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ENHANCING STUDENT ENGAGEMENT THROUGH MEDIA TOOLS: A CASE STUDY OF DIGITAL INTERACTIVITY IN ZAMBIAN SECONDARY SCHOOLS

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Abstract

The integration of digital media tools in education has rapidly evolved, offering new pathways to foster student interactivity and engagement. This study investigates how selected digital platforms—including WhatsApp, Google Classroom, and Zoom—have influenced student participation and active learning in selected secondary schools in Zambia. Using a qualitative research design, the study gathered insights from students and teachers to understand how media tools shape learner behavior, motivation, and collaboration. The findings revealed that digital tools have a positive impact on student engagement when infrastructure, digital literacy, and instructional design are adequately addressed. The study recommends that institutional policies support blended learning, digital inclusion, and continuous teacher training to leverage media tools effectively for active learning.

Keywords: *Media tools, Student interactivity, Active learning, Digital education, Blended learning, Google Classroom, WhatsApp in education, Zambia, Secondary schools, Educational technology*

Introduction

In recent years, the role of digital media in education has undergone a significant transformation, especially in response to the global shift toward technology-driven learning. The COVID-19 pandemic served as a catalyst for this shift, forcing many educational institutions to quickly adopt online platforms to ensure learning continuity. While digital instruction was initially a crisis response, it has increasingly become a strategic tool in modern pedagogy. One of the key benefits associated with digital media tools is their ability to increase student interactivity and promote active learning. This development has been particularly relevant in secondary education, where student engagement is a determinant of learning outcomes, retention rates, and academic motivation. In Zambia, as in many developing nations,

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integrating media tools into classroom practice has presented both opportunities and challenges. On one hand, platforms like WhatsApp, Google Classroom, Zoom, and YouTube have empowered educators to reach students beyond traditional classroom walls. These platforms support multimedia content, instant communication, peer collaboration, and flexible assessment strategies. On the other hand, disparities in access to digital devices, inconsistent internet connectivity, and limited digital literacy among both teachers and learners have posed significant implementation barriers. Consequently, the effectiveness of media tools in promoting student interactivity remains a contested issue, particularly in under-resourced educational contexts.

Active learning, defined as instructional methods that engage students in the learning process beyond passive listening, is central to improving the quality of education. This pedagogical approach emphasizes discussion, reflection, collaboration, and critical thinking—all of which can be enhanced through well-integrated media tools. In contrast to traditional lecture-based instruction, active learning leverages technology to foster student autonomy, encourage two-way communication, and facilitate personalized feedback. Digital tools not only enable synchronous and asynchronous learning but also provide opportunities for learners to construct knowledge through exploration, problem-solving, and interaction with diverse content formats.

This study investigates the extent to which media tools influence student interactivity in selected Zambian secondary schools. It focuses on understanding how digital platforms are used, the nature of student participation, and the perceived benefits and challenges from the perspectives of both students and teachers. The research aims to address the following questions:

1. How are media tools being utilized to promote student engagement in the classroom?
2. What are the perceived outcomes of using media tools on student behavior and academic involvement?
3. What challenges hinder the effective use of media tools in enhancing active learning?

Through this investigation, the study aims to contribute to a growing body of knowledge on technology-enhanced learning in the African context. By examining real classroom experiences, the study offers practical insights that can inform educational policy, teacher training programs, and institutional strategies for blended learning. Ultimately, it advocates for a nuanced and context-sensitive approach to media tool integration—one that bridges the digital divide and promotes inclusive, interactive education for all learners.

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Research Methodology

This study employed a qualitative research design to explore how media tools enhance student interactivity and promote active learning in selected secondary schools in Zambia. A case study approach was adopted to gain an in-depth understanding of the lived experiences of both students and teachers in classrooms that utilize digital platforms. The qualitative design was chosen due to its strength in capturing perceptions, behavioral patterns, and contextual influences that quantitative methods may overlook.

Research Site and Participants

The study was conducted in two public secondary schools located in an urban district in Zambia. These schools were selected based on their integration of media tools such as Google Classroom, WhatsApp, Zoom, and YouTube in the delivery of lessons. A purposive sampling technique was used to select participants who were actively engaged with these tools.

A total of 20 participants took part in the study, comprising 12 students and 8 teachers. The students were from Grade 10 to Grade 12, representing a diverse mix of academic abilities and technological exposure. The teachers had varying levels of experience in digital pedagogy, ranging from novices to early adopters.

