



PROCEEDING OF THE
5th INTERNATIONAL RESEARCH CONFERENCE

Ideology Towards Renaissance



09th to 12th November 2022

PROCEEDINGS OF ABSTRACTS



TRINCOMALEE CAMPUS, EASTERN UNIVERSITY, SRI LANKA.



Trincomalee Campus

Eastern University, Sri Lanka

ABSTRACTS

5TH INTERNATIONAL RESEARCH CONFERENCE – 2022



09th – 11th November, 2022

©Trincomalee Campus, Eastern University, Sri Lanka

Abstracts of the

5th INTERNATIONAL RESEARCH CONFERENCE –
TRINCO-2022

Trincomalee Campus

Eastern University, Sri Lanka

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ISBN: 978-624-5186-00-6

Published by:
Trincomalee Campus
Eastern University, Sri Lanka
November 2022

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TRInCo-2022

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MESSAGE FROM THE VICE-CHANCELLOR EASTERN UNIVERSITY



It gives me an immense pleasure to pen this message on the 5th international research conference (TRInCo-2022) focusing on the theme “Ideology towards Renaissance”. Trincomalee Campus initiated the International Research Conference in 2016 and gradually evolved to be a leading affair in the campus for the purpose of motivating academics, business practitioners and students to involve in research.

The rebirth of important aspects in life from the world such as science, culture, tradition, emphasize renaissance. The instances which imply sustainability always carry the essence of underlying skill knowledge of the community and recall the attitude of the same. Giving importance for Environmental Sustainability & Climate Change, Holistic Health Care Services, Environment friendly Entrepreneurship & Business, Green & Sustainable Energy, are the growing ideology which engulf Marine Studies & wellness Tourism Development as well.

Sustain greenly improves our living quality and preserve our ecosystem. It is important and relevant for organizations of all levels in community engagement or industries. As social awareness regarding the need for green solutions increases, organizations can undertake several green initiatives to reduce their negative impact on the environment. These include using organic cleaning products, reducing the use of paper, using eco-friendly products, and using energy-saving equipment.

Here we start with the ideology towards green entrepreneurship and business. An activity of consciously speaking environmental, social problems with need, and coming up with brilliant innovative

entrepreneurial ideas which bring-up a solution to the community, there we are on the track of green entrepreneurship.

Whatever the ideology might be, but it must be towards the path which we have left over and off lined. It's very critical to align in the track which leads to renaissance, still the option is to be a green entrepreneur a person who starts an entrepreneurial venture that is green by design and all the products and processes that come out of that venture are also green from the moment the venture is set up.

My call to young and energetic individuals to go for multidisciplinary research to reinforce the 'ideologies towards renaissance'. Building solutions for the future based on needs & gaps identified in communities and with our partners. So innovation is a must which group up technology developments and open source tools where meta-computing platforms ease the tasks. Let us figure out our world as green renaissance and work together.

Through this International Research Conference, we can highlight academic contributions of the Trincomalee Campus to various industries. Therefore, I believe that the opportunity provided through this conference will contribute to the development of industries by means of scientific explorations and academic wisdom. The publication produced will undoubtedly provide useful insights to policy makers in their respective fields to enjoy the renaissance in their business.

I must congratulate the Rector, Deans of the Faculties, Heads of the Departments, and the Organizers of TRInCo – 2022 and Students for bringing the research conference back to Trincomalee Campus to rebuild the research culture that itself witnesses the renaissance.

Professor. V. Kanagasigam
Vice-Chancellor
Eastern University of Sri Lanka
Sri Lank.

MESSAGE FROM THE RECTOR TRINCOMALEE CAMPUS



It is a great pleasure to issue a message as Rector of the Campus. Firstly, I would like to warmly invite all the participants to the 5th International Research Conference on “TRInCo-2022” as one of the hybrid conference. I strongly believed that this conference will boost the quality of the research and collaborations more in future nationally and internationally.

Research plays important role in the development of the country and mankind and meet their needs. Research institutions includes universities and industries located nationally and internationally should initiate and perform more research studies to address and find solutions to the problems faced by Sri Lanka as well as the world. The outcome of the research studies which are presented in the conference must be discussed meaningfully, and suitable solutions have to be taken based on the constructive discussion and arguments. The articles submitted to this conference are written by scholar researchers around the world in all disciplines.

I have a confident that this International Conference on TRInCo-2022 is the best platform to discuss the research outcomes critically and come up with effective solutions as well as establish a good collaboration between universities and industries located nationally and internationally to address the current global issues. The theme of the conference is “**IDEOLOGY TOWARDS RENAISSANCE**”, which is the most suitable topic for the current globe. This theme should be discussed critically as well.

Finally I would like to thank distinguished keynote speakers, guest speakers, presenters, reviewers, sponsors and participants. As is a tradition with the conferences, I hope you will enjoy the content, renew old fellowships, make new fellowships, get new ideas, and above all, have a great deliberation. I also wish organizing committee of the conference and all staff members of Trincomalee Campus who conduct the conference successfully.

Prof (Mrs) Chandravathany G Devadason,
Conference Chair / TRInCo 2022
Rector, Trincomalee Campus,
Eastern University, Sri Lanka.

MESSAGE FROM THE CONFERENCE CO-CHAIRS



Trincomalee Campus of Eastern University is conducting its 5th International Research Conference (TrinCo 2022) under the theme “Ideology Towards Renaissance”. This time the conference is held in hybrid mode opening doors



to the digital era. At this conference, there will be three keynote lectures. Researchers around the country will present 39 research papers belonging to nine different streams. We warmly welcome all the speakers, presenters, and other delegates and we thank them all for their contribution to academia through knowledge production and dissemination.

TRInCo, the international research conference, aims to provide a forum for academics and practitioners to discuss their research findings and experiences, identify possible future research projects with a broader scope, and enhance collaboration among academics, researchers, practitioners, and other stakeholders. Organising an international research conference is not an easy task during an economic crisis. Thus, we would like to thank the organising committee of TRInCo 2022 for making this event a success. The recognition of an international research forum depends on the quality of its content. Thus, last but not least, we would like to thank the reviewers for selecting good-quality research papers.

We wish the participants all the very best! And encourage them to participate in our next International Research Conference.

Dr. Pushpika Kumari Ganegoda
Senior lecturer &
Co-Chair of the conference

Mr. S. Thadchanamoorthy
Senior lecturer &
Co-Chair of the conference

MESSAGE FROM THE SECRETARY AND CO-SECRETARY



It is with deep pleasure that we pen this message on the occasion of the 5th International Research Symposium (TRInCo-2022) on “*Ideology towards Renaissance*” organized by the Trincomalee Campus, Eastern University, Sri Lanka.



TRInCo-2022 offers direct and indirect contribution to various industries through interaction and application oriented research works in different fields. TRInCo-2022 paves the way for all stakeholders who intend either to acquire or share their knowledge by being able to be part of this annual event. It is quite surprising that even by its 5th year, this annual event has gained global reach and draws the attention from local and international researchers and practitioners which in turn will provide opportunities to the future researchers, academics and industry players.

Theme “Ideology towards Renaissance” compliments the core focus of the conference, which is a very timely topic to address the problems we face and the solutions for renaissance as we suffer due to the pandemic and economic crises. We believe that all the participants will be benefited immensely by acquiring research based advanced knowledge and contribute towards creating appropriate policies and strategies for national development.

On behalf of the organizing committee, we take this opportunity to extend our gratitude to the Vice Chancellor and Rector for their immense support and encouragement to make this TRInCo-2022 successful. We profusely thank our Chief Guest, His Excellency Hon. Gopal Baglay, Indian High Commissioner in Sri Lanka for gracing the occasion. Further, we are grateful to our Guest of Honors, other guests, Keynote Speakers, and Guest Speakers. We also express our sincere thanks to the Senior Academics and all other Academics, Administrators, Organizing Committee Members, Non-academics and Support Staff of our campus Presenters and Participants and all others who gave their support to make TRInCo-2022 successful.

