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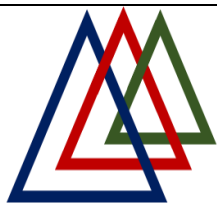
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Supporting epidemiological and public health research to promote public well-being

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Abstract

Keywords:

Disease Prevention
Infectious Diseases
Non-Communicable Diseases
Parasitology and Medical entomology

Epidemiological and public health research plays a crucial role in understanding the determinants of health, preventing disease and improving healthcare systems. By identifying risk factors and disease trends, epidemiological research makes it possible to develop evidence-based prevention and intervention strategies. It is essential for responding to emerging health challenges, such as pandemics, antibiotic resistance and rising chronic diseases. In addition, public health research guides the development of health policies and promotes equity in care, by highlighting health disparities and proposing solutions adapted to vulnerable populations. Rigorous, multidisciplinary epidemiological research is therefore essential to improving the health of populations and strengthening the resilience of healthcare systems in the face of global threats.

I. Introduction

Epidemiology and public health are closely linked, as epidemiology provides the scientific tools needed to understand, prevent and control disease in populations. As a key public health discipline, it identifies risk factors, monitors disease trends and evaluates the effectiveness of health interventions (Bonita et al., 2006). Through observational and experimental studies, epidemiology helps to develop evidence-based public health policies, thereby improving the prevention and management of infectious and chronic diseases (Gordis, 2014). Consequently, an integrated approach between these two fields is essential for promoting health and reducing health inequalities on a global scale (Schneider, 2020).

Through this section, our journal highlights contemporary challenges facing populations and health systems worldwide, including emerging and reemerging diseases, cancers, vector-borne infections and pathologies linked to extreme environmental conditions. In addition, we are targeting epidemiological methodologies used to assess environmental impacts on health, while exploring solutions and public policies to prevent these risks, improve community resilience and reduce the health impact of global environmental changes.

These objectives aim to make this journal an essential resource for researchers, healthcare professionals, policy-makers and students, providing practical and scientific information to help them better understand healthcare challenges and solutions.

This section of the journal aims to provide readers with the knowledge and ideas they need to understand and exploit emerging phenomena, and enables researchers to share their findings and hypotheses and fuel multidisciplinary scientific discussions around health phenomena. This section is divided into sub-sections, each targeting a specific area.

II. Disease Prevention

Disease prevention is a fundamental pillar of public health, aimed at reducing the incidence and severity of disease through targeted interventions. It is divided into three levels: primary prevention, which seeks to avoid the onset

of disease through measures such as vaccination and the promotion of healthy lifestyles (Koplan et al., 2009); secondary prevention, which aims to detect disease early to improve the chances of treatment, for example through cancer screening (WHO, 2022a); and tertiary prevention, which concerns the management of chronic diseases to limit their complications and improve patients' quality of life (Friis & Sellers, 2021). An effective preventive approach relies on science-based strategies and collaboration between governments, healthcare professionals and civil society to reduce the global burden of disease.

III. Infectious Diseases

Infectious diseases, caused by pathogens such as bacteria, viruses, fungi and parasites, are a major public health issue worldwide. They can be transmitted by direct contact, through the air or water, or by biological vectors such as mosquitoes (Heymann, 2015). The prevention and control of infectious diseases are based on several strategies, including vaccination, hygiene, access to drinking water and appropriate antimicrobial treatments (Murray & Cohen, 2021). However, the emergence of antibiotic resistance and the appearance of new infections, such as the COVID-19 or Ebola pandemics, underline the need for continuous epidemiological surveillance and international cooperation to limit their spread (Fauci et al., 2020).

IV. Non-Communicable Diseases

Non-communicable diseases (NCDs) are chronic conditions that do not spread from person to person and are often the result of genetic, environmental and behavioural factors. The main NCDs include cardiovascular disease, cancer, diabetes and chronic respiratory diseases, which are the leading cause of death worldwide, contributing to around 74% of global deaths (WHO, 2022b). The main risk factors include smoking, poor diet, physical inactivity and excessive alcohol consumption (Gordon & Gulanick, 2020). The prevention and management of NCDs rely on multisectoral approaches, combining public health policies, medical interventions and the promotion of healthy lifestyles to reduce their impact and improve people's quality of life (Beaglehole et al., 2011).

V. Parasitology and Medical entomology

Parasitology and medical entomology are two essential public health disciplines, studying respectively the parasites and arthropod vectors responsible for human diseases. Medical parasitology is concerned with organisms such as protozoa (e.g. *Plasmodium* causing malaria) and helminths (e.g. *Schistosoma* responsible for bilharzia), which cause infections often linked to unfavourable socio-economic conditions (Roberts & Janovy, 2019). Medical entomology, on the other hand, focuses on insects and other arthropod vectors such as mosquitoes (*Anopheles* for malaria, *Aedes* for dengue fever and chikungunya) and ticks (*Ixodes* for Lyme disease) (Gullan & Cranston, 2020). The prevention and control of parasitic and vector-borne diseases rely on combined strategies, including improved hygiene, the use of insecticides, vaccination and epidemiological surveillance (WHO, 2023).

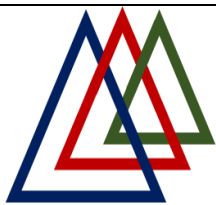
VI. Conclusion

Promoting the physical, mental and social well-being of the population requires close collaboration between researchers and practitioners and the promotion of action research. To this end, our journal provides a forum for the exchange and sharing of knowledge and expertise.

