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ABSTRACT BOOK

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**Main Theme: The United Nations 17 Sustainable Development
Goals**

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Abstract Book

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Keynotes



Prof. Dr. Sibel Balci

TED University, Turkey

Keynote Title: "Integrating Sustainable Development Goals into University Life: Challenges and Opportunities"

Biography: Prof. Dr. Sibel Balci works as a faculty member in the Department of Primary Education at TED University Faculty of

Education. Dr. Balci is a distinguished academic in the field of science education, with a particular focus on education for sustainable development. She completed the Department of Secondary Science and Mathematics Education, Middle East Technical University. Dr. Balci then pursued her Ph.D. at the same institution, where she specialized in eco-schools. Her work has encompassed sustainable development goals, primarily in the context of SDG 4 Quality Education.

Dr. Balci is also a dedicated educator, teaching courses in environmental education, science education integrated with sustainable development goals and related fields. She is known for her commitment to student success and her ability to inspire future teachers. Beyond her teaching and research, she actively engages in environmental projects and collaborates with partners to develop sustainable environmental solutions.

Currently serving as the Dean of Students, her work with university students involves topics such as sustainable campus practices, gender equality, responsible consumption and production. At present, she is collaborating with a researcher benefiting from the Marie Curie Postdoctoral Fellowship Program to systematically design a core curriculum and extracurricular activities for integrating sustainable development goals into University life.

Prof. Dr. Balci's work continues to make significant impacts in the field of education for sustainable development, reflecting her dedication and expertise.



Dr. Sonila Daiu

University Metropolitan Tirana, Albania

Keynote Title: "Future-Ready Education: The Role of English Language and Technology in Meeting SDGs"

Biography: Sonila Daiu is the Dean of Students and a lecturer at University Metropolitan Tirana, where she lectures and conducts the management and coordination of academic and social activities, alumni relations, and student admissions in a higher education institution. This includes providing academic and social support, assisting alumni, defining admission policies,

developing the campus environment, collaborating with student clubs, managing administrative tasks, and monitoring student performance.

Graduated in English Language in 2002 from the Department of English Language, Faculty of Foreign Languages, Aleksandër Xhuvani University, Elbasan and Postgraduate specialization in Methodology – Linguistics at the University of Tirana, Faculty of Foreign Languages, Department of English Language, in 2009. In 2013, she enrolled in a Ph.D. program in Linguistics at the Department of English Language, University of Tirana, and in September 2016, she earned a Ph.D. in Linguistics.

Her work has focused on expertise in public communication, linguistics, ESP (English for Specific Purposes) focused on the specific and professional needs of the learners. It includes areas such as English for Business, English for Engineering Purposes, English for Academic Purposes, and many other specialized fields, self-confidence, and writing structure. In addition to her educational skills, she has several years of experience training students in ideation, structuring, and implementing their ideas in the startup world. She provides specialized assistance and guidance to help students develop successful ideas, organize their structure, and apply them in practice through personalized training. She has participated in and presented at various national and international conferences and has a considerable number of scholarly publications. She is also engaged in Erasmus+ projects.

Research Fields of Interest: Her main research interests include corpus linguistics and the application of corpus methods in the study of language and writing, native and foreign language correctness from a practical and innovative perspective in interaction with today's technological developments.



Assoc. Prof. Dr. Serkan İlseven

Near East University, Department of Environmental Education, Lefkosa - North Cyprus

Keynote Title: The advantages of the Lefke CMC Area in Cyprus, which is being transformed into a Geopark within the scope of applied environmental education, and the problems that will arise during the implementation of this project