Mrs. V. Leninkumar
Secretary – TRInCO 2022

Mr. M. S. Ishar Ali
Co-Secretary – TRInCO 2022



भारतीय उच्चायुक्त
High Commissioner of India

Message

It is a pleasure to convey my greetings to Trincomalee Campus of the Eastern University, as it holds its 5th International Research Conference. I do hope that the Conference would foster stimulating exchange of ideas, practices, history, culture and intellect, and promote the ideals of the Campus, as an important centre of equitable higher education.

In this era of globalization, it is important for nations to develop on the foundation of their own culture. I also hope that the Conference will serve to identify best instances from our shared history and culture, and from around the world, and highlight their relevance for present and future. With distinguished academicians from Sri Lanka, India and elsewhere, the impulses generated here will reverberate in wider discourse on policies and practices.

I would like to congratulate the Trincomalee Campus of the Eastern University for organizing this event and wish all participants an engaging and productive Conference.


(Gopal Baglay)
7.11.2022

KEY NOTE ADDRESS I

“Ideology Towards Renaissance”



The term Ideology initially proposed as the ‘science of ideas’ is currently considered as a system of abstract thoughts that guides an individual, social movement, institution, class, or large group. The renaissance refers to the period of the great revival of art, literature, and learning in Europe. Sri Lanka is facing the worst economic and food crisis in its post-independent history. Multiple sectors including agriculture, health, energy, education, industry and business are affected. Climate change is posing an ever-increasing threat to the country and environmental issues including deforestation, soil erosion, and water and

air pollution are becoming serious concerns. In this context, a Sri Lankan revival is the need of the hour.

A revival requires a comprehensive plan to overcome the problems affecting different sectors. The universities possess considerable numbers of staff with superior intellectual capacity and research capabilities in diverse disciplines. Several members of academia have reached the top 2% of the researchers in the world. Despite the resource constraints, the universities have continued efforts to accomplish their central mission of advancing and disseminating knowledge. Trinco-2022 is an example of such efforts. The university academics are in a position to conduct a comprehensive analysis of the crisis in different sectors and identify potential strategies to overcome those. In this regard, collaborative research is encouraged because collaboration brings multiple benefits including access to more resources, information and opportunities to exchange ideas, making the outcome more applicable and of greater quality compared to individual research. Top managerial commitment, clarity of goals, knowledge and expertise of partners, mutual respect and trust, transparency, effective communication and monitoring of progress are among the success factors of collaborative research. Bureaucratic red tapes and lack of coherent government strategy on transnational collaboration pose challenges. University-industry/business linkages as well as modern communication technologies play facilitating roles. Teaching and outreach engagements serve as important conduits to disseminate the research outputs.

An example of a successful collaborative research outcome is *A Strategy for the Restoration and Rebuilding the Agri-Food Sector of Sri Lanka* submitted to the Government by the academics of the Faculties of Agriculture of the state universities to serve as a guide. Such collaborative studies to address the problems in other sectors will help in the formulation of a comprehensive plan that can serve as a guide to reach the nascent stage of the revival of Sri Lanka.

Professor Emeritus Kalyani Perera
University of Peradeniya, Sri Lanka

KEY NOTE ADDRESS II

Transforming Education for Sustainable Development with Special Reference to Sri Lankan Context



Education for sustainable development is the need of the hour as it emphasizes various ways and means for human living in harmony with earth and thereby empowers people to change their attitude and work culture towards a sustainable future. Development of human society is inevitable but it should happen without depleting the capacity of the natural environment to meet present and future needs.

The widely accepted and verified fact is a positive relationship between education with various dimensions of the sustainable development. Hence, it is indispensable to strengthen the education system for sustainable development. In Sri Lanka the primary need is to ensure inclusive and equitable quality education and promote lifelong education for all. From primary to secondary education should have activities to embrace the social, economic and education aspect of sustainable development especially sustainable human development. The concept should be well ‘stamped-in’ among the young minds while they are growing. At higher education level improving soft skills to enhance the employability of graduation is essential. Varsities have to play a major role in creating wealth of the country to overcome the present economic crisis. They are responsible for nurturing the human capital. The vocational, technical and educational knowledge and skills should be channelized towards the development of Sri Lankan economy. The main focus should be on the country’s sustainable human development without any bias and prejudice. The problems like lack of adequately trained teachers, lack of infrastructural & instructional features at primary, secondary and tertiary levels and equity issues related to the opportunities for rural students should be addressed immediately.

Thus, in this paper an attempt has been made to discuss about the transforming education for sustainable development in the light of UNESCO guidelines with present Sri Lankan context. Some issues and strengths are also discussed. It is concluded that the system of education is the most important intervention for sustainable development. It is recommended that the system should be revamped in educational sector immediately from primary to tertiary levels to overcome the current social, cultural, and economic issues in Sri Lanka.

Prof. P. Sivakumar

Professor & Head, Department of Education (DDE)

Special Officer (Planning & Development)

Alagappa University, Tamil Nadu, India

KEY NOTE ADDRESS III

Collaborations and Digitalization for reawakening the administrative system with a smooth social change



The recent past development were more focus on rigid infrastructure rather proper management for the success. The developments were more focused on Buildings and Transport sectors. Even though some of them are really important, it has to be balanced with **developing the effective and efficient management structure** too. This is where, even some important developments project fails to deliver their planned outcome.

It has been proven that the most effective and efficient management can be obtained through **digitalization and using the Information Communication Technology (ICT) infrastructure**. This will be the most appropriate way forward in this era. This provides many advantages including (i) transparency operations, (ii) time saving or fast operations, (iii) pro-actively very well prepared and planned decisions and (iv) fully or partially automated operations. Here excellent human comfort with more optimistic or economic operations are able to be achieved. In today's era, adaptation of digitalization and ICT based management becomes unavoidable. For example with increasing population: (i) delays becomes as disaster, (ii) non-transparency operations allows influences, thus create disaster by making the total system as inefficient or its unprofessional operations, (iii) keeping all communications and taking them back on the sport for future references becomes more challenging. Therefore adaptation of digitalization together with ICT usage becomes inevitable for implementing best and clean administrative system for the future. This is very important for the true holistic Renaissance of the country.

The Sri Lanka has excellent Human Resources with very well educational and literature knowledge. Further they are too having very good hard working culture with self-respect. However, need to

motivate more on **collaboration and team working environment**. For example very high caliber state University system is in place. Reasonably good level industries also available in Sri Lanka. But the linkage is very less. Therefore all the students' projects should be linked to solving the community problem or industrial problems. These need to be motivated by the administration while if required industrial funding also to be motivated by the Government ministries. Even through some level of linkage is available, but it is far below the expectation. The best way forward is initiate as possible as collaborations with continuous monitoring facilities. This will be also possible by initiating incubation center operations, where the university students projects are evaluated and selected potential projects are funded by industries for bringing them to the commercial market level. This could also implemented with simple and professional administrative system, which need fast responding mechanism.

Some of the resources and how they could be utilized will be discussed in the presentation as model system for implementation. Examples will be given on how the link between academics and practitioners could be strengthen for better sharing of their experiences and knowledge. Even the collaborations between academics and practitioners should be starting from identifying the research projects title onwards. It should be done based on the real needs, where funding becomes easy too. Finally paths for strengthening the collaborations will be discussed. This keynote speech will disseminate the knowledge and experience, according to the objectives of this conference.