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Exploring the Frontiers of Emerging Technologies

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Abstract

Keywords:

*Quantum Computing
Extended Reality
Generative AI
Next Generation Networks*

Emerging technologies are rapidly transforming various industries, offering unprecedented opportunities and challenges. This journal section aims to provide a platform for researchers, professionals, and enthusiasts to explore and contribute to the latest advancements in four key domains: Quantum Computing, Extended Reality (XR), Generative AI, and Next-Generation Networks. By covering state-of-the-art research, innovative applications, and theoretical foundations, the journal section seeks to facilitate knowledge exchange and interdisciplinary collaboration. The topics include quantum algorithms, immersive user experiences, AI-driven creativity, and the future of ultra-fast connectivity. Our readership includes academics, industry professionals, technology developers, policymakers, and students who seek to stay informed about the latest advancements and practical implementations of emerging technologies. This paper presents an overview of the *Emerging Technologies* section's scope.

I. Introduction

The rapid evolution of digital technologies has led to transformative changes across industries, societies, and scientific disciplines. The convergence of computing power, connectivity, and artificial intelligence has created unprecedented opportunities, fostering innovation in sectors ranging from healthcare and education to business and entertainment. This journal section is dedicated to providing a platform for researchers, industry professionals, and academics to discuss, analyze, and contribute to the latest advancements in Quantum Computing (Caleffi, M et al. 2024), Extended Reality (XR) (Lopes, J.C et al. 2024), Generative AI (Feuerriegel, S. et al. 2024), and Next-Generation Networks (Kamath, S, et al. 2024). Our journal is tailored for a diverse audience, including scientists, engineers, entrepreneurs, policymakers, and educators, who are interested in exploring the implications of cutting-edge technological developments. By fostering interdisciplinary collaboration and presenting high-quality research, this journal aims to bridge the gap between theoretical advancements and real-world applications, ultimately shaping the future of technology.

The significance of these emerging technologies extends beyond academia and industry, influencing public policy, ethics, and societal well-being. Governments are investing in research and development to harness these technologies for national security, economic growth, and social progress. Businesses are integrating them into their operational models to improve efficiency, customer experience, and decision-making processes. Additionally, these advancements have the potential to address pressing global challenges such as climate change, cybersecurity threats, and healthcare accessibility.

As we navigate this technological revolution, it is crucial to explore both the benefits and challenges associated with these advancements. Ethical concerns, data privacy, regulatory frameworks, and the digital divide must be addressed to ensure that these technologies contribute to a sustainable and inclusive future. This journal section serves as a conduit for thought leadership and innovative solutions, encouraging collaboration between academia, industry, and policymakers to shape a responsible technological landscape. This journal section seeks to empower readers with the knowledge and insights necessary to understand and leverage emerging technologies effectively. The following sub-sections delve into the specific

domains covered by the journal section, highlighting their real-world applications and the transformative impact they hold for various industries.

II. Quantum Computing

Quantum computing represents a paradigm shift in computational capabilities, leveraging the principles of quantum mechanics to solve complex problems that remain intractable for classical computers. The journal section explores topics such as quantum algorithms, quantum cryptography, quantum machine learning, and hardware advancements, fostering discussions on the potential applications and challenges in this rapidly evolving field (Caleffi, M et al. 2024).

Real-World Applications:

- Drug Discovery: Quantum simulations accelerate the identification of new molecules and drug compounds.
- Financial Modeling: Enhances risk assessment and portfolio optimization.
- Cryptography: Develops unbreakable encryption methods for secure communications.

III. Extended Reality (XR) – AR, VR & Mixed Reality (MR)

Extended Reality (XR), encompassing Augmented Reality (AR), Virtual Reality (VR), and Mixed Reality (MR), is revolutionizing industries such as healthcare, education, entertainment, and manufacturing. The journal welcomes research on human-computer interaction, immersive user experiences, XR-based training systems, and advancements in XR hardware and software. We aim to highlight innovative applications and explore how XR is shaping the future of digital interaction (Lopes, J.C et al. 2024).

Real-World Applications:

- Medical Training: VR-based simulations help doctors practice surgeries safely.
- Education: AR-enhanced textbooks and VR classrooms create immersive learning experiences.
- Retail & Marketing: Virtual try-ons and AR-driven shopping experiences.

IV. Use Cases and Algorithms of Generative AI

Generative Artificial Intelligence (AI) has unlocked new possibilities in content creation, automation, and problem-solving. This section of the journal focuses on advancements in generative models, ethical considerations, real-world applications, and the impact of generative AI on various sectors. Topics include deep learning architectures, text and image generation, AI-driven creativity, and AI ethics (Feuerriegel, S. et al. 2024).

Real-World Applications:

- Content Generation: AI-created articles, music, and digital artwork.
- Healthcare: AI-assisted medical image analysis for diagnostics.
- Gaming & Entertainment: AI-generated characters, dialogue, and realistic virtual worlds.

V. Next-Generation Networks (IoE, 5G, 6G ...)

Connectivity is at the core of digital transformation, and next-generation networks, including the Internet of Everything (IoE), 5G, and 6G, are paving the way for ultra-reliable, high-speed communication. The journal section seeks contributions on network architectures, edge computing, IoE applications, security challenges, and the impact of 5G/6G on smart cities, autonomous systems, and Industry 4.0 (Kamath, S, et al. 2024).

Real-World Applications:

- Smart Cities: 5G-enabled IoT devices optimize traffic, energy usage, and public safety.
- Autonomous Vehicles: Low-latency communication enables safer self-driving cars.
- Telemedicine: High-speed networks support remote surgeries and real-time health monitoring.