Data Collection Methods

Data were collected through semi-structured interviews, classroom observations, and document analysis. The interviews provided rich qualitative data on the participants' experiences, challenges, and perceived outcomes of using media tools. Each interview lasted approximately 30–45 minutes and was conducted in a private setting to encourage open responses. Classroom observations were conducted over a two-week period to witness real-time interactions facilitated by media tools. The observations focused on student participation, collaboration, teacher-student interaction, and the use of technology to deliver content. Observation checklists and field notes were used to document findings. Additionally, relevant documents such as class schedules, online assignments, discussion threads, and feedback logs

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from platforms like Google Classroom and WhatsApp were analyzed to support triangulation of data.

Data Analysis

Thematic analysis was used to analyze the collected data. Interview transcripts and observation notes were coded manually to identify recurring themes and patterns. The themes were then categorized under three broad areas: usage of media tools, impact on student interactivity, and challenges to effective integration.

To ensure trustworthiness, triangulation was employed across the different data sources. Member checking was conducted by sharing preliminary findings with a subset of participants to validate interpretations. Ethical clearance was obtained from the school authorities, and informed consent was secured from all participants, with confidentiality and anonymity strictly maintained throughout the study.

Findings and Discussion

The findings of the study are organized into three major themes: (1) the utilization of media tools, (2) their influence on student interactivity, and (3) the challenges experienced in integrating digital tools for active learning. The discussion integrates participant experiences with broader pedagogical insights to highlight the transformative, yet complex, role of media tools in Zambian secondary schools.

1. Utilization of Media Tools in the Classroom

The study found that media tools such as WhatsApp, Google Classroom, and Zoom were actively used to supplement face-to-face instruction. Teachers reported using **Google Classroom** to assign homework, upload learning materials, and track student submissions. The platform's features allowed teachers to provide timely feedback and monitor individual learner progress.

One teacher remarked: *"It helps me keep track of students who are active and those who are lagging behind. The comments section gives room for individual support."*

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WhatsApp was the most commonly used tool due to its low data consumption and wide accessibility. Teachers used it to form class groups where learning materials, voice notes, and motivational messages were shared. Students found WhatsApp effective for clarifying doubts and engaging in peer discussions.

Zoom, while less frequently used due to connectivity issues, was employed for live classes, especially during exam preparation. Its features—such as screen sharing and breakout rooms—enabled virtual group activities, making remote instruction more dynamic.

The findings confirm that digital tools have been integrated into teaching strategies, albeit unevenly. Usage levels depended on teacher confidence, school policies, and availability of resources.

2. Influence on Student Interactivity

One of the most significant outcomes observed was the **increase in student participation and collaboration**. Students who were typically reserved in physical classrooms were more likely to ask questions and share opinions through digital platforms.

A Grade 11 student shared: *"In class, I hesitate to speak, but on WhatsApp I feel comfortable asking questions, even late at night. I get answers from both teachers and classmates."*

The asynchronous nature of platforms like Google Classroom allowed students to reflect before responding, enhancing the quality of their engagement. Some students also cited **gamification elements** in online quizzes and interactive polls as motivating factors.

Furthermore, **collaborative learning** was strengthened. Shared documents on Google Drive allowed multiple students to work on group assignments simultaneously, fostering team spirit and digital fluency. Group chats facilitated academic discussions that extended beyond classroom hours.

Teachers observed that students became more **self-directed and responsible**, managing their own learning schedules and engaging with digital content independently. This behavior aligns with the principles of active learning, where students are not passive recipients of knowledge but active participants in the learning process.

3. Challenges to Effective Integration

Despite these positive trends, the study also uncovered several barriers to effective implementation.

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Digital inequality was a recurring theme. While some students had access to personal smartphones and stable internet, others relied on shared devices or experienced frequent network disruptions. Rural students were disproportionately affected, often missing virtual classes due to electricity or connectivity issues.

A teacher noted: *"Sometimes I assign work and only half the class responds. It's not laziness—it's lack of access to gadgets or data bundles."*

Additionally, **teacher preparedness** emerged as a limiting factor. Although some teachers adapted quickly, others expressed discomfort with technology, citing lack of training and technical support. This knowledge gap led to underutilization of advanced features on digital platforms.

Moreover, **overreliance on text-based communication** in platforms like WhatsApp presented challenges for learners with low literacy or learning disabilities. Teachers also struggled to maintain academic discipline in virtual spaces, where students sometimes diverted discussions to off-topic conversations.