Biography: Artist Serkan İlseven was born on February 17, 1966 in Paphos, Cyprus. After completing his primary education in Paphos and secondary education in Lapta, he graduated from the Department of Geography of the Faculty of Social Sciences of Izmir Dokuz Eylül University in 1989. He worked as a teacher and administrator in various high schools affiliated with the TRNC Ministry of National Education between 1990-2009. He served as the Director of Administrative, Financial, Technical and Parliamentary Services in the TRNC Assembly of the Republic between 2009-2019, as the general manager of the Presidency between 2020-2023, and as the undersecretary of the Ministry of Labor and Social Security between 2023-2024. He is currently the chairman of the TRNC Presidency Culture and Arts Committee. He is a member of the Presidential Bi-communal Environmental Committee. He is the Vice President of the TRNC Environmental Protection Foundation. He completed his MA in Physical Geography in 2009 and his PhD in Environmental Education and Management at the Near East University Institute of Educational Sciences in 2014. He became an Associate Professor in 2019. İlseven teaches at the Geography Department and the Environmental Education and Management Department of the Faculty of Arts and Sciences at Near East University. He has published books titled Geography of Cyprus, Forest and Park Trees of Northern Cyprus, Human, Economic and Political Geography of Cyprus, Physical Geography of Cyprus, Orchids of Cyprus, Principles of Vegetation Geography, Forest and Park Trees of Cyprus. Dozens of his articles have been published in international journals. He started painting in the early 1980s by taking painting lessons from the painter Alper Özkemal. He has held 8 solo exhibitions and hundreds of group exhibitions in Turkey and abroad. Serkan İlseven, whose works are in private collections at home, abroad and in Turkey, was awarded the XIIIth State Painting and Sculpture Exhibition Award in 1998, the PGM Award in 2000 and the Fergani Award given by the Near East University to master painters in 2020. He participated in the TURKSOY Painters Meeting (Mersin) in 2002 and the International Art Days (Izmir) in 2004 as the TRNC representative. He is the father of two daughters named Polen and Dolin.

ABSTRACTS

Future-Ready Education: The Role of English Language and Technology in Meeting SDGs

Sonila Daiu, Xhoana Pole, University Metropolitan Tirana, Tirana, Albania

Abstract

As the world becomes increasingly interconnected, the role of English as a global lingua franca is more critical than ever. This keynote speech will explore the transformative potential of English language technology in advancing global education and contributing to the achievement of the United Nations 17 Sustainable Development Goals (SDGs).

In an era where digital literacy and technological proficiency are paramount, integrating English language education with advanced technologies presents a unique opportunity to drive sustainable development. This study will highlight case studies and best practices from diverse regions, showcasing successful implementations of English language technology that have led to improved educational outcomes.

These examples will underscore the importance of sustainable and inclusive approaches in leveraging technology to achieve educational equity. By leveraging digital tools, such as AI-driven language platforms, educational institutions can provide more personalized and accessible learning experiences, thus contributing to broader societal goals.

The speech will then draw connections between enhanced English language skills and specific SDGs, such as Quality Education (Goal 4), Reduced Inequalities (Goal 10), and Partnerships for the Goals (Goal 17). By highlighting these links, we will demonstrate how proficiency in English can empower individuals, bridge educational gaps, and facilitate global cooperation toward sustainable development.

Critical discussions will also focus on the challenges and ethical considerations of deploying technology in education, including issues of digital divide, data privacy, and the need for context-specific adaptations. Solutions and strategies for mitigating these challenges will be proposed, aiming to maximize the benefits while minimizing potential drawbacks. Ultimately, this keynote will underscore the indispensable role of education and technology in realizing the SDGs, advocating for innovative and inclusive approaches that harness the power of English language technology to create a sustainable and equitable future for all.

Keywords:

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The importance of implementing the SDG's in the classroom in training future responsible citizens

Andreia Marlise Carneiro de Carvalho, Isilda Teixeira Rodrigue, University of Trás-os-Montes and Alto Douro, Portugal

Abstract

The research work being developed in the doctoral thesis consists of the theme of the Sustainable Development Goals (SDGs) in schools.

The 2030 Agenda presented in 2015, includes 17 SDGs, 169 goals and 232 indicators, representing an urgent call for action by all countries for a global partnership, to eradicate poverty, improve health and education, reduce inequality and stimulate economic growth, while combating climate change and preserving ecosystems (DGE, 2016). In this sense, work must be done at school with students, to form future citizens who carry out individual and collective actions to achieve sustainable development. However, what is clear is that in Basic and Secondary Education the SDGs are practically unknown and little used, with no research studies to evaluate their implementation in the classroom (Guimarães & Serafim, 2018).