VI. Conclusion

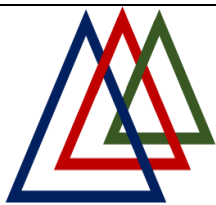
As emerging technologies continue to evolve, their interdisciplinary impact will shape the future of innovation and research. Our journal serves as a platform for knowledge exchange, fostering collaboration between academia and industry to explore the full potential of these transformative technologies. We welcome original research, reviews, and case studies that contribute to the advancement of knowledge in these domains.

Acknowledgment

We express our gratitude to the section editors and the scientific committee for their dedication and contributions to the success of the journal. Their expertise, rigorous evaluations, and commitment to academic excellence will be instrumental in maintaining high scholarly standards. Their efforts in peer review, editorial oversight, and continuous support will significantly contribute to the journal's continued growth and impact. This statement recognizes their invaluable role in advancing research and fostering knowledge dissemination, ensuring the journal remains a reputable platform for academic excellence in the future.

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Harnessing Intelligent Systems and E-Learning for the Digital Transformation of Education: Insights and Innovations

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Abstract

Keywords:

*Digital Transformation
Adaptive Approaches
Artificial Intelligence
Intelligent Systems
E-Learning Tools
Smart Classroom
EdTech Insights*

The integration of intelligent systems and e-learning technologies is examined in this paper within the framework of the digital transformation of education. Key topics including artificial intelligence, adaptive techniques, and the significance of intelligent systems in transforming the face of education are all covered. The term of "smart classrooms" and the insights that "EdTech" provides are explored, emphasizing how they might improve instruction. The article also emphasizes how artificial intelligence is becoming increasingly significant in supporting individualized learning. An education system that is more flexible, interactive, and effective is anticipated as a result of the convergence of various technologies. The purpose of this paper is to keep researchers and educators on the most recent advancements in this field. It also solicits contributions for the Scimetech journal's "E-Learning and Intelligent Systems" section.

I. Introduction

Today the development of information and communication technologies has led to their use in all areas of life. In education, for example, this integration has led to the development of learning systems and platforms for transmitting knowledge to learners. Building on these foundational advancements, the ongoing digital transformation of education is reshaping how learning occurs across the globe. With the advent of sophisticated e-learning tools, adaptive approaches, and the integration of artificial intelligence (AI), the educational sector is experiencing profound changes. These advancements not only enhance the learning experience but also foster new methods of teaching and assessment. The implementation of intelligent systems, from personalized learning platforms to smart classrooms, represents a significant leap forward in educational technology (EdTech). Furthermore, the integration of AI in education is enabling personalized learning paths, adaptive assessments, and intelligent feedback systems that cater to the diverse needs of students.

Our journal is designed for a diverse public, which includes scientists, engineers, entrepreneurs, industry decision-makers, and educationists interested in exploring the implications of cutting-edge technological developments. By supporting interdisciplinary collaboration and presenting high-quality research, this publication aims to bridge the gap between advances in theory and real applications, helping to shape the future of technology.

This section aims to equip readers with the knowledge and ideas needed to understand and effectively exploit emerging technologies in learning and education. The following subsections explore the specific areas covered by this section, emphasizing their real applications and the transformative impact they can have on the various fields:

II. E-Learning and Intelligent Systems

1. Digital Transformation of Education

The digital transformation of education involves a shift from traditional learning methods to more dynamic, interactive, and technology-driven approaches. Technologies such as cloud computing, data analytics, and AI are pivotal in this transformation, enabling remote learning and fostering global collaboration among students and educators (Smith, 2023).

2. Adaptive Approaches in Education

Adaptive learning systems adapt the learning path to the individual needs of students, optimizing learning efficiency and effectiveness. These systems employ artificial intelligence algorithms to analyze learner behavior and adapt content delivery accordingly (Johnson & Lee, 2024). As a result, adaptive learning ensures that all students receive personalized teaching that takes into account their individual profiles and unique strengths and weaknesses. (M. Riad, et al 2023).

3. Artificial Intelligence in E-Learning

AI is a crucial tool in the modern e-learning system. Machine learning algorithms help design systems that understand individual learning patterns and provide real-time recommendations. AI-led tools, such as chatbots and virtual tutors, enhance student engagement by providing immediate assistance (Gonzalez et al., 2025). Building on this, the use of Deep Learner Profiles, Machine Learning Approaches, and Reinforcement Learning can further personalize the learning experience, tailoring interventions to individual needs and optimizing learning outcomes (Mustapha, R., et al., 2023).

4. Intelligent Systems in Education

Intelligent systems in the education field cover a wide range of technologies designed to automate administrative tasks, track student progress and support both teachers and learners. For example, AI-powered scoring systems, content recommendation engines, and learning management systems (LMS) are transforming the educational environment into a better, more fluid learning space (Williams & Harris, 2023), and (M. Riad, et. al 2023).

5. E-Learning Tools

From the virtual classroom to the collaborative platforms, e-learning tools have been revolutionizing the way knowledge is provided and used. Using tools including video conferencing, e-learning and interactive simulations, students can interact with content in a flexible and scalable way (Kumar & Patel, 2024). This evolution in e-learning tools is echoed in adaptive learning techniques, which take into account learners' learning styles and motivation. By combining these interactive technologies with personalized approaches, it becomes possible to optimize learning based on the specific needs of each student (Riad, M., Qbadou, M., Aoula, E. S., & Gouraguine, S., 2023).

6. Smart Classroom

The smart classroom is an emerging approach to enhancing the traditional learning environment by integrating technology. Interactive whiteboards, student engagement applications and IoT-enabled devices all play a key role in creating an engaging and immersive educational experience. These technologies encourage collaboration, critical thinking and real-time feedback (Roberts, 2024). Additionally, the use of a Connected Smart Classroom is essential for adapting the learning path to each learner's individual profile, allowing for more personalized and effective learning experiences (Mustapha, G. Soukaina, Q. Mohammed and E. es-saadi, 2022).