Concerns around **data privacy and screen fatigue** were also raised. Some students reported increased stress due to constant notifications and the blurred boundaries between school and home life.

Discussion

The findings reinforce existing literature on the potential of digital media to facilitate student-centered learning. Tools like Google Classroom and WhatsApp enable **personalized feedback, increased autonomy, and peer interaction**, which are hallmarks of active learning environments. These platforms dismantle traditional power hierarchies in classrooms, allowing students to communicate more freely and confidently.

However, the study also demonstrates that **access alone does not guarantee engagement**. Effective use of media tools requires teacher training, student digital literacy, and supportive school leadership. Equity remains a critical issue; any strategy to scale up media tool adoption must prioritize inclusivity to ensure that no learner is left behind.

Furthermore, the **blended learning model**—combining digital and in-person instruction—emerges as a pragmatic approach in resource-limited contexts. It leverages the strengths of technology while retaining the benefits of classroom interaction. Policymakers should thus

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support hybrid infrastructures and invest in tools that are low-cost, mobile-friendly, and contextually adaptable.

Conclusion

This study examined the role of digital media tools in enhancing student interactivity and promoting active learning in selected Zambian secondary schools. The findings demonstrate that platforms such as WhatsApp, Google Classroom, and Zoom have contributed to increased student participation, collaboration, and engagement. Students felt more comfortable expressing themselves through digital channels, while teachers noted improvements in learner autonomy and academic responsibility.

However, the effectiveness of these tools is not uniform. Factors such as access to devices, internet connectivity, teacher training, and digital literacy significantly affect outcomes. While some learners thrived in digitally mediated environments, others struggled due to systemic barriers. These disparities underscore the need for an inclusive approach that recognizes infrastructural and pedagogical limitations.

Overall, the integration of media tools into teaching and learning holds great promise for transforming education in Zambia and beyond. Yet, for their potential to be fully realized, media tools must be embedded within a broader framework of support, capacity building, and equity-focused policy design.

Recommendations

1. **Invest in Digital Infrastructure** Provide affordable and stable internet connectivity, electricity, and access to digital devices in all schools, especially in rural areas.
2. **Teacher Professional Development** Organize continuous training programs to improve teachers' digital competencies and confidence in using media tools for instruction.
3. **Promote Blended Learning Models** Combine traditional face-to-face teaching with digital platforms to balance accessibility and pedagogical richness.
4. **Develop Inclusive Digital Policies** Ensure that platforms accommodate students with disabilities and offer features in local languages and low-bandwidth formats.
5. **Monitor and Evaluate** Establish mechanisms to assess the effectiveness of media tools regularly, using student feedback and academic performance as benchmarks.

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By implementing these strategies, schools can create more interactive, inclusive, and student-centered learning environments that prepare learners for the demands of a digital world.

Reference

1. Akila, V., M., R. E., Prabhu, G., Akila, R., & Swadhi, R. (2025). Performance Metrics in Blockchain-Enabled AIML for Cognitive IoT in Large-Scale Networks: Optimizing Data Analytics for Enhanced Network Performance. In R. Kanthavel & R. Dhaya (Eds.), AI for Large Scale Communication Networks (pp. 265-288). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-6552-6.ch012
2. Arockia Venice, J., Arivazhagan, D., Suman, N., Shanthi, H. J., & Swadhi, R. (2025). Recommendation Systems and Content Personalization: Algorithms, Applications, and Adaptive Learning. In R. Kanthavel & R. Dhaya (Eds.), AI for Large Scale Communication Networks (pp. 323-348). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-6552-6.ch015
3. Arockia Venice, J., Vettriselvan, R., Rajesh, D., Xavier, P., & Shanthi, H. J. (2025). Optimizing Performance Metrics in Blockchain-Enabled AI/ML Data Analytics: Assessing Cognitive IoT. In S. Hai-Jew (Ed.), Enhancing Automated Decision-Making Through AI (pp. 97-122). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-6230-3.ch004
4. Arockia, V. J., Vettriselvan, R., Rajesh, D., Velmurugan, P. R., & Cheelo, C. (2025). Leveraging AI and Learning Analytics for Enhanced Distance Learning: Transformation in Education. In H. Mamede & A. Santos (Eds.), AI and Learning Analytics in Distance Learning (pp. 179-206). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-7195-4.ch008
5. Bansod, A., & Venice, A. (2023). Importance of Cybersecurity and RegTech in FinTech. Telecom Business Review, 16(1).
6. Basha, R., Pathak, P., Sudha, M., Soumya, K. V., & Arockia Venice, J. (2025). Optimization of Quantum Dilated Convolutional Neural Networks: Image Recognition With Quantum Computing. Internet Technology Letters, 8(3), e70027.
7. Catherin, T. C., Vettriselvan, R., Mathur, S., Regins, J. C., & Velmurugan, P. R. (2025). Integrating AI and Learning Analytics in Distance Learning: Strategies for Educators and Institutions. In H. Mamede & A. Santos (Eds.), AI and Learning Analytics in