Prof. Arulampalam Atputharajah

Member of the IESL, Chartered Engineer, Senior Member of the IEEE

Professor in Electrical and Electronic Engineering,

University of Jaffna, Sri Lanka

SCIENTIFIC DIALOGUE I

Sustainable Agriculture & Economy

Dr. K. Premakumar

Senior Lecturer-GI, Faculty of Agriculture
Eastern University, Sri Lanka



Sri Lanka's economic crisis has brought to the forefront of Agriculture serious concerns, especially relating to increases in Agricultural inputs, food prices and shortages in food. As a result, uncertainties have grown about whether, in the coming months, (a) required food supplies will be available, (b) the Agri-Food sector will be able to sustain the livelihoods of those engaged in crop, livestock and poultry farming, fishing, food manufacturing, food distribution and allied activities and (c) the Agri-Food sector will be able to provide food security for those most affected by the crisis. Within this context, the members of the Faculties of Agriculture of the State Universities of Sri Lanka, recognize that following concerns are of particular significance to the most vulnerable communities, the country needs to immediately develop and implement a plan of action to address several key areas to sustain agriculture in-order to improve food security of the island nation –

1. Provide the basic food needs of the population through direct administrative/regulatory interventions, including but not limited to rationing of scarce supplies to the most vulnerable across the country.
2. Ensure the availability of raw materials/inputs at affordable prices to sustain those engaged in the Agri-Food sector, prioritizing the farming of crops, livestock, poultry, and fisheries. These sub-sectors of the Agricultural economy can

- most effectively and efficiently provide consumption requirements and attract foreign exchange to the country.
3. Develop a new generation of food growers, new sources of food and sustainable sources of Agri-Inputs, such as plant nutrients, plant protection options, planting materials, feed, mechanical tools/implements, and farm power, where applicable.
 4. Develop effective and efficient institutional support for research and development, extension, and input supply, which addresses the country's needs based on scientific evidence, and which integrates traditional extension systems with mass media, digital technology, and community-based organizational structures.
 5. Sustain key stakeholders in the existing supply and distribution channels, and introduce new and innovative channels, strengthen local markets, and address vulnerable populations using existing institutional and local level structures. Strengthen and deploy technologies, regulations, and institutions to reduce postharvest losses, improve storage and processing methods at the local level, and support innovations across the value chain.
 6. Create a conducive environment to find alternative sources of locally available food and agri-inputs, where possible, to support food production.

Problems confronted by the Sri Lankan society today are a result of a lack of a consistent long-term policy and action programs for agriculture, which could have prevented a crisis of this nature from occurring. Such a policy must be developed and must include mechanisms to address future crisis situations by effectively using knowledge, other resources, and institutional structures (state and others), using consultative processes in a holistic manner. It must also ensure that a system to address pressing issues, over the long term, in a sustained manner, is developed. The **'Strategy for Restoration and Rebuilding the Agri-Food Sector'** is a concerted effort by the Government of Sri Lanka and it should pursue to restore and rebuild

its Agri-Food sector, using scarce but available resources. The document submitted by the members of the Faculties of Agriculture of the State Universities of Sri Lanka addresses the entire food system, considering all economic actors and priority sub-sectors in the agriculture value/supply chains and identifies short and medium needs and interventions, also considering long term requirements., it is noted, have already been discussed and implemented, suggesting that the government is taking these concerns seriously and is attempting to address them to some extent.

The Ministry of Education should facilitate students and teachers to attend schools in their neighborhood till there is improvement in the economic situation. Schools should initiate activities that can provide joy and relaxation to children instead of focusing too much on the traditional curriculum. They should also function as social spaces where students, parents and teachers can get together and chart mechanisms of survival and resilience. Students could take the lead in cultivating vegetables in their **School Gardens (Kitchen Gardens)**. **School kitchens**, established with the help of the wider community, may ensure that future generations get the necessary nutrients for their growth. Apart from the above suggestions for a national agricultural policy, Sri Lanka's vulnerability to the effects of climate change will continue to threaten food security and nutrition. Therefore, these precautionary measures and prioritized strategies should be undertaken for Sri Lanka to overcome the grappling issues and emerge as a stronger nation.

SCIENTIFIC DIALOGUE II

Marching Towards Renaissance of the Economy: Is It High Time to Sri Lanka?

Prof. T. Bhavan

Professor in Economics, Department of Economics
Eastern University, Sri Lanka



The ideology of the Renaissance of the economy was raised in mid-age of the history of the European economy, especially between 14th and 15th centuries, when the European economy grew dramatically, particularly in the area of trade. The rise of the economy witnessed population growth which was capitalized as labour as well as output market, improvements in the banking and financial system, finding and expansions of new trade routes, and introduction

of a new manufacturing system. Asia too has witnessed the renaissance of the economy as it is highly intensified and integrated with the rest of the world. The emergence of two giants in Asia; Indian and China, has developed integration between East Asia and South Asia and trying to balance the global economic powers. With the emerging power of the Asia, it is said that the Asia would be dictating the next millennium.

No wonder, Sri Lanka is not too far to get integrated with the emergence of the Asian economies as it has already sensed the renaissance of the economy after the end of civil war in 2009. By 2013, Sri Lanka recorded all of its progressive economic signals such as GDP growth, improved per capita income, single digit of inflation, maintained higher level of human development index, surge of tourism sector, remarkable constructions of infrastructure etc.

However, the pandemic and the ongoing worst economic crisis ever in the history has set back the country. Nevertheless, the crisis could be taken as a signal to the country to correct the economic mistakes that the country has so far adopted. Therefore, it's a great opportunity to Sri Lanka to learn lesson from its worst economic crisis and to adopt appropriate reforms to get integrated the renaissance of the economy at the regional as well as global level.

SCIENTIFIC DIALOGUE III

The need for digitizing the Tourism and Hospitality industry in Sri Lanka

Dr. A. Rukshan

Senior Lecturer in IT, Department of Management and Entrepreneurship
University of Vavuniya, Sri Lanka.



Currently, Sri Lanka faces modern economic and social crisis and tries to find ways to recover economically stable by increasing the foreign exchange reserves. It is important to revitalization of the tourism industry that accounts for almost 12 percent of the country's GDP - the third-largest source of foreign exchange reserves. Digitization is the process of converting information into a digital format that can help the tourism and hospitality industry to prepare for the tourism season starting by the end of 2022.

As the digital world developed, consumer behavior started to change, which had a large impact on the hotel and travel sectors. People anticipate a customer-focused experience, from choosing their product and services with a few clicks to getting comprehensive information from the digital devices. Therefore, digitization of tourism and hospitality industry is essential to promote the business as well as destination tourism to connect tourist and facilitate service providers.

This speech introduces the digitalization of tourism and hospitality industry to help the Interconnectivity and interoperability of hospitality ecosystem for active tourism and cultural engagement. This speech will also highlight the contribution of the digitalization of tourism and hospitality industry to promote the sharing economy where resources or assets are shared, reused, and rotated among many people and business. With this, more and more people explore for more economical ways to locate, fund, and buy product or services.

In this talk the use of 'Gamification' that uses gaming techniques to promote destination tourism, and engage customers online to inspire them to meet particular goals or objectives will also discuss. The aim of this is to vastly improve the whole experience by enhancing the fun, interaction, and enjoyment of the entire visit to a particular site. The Gamification technique can also use to train and educate the hotel employees, to get the five star ratings from the customers.

SCIENTIFIC DIALOGUE IV

Psychology of Learning in Higher Education: Trends and Challenges in Interdisciplinary Approaches

Prof. Manjula Vithanapathirana
Professor of Educational Psychology (Chair), Faculty of Education
University of Colombo



The term learning is a keyword in the discipline of education. The discipline of Education has a history from 20th century. It has been believed traditionally that the only way to properly impart education is through the standard classroom method.

A student is primarily a person enrolled in an educational institution who attends classes in a course to attain the appropriate level of mastery of a subject under the guidance of an instructor and to do whatever activities the instructor assigns. A learner is “a person who is finding out about a subject or how to do something.”. Learners can learn without teachers, but students are only students when they have teachers.

From the point of view of neurobiology, learning involves changing the brain. For optimal learning to occur, the brain needs conditions under which it is able to change in response to stimuli (neuroplasticity) and able to produce new neurons (neurogenesis). The most effective learning involves recruiting multiple regions of the brain for the learning task. Many brain imaging technologies are now sensitive to changes in brain circuits that accrue from learning, allowing researchers to better understand how specific learning experiences drive changes in brain function and structure.

Online teaching was not a priority before the pandemic. Teachers did not possess the necessary pedagogical and technical skills to integrate

digital technology into education when a compelling need arose. Lack of continuous updates of ICT knowledge and skills led to techno-anxiety widely reported in research. More attention is directed learning toward blended learning environments. The justification for blended learning comes from the arguments that traditional classroom teaching methods are no longer effective to achieve current learning standards.

The disparities in knowledge and ability to use digital and information technology, experience, and competencies are wide. Partnership with technologists would benefit educators in several ways, such as speeding up the innovation process in education, stimulating fresh teaching ideas, improving learners' experience, widening access to skills and resources, etc..