7. EdTech Insights

"EdTech" is creating significant transformations in both in-class and online learning. From mobile learning applications to AI-enhanced learning platforms, EdTech innovations are enhancing accessibility, engagement and personalized learning. Teachers and researchers are continually exploring new ways to integrate these technologies to optimize learning outcomes (Patel et al., 2023).

III. Conclusion

This article has explored the transformative role of intelligent systems and e-learning tools in the ongoing digital evolution of education. These technologies hold immense promise for reshaping how education is delivered and experienced. As we move forward, it is essential for educators and researchers to engage with these emerging trends and contribute to the growing body of knowledge in the field of e-learning and intelligent systems. The Scimetech journal's "E-

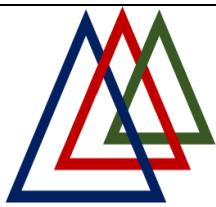
Learning and Intelligent Systems" section invites educators and researchers to publish their findings, share innovative practices, and discuss future directions in this rapidly evolving field.

Acknowledgment

We would like to express our appreciation to the section editors and the Scientific Committee for their dedication and contribution to the success of the journal. Their expertise, rigorous reviews, and dedication to academic excellence will be instrumental in ensuring that high scientific standards are maintained. Their efforts in terms of peer review, editorial oversight, and ongoing support will contribute significantly to the journal's continued growth and impact. The statement acknowledges their invaluable key role in progressing research and promoting the dissemination of knowledge, ensuring that the journal remains a renowned platform for academic excellence in the future.

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Exploring the Frontiers of Social Sciences and Humanities

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Abstract

Keywords:

*Sociology
Psychology
Education
Cultural Studies
Nursing Education*

The Social Sciences and Humanities section of this journal serves as a dynamic platform for exploring the complexities of human behavior, education, culture, and healthcare. By fostering interdisciplinary collaboration, the section delves into diverse topics such as mental health, social structures, pedagogical practices, cultural narratives, and nursing education. Researchers, educators, and practitioners contribute to a growing body of knowledge that informs public policy, shapes inclusive educational practices, preserves cultural heritage, and enhances healthcare delivery. This overview highlights the section's scope and underscores its role in addressing contemporary societal challenges through research and discourse.

I. Introduction

Globalization has only increased the need for an interdisciplinary approach to comprehending the changes in society and the cultural complexities involved. As a result, social challenges and opportunities are becoming increasingly complicated. The complexities of education, culture, human behavior, and healthcare have become increasingly important as societies' linkages grow (Frenk et al., 2022). This journal section will hence be a space of interdisciplinary conversations that attempt to close the gap between theory and application through the promotion of collaboration across scholars from various backgrounds.

Our journal is addressed to sociologists, psychologists, educators, healthcare practitioners, and cultural critics. This section aims to advance collaboration, inform policy, and provoke thought through higher research quality. Research in these areas provides directions for envisioning changing relationships among technology, education, and culture, and the social formations that determine human experience.

In fact, the growing relevance of social and cultural research happens outside the academy-by evidencing public policy, educational reform, cultural preservation, and the very practice of health care. Training in cultural competence has been found to improve the delivery of health care and patient satisfaction (De-María et al., 2024). Social science-informed education reform led to the creation of inclusive pedagogies and equitable learning environments. Now, at a time of globalization and diversity, consider that conversant with these topics will serve to foster inclusivity of society and underpin sustainable social development.

II. Sociology and Psychology

This subsection will explore human behavior, social structures, and psychological processes, offering insight into how individuals and societies interact and evolve. Among the topics of interest are mental health, social identity, group dynamics, behavioral cultural influences, and psychological resilience (Khadka, 2024).

Real-World Applications:

- Understanding social determinants of health and well-being.
- Exploring mental health interventions and therapeutic practices.
- Investigating the impact of societal changes on psychological adaptation.

III. Education

The education subsection delves into innovative teaching methods, curriculum development, digital learning environments, and educational policies. It emphasizes the role of education in shaping future generations and adapting to global challenges (Wang et al., 2024).

Real-World Applications:

- Implementing inclusive education practices.
- Integrating digital tools to enhance student engagement.
- Developing teacher training programs to improve pedagogical effectiveness.

IV. Cultural Studies

Cultural Studies explores diverse cultural narratives and identities, examining how race, gender, and class are intertwined with marginalized communities. It explores the connection between culture policy and preservation in globalized contexts, and how ICT facilitates cultural exchange. By integrating media studies with cultural analyses, it aims to address contemporary issues and bridge theory-practice gaps (Lin, 2020).

Real-World Applications:

- Analyzing the impact of global media on local cultures.
- Examining cultural identity formation in multicultural societies.
- Investigating the role of art, literature, and media in shaping societal norms.

V. Nursing Education

This subsection focuses on advancing nursing education through pedagogical innovations, curriculum design, and practical training. It aims to bridge the gap between theoretical knowledge and clinical practice, enhancing the competence and compassion of future healthcare providers (Pearson & Shumway, 2025).

Real-World Applications:

- Developing simulation-based training programs for clinical skills.
- Promoting emotional intelligence and resilience in nursing students.
- Evaluating the effectiveness of interdisciplinary training models.

VI. Conclusion

The Social Sciences and Humanities section fosters interdisciplinary research that addresses contemporary societal challenges, encouraging collaboration among researchers, educators, and practitioners. Through a nuanced exploration of human experiences, this section aims to inspire meaningful contributions that advance knowledge and inform practice.