https://doi.org/10.47059/AJMS/V4SI02/04

Distance Learning (pp. 207-228). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-7195-4.ch009

8. Catherine, S., Kiruthiga, V., & Gabriel, R. (2024). Effective Brand Building in Metaverse Platform: Consumer-Based Brand Equity in a Virtual World (CBBE). In Omnichannel Approach to Co-Creating Customer Experiences Through Metaverse Platforms (pp. 39-48). IGI Global Scientific Publishing.
9. Catherine, S., Ramasundaram, G., Nimmagadda, M. R., & Suresh, N. V. (2025). Roots, Routes, and Identity: How Culture Shapes Heritage Travel. In Multiple-Criteria Decision-Making (MCDM) Techniques and Statistics in Marketing (pp. 343-352). IGI Global Scientific Publishing.
10. Catherine, S., Suresh, N. V., Mangaiyarkarasi, T., & Jenefa, L. (2025). Unveiling the Enigma of Shadow: Ethical Difficulties in the Field of AI. In Navigating Data Science: Unleashing the Creative Potential of Artificial Intelligence (pp. 57-67). Emerald Publishing Limited.
11. Delecta Jenifer, R., Vettriselvan, R., Saxena, D., Velmurugan, P. R., & Balakrishnan, A. (2025). Green Marketing in Healthcare Advertising: A Global Perspective. In B. Miguélez-Juan & S. Rebollo-Bueno (Eds.), AI Impacts on Branded Entertainment and Advertising (pp. 303-326). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-3799-8.ch015
12. Devi, M., Manokaran, D., Sehgal, R. K., Shariff, S. A., & Vettriselvan, R. (2025). Precision Medicine, Personalized Treatment, and Network-Driven Innovations: Transforming Healthcare With AI. In R. Kanthavel & R. Dhaya (Eds.), AI for Large Scale Communication Networks (pp. 303-322). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-6552-6.ch014
13. Duraimutharasan, N., Deepan, A., Swadhi, R., Velmurugan, P. R., & Varshney, K. R. (2025). Enhancing Control Engineering Through Human-Machine Collaboration: AI for Improved Efficiency and Decision-Making. In M. Mellal (Ed.), Harnessing AI for Control Engineering (pp. 155-176). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-7812-0.ch008
14. Gayathri, K., Krishnan, P., Rajesh, K., Anandan, K., & Swadhi, R. (2019). Synthesis, growth, structural, optical, thermal, dielectric and laser damage threshold studies of

https://doi.org/10.47059/AJMS/V4SI02/04

new semi organic NLO crystal: Tetra aqua bis (hydrogen maleato) cobalt(II). AIP Conference Proceedings, 2115, 030412. https://doi.org/10.1063/1.5113251.