The main objectives of this study were to identify the SDGs implemented in the classroom; list strategies used by Teachers to implement the SDGs; and find out how the SDGs are being worked on. In this sense, a mixed methodology was applied using a convenience and non-probabilistic sample of 150 teachers from Basic and Secondary Education. Data collection was carried out by applying a questionnaire the authors prepared. The questionnaire consists of two parts, sociodemographic characteristics and a total of 30 questions, which were subdivided into six sections. We used descriptive statistics of closed questions and content analysis of open questions to analyze the results.

The analysis of the results suggested that teachers know the concept of sustainable development, however, can't identify the SDGs and showed difficulties in applying strategies that facilitate their implementation in the classroom. Furthermore, it was clear from the results that there is a complete lack of knowledge that there is a relationship between the SDGs and Sustainable Development. Therefore, this research will have a good contribution to guide the future research work that we will carry out on this topic and also in the creation and development of teaching strategies and resources that guide teachers in their day-to-day life in the classroom with their students in the future.

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Advanced Machine Learning Techniques for Groundwater Discharge Forecasting in semi arid region

Abdessamad Elmotawakkil, Department of Computer Science Ibn Tofail University Kenitra Faculty of Sciences, Morocco

Abstract

Groundwater is an essential resource for sectors such as agriculture, industry, and domestic use, particularly in arid and semi-arid regions like the Rabat-Salé-Kénitra area of Morocco. Traditional groundwater assessment methods are often slow and expensive, driving the need for more efficient alternatives. This research investigates the use of advanced machine learning models—Artificial Neural Networks (ANN), Gradient Boosting (GB), Random Forest (RF), and Support Vector Machines (SVM) to predict groundwater discharge points in the Rabat-Salé-Kénitra region. The study utilizes a comprehensive dataset that combines satellite observations and ground-based measurements, incorporating variables such as surface temperature, groundwater storage, and soil moisture. The models were trained and assessed using performance metrics like Mean Squared Error (MSE), Root Mean Squared Error (RMSE), Mean Absolute Error (MAE), and Nash-Sutcliffe Efficiency (NSE). Results show that ANN and Gradient Boosting models achieved the highest accuracy, with R^2 and NSE values nearing 0.999, outperforming the RF and SVM models. This research underscores the potential of machine learning integrated with remote sensing data to improve groundwater management and offers a basis for future studies in this domain

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Predicting the Next Decade of Sea Level Temperatures in the Mediterranean Sea Using Hybrid Deep Learning Models

Ihsan Uluocak, Cukurova university, Turkey

Abstract

The Mediterranean Sea plays a crucial role in regulating regional climate, supporting biodiversity, and sustaining coastal economies, making its temperature an essential factor for environmental stability. This study presents a forecast of sea level temperatures in the Mediterranean Sea for the next 10 years using historical data from the European Centre for Medium-Range Weather Forecasts (ECMWF), spanning from 1940 to 2024. Two hybrid deep learning models, CNN-LSTM and CNN-GRU, are employed to predict future temperature trends. The models are evaluated using Mean Absolute Error (MAE) and R-squared (R^2) as primary accuracy metrics, with a Diebold-Mariano test applied to compare the predictive performance of the models. The results will provide valuable insights into the potential impacts of climate change on the Mediterranean region's sea level temperatures, contributing to better understanding and future planning efforts.

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Microplastics and Heavy Metal Co-Contamination: Effects on the Soil

Namita Das, City University Ajman, Bits Pilani Dubai Campus, UAE

Abstract

Microplastics are emerging as a huge threat to soil health and agricultural productivity. Microplastics in the presence of co-contaminants like heavy metals in soil affects nutrient recycling and harming the biodiversity of the soil. The paper focuses on the changes occurring to the physical, chemical, and biological processes of soil by the presence of microplastics with heavy metal as co-contaminant. Cumulatively they alter the heavy metal's mobility, and availability, soil fertility, microbiological diversity and functions, thereby impacting food security and long-term health impact.