We are used to single-disciplinary approaches in imparting education. Issues in the current social scenarios show that it is increasingly difficult to address them by relying on a single disciplinary theoretical perspective. Issues are too broad or complex to be dealt with adequately and ethically by a single discipline. In a multidisciplinary approach, a breakdown of a problem into different segments of its various disciplines and finally arrive at an additive approach with a solution. Interdisciplinary research results in innovations. Teams or individuals that integrate information, data, techniques, tools, perspectives, concepts, and/or theories from two or more disciplines are needed to solve problems. Blurring traditional disciplinary boundaries will foster the development of interdisciplinary research strategies to enhance approaches to teaching and learning.

GUEST SPEAKERS ADDRESS I

Language and Literature – A Human Perspective

Professor J. Kennedy
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Language, literature, and mind are inseparable but different entities. However, they all work together in many aspects, especially in the creative art. The human mind is an abstract phenomena but this untouchable matter is the base for every action and reactions of the human activity.

“Emotion” and “feeling” are the two words that everyone knows. However, many of us may not be in a position to separate them and may not know that these two play two different roles in the human

activities. Feeling is an experience that is being experienced by the physical body. In other words, feeling is a measurable experience which is experienced by the physical parts of the body such as experiencing a touch. Whereas, emotion is another kind of experience that is being experienced by the abstract part of the body such as happiness, sadness, anger, etc. In other words, emotion is an immeasurable experience which cannot be quantified.

Everyone identifies that we have “mind” but unable to detect it as that of the physical parts of the body such as eye, hand, toes, heart, brain, etc. Emotions are immeasurable and abstract entities and they are experienced by the mind. Since mind is an abstract phenomenon, the emotions that are growing from the mind are also by default become abstract matters. Emotions are evolved from the mind and finally are settled on the mind. The settlement of such emotion is nothing but we call “satisfaction.”

When a human wants to release her/his emotion, she/he becomes satisfied and then settles her/his mind. The releasing of emotion could be anything. That is, the releasing of emotion may by a physical reaction such as smiling or laughing or hugging or even a creative art. In this light, language and literature (art at a larger sense) are evolved from the mind. When a need comes for releasing of any emotion; literature evolves through language. This is the natural process of every human activity.

GUEST SPEAKERS ADDRESS II

Entrepreneurship and Business

Prof. J. Kumarasingha

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University of Sri Jayewardenepura, Sri Lanka



為せば成る 為さねば成らぬ何事も 成らぬは人の
為さぬなりけり

*“Nase ba Naru. Nasaneba Naranu nanigotomo.
Naranuwa hitono Nasanu Narikeri.”*

This means “If you try, you will succeed. If you don’t try anything, you will not succeed at anything. If you haven’t succeeded, it means that you have not yet tried (enough).”

Even if the definition of entrepreneurship hasn't changed much throughout time, there are now more options and alternatives than ever before for potential entrepreneurs. Consider: What options did an entrepreneur have 100 years ago? If you lacked the skills to make anything or the cash to buy things in large quantities for resale, you were out of luck. There will be 582 million entrepreneurs worldwide in 2022. And there is an obvious reason for this increase in entrepreneurship: there are now more opportunities than ever before. It shouldn't be surprising that millions of entrepreneurs create new businesses each year in the world given how simple it is to establish a new firm. However, it may be another way round in Sri Lanka. It's one thing to start a business and to be an entrepreneur. On the other hand, sustaining it and ensuring that your numbers don't appear negative is another.

For instance, there are complete commercial online platforms that enable you to launch, expand, and manage a business. On the other hand, think about Drop-shipping which is an e-commerce retail model that allows stores to sell products without keeping any physical inventory. As a result, there are 101 courses available to help you launch your own business successfully if you have an entrepreneurial spirit in the modern world.

What are entrepreneurship and business? Have you ever wondered about the distinction between an entrepreneur and a businessperson?

Despite the fact that they sustain the economy, provide jobs for people, and address customer problems through products or services, they are significantly distinct from one another.

Who is an entrepreneur?

According to the Oxford Dictionary, an entrepreneur is “a person who organizes and operates a business or businesses, taking on greater than normal financial risks to do so.”

Who is a business owner?

The Oxford Dictionary defines a business owner as “an individual or entity who owns a business entity in an attempt to profit from the successful operation of the company.”

The creation or extraction of economic value is referred to as entrepreneurship. According to this definition, entrepreneurship is considered a transformation that typically involves greater risk than is typical when beginning a business and may also involve values other than just financial ones. In layman's language, entrepreneurship is the act of creating a business or businesses while bearing all the risks with the hope of making a profit. Through entrepreneurship, individuals may take control of their careers and steer them in the way they desire. It's not some idea or concept that keeps popping into your thoughts. Entrepreneurs implement the concept. The primary relationship between an entrepreneur and a business is one of concept implementation in entrepreneurship. I genuinely believe that not all entrepreneurs are businessmen, and not all businessmen are entrepreneurs. Entrepreneurship is a thrilling new experience, one that's extremely rewarding and sure to keep you on your toes at all times.

It involves creating a life on your terms and zero bosses. There are no time constraints and there's no one preventing you. Entrepreneurs can start the process of improving the world for everyone in it, including themselves. However, the more recent definition of entrepreneurship also includes the idea of changing the world through finding solutions to significant issues, such as enacting social change or developing a product that challenges the way we now live our daily lives. Entrepreneurs drive change and have bigger aspirations than running straightforward businesses, with many of them aiming to improve the world. Naturally, some of these ideas will lead to a shift in the entire planet. They might undertake the challenge of exploring something that has never been investigated before or develop a new product that addresses a current need. Entrepreneurship generates new wealth in an economy. New ideas and improved products or services from entrepreneurs

allow for the growth of new markets and new wealth. Therefore, an entrepreneur is a person who launches a firm based on a novel idea for a good or service. Additionally, they are the founders and innovators of novel approaches, services, and products.

Entrepreneurs are some of the world's most powerful transformers. From Elon Musk sending people to Mars to Bill Gates and Steve Jobs making computers part of every household, entrepreneurs imagine the world differently. This is high time for Sri Lanka to promote entrepreneurial culture and we clearly need an economic policy for it. The World Bank's Ease of Doing Business index ranks economies according to how conducive they are to new businesses. Out of the 189 countries and territories analyzed in its 2019 report, New Zealand came out on top. This is followed by Singapore, Hong Kong, Denmark, and South Korea. However, in terms of ease of doing business, Sri Lanka is ranked 99 in 2022, whereas we were ranked 83 before. Sri Lanka has depended on a variety of industries and a number of problems forced the country to explore alternative revenue streams. For the country's economy to grow and achieve our goals for economic development, we need research and development in the Small and Medium Enterprise (SME) sector.

Thus, the purpose of this conference is to promote and disseminate research in order to inform a larger community about this specific topic. I think this topic would spark interesting discussions, especially given the current state of our country.

On the other hand, the conference also aims to strengthen relationships and the network between academics, professionals, and decision-makers. Today, it has become necessary that academically sound research is connected to policy directives. I genuinely hope that at least some of the intellectual conversation and discussions we have today will focus on making policy suggestions that will help to make a better Sri Lanka.

Finally, I take this opportunity to express my gratitude to the researchers, presenters, and other contributors.

I hope you all have a productive and fruitful session today!

Thank You

GUEST SPEAKERS ADDRESS III

Communication (Media) and Nation Development; Theory and Practice of Communication in Nation Development

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Introduction: The world is in the blink of a third world war. The world is divided again into two blocks and fueling a probable war in the future. Following World War II (WWII), nearly all of the participants' economies failed, their infrastructure was destroyed, and two geopolitical blocs emerged. On one side were the Western Bloc of capitalist advanced economies allied with the United States, also known as the "liberal World" or the "Western World." The socialist nations that made up the Soviet Union's hegemonic order, the Communist world, peasants' states, and Mao's China were on the opposing side. Europe had a few neutral nations, and then there was the Third World and the rest of the world. In the immediate aftermath of World War II, a cold war between the capitalist and communist worlds began, in which the United States engaged in a number of proxy conflicts with states backed by the Soviet Union that were socialist and Marxist-Leninist. The United States became the only superpower in the world after the fall of the Soviet Union in 1991, and some political theorists even regarded it as the only hyper power. Since then a liberal economy existed as the basic economic model until the 2008 financial crisis. COVID-19 began when the world's economy began to recover. While she was struggling to overcome the pandemic's consequences, she began a geo-economics, geopolitical, and geo-war engagement against the east camp.