15. Gayathri, K., Rajesh, K., Krishnan, P., Anandan, K., Swadhi, R., Devaraj, A. R., & Anbalagan, G. (2020). Structural and optical properties of SnO_2 thin films deposited by spray pyrolysis technique. AIP Conference Proceedings, 2265, 030425. https://doi.org/10.1063/5.0017481
16. Geethapriya, J. & Devaraj, Anitha & Krishnan, Gayathri & Swadhi, R. & Elangovan, N & S.Manivel, & Subbaiah, Sowrirajan & Thomas, Renjith. (2023). Solid state synthesis of a fluorescent Schiff base (E)-1-(perfluorophenyl)-N-(o-toly)methanimine followed by computational, quantum mechanical and molecular docking studies. Results in Chemistry. 5. 100819. 10.1016/j.rechem.2023.100819.
17. Gokila, S., Helen, D., Alemu, A. M., & Suresh, N. V. (2024, November). Scaling Approach Over Learning Layer of Deep Learning Model to Reduce the FALSE Error in Binary Classification. In 2024 8th International Conference on Electronics, Communication and Aerospace Technology (ICECA) (pp. 1294-1300). IEEE.
18. Helen, D., & Suresh, N. V. (2024). Generative AI in Healthcare: Opportunities, Challenges, and Future Perspectives. Revolutionizing the Healthcare Sector with AI, 79-90.
19. J. Jayaganesh, K. Suresh Kumar, Konda Hari Krishna, Mohit Tiwari, R. Vettriselvan, Chetan Shelke, (2026) Different Requirements in Quality of Service Using an Adaptive Network Algorithm, Advances in AI for Cloud, Edge, and Mobile Computing Applications, Apple Academic Press, Taylor & Francis Group.
20. Kalaivani, M., Suganya, V., Suresh, N. V., & Catherine, S. (2025). The Next Wave in Marketing: Data Science in the Age of Generative AI. In Navigating Data Science (pp. 13-26). Emerald Publishing Limited.
21. Manoharan, C., Poongavanam, S., Arivazhagan, D., Divyaranjani, R., & Vettriselvan, R. (2020). Cognition and emotions during teaching-learning process. International Journal of Scientific and Technology Research, 9(2), 267-269.
22. Natraj, N. A., Abirami, T., Ananthi, K., Venice, J. A., Chandru, R., & Rathish, C. R. (2024). The Impact of 5G Technology on the Digital Supply Chain and Operations Management Landscape. In Applications of New Technology in Operations and Supply Chain Management (pp. 289-311). IGI Global.

https://doi.org/10.47059/AJMS/V4SI02/04

23. Natraj, N. A., Abirami, T., Ananthi, K., Venice, J. A., Chandru, R., & Rathish, C. R. (2024). The Impact of 5G Technology on the Digital Supply Chain and Operations Management Landscape. In Applications of New Technology in Operations and Supply Chain Management (pp. 289-311). IGI Global.
24. Poongavanam, S., Srinivasan, R., Arivazhagan, D., & Suresh, N. V. (2023). Medical Inflation-Issues and Impact. Chettinad Health City Medical Journal (E-2278-2044 & P-2277-8845), 12(2), 122-124.
25. R. Vettriselvan, C. Vijai, J. D. Patel, S. Kumar.R, P. Sharma and N. Kumar, "Blockchain Embraces Supply Chain Optimization by Enhancing Transparency and Traceability from Production to Delivery," 2024 International Conference on Trends in Quantum Computing and Emerging Business T
26. Ramya, R., Kiruthiga, V., Vettriselvan, R., Gayathri, V., & Velmurugan, P. R. (2025). Hybrid Entrepreneurship Navigating Career Transitions: Career Shifts and Their Impact on Economic Growth. In M. Tunio (Ed.), Applications of Career Transitions and Entrepreneurship (pp. 241-268). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-4163-6.ch010
27. Shanthi, H. J., Gokulakrishnan, A., Sharma, S., Deepika, R., & Swadhi, R. (2025). Leveraging Artificial Intelligence for Enhancing Urban Health: Applications, Challenges, and Innovations. In F. Özsungur (Ed.), Nexus of AI, Climatology, and Urbanism for Smart Cities (pp. 275-306). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-5918-1.ch010
28. Suganya, V., & Suresh, N. V. (2024). Potential Mental and Physical Health Impacts of Spending Extended Periods in the Metaverse: An Analysis. In Creator's Economy in Metaverse Platforms: Empowering Stakeholders Through Omnichannel Approach (pp. 225-232). IGI Global.
29. Sujatha, R., Aarthy, S. L., & Vettriselvan, R. (Eds.). (2021). Integrating Deep Learning Algorithms to Overcome Challenges in Big Data Analytics. CRC Press.
30. Suresh, N. V., & Rexy, V. A. M. (2024, February). An Empirical Study on Empowering Women through Self Help Groups. In 3rd International Conference on Reinventing Business Practices, Start-ups and Sustainability (ICRBSS 2023) (pp. 957-964). Atlantis Press.