Acknowledgment

We would like to thank the section editors and the scientific committee for their devotion and contributions to the success of the publication. Their knowledge guarantees that the publication maintains a credible venue for intellectual brilliance.

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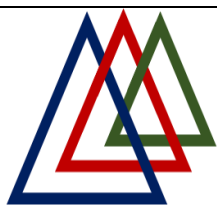
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Exploring Applied Linguistics and Education: A Multidisciplinary Perspective

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Abstract

Keywords:

*Applied Linguistics
Language Teaching
Educational Technology
Artificial Intelligence
Sociolinguistics, TESOL, ELT*

Applied Linguistics and Education intersect in a variety of ways, influencing modern teaching methodologies, language acquisition processes, and teacher professional development. This article highlights key themes in the discipline, such as language teaching and learning, educational technology, and the role of artificial intelligence in education. It also addresses the significance of TEFL, TESOL, and ELT studies, as well as sociolinguistics and applied linguistics research. This discipline intends to support educators and researchers by offering a forum for novel contributions. By promoting a multidisciplinary approach, this field invites scholars and researchers to engage in meaningful discourse and publication opportunities.

I. Introduction

In recent years, the field of Applied Linguistics and Education has become increasingly prominent, especially in the areas of improving pedagogical strategies, comprehending language acquisition, and incorporating contemporary technologies into the classroom. With the advent of globalization, the necessity for effective English language teaching (ELT) and sociolinguistic aspects has become critical. To address these issues, academics and educators are constantly exploring new approaches and digital tools to expedite English language teaching and learning.

The ongoing development of educational technology and artificial intelligence has transformed traditional teaching methods. Language acquisition theories increasingly incorporate computational tools to provide personalized learning experiences and adaptive curriculum designs. Furthermore, professional development for teachers has expanded, with training programs emphasizing digital literacy and interactive approaches.

Themes in Applied Linguistics and Education This section of Scimetech is dedicated to a broad range of topics that contribute to the advancement of language education and linguistic research. These include:

A. Language Teaching and Learning

This area focuses on novel pedagogical practices for improving language learning. Effective teaching strategies, curriculum development, and assessment procedures are investigated to promote language acquisition. In addition, research on student engagement, motivation, and individualized instruction assists instructors cater to diverse learning needs

B. Applied Linguistics

The scientific investigation of language and its practical applications in communication, translation, discourse analysis, and language policy. This area investigates how linguistic theories influence real-world language use and instructional methods, ensuring that language education stays successful and contextually relevant.

C. Educational Technology

The incorporation of digital technologies such as learning management systems, gamification, and AI-powered tutoring improves language learning experiences. This discipline studies how blended learning, online courses, and multimedia-based instruction can enhance language proficiency and engagement.

D. Language Acquisition

This theme investigates how cognitive and social factors influence the process of acquiring a new language. Topics covered include first and second language acquisition, bilingualism, and the significance of interaction in building linguistic competence. Research in this area provides best practices for arranging language instruction around developmental and psycholinguistic concepts.

E. TEFL, TESOL, and ELT

This theme addresses the challenges of English language teaching in a variety of educational settings, with a focus on effective teaching methodologies, curriculum adaptation, and assessment strategies in Teaching English as a Foreign Language (TEFL), Teaching English to Speakers of Other Languages (TESOL), and English Language Teaching. Inclusion and intercultural skills are prioritized.

F. Sociolinguistics

This discipline studies the relationship between language and society, looking into topics including multilingualism, linguistic diversity, dialectology, language identity, and code-switching. It sheds light on how social dynamics and cultural factors impact communication and language training.

G. Artificial Intelligence in Education

AI-driven methodologies, such as Natural Language Processing (NLP), adaptive learning systems, and automated assessment tools, are changing the face of language education. This research investigates the advantages and disadvantages of artificial intelligence in providing educators with tailored learning experiences, instant feedback, and data-driven insights.

H. Professional Development

This theme focuses on the continual training and tools available to educators to improve their teaching abilities. Topics covered include teacher training programs, reflective teaching practices, continuing education, and the use of technology in professional development. The purpose is to provide educators with the tools and information they need to respond to changing trends in language instruction.

II. Conclusion

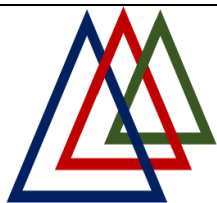
The Applied Linguistics and Education section of Scimetech is a dedicated space for educators, especially those working in English Language Teaching and Learning. This area intends to help professionals with their academic and practical objectives by encouraging collaboration and knowledge sharing. Contributors who publish in this section will have the opportunity to share insights, showcase research findings, and interact with an international community of experts. Scimetech welcomes submissions from educators, linguists, and academics. By participating, they can help influence the future of language education and applied linguistics, distribute essential research, and inspire educational innovations. We welcome articles addressing current difficulties, new practices, and multidisciplinary approaches to language learning and instruction.

Acknowledgment

We extend our profound gratitude to the researchers, educators, and collaborators whose work continues to define the developing fields of Applied Linguistics and Education. Their commitment to advancing knowledge, developing innovative techniques, and encouraging collaboration has broadened the discussion of language learning and teaching. Special appreciation to Scimetech editorial staff for their dedication to creating a forum for intellectual debate, as well as to everyone who supports the dissemination of research in language education and linguistics.