The Crisis in the new normal in the 21st Century

The crisis; induce crises, economic crises, and health crises, in the new normal in the 21st century has led to name 21st century as crisis era. The development processes and the economy started to slack off. Production breakdown led to a challenge to globalization, which in turn sparked movements toward regionalization and nationalism. The current state of the

world is unpredictable as a result of this unstable situation. Globally, there is now a broken social, economic, and health crisis. Due to transportation limitations and the effects of war, there is a reduction in the supply of food, gas, fuel, and other strategic resources. The system as a whole is in crisis. The impact of the present crisis has no national boundaries. The global crisis needs to be addressed in an effective and collaborative way. This issue needs to be examined and discussed by academics, politicians, opinion leaders, journalists, and other social reformers and activists in order to develop a solution. The activation of social movements is required and through which connectivity among social members, motivation, analysis of the situation, and scope of development is demanded. The notion of building resilience is really about preparing for the knowable. The need for Development communication or communication for development should be emphasized in this environment for the future development of the world.

Social changes through the Development of Communication

The "European Recovery Program," later known as the Marshall Plan, was implemented by the United States in 1947 as a response to the post-war world that had been destroyed by war. Eminent academics T. Parsons, E. Shils, H. Lasswell, and D. Lerner were given the task of analyzing the situation and making a recommendation to the world. They created a geopolitical plan and methods for winning over the hearts and minds of people living in what was formerly referred to as "underdeveloped countries." Many of these concepts and methods formed the core of "Modernization Theory." The earlier developmental model had been completely replaced by the new developmental model in this new developmental plan.

Development is a change process intended to enhance man's quality of life and surroundings. Development, according to Dudley Sears (1985), entails the creation of opportunities for the realization of human potential. In order for a nation to utilize its human resources to their full potential, Schramm (1964) hypothesized that education, literacy training, mechanical skill training, health improvement, and adequate living facilities must all be included in the development plan.

Distribution of information, dissemination of knowledge, and providing entertainment are major roles of media. In a broader sense, they are equally applicable in the pursuit of national development. It could be argued that the media, by educating, informing, and entertaining, makes society, society members, or the nation, as well as the society's leadership, aware of the importance and necessity of undertaking certain processes. The persuasion function which is attached to the above three functions influences people's

actions in a specific direction. The role of the media in providing the public with the information needed to achieve development or change goals is thus seen. The capacity and capability of the media to teach, manipulate, sensitize, and mobilize people through information dissemination are central to their roles in national development.

Media Theories and Development

Three other theories, Dependency Theory, world System Theory, and Globalization Theory, were gradually developed to address the national international, and social issues of the world. The importance of communication in development (the theme of developmental communication) is emphasized in all four developmental theories.

According to McCombs and Shaw's Agenda-Setting Theory (1972), the media also shape public opinion by instilling issues like development programs and policies as top priorities in the minds of the general public.

In the "Development Communication" phase, the media enters the development process. This means that the content of the message or the information sent is intentionally packaged by the sender in such a way as to persuade, encourage, or persuade the recipient or target audience to take a stance and become involved in the realization of their purpose. In some cases, the purpose of the message sent is to get the target audience to adopt a positive attitude change towards the development objective.

Communication studies on so-called "Modernization" or "Development theory" have been conducted based on the idea that mass media can help transform traditional societies. In a comparative analysis, Lerner (1950) argued that media exposure prompted traditional societies to break free from their ties to the past and to strive for a more modern way of life. The best strategy for overcoming historical "backwardness" was suggested to be using the mass media as a "bridge to a wider world, as the vehicle for transferring new ideas and models from the North to the South and, within the South, from urban to rural areas." Schramm (1964) agreed with Lerner's assertion that the media can arouse the aspirations of people living in developing countries. The Southern mass media, in his words, "must shake people off of fatalism and fear of change." Individuals must desire a better life and be willing to work for it. Everett Rogers (1962) recognized the important role of the mass media in development and introduced the 'diffusion of innovation' model. In this model, the mass media adopted a top-down communication strategy that involved a one-way flow of information from governments or international development organizations. The mass media were widely believed to be a panacea because they were accepted as neutral

forces in the development process, despite the fact that the media are products of social, political, economic, and cultural conditions.

By the end of the 1970s, it was abundantly clear that the general public wasn't just a passive consumer of information and that the media couldn't change people's attitudes or behaviors on their own. Around this time, the 'Another Development' perspective began to have an impact on communication theory and practice. Its supporters contended that since communities were where development was actually felt, community involvement in the formulation and implementation of development programs was crucial. The importance given to alternative communication systems and media practices for local people to participate in development activities led to the understanding that communication for development is a two-way process in which communities can participate as significant agents in their own development.

By the end of the 1980s, a lot of development organizations, especially non-governmental organizations, had embraced the idea of participatory development, especially participatory rural appraisal, whereby underprivileged communities actively participate in defining their own issues and potential solutions. Since then, a greater emphasis has been placed on horizontal, multi-directional communication techniques that employ a variety of channels and emphasize the value of dialogue in fostering trust and understanding, amplifying the voice of the underprivileged, and empowering them to find solutions to issues in order to improve their own well-being.

The idea that dialogue is essential to growth is emphasized by Communication for Social Change (CFSC). The CFSC employs participatory methods. It emphasizes the value of horizontal communication, the significance of people as change agents, and the necessity of partnerships and effective negotiation techniques. CFSC focuses on dialogue processes that enable people to get over challenges and find solutions that will help them reach the objectives they have set for themselves. All members of civil society, including women, men, and children, define who they are, what they want, what they need, and what needs to change for them to have a better life through these processes of public and private dialogue. A CFSC approach focuses on shifting away from individual behaviors and toward collective community action and long-term social change.

In the first decade of the twenty-first century, the argument is still heated. Some actors in the development sector believe that communication for development should help shifts in power and support the social transformation that is led by those who are most impacted by development policies. Others claim that those who are poor cannot always influence how policies are made, but can only provide information to those who make

policies and are counseled by technocrats. This latter perspective, which does not allow for extensive participation in policy advocacy, continues to be a source of worry. One common viewpoint promotes a comprehensive, "diagonal" strategy that uses both vertical and horizontal communication to guide decision-making at the local and national levels.

Development communication for Sri Lanka

The current crisis situation in Sri Lanka is so challenging that it has impacted almost every aspect of the country. The situation has affected all citizens, rich and poor alike even though the condition of vulnerable groups is appalling. Domestic production has been significantly reduced due to a scarcity of strategic resources such as gas, fuel, manure, and electricity. It has impacted the service sector, and the failure of both the private and public sectors has had a significant impact on the country's economy. also. A national development strategy should be developed based on an analysis and interpretation of the current problem.

The problem must be dealt with effectively and collaboratively. The role of the media in disseminating information, gathering masses, and persuading them to agree on a point of view is critical. Also, the best development strategy for the country should be discussed and agreed upon. The practical value of development theories required discussion, and the role of media in dissolution appears to be required to overcome the country's current issues.

Conclusion

Throughout history, communication strategies, theories, and models have been used to address problems that arise in global crises of any kind. Communication has been used throughout history, from the Great Depression to World War 11 to economic, environmental, and health crises. Theories of communication for development have been developed from time to time and have proven to be very effective in dealing with global crises. It is recommended that the same strategies be used to deal with the current crisis of the twenty-first century because communication has solved problems in previous crises. The development of communication theories can be used to address Sri Lanka's worst crisis to date.

GUEST SPEAKERS ADDRESS IV

Promoting Self-directed Learning in Undergraduates of Health-care Sciences

Dr. Angela Arulpragasam Anthony

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Eastern University, Sri Lanka**



Self-Directed Learning (SDL) is a widely accepted learning model described in the adult learner. It takes into account the nature of adult learners, of taking control of what they learn and how they would learn it. SDL is considered the most effective way of learning to survive in the ever changing global environment. As such, since the turn of the century, the Government of Sri Lanka has taken steps to adopt Outcome Based Learning (OBE) and SDL in all its higher education institutions.