https://doi.org/10.47059/AJMS/V4SI02/04

31. Suresh, N. V., Ananth Selvakumar, Gajalaksmi Sridhar, and S. Catherine. "Ethical Considerations in AI Implementation for Patient Data Security and Privacy." In AI Healthcare Applications and Security, Ethical, and Legal Considerations, pp. 139-147. IGI Global, 2024.
32. Suresh, N. V., Catherine, S., Selvakumar, A., & Sridhar, G. Transparency and accountability in big data analytics: Addressing ethical challenges in decision-making processes. In Digital Transformation and Sustainability of Business (pp. 742-745). CRC Press.
33. Suresh, N. V., Karthikeyan, M., Sridhar, G., & Selvakumar, A. (2025). Sustainable urban planning through AI-driven smart infrastructure: A comprehensive review. Digital Transformation and Sustainability of Business, 178-180.
34. Suresh, N. V., Manoj, G., Rajkumar, M. D., & Kanagasabai, B. (2024). Fundamental anomalies as a mediator in the relationship between heuristics and investment decisions. International Journal of Applied Management Science, 16(4), 383-396.
35. Suresh, N. V., Selvakumar, A., & Sridhar, G. (2024). Operational efficiency and cost reduction: the role of AI in healthcare administration. In Revolutionizing the Healthcare Sector with AI (pp. 262-272). IGI Global.
36. Suresh, N. V., Selvakumar, A., Sasikala, B., & Sridhar, G. (2024, June). Integrating Environmental, Social, and Governance (ESG) Factors into Social Accounting Frameworks: Implications for Sustainable Business Practices. In International Conference on Digital Transformation in Business: Navigating the New Frontiers Beyond Boundaries (DTBNNF 2024) (pp. 18-28). Atlantis Press.
37. Suresh, N. V., Selvakumar, A., Sridhar, G., & Jain, V. (2024). Integrating Mechatronics in Autonomous Agricultural Machinery: A Case Study. Computational Intelligent Techniques in Mechatronics, 491-507.
38. Suresh, N. V., Selvakumar, A., Sridhar, G., & Jain, V. (2025). Dynamic Pricing Strategies Implementing Machine Learning Algorithms in E-Commerce. In Building Business Models with Machine Learning (pp. 129-136). IGI Global Scientific Publishing.
39. Suresh, N. V., Selvakumar, A., Sridhar, G., & Trivedi, S. (2024). A Research Study on the Ethical Considerations in Harnessing Basic Science for Business Innovation. In Unleashing the Power of Basic Science in Business (pp. 55-64). IGI Global.

https://doi.org/10.47059/AJMS/V4SI02/04

40. Suresh, N. V., Shanmugam, R., Selvakumar, A., & Sridhar, G. Patient-centric care optimization: Strategies for enhancing communication and efficiency in healthcare settings through cross-functional collaboration. In Digital Transformation and Sustainability of Business (pp. 738-741). CRC Press.
41. Suresh, N. V., Sridhar, J., Selvakumar, A., & Catherine, S. (2024). Machine Learning Applications in Healthcare: Improving Patient Outcomes, Diagnostic Accuracy, and Operational Efficiency. In AI Healthcare Applications and Security, Ethical, and Legal Considerations (pp. 1-9). IGI Global
42. Swadhi, R. (2025). Innovative Strategies for Widespread Adoption in a Climate-Smart Future: Scaling Up Agroforestry. In A. Atapattu (Ed.), Agroforestry for a Climate-Smart Future (pp. 473-496). IGI Global Scientific Publishing.
43. Swadhi, R., Gayathri, K., Anitha Rexalin, D., Rajesh, K., & Anandan, K. (2025). Development and characterization of gadolinium-doped hydroxyapatite to enhance biocompatibility in biomedical applications. Texila International Journal of Public Health, 13(1). https://doi.org/10.21522/tijph.2013.13.01.art033
44. Swadhi, R., Gayathri, K., Anitha Rexalin, D., Rajesh, K., & Anandan, K. (2025). Magnesium-doped brucinium hydroxyapatite: A versatile material for biomedical applications. Cuestiones de Fisioterapia, 54(4), 288–298
45. Swadhi, R., Gayathri, K., Dimri, S., Balakrishnan, A., & Jyothi, P. (2025). Role of Digital Marketing in Shaping Travel Decisions: Consumer Behavior in Tourism. In B. Sousa & V. Santos (Eds.), Intersections of Niche Tourism and Marketing (pp. 153-176). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-8417-6.ch007https://doi.org/10.4018/979-8-3693-8282-0.ch016
46. Swadhi, R., Gayathri, K., Rajesh, K., Anandan, K. & Anitha Rexalin, D., (2023). Hydrothermal synthesis and characterization of brucine functionalized hydroxyapatite materials for bioimaging applications. European Chemical Bulletin, 12(7), 2456–2469. https://doi.org/10.48047/ecb/2023.12.7.190
47. Thiruvasagam, G., & Vettriselvan, R. (2021). What is after COVID-19?: Changing economies of the shipping industries and maritime education institutions. 21st Annual General Assembly, IAMU AGA 2021-Proceedings of the International Association of Maritime Universities, 96-110.