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Interdisciplinary Modeling and Intelligent approaches in Natural Sciences

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Abstract

Keywords:

*Artificial intelligence in natural science
Computational Modeling
Scientific Programming
Medical Physics,
Biophysics*

The *Journal of SciMeTech* is an interdisciplinary, peer-reviewed publication dedicated to advancing research across the full spectrum of natural sciences. With a special focus on the integration of computational science, artificial intelligence, and programming, the journal provides a platform for innovative studies that address complex scientific challenges through modern technologies. We welcome original research, reviews, and methodological contributions in fields such as physics, chemistry, environmental science, medical physics, biophysics, and geosciences. The journal actively encourages submissions that apply simulation, modeling, machine learning, and open-source programming to natural phenomena. Our goal is to foster a dynamic and collaborative scientific community where high-impact discoveries, reproducible methods, and digital innovation converge to redefine the future of natural science research.

I. Introduction

This journal is a peer-reviewed, interdisciplinary platform dedicated to the advancement of scientific knowledge across the broad domains of the natural sciences. Our mission is to support innovative research that explores the structure, behavior, and interactions of natural systems—from subatomic particles to planetary ecosystems—while embracing the transformative role of modern technologies.

In response to the growing complexity of scientific challenges, we place particular emphasis on computational methods, artificial intelligence, and programming as essential tools for 21st-century science. We welcome submissions that apply these technologies to classical and emerging questions across physics, chemistry, environmental science, geosciences, and beyond. The journal actively supports the expansion of fields such as medical physics, biophysics, and computational biology, where science, technology, and human health intersect. From image processing in radiotherapy to molecular modeling of protein structures, these disciplines exemplify the power of interdisciplinary approaches and algorithmic thinking in solving real-world problems.

We encourage contributions that leverage machine learning, simulation, modeling, and data-driven methodologies to investigate natural phenomena. Whether it's using neural networks for disease diagnosis, deep learning to analyze satellite imagery, or Python scripts to simulate quantum systems, we value research that blends theory, experimentation, and code.

The journal publishes a wide range of article types: original research, reviews, methodological papers, software and code notes, and applied studies. We are especially interested in work that promotes reproducibility, open science, and the development of scientific tools. The specific domains covered by the journal section, highlighting their real-world applications and the transformative impact they hold for various industries.

We recognize the importance of open-source programming, scientific computing libraries, and high-performance computing in accelerating discovery. Submissions that introduce novel algorithms, analytical workflows, or computational pipelines are highly encouraged.

Our goal is to provide a space for scientists, engineers, developers, and innovators to collaborate and communicate their contributions to a global audience. By highlighting research that is rigorous, innovative, and computationally forward-thinking, we aim to shape the future of natural science publication.

As an editorial team, we are committed to ensuring quality, transparency, and interdisciplinary exchange. We invite researchers working at the intersection of natural science and computing to join us in redefining the boundaries of discovery.

II. Physical Sciences

This section is devoted to advancing our knowledge of matter, energy, and the physical laws governing nature. Emphasis is placed on both foundational science and computational applications.

- Theoretical and Applied Physics: Quantum theory, thermodynamics, electromagnetism, and astrophysics.
- Materials Science and Nanotechnology: Synthesis, modeling, and performance prediction of advanced materials.
 - Chemistry:
- Computational Chemistry: Molecular simulations, quantum chemical calculations.
- Cheminformatics: AI in drug and material design, predictive chemical modeling.
- Finite element modeling (FEM) in material behavior analysis.
- Monte Carlo simulations and density functional theory (DFT).
 - Tools used
- AI/ML algorithms for predicting chemical properties.
- Deep learning for spectroscopy, crystallography, or spectral image classification.
- Use of Python, MATLAB, Fortran, or C++ for custom simulations.
- TensorFlow, PyTorch for neural networks in chemistry or physics.
- OpenFOAM or COMSOL for modeling fluid dynamics or electromagnetism.

III. Environmental and Earth Sciences

This section explores the dynamic processes shaping our planet, focusing on Earth systems, climate, and human-environment interactions.

- Geology & Geophysics: Earth structure, plate tectonics, seismic modeling.
- Hydrology & Water Resources: Watershed modeling, aquifer dynamics.
- Climatology & Meteorology: Weather simulation, global warming models.
- Environmental Monitoring: Pollution tracking, ecosystem health, remote sensing.
 - Tools programming:
- Satellite image classification using CNNs.
- Forecasting droughts and floods with LSTM models.
- Climate change simulations using HPC.
- Machine learning in geospatial mapping and risk analysis.
- Geospatial programming (Python with GDAL, Rasterio, ArcPy).
- GIS-based modeling (QGIS, ArcGIS with AI plugins).
- R and Python for environmental statistics.
- Custom climate models and earth system simulations.

IV. Interdisciplinary Natural Science & AI

This flagship section bridges disciplines and showcases the role of artificial intelligence, machine learning, and computational modeling in solving complex scientific problems.

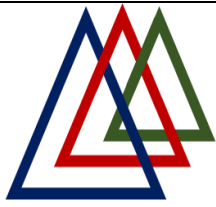
- Biophysics and Systems Biology: Molecular modeling, simulation of biological pathways.

- Computational Ecology: Population modeling, ecosystem simulations, agent-based modeling.
- Scientific Informatics:
- Text mining in scientific literature (e.g., PubMed, Scopus data).
- Knowledge graphs for cross-domain natural science linking.
- Use of convolutional neural networks (CNNs) to classify biological or geological images.
- Deep reinforcement learning in environmental decision-making.
- AI-assisted discovery in physics (e.g., symbolic regression, GPT-based code generation).

V. Software, code and Data Tools in Natural Sciences

A specialized section dedicated to the development of **scientific software**, **custom algorithms**, **data platforms**, and **open-access tools**.

- Release of new scientific libraries, packages, or tools.
- Algorithms for scientific image analysis, simulation engines, or modeling frameworks.
- Datasets with detailed documentation, ideal for machine learning training.
- Best practices in code reproducibility, version control, and open science.