Many studies done in Sri Lanka and abroad have shown the readiness of undergraduate students and university teachers to adapt SDL. However, the studies also show that in many higher education institutions SDL is still in its infancy, reflecting the need for system and attitudinal changes.

In my lecture, I hope to propose strategies from my experience and that of my students, to make effective SDL a reality among our undergraduates.

GUEST SPEAKERS ADDRESS V

Agriculture, Marine Studies and Tourism Development: MARINE ANIMAL IMMUNE SYSTEM STUDIES

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Faculty of Marine Sciences, Tamil Nadu, India.



Fish is a heterogeneous group of different organisms which include the agnathans (hagfishes and lampreys), condryctians (sharks and rays) and teleosteans (bony fish). Like in all vertebrates, fish have cellular and humoral immune responses, and central organs whose the main function is involved in immune defence. Fish and mammals show some similarities and some differences regarding immune function. The immune system

is composed of different immune organs, cells and tissues. For now, let's see which immune organs (and tissues) make up the immune system and then move on to the cells. "Primary organs" - These are immune organs concerned with production and maturation of lymphoid cells and including bone marrow and thymus gland. "Secondary organs" - these immune organs are spots or sites in which the lymphocytes localize, identify unfamiliar antigens and triggers reaction in opposition to it. It Contains tonsils, lymph nodes, Spleen, Peyer's patches (in the small intestines), appendix and liver. The most important immunocompetent organs and tissue of fish include the kidney (anterior/or head and posterior/or caudal), thymus, spleen, liver, and mucosa-associated lymphoid tissues. In fish, myelopoiesis generally occurs in the head kidney and/or spleen, whereas thymus, kidney and spleen are the major lymphoid organs. Next to the thymus as the primary T cell organ head kidney is considered the primary B cell organ. Also, head kidney and spleen present macrophage aggregates, also known as melano-macrophage centres.

Keywords: Immune system, spleen, thymus, head-kidney and antigen antibody.

GUEST SPEAKERS ADDRESS VI

Recent advances in renewable energy technologies for Sustainable development

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Driven by the increasing global demand for electricity, and raising concern of environmental issues of emissions, in particular global warming and has resulted in extensive research into several alternative green energy technologies have been developed over the years. The electricity consumption that derived from renewable technologies including combination of solar photovoltaic, wind, hydroelectric, geothermal, oceanic power (tidal and wave), and modern biofuels have all been explored extensively. Therefore, electricity generation from the renewable energy sources becoming a mainstream solution to provide economically viable, socially acceptable, and environmentally sound power supply towards achieving the United Nations Sustainable Development Goal 7 of *Affordable and Clean Energy*, which aims at ensuring access to affordable, reliable, sustainable and modern energy for all. In addition to the technologies developed to derive electricity from the indigenous renewable energy sources, a novel technology for generating thermoelectric power from waste-heat energy has emerged as a promising alternative green technology due to its distinct advantages. The thermoelectric technology offers opportunity for harvesting and recovering low-grade thermal energy, such as waste-heat energy, which is directly converted into usable electrical energy by thermoelectric generators (also known as thermoelectricity). Thermoelectric generators are basically semiconductor-based solid

state devices, which directly converts a temperature gradient into an electric voltage based on *Seebeck effect*. Thermoelectric generators recover waste heat as a renewable energy source, and that operates very reliably, continuously and optimally with self-heating, and silence in operation due to the absence of moving parts. Application of thermoelectric generator as low power generation are widely used in biomedical, military, mobile communications, and space satellites, whereas the high-power generation of thermoelectric generator is mostly used in automobiles, industries, and small-scale and remote applications typically of rural electrification. Thermoelectric generators are also used for enhancement of power generation in systems using abundant solar and geothermal heat.

The thermoelectric generators provide a feasible solution for the sustainable energy, and new and exciting materials that can enable this technology to deliver higher efficiencies. The efficiency of a thermoelectric material is defined by the dimensionless figure-of-merit $ZT = (S^2\sigma/\kappa)T$, where S is the thermoelectric power, σ is the electrical conductivity, T is the operation temperature, and κ is the total thermal conductivity that is composed of carrier contribution κ_{car} and lattice contribution κ_{lat} . The developments on thermoelectrics from *strongly correlated cage compounds* (SCCC) currently receive intensive international research efforts [1-4] due to the prospect of devising novel strongly correlated compound materials for clean renewable electrical energy due to the variety of physical properties and fascinating ground state properties that are found in *strongly correlated electron systems* (SCES) in general. Several novel proof-of-principle approaches such as phonon disorder in *phonon-glass electron crystals* (PGEC), low dimensionality in nanostructured materials and charge-spin-orbital degeneracy in SCES have been confirmed on improving thermoelectric efficiency in reality. An efficient thermoelectric device should not only have large electrical conductivity and thermoelectric power but also low thermal conductivity. Recently attention has been focused on SCCC as an emergent class of materials conceived to unify within a single material, the specific properties of SCES and cage compounds. According to Slack's criterion [2] cage compounds hold promise to

behave as PGEC. The rattling of loosely bonded guest atoms that are encapsulated within oversized cages are supposed to strongly scatter heat-carrying phonons, thereby reducing the phonon thermal conductivity (*glass-like*) of the material. The charge carriers are much less affected by the rattling modes than the heat carriers (*crystal-like*), thus leading to an enhanced ratio of electrical to thermal conductivity (σ/κ). These specific properties are aimed to be connected in representatives of the new class of SCCC for developing efficient thermoelectric materials with favorable figure-of-merit. Therefore, resurgence in the search for new materials with enhanced thermoelectric performance are requisite for advanced thermoelectric energy conversion applications.

References

- [1] S. Paschen, Thermoelectric aspects of strongly correlated systems, *Handbook on Thermoelectrics* (ed. D.M. Rowe, CRC Press, Boca Raton, FL) Chap. 15, (2006).
- [2] G.A. Slack, New Materials and Performance Limit for Thermoelectric Cooling, in *Handbook on Thermoelectrics* (ed. D.M. Rowe, CRC Press, Boca Raton, FL) Chap. 34, (1995) 407.
- [3] S. Paschen, A. Bentien, S. Budnyk, A.M. Strydom, Yu. Grin, and F. Steglich, in the *International Conference on Thermoelectrics*, Vienna (2006). DOI: [10.1109/ICT.2006.331325](https://doi.org/10.1109/ICT.2006.331325).
- [4] T.M. Tritt, *Annual Rev. Mat. Research*, **41** (2011) 433.

GUEST SPEAKERS ADDRESS VII

Emerging IoT Trends

Prof. Roshan Gabriel Ragel

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The Internet of Things (IoT) is widely used in various sectors, including retail and healthcare, together with homes, offices, campuses, and cities. Thanks to connected technology, we now engage with the world and each other differently. The Internet has been around for some time now, and its primary purpose has been to link people; in other words, the "Internet of People" as we know it. The Internet of Things is a relatively new concept that connects objects. Things may exchange data they get via

sensing, make judgments, and regulate surroundings when we allow them to connect and interact with one another. That is, computing devices are interrelated and can transfer data between themselves over a network without requiring any human-to-computer or human-to-human interaction.

In this talk, I will touch upon the emerging trends in the Internet of Things. It will include answers to questions such as,

- how big data analytics and cloud computing can help with the growing amount of sensor data,
- how blockchain technology can help with the ever-increasing concerns on securing data,
- how edge computing can provide an efficient and cost-effective computing solution for the ever-growing computing need of the Things,
- how Machine Learning (ML) and Artificial Intelligence (AI) could be used for the massive amount of decision-making required for the Internet of Things, and
- how Software as a Service (SaaS) could be used as the brain of the IoT platforms.

These trends are here to stay and are here to make our life more secure and more comfortable than it has ever been before. Therefore, we must know and prepare ourselves accordingly.