The presence of Microplastics in soil is a prolonged menace which needs to be dealt with in a more concise and specific manner. Accordingly, this topic covers the three UN sustainability goals of:

1. 15 Life on land
2. 13 Climate change
3. 3 Good health and well being

Keywords:

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Determination of trace amounts of selected metal ions in environmental waters by stripping voltammetry using bismuth electrodes

Malgorzata Grabarczyk, University of Maria Curie-Skłodowska, Poland

Abstract

Contaminants in environmental water samples can have different chemical characteristics and, in a preliminary classification, they can roughly be divided into organic, inorganic and metal species pollutants. Monitoring each of them is necessary for full control and estimation of the quantity of natural water samples. For the determination of metal ions, one of the first-choice methods is stripping voltammetry. In the stripping voltammetry technique, the basis of the measurement is the current–potential relationship of the electrode recorded in a three–electrode system, in which the underlying reaction takes place at the working electrode. Measurement is carried out in two stages. In the first stage, called preconcentration, the metal ions to be determined are accumulated on the electrode; in the second stage, called stripping, the accumulated component undergoes an electrode reaction as a result of a change in the potential of the working electrode. As the key reaction takes place at the working electrode, it is very important to select it appropriately, taking into account the type of metal ion to be determined. For many years, mercury electrodes have been the main choice in the voltammetric analysis of metal ions. However, in recent years, safety and environmental considerations have restricted their use and encouraged the search for alternative materials that are more environmentally friendly and capable of possessing more possibilities for in situ and flow analysis. These include, inter alia, bismuth electrodes, introduced in 2000 by Joseph Wang and his group. The aim of our research was to develop new voltamperometric procedures for the determination of selected metal ions such as Cd(II), Ga(III), In(III), V(V), W(VI) using bismuth electrodes. The developed procedures have been successfully used for the determination of even trace amounts of metal ions in aqueous environmental samples such as river water, lake water or wastewater [1-5].

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Potentiometric sensors for inorganic anions monitoring in the environment

Cecylia Wardak, University of Maria Curie-Skłodowska, Poland

Abstract

In view of the enormous development of technology accompanying us now and the use of significant amounts of sources by humans, it is more important than ever to monitor the state of the natural environment. Ion-selective electrodes have been successfully used for many years to determine the content of various types of ions in environmental samples [1,2]. In a simple and quick way, they make it possible to obtain the concentration of ions of interest in the presence of other substances without the need for complicated sample preparation.

Compared to other methods, the wide range of concentrations in which it is possible to determine the analyte also avoids dilution of test solutions and the often tedious processes to concentrate the sample. A number of advantages resulting from the use of ISEs, including their high selectivity, low detection limits and good potential stability, combine SCISEs, which thanks to the elimination of the internal electrolyte are additionally easier to miniaturize and modify the shape, and more convenient to store and transport [3]. Further development of this type of sensor is possible thanks to the use of new compounds and materials aimed at improving their properties and parameters. Ion-selective electrodes are particularly useful in the analysis of anions because fewer analytical methods have been developed for them than for cations.

In this paper, the construction, properties and analytical application of new solid contact ion-selective electrodes sensitive to nitrate and chloride ions are described. For the electrode construction new material- nanocomposite of multiwalled carbon nanotubes and polyaniline nanofibers was used as solid contact. The use of this material made it possible to obtain electrodes with very good analytical and operational parameters. Compared to the electrodes without the nanocomposite, the modified electrodes showed a wider measuring range, a lower detection limit and much better stability, repeatability and reversibility of the potential. Such favorable parameters of the electrodes make them useful for monitoring the state of the environment, in this case in terms of the content of nitrates and chlorides. The usefulness of the developed electrodes was confirmed by using them in the analysis of natural waters, i.e. spring water, river water, groundwater and seawater. The correctness of the analysis results was verified by analyzing the same sample with a different analytical method. In the case of nitrate determination, UV-VIs spectrophotometry was used, and in the case of chlorides, precipitation titration using the Mohr method. In each case, a satisfactory agreement of the determination results was obtained.

Keywords:

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