https://doi.org/10.47059/AJMS/V4SI02/04

48. Velmurugan, P. R., Arunkumar, S., Vettriselvan, R., Deepan, A., & Rajesh, D. (2025). Strategic Approaches to Corporate Social Responsibility and Sustainable Development: Integrating Leadership, Marketing, and Finance. In I. Gigauri & A. Khan (Eds.), Navigating Corporate Social Responsibility Through Leadership and Sustainable Entrepreneurship (pp. 373-406). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-6685-1.ch013
49. Velmurugan, P. R., Catherine, S., Vettriselvan, R., E. P., J., & Rajesh, D. (2025). Innovative Intercultural Communication Training in Translator Education: Cultivating Cultural Competence. In M. Amini (Ed.), Cutting-Edge Approaches in Translator Education and Pedagogy (pp. 217-244). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-6463-5.ch008
50. Velmurugan, P. R., Swadhi, R., Varshney, K. R., Regins, J. C., & Gayathri, K. (2025). Creating Engaging and Personalized Learning Experiences in Distance Education: AI and Learning Analytics. In H. Mamede & A. Santos (Eds.), AI and Learning Analytics in Distance Learning (pp. 103-126). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-7195-4.ch005
51. Venice, J. A., Thoti, K. K., Henrietta, H. M., Elangovan, M., Anusha, D. J., & Zhakupova, A. (2022, September). Intelligent space robots integrated with enhanced information technology and development activities. In 2022 4th international conference on inventive research in computing applications (ICIRCA) (pp. 241-249). IEEE.
52. Venice, J. A., Thoti, K. K., Henrietta, H. M., Elangovan, M., Anusha, D. J., & Zhakupova, A. (2022, November). Artificial Intelligence based Robotic System with Enhanced Information Technology. In 2022 Sixth International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud)(I-SMAC) (pp. 705-714). IEEE.
53. Vettriselvan, R. & Ramya, R. (2025). Sustainable Curriculum Design and Development: A Comprehensive Approach. In A. Sorayyaei Azar, S. Gupta, K. Al Bataineh, N. Maurya, & P. Somani (Eds.), Smart Education and Sustainable Learning Environments in Smart Cities (pp. 471-486). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-7723-9.ch027
54. Vettriselvan, R. (2025). Commercial Applications of Aeroponics: Revolutionizing Modern Agriculture and Sustainable Food Production. In C. G. (Ed.), Utilizing

https://doi.org/10.47059/AJMS/V4SI02/04

Aeroponics Techniques for Improved Farming (pp. 249-282). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-2320-5.ch010

55. Vettriselvan, R. (2025). Empowering Digital Education: The Future of Value-Based Learning in the Digital Era. In B. Sousa & C. Veloso (Eds.), Empowering Value Co-Creation in the Digital Era (pp. 199-228). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3373-1742-7.ch009
56. Vettriselvan, R. (2025). Harnessing Innovation and Digital Marketing in the Era of Industry 5.0: Resilient Healthcare SMEs. In T. Olubiyi, S. Suppiah, & C. Chidoko (Eds.), The Future of Small Business in Industry 5.0 (pp. 163-186). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-7362-0.ch007
57. Vettriselvan, R., & Anto, M. R. (2018). Pathetic health status and working condition of Zambian women. Indian Journal of Public Health Research & Development, 9(9), 259-264.
58. Vettriselvan, R., Anu, S., & Jesu Rajan, F. S. A. (2016). Problems faced by women Construction workers in Theni District. International Journal of Management Research and Social Science, 3(2), 58-61.
59. Vettriselvan, R., Deepa, R., Gautam, R., Suresh, N. V., & Cathrine, S. (2025). Bridging Academia and Industry Through Technology and Entrepreneurial Innovation: Enhancing Supply Chain Efficiency. In P. Mahalle (Ed.), Bridging Academia and Industry Through Cloud Integration in Education (pp. 145-174). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-6705-6.ch006
60. Vettriselvan, R., Deepan, A., Garg, P. K., Suresh, N. V., & Velmurugan, P. R. (2025). Advanced Text Analysis, Simplification, Classification, and Synthesis Techniques: Leveraging AI for Enhanced Medical Education. In N. Jomaa (Ed.), Using AI Tools in Text Analysis, Simplification, Classification, and Synthesis (pp. 37-66). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-9511-0.ch002
61. Vettriselvan, R., Deepan, A., Jaiswani, G., Balakrishnan, A., & Sakthivel, R. (2025). Health Consequences of Early Marriage: Examining Morbidity and Long-Term Wellbeing. In E. Uddin (Ed.), Social, Political, and Health Implications of Early Marriage (pp. 189-212). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-3394-5.ch008