GUEST SPEAKERS ADDRESS VIII

Free Radicals, Antioxidants and Health Benefits

Prof. S. T. Senthilmohan

Consultant Scientist, Australia & Visiting Professor
BHC, India



The naturally occurring antioxidants in fruits and vegetables scavenge harmful free radicals, and thus have a protective effect against oxidation, and prevent food spoilage. When an overload of free radicals cannot gradually be destroyed, their accumulation in the body generates a phenomenon called oxidative stress. This process plays a major part in the development of chronic

and degenerative illness such as cancer, autoimmune disorders, aging, cataract, and cardiovascular. The human body has several mechanisms to counteract oxidative stress by producing antioxidants, which are either naturally produced in situ, or externally supplied through foods and/or supplements.

Antioxidants in their reduced form are modified mainly by oxidation, and less by heating and hydrolysis during the processing. Natural antioxidants in their reduced forms have many well studied health-promoting characteristics. However much less is known about the effects of their oxidized forms and other metabolites, which may also have some health benefits. The oxidized forms of natural antioxidants affect cell signaling, the regulation of transcription factor activities and other determinants of gene expression.

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AN ASSESSMENT ON SELF-MEDICATION PRACTICE WITH ANTIBIOTICS AMONG GENERAL RESIDENTS IN SRI LANKA

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Abstract - Self-medication is the usage of drugs to treat self-diagnosed illnesses or symptoms. Antibiotics referred to the medicines formulated with the aim of treating or preventing bacterial infections (Ayukekbong et al, 2017). Reusing old prescriptions to purchase medicines, acquiring medicines without prescription, sharing of medicines with relatives, friends, or family members include to Self-medication practices (Ajibola et al, 2018). The study was conducted in Sri Lanka, with a 600 Sample of general public individuals to investigate the prevalence and pattern of self-medication with antibiotics amongst general residents in Sri Lanka. On respondents' general characteristics nearly half of the respondents stated that they had been prescribed antibiotics within six months period preceding the study. Majority of the respondents (75%) stated that they discard excess or expired antibiotics by putting them in regular dustbin. 9% of respondents prefer to keep excess antibiotics for future usage. Garden burial and flushing in the toilet or sink were practiced by 10% and 4% respectively. 2% of the respondents practice incineration with their excess or expired antibiotics. Out of all participants 76.2% self-medicated themselves with antibiotics. When consider on Antibiotics used for self-medication, the majorities' choice of antibiotic was Amoxicillin (62%). Erythromycin (8%), Azithromycin (6%), Ciprofloxacin (5%), Ampicillin (5%), tetracycline (4%) were used in minor proportions and very few of individuals used Combined antibiotics (3%), Cefuroxime (1%) and Ceftriaxone (1%) for self-medication practice. Majority of respondents agreed that doctors prescribed antibiotics when a patient expects it. But majority were uncertain on whether doctors take time to provide information on how they should be used (41.6%) and whether pharmacy staff take their time to inform how antibiotics should be used (42.8%). The study reveals the irrational use of antibiotics by the public is an important issue as it results serious medical social and economic consequences. The malpractices needed to be investigated in depth to get knowledge on why people practice it and what can be predicted from this behavior.

Keywords: Antibiotics; Bacterial Infections; Irrational Use; Self Medication.

TRANSFORMATION OF COGNITIVE BEHAVIOUR THERAPY AS A PSYCHOTHERAPEUTIC INTERVENTION: A REVIEW

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Abstract - Cognitive behavior therapy is an evidence-based psychotherapeutic intervention in contemporary clinical psychological practice. It's an effective intervention for mental and behavioral health challenges. The cognitive behavior therapy approach has been introduced by Aaron T. Beck. This therapeutic intervention has transformed several perspectives in its sixty years of existence. As an effective and holistic psychotherapeutic intervention, it has changed its original therapeutic form and expanded in various cognitive behavioral therapeutic approaches. Therefore this study mainly focuses on recognizing the development and transformation of cognitive behavior therapy. To explore this transformation of cognitive behavior therapy objectives of the study are to identify the limitation and strengths of CBT. To recognize the various therapeutic methods applied on overcoming the weakness of CBT. To recognize the future directions of the CBT intervention. This study is qualitative. A total number of 14 index studies and secondary resources have been examined. Studies are selected through the keywords of limitations, weaknesses, strengths, effectiveness, and future directions of cognitive behavior therapy. A single study may be discussed above mentioned single point or many points of criteria. However, studies that have been studied about the effectiveness of cognitive behavior therapy based on clinical interventions are ignored in this study. Mainly focused on studies that emphasize the theoretical concepts interrelated with the study. The collected data was analyzed according to the objectives of the study. In the early stage of cognitive behavior therapy, it's less oriented on the individual emotions interpersonal factors and the therapeutic alliance in the intervention. The therapeutic foundation of CBT is not developed based on the knowledge of cognitive psychology and neuroscience. Therapeutically CBT involves longer follow-ups. The intervention was time-consuming. CBT was Inadequate in relapse prevention and management of the comorbid condition. CBT was not an effective intervention for all life stages. However, empirical research and 3rd wave of CBT able to strengthen these weaknesses. Contemporary CBT transforms as an effective evidence base clinical intervention. In the Future cognitive behavior therapies will transform into transdiagnostic psychotherapy. Also, CBT will be clinically able to perform as a short-term intervention and cost-effective psychotherapy. Health seekers will be able to receive individualized cognitive behavior therapy. Therefore in the future cognitive behavior therapy will be an evidence-based and effective intervention that transformed from its traditional model. CBT will be the major clinical psychotherapeutic intervention in future healthcare services.

Keywords: Cognitive Behavior Therapy; CBT; Psychotherapy; Clinical; Intervention

A LITERATURE REVIEW OF GUM OF *FERULA ASAFOETIDA* L AND TENDER LEAF OF *RICINUS COMMUNIS* L PASTE FOR VARICOSE VEIN IN SIDDHA MEDICINE

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Abstract - The paste of *Ferula asafoetida* dried latex powder mixed with tender leaves of *Ricinus communis* and apply as *pattru* to varicose vein is a treatment procedure use in *Kappalthurai* Ayurvedic Hospital as well as Siddha treatments. Effectiveness of Siddha Medicines will be conformed to proper research procedure is an important for develop as a well-proofed system of medicine in the modern world.

The Varicose vein condition known as *Narambu kiranthi*, *Narambu silanthi*, and *Surul sirai narambu* in Siddha system of Medicine. Balance the *vatha dosha* is an important step to regularise the *narambu kiranthi*.

Vatha dosha have the characters of dryness, lightness, coldness and motility. In this varicosity is deranged *vatha dosha* causes dryness in veins and loss the elasticity of veins. *Kapha dhosa* responsible for *amam* which block the blood flow in *naalam*. The *Ammanaku* tender leaves and *Perunkayam* dry latex have vibagam of *Karppu*. *Karppu suvai* has the combination of *Theyu* and *Vayu*. The *Kapha dosha* reduce by *Karppu*, *Kasappu*, and *Thuvvarppu suvai* and *Ushna veeriyam* helps to remove the *amam*. When *amam* was removed, regular blood flow established. External applications like *Patru*, absorbs through sweat pores and hair follicles by passive diffusion process. Through these mechanisms, varicose vein condition will control and symptoms will reduce.

Therefore, this literature research concluded as; This simple remedy delivered good response to varicose vein treatment and cost effective without any surgery managements.

Keywords: *Ferula asafoetida*, *Ricinus communis*, *Narambu kiranthi*, Varicose

LEVEL OF AWARENESS ON GESTATIONAL DIABETES MELLITUS AND ASSOCIATED FACTORS AMONG PREGNANT WOMEN IN THE ANTENATAL CARE CENTERS, KATTANKUDY

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Abstract - Gestational diabetes mellitus (GDM), is glucose intolerance first recognized during pregnancy. It has a serious impact on the health of the mother and baby. Awareness of the complications of GDM among pregnant women may aid in the prevention and optimal management of this common disease. However, there is insufficient data on the level of awareness of common risk factors, screening methods, immediate and long-term effects, and treatment modalities of GDM among pregnant women. Thus, this study aimed to assess the level of awareness about GDM and factors associated with the assessed level among pregnant mothers attending antenatal care centres of the Medical Officer of Health, Kattankudy. A cross-sectional study was conducted on 226 volunteer participants after obtaining informed written consent from March to June 2022. The data was collected using a pretested interviewer-administered questionnaire and data was analysed using SPSS version 24.0. Descriptive statistics, visual binning, and ordinal logistic regression were used as statistical tools. GDM awareness was present in 89.8% of participants. However, a good level of awareness (score ≥ 10) about GDM was present in only 31.0% while 35.8% had a poor level of awareness (score ≤ 5). Level of education, employment status, parity, and gestational age were significantly associated with the level of awareness of GDM. Only one-third of the participants had a good level of awareness. Therefore, adequate health education measures have to be taken to enhance awareness of complications of GDM to attain a healthy pregnancy outcome.