Advancing Innovation in Engineering and Technology

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Abstract

Keywords:

*Mechanical Engineering,
Civil Engineering,
Electrical Engineering,
Artificial Intelligence,
Cybersecurity & Blockchain*

Emerging advancements in engineering and technology are reshaping industries, economies, and societal structures, presenting both opportunities and challenges.

This journal section provides a dedicated platform for researchers, professionals, and industry leaders to explore and contribute to cutting-edge developments in four pivotal domains: Mechanical and Civil Engineering, Electrical Engineering, Computer Science and Artificial Intelligence, and Blockchain, Cybersecurity, and Privacy. By covering state-of-the-art research, innovative applications, and theoretical foundations, this section fosters interdisciplinary collaboration and knowledge exchange.

Key topics include sustainable infrastructure, renewable energy systems, AI-driven solutions, and secure digital ecosystems. Our readership comprises academics, engineers, policymakers, and technologists seeking to stay informed about the latest breakthroughs and real-world implementations in engineering and technology. This paper presents an overview of the Engineering and Technology section’s scope.

I. Introduction

The rapid evolution of engineering and technology has led to transformative changes across industries, societies, and scientific disciplines. The convergence of computational power, automation, and secure digital frameworks has opened unprecedented opportunities, fostering innovation in sectors such as healthcare, energy, construction, and information security.

This journal section is dedicated to providing a platform for researchers, industry professionals, and academics to discuss, analyze, and contribute to the latest advancements in Mechanical and Civil Engineering [1], Electrical Engineering [2], Computer Science and Artificial Intelligence [3], and Blockchain, Cybersecurity, and Privacy [4].

Our journal is tailored for a diverse audience, including engineers, scientists, entrepreneurs, policymakers, and educators, who are interested in exploring the implications of emerging engineering advancements. By fostering interdisciplinary collaboration and presenting high-quality research, this journal aims to bridge the gap between theoretical advancements and real-world applications, ultimately shaping the future of engineering and technology.

The significance of these fields extends beyond academia and industry, influencing public policy, ethics, and societal well-being. Governments and corporations are investing in research and development to harness these technologies for economic growth, infrastructure resilience, and digital security. Businesses are integrating new engineering solutions into their operational models to enhance efficiency, sustainability, and decision-making processes. Additionally, advancements in these areas are addressing global challenges such as climate change, cybersecurity threats, and urbanization.

As we navigate this technological revolution, it is essential to explore both the benefits and challenges associated with these advancements. Ethical considerations, regulatory compliance, and the sustainability of technological integration must be addressed to ensure that engineering and technology contribute to an inclusive and responsible future.

This journal section serves as a hub for thought leadership and innovative solutions, promoting collaboration between academia, industry, and policymakers to drive responsible engineering innovation.

The following sub-sections delve into the specific domains covered by this journal section, highlighting their real-world applications and transformative impact.

II. Mechanical and Civil Engineering

Mechanical and Civil Engineering continue to be the foundation of industrial and urban development, offering innovative solutions for sustainable design, automation, and resilient infrastructure.

- **Sustainable Infrastructure and Green Buildings:** The demand for eco-friendly infrastructure has led to advancements in energy-efficient materials, carbon-neutral construction, and smart cities. Research in this area focuses on optimizing building materials, integrating renewable energy, and enhancing water and waste management systems.
- **Advanced Manufacturing and Robotics:** The integration of robotics, 3D printing, and nanomaterials has revolutionized industrial automation and precision manufacturing. Smart factories and autonomous robotic systems are improving efficiency and reducing environmental impact.
- **Resilient Structural Design:** The development of earthquake-resistant buildings, self-healing concrete, and intelligent transportation systems is shaping the future of urban planning. Innovations in computational modeling are enabling engineers to design safer and more adaptive infrastructure.

III. Electrical Engineering

Electrical Engineering plays a critical role in the advancement of power systems, smart networks, and embedded technologies.

- **Renewable Energy and Smart Grids:** The shift towards clean energy sources has accelerated the adoption of solar and wind power, battery storage solutions, and AI-driven smart grid management.
- **Embedded and IoT Systems:** Connected devices and real-time computing are transforming industrial automation, healthcare monitoring, and intelligent transportation systems, making processes more autonomous and efficient.
- **5G and 6G Communication Networks:** Next-generation wireless communication is enabling high-speed data transfer, enhanced connectivity, and the proliferation of smart city infrastructure and autonomous vehicles.

IV. Computer Science and Artificial Intelligence

The fusion of AI and computer science is revolutionizing data-driven decision-making, automation, and computing paradigms.

- **Machine Learning and Deep Learning:** AI-driven predictive analytics, natural language processing, and autonomous systems are enhancing various fields, including healthcare diagnostics, financial modeling, and robotics.
- **Cloud and Edge Computing:** Distributed computing frameworks are optimizing real-time data processing, improving computational efficiency, and enhancing cybersecurity.
- **Ethical AI and Explainability:** Ensuring transparency and fairness in AI models is essential for ethical AI deployment in sensitive domains such as healthcare, finance, and law enforcement.

V. Blockchain, Cybersecurity, and Privacy

Securing digital infrastructures has become a priority in the modern technological landscape. Blockchain and cybersecurity innovations are redefining data integrity and privacy frameworks.

- **Blockchain Applications:** Decentralized ledger technology is improving transparency and security in finance, supply chains, and identity management.
- **Cybersecurity Threats and Defense Mechanisms:** Cybersecurity research is focused on mitigating emerging threats such as ransomware, AI-driven attacks, and zero-trust architectures.
- **Privacy Regulations and Cryptographic Innovations:** Global regulations like GDPR and advances in encryption techniques are shaping the future of data protection and secure communications.

