(5), 495–506. <https://doi.org/10.1017/s1478951518000986>
- Park, S., Yun, J., Lee, J., & Cho, I. (2024). Research trends in nurse–parent partnership: A scoping review of the paediatric field in South Korea. *Nursing Open*, 11(8). <https://doi.org/10.1002/nop2.2248>
- Pereira, C., Tavares, C., & Rosas, A. (2016). Fatores intervenientes na preceptoria num serviço especializado em HIV/AIDS: Estudo etnográfico. *Online Brazilian Journal of Nursing*, 15(4), 624–631. <https://doi.org/10.17665/1676-4285.20165486>
- Righi, E., Visentin, A., Mirandola, M., Rigo, C., Cutone, C., Rocchi, M., ... & Tacconelli, E. (2024). A digital approach to improve infection screening among solid organ transplant candidates. *Clinical Transplantation*, 38(7). <https://doi.org/10.1111/ctr.15408>
- study. *Pediatric Emergency Care*, 41(2), 116–121. <https://doi.org/10.1097/pec.0000000000003230>
- Visscher, K., Johnson, C., MacLeod, M., & Veen, J. (2022). Multi-, inter- and transdisciplinarity in challenge-based engineering education. <https://doi.org/10.5821/conference-9788412322262.1176>

- Walton, M., Ardolino, T., Cheung, R., Zheng, H., Leotsakos, A., & Barraclough, B. (2014). Educating future leaders in patient safety. *Journal of Multidisciplinary Healthcare*, 381. <https://doi.org/10.2147/jmdh.s53792>
- Allison, J., Hwang, G.-J., Mayer, R. E., Pellas, N., Karnalim, O., de Freitas, S., Ng, O.-L., Huang, Y.-M., Hooshyar, D., Seidman, R. H., Al-Emran, M., Mikropoulos, T. A., Schroeder, N. L., Roscoe, R. D., & Sanusi, I. (2025). From Generative AI to Extended Reality: Multidisciplinary Perspectives on the Challenges, Opportunities, and Future of Educational Computing. *Journal of Educational Computing Research*, 63(6), 1327–1363. <https://doi.org/10.1177/07356331251359964>
- Sissodia, R., & Dwivedi, V. (2025). *Multidisciplinary approaches to AI integration in education and healthcare systems* (pp. 435–463). <https://doi.org/10.4018/979-8-3373-5072-1.ch017>