https://doi.org/10.47059/AJMS/V4SI02/04

62. Vettriselvan, R., Rajesh, D., Subhashini, S., Gajalakshmi, K., & Sakthivel, R. (2025). Developing and Applying PCK in Diverse Subjects: Best Practices for Mathematics, Science, Social Sciences, and Language Arts. In N. Taskin Bedizel (Ed.), Current Trends and Best Practices of Pedagogical Content Knowledge (PCK) (pp. 1-30). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-0655-0.ch001
63. Vettriselvan, R., Rajesh, D., Swadhi, R., Velmurugan, P. R., & Arunkumar, S. (2025). Enhancing Efficiency and Accountability: Innovative Approaches to Public Financial Management in Higher Education. In A. Enaifoghe & R. Mthethwa (Eds.), Challenges of Public Administration Management for Higher Education (pp. 81-112). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-4346-3.ch005
64. Vettriselvan, R., Ramya, R., Sathya, M., Swadhi, R., & Deepan, A. (2025). Service Delivery and Citizen-Centric Approaches: Innovating Public Administration Management in Higher Education. In A. Enaifoghe & R. Mthethwa (Eds.), Challenges of Public Administration Management for Higher Education (pp. 113-136). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-4346-3.ch006
65. Vettriselvan, R., Velmurugan, P. R., Deepan, A., Jaiswani, G., & Durgarani, M. (2025). Transforming Virtual Education: Advanced Strategies for Quality Assurance in Online and Distance Learning. In M. Kayyali (Ed.), Navigating Quality Assurance and Accreditation in Global Higher Education (pp. 563-580). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-6915-9.ch024
66. Vettriselvan, R., Velmurugan, P. R., Regins, J. C., Uma Maheswari, S., & Joyce, R. (2025). Best Practices, Ethical Challenges, and Regulatory Frameworks for AI Integration in Banking: Navigating the Future. In P. Chelliah, R. Venkatesh, N. Natraj, & R. Jeyaraj (Eds.), Artificial Intelligence for Cloud-Native Software Engineering (pp. 377-410). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-9356-7.ch015
67. Vettriselvan, R., Velmurugan, P. R., Varshney, K. R., E. P., J., & Deepika, R. (2025). Health Impacts of Smartphone and Internet Addictions Across Age Groups: Physical and Mental Health Across Generations. In M. Anshari, M. Almunawar, & P. Ordóñez de Pablos (Eds.), Impacts of Digital Technologies Across Generations (pp. 187-210). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-6366-9.ch010

https://doi.org/10.47059/AJMS/V4SI02/04

68. Vettriselvan, R., Vijai, C., Patel, J. D., Sharma, P., & Kumar, N. (2024, March). Blockchain embraces supply chain optimization by enhancing transparency and traceability from production to delivery. In 2024 International Conference on Trends in Quantum Computing and Emerging Business Technologies (pp. 1-6). IEEE.
69. Vijayalakshmi, M., A. K., S., Vettriselvan, R., Velmurugan, P. R., & Hasine, J. (2025). Strategic Collaborations in Medical Innovation and AI-Driven Globalization: Advancing Healthcare Startups. In V. Gupta & C. Gupta (Eds.), Navigating Strategic Partnerships for Sustainable Startup Growth (pp. 85-110). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-4066-0.ch004
70. Vijayalakshmi, M., Subramani, A. K., Vettriselvan, R., Catherin, T. C., & Deepika, R. (2025). Sustainability and Responsibility in the Digital Era: Leveraging Green Marketing in Healthcare. In H. Rahman (Ed.), Digital Citizenship and Building a Responsible Online Presence (pp. 285-306). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-6675-2.ch011

https://doi.org/10.47059/AJMS/V4SI02/04