VI. Conclusion

The “Engineering and Technology” section of “SciMeTech” is committed to presenting high-impact research across mechanical, civil, electrical, and computing domains. By fostering interdisciplinary collaboration, this section serves as a platform for exploring cutting-edge innovations that drive sustainability, efficiency, and security.

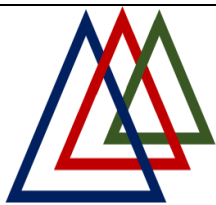
With continuous advancements in engineering, we invite researchers, industry experts, and innovators to contribute to this growing body of knowledge. This journal section bridges the gap between academic research and industry applications, ensuring that engineering remains a transformative force in global development.

Acknowledgment

We express our gratitude to the section editors and the scientific committee for their dedication and contributions to the success of the journal. Their expertise, rigorous evaluations, and commitment to academic excellence will be instrumental in maintaining high scholarly standards. Their efforts in peer review, editorial oversight, and continuous support will significantly contribute to the journal’s continued growth and impact. This statement recognizes their invaluable role in advancing research and fostering knowledge dissemination, ensuring the journal remains a reputable platform for academic excellence in the future.

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Exploring Law, Administration, and Political Sciences: Contributing to Global Governance and Justice

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Abstract

Keywords:

*Constitutional Law
International Law
Political Sciences
Public Management, Political
Economy
Social Justice
Territorial Development*

The "Law, Administration, and Political Sciences" section of the international and multidisciplinary journal Scimetech serves as a platform for scholarly discourse in the realms of Constitutional Law, Justice, Human Rights, International Law, Geopolitics, Public Governance, Administrative Management, Political Economy, Development, Public Policy Evaluation, Social Justice, Territorial Development, and Public Policies. This section invites educators and researchers to contribute original articles that critically examine these themes, fostering a deeper understanding and advancement of knowledge in these interconnected domains.

I. Introduction

In an era characterized by rapid global changes and complex socio-political dynamics, the study of law, administration, and political sciences has become increasingly vital. These disciplines provide critical insights into the structures and processes that govern societies, influence policy decisions, and uphold justice and human rights.

This article serves as an invitation for submissions to the specified section of the Scimetech journal. Prospective authors are encouraged to align their manuscripts with the themes outlined above and adhere to the journal submission guidelines.

The Scimetech, as an open access international journal, recognizes the importance of these fields and has dedicated a section to explore and disseminate scholarly work related to:

II. Law, Administration, and Political Sciences

1. Quantum Constitutional Law, Justice, and Human Rights:

The "Constitutional Law, Justice, and Human Rights" section of Scimetech is dedicated to exploring the foundational legal principles and mechanisms that uphold justice and protect individual freedoms within democratic societies. This section encompasses a range of critical themes including Constitutional Frameworks and the Rule of Law, Separation of Powers, Judicial Review and Constitutional Justice, Protection of Fundamental Rights, International Human Rights Law, Human Dignity in Constitutional Contexts.

2. Extended International Law and Geopolitics

This discipline focuses on analyzing the legal principles governing international relations and the geopolitical factors influencing global interactions. The intricate relationship between international law and geopolitics is pivotal in shaping

global interactions, as legal frameworks and geopolitical dynamics mutually influence each other. Key areas of focus include Foundations of International Law, Geopolitical Factors Influencing International Law, Interplay between Legal Principles and Geopolitical Dynamics, Sovereignty and Non-Intervention, Use of Force and Self-Defense, Human Rights and Geopolitical Interests, Evolving Global Order and Legal Adaptations.

3. Public Governance and Administrative Management

The "Public Governance and Administrative Management" section encompasses a range of critical topics aimed at enhancing the efficiency and effectiveness of public administration. Key themes include 1-Structures, processes, and mechanisms that ensure the direction, control, and accountability of public institutions, 2- Strategic planning, human resource management, financial oversight, and fostering innovation within governmental bodies, policy analysis, stakeholder engagement, program evaluation, and the measurement of policy impacts on communities. 3- Technology into public administration, 4- Crisis Management and Resilience, 5-Public Sector Ethics and Integrity, 6-Sustainability and Environmental Management.

4. Territorial Development and Public Policies

The "Territorial Development and Public Policies" discipline encompasses a range of critical themes that explore how public policies influence and shape territorial development. Key areas of focus include: 1- Definition and Scope of Territorial Development, 2- Examining national policies that bridge decentralization efforts and development goals, 3- Analyzing the impact of governance models and planning processes on territorial development, 4-Investigating the obstacles encountered by public policies in promoting territorial development, 5- Exploring how cities and regions play a critical role in achieving Sustainable Development Goals, 6- Highlighting the role of public policies in promoting economic development, social cohesion, and environmental sustainability, and 7-exploring the balance between economic development and environmental sustainability.

III. Conclusion

The "Law, Administration, and Political Sciences" section of Scimetech is devoted to advancing scholarly conversations in these critical areas. We encourage educators and researchers in the fields of law, administration, and political sciences to contribute their original research and analyses. By sharing your work, you will play a pivotal role in enriching the academic discourse and informing practices that shape just and effective governance structures worldwide.

Acknowledgment

We extend our sincere appreciation to the section editors and the scientific committee for their dedication and invaluable contributions to the journal's success. Their expertise, thorough evaluations, and commitment to academic excellence are essential in upholding the highest scholarly standards. Through their diligent peer reviews, editorial oversight, and unwavering support, they play a pivotal role in driving the journal's growth and influence. This acknowledgment highlights their significant impact on advancing research and promoting knowledge dissemination, ensuring the journal remains a distinguished platform for academic excellence in the years to come.