Keywords: Gestational Diabetes Mellitus; Awareness; Risk factors

SALINITY TOLERANCE OF *Culex sp* LARVAE COLLECTED FROM DENGUE HOTSPOTS IN BATTICALOA DISTRICT SRI LANKA

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Abstract - Mosquitoes are the disease vectors that cause deadly diseases especially in tropical region of the world. Batticaloa district is one of the highest dengue cases reported area but the lowest reported Japanese encephalitis (JE) and no filariasis reported which spread by *Culex sp* vectors. The lack of recent study on *Culex sp* vector diseases and still no Japanese encephalitis recently reported cases this study enrich and updated the data on this mosquito vectors for future studies by fulfilling the gap. According to the supportive Medical of Health (MOH) guide, Batticaloa district is one of the five highest Japanese encephalitis cases (6.84%) reported districts in Sri Lanka (2009), during past fifteen years. This study was focused to measure the maximum amount of salinity that mosquitoes can tolerate and then identify potential breeding sites rather than fresh water because salinity tolerance ability increase the breeding sites of mosquitoes apart from the standard potential freshwater bodies. A total of 330 water samples from 33 naturally breeding locations in four dengue hotspots (Batticaloa, Eravur, Oddamawadi and Valachchenei) in 14 Medical officer of Health (MOH) areas in the District of Batticaloa were collected from August 2021 – November 2021. A ladle dipper was used to obtain samples of larval mosquitoes. Larval species were identified microscopically using standard taxonomic keys. Physicochemical parameters such as temperature, Dissolved Oxygen (DO), pH and salinity of the natural breeding streams water were measured in-situ using digital meters. *Culex sp* collected from field study were separated into four colonies according to the hotspot and reared. After emerging of first progeny 1st instar larvae and 3rd instar larvae of genus were exposed to different salinity levels of 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20 and 22 ppt under the laboratory conditions. Probit analysis was performed to determine salinity tolerance of *Culex sp* mosquitoes. Overall, a total of 450 were collected from different breeding habitats including boats. The abundance of *Culex sp* mosquito larvae showed a significant positive correlation ($P < 0.05$) with physico-chemical parameters in breeding habitats, such as temperature, DO and salinity. *Culex sp* larvae reported in multiday boat with having small amount of water and kitchen waste in the bottom with 4 ppt (max) salinity level. *Culex sp* larvae were reported from the waste drainage canals in the residence area Eravur with 4 ppt (max) salinity level. According to the results obtained from the salinity tolerance laboratory study *Culex sp* showed 20 ppt salinity tolerance. The current study concluded that *Culex sp* vector mosquitoes can breed in high salinity water mostly found in the Eravur, Batticaloa, Valachchenei and Oddamawadi towns in , Batticaloa district. This may be the reason for future outbreak of JE, Filariasis cases in the district and knowledge generated on the ecology of *Culex sp* vector mosquitoes will help to control re-emerging of these diseases in the country.

COMPARATIVE PHYSICOCHEMICAL ANALYSIS OF DIFFERENT PARTS OF MEDICINAL PLANT *Psidium guajava* L IN JAFFNA DISTRICT

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Abstract - *Psidium guajava* L (Myrtaceae) is a major food crop and medicinal plant that may be found in tropical and subtropical areas. It has been used in the treatment of inflammation, diabetes, hypertension, wounds, and fever for centuries. The purpose of this research was to comparatively analyze the physicochemical possessions in different parts of *Psidium guajava* L. in Jaffna District. For this purpose, the different parts such as leaves, fruits, seeds and bark of *Psidium guajava* were collected, and their identification was authenticated. Physicochemical parameters as pH (1%, 10%), electric conductivity (1%, 10%), brix value (1%, 10%), crude protein, fat, moisture contents, different ash values, minerals and elemental analysis were evaluated to determine the quality. Results are showed that the bark has highest pH (1%: 4.90 ± 0.02 , 10%: 4.91 ± 0.03) and lowest moisture content (05.24 ± 0.06); fruit has highest electric conductivity (1%: $590.67 \pm 0.58 \mu\text{s}$, 10%: $4.43 \pm 0.01 \text{ms}$), brix value (10%) and highest crude protein content ($20.89 \pm 0.21\%$) while seeds have highest fat content ($8.19 \pm 0.14\%$). Further the leaves have highest total ash (wet basis 7.30 ± 0.36 and dry basis 7.95 ± 0.08), acid insoluble ash (5.39 ± 0.03), sulphated ash (0.31 ± 0.01) and alcoholic and aqueous extractive values than other parts of this plant. Elements as sodium and potassium were detected highly in fruit of this plant. This current study concluded that the different parts of the *Psidium guajava* have different physicochemical properties which are revealing the various pharmacological attributes of this plant. Further, this information can be supportive in the correct documentation of this plant for upcoming systematic amendments.

Keywords: Different parts; Jaffna; Medicinal plant; Physicochemical analysis; *Psidium guajava*

CALCIUM RELEASING ACTIVITY OF FRUIT EXTRACTS OF *ANNONA MURICATA* L. ON VARIOUS CONCENTRATION; IN VITRO STUDY

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Abstract - Kidney stone formation is a complex that results from a succession of several physiochemical events including supersaturation, nucleation, growth, aggregation and retention within the kidneys. Urinary stones affect 10-12% of the population in industrialized countries.

Annona muricata (*A.muricata*) is a member of the Annonaceae family and is a fruit tree with a long history of traditional use. *A.muricata*, also known as soursop, graviola, gunabana, is an evergreen plant that is mostly distributed in tropical and subtropical regions of the world. The fruits of *A.muricata* are extensively used to prepare syrups, candies, beverages, ice-creams and shakes. A wide array of ethno medicinal activities is contributed to different parts of *A.muricata*, and indigenous communities in Africa and South America extensively use this plant in their folk medicine. Numerous investigations have substantiated these activities, including anticancer, anticonvulsant, anti-arthritic, anti-parasitic, antimalarial, hepatoprotective and antidiabetic activities.

This study was designed as in vitro, to evaluate the effect of fruit extract of *A.muricata* used to releasing calcium from renal stones. First of all, to tested calcium releasing property from renal stone, then tested the activity of calcium realizing in various concentration such as 100%, 75%, 50% and 25%.

Experiment was demonstrated a significant effect of the tested fruit extract of *A.muricata* released calcium from renal stones in vitro. However, results revolved that the extract of the fruit of *A.muricata* has a better effect on releasing calcium from renal stones. This activity was dominant in high concentration (100%).

Keywords: *Annona muricata*; Renal stones.

A STUDY OF TRADITIONAL USE OF *FICUS RACEMOSA* LINN AGAINST GESTATIONAL DIABETES MELLITUS (GDM)

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Abstract - *Ficus racemosa* . is a very effective medicinal plant in the indigenous system of medicine. In Sinhala known as "Attikka" Traditional Ayurveda classics were recommended to eat *Ficus racemosa* fruits with coconut as a home remedy for GDM. The International Association of Diabetes in Pregnancy Study reported an increase in GDM prevalence to 15–20%. among the 29.3% prevalence of prediabetes and 4.5% prevalence of known diabetes outside pregnancy reported by some associations.

Methodology: Research is done as a systematic literature review by following the PRISMA model. and data were collected from web searches.

The aim of this research is to introduce *Ficus racemosa* Linn as an effective plant for GDM. .

Objective :are to find out the effective part of the plant, find out the antioxidant effect, and find out the phytochemicals.

Results: according to research articles effective phytochemical of *Ficus racemosa* Linn is β -sitosterol which was found to possess potent hypoglycemic activity. and it will help to reduce oxidative stress. antioxidant effect of this herbal helps to reduce the oxidative stress of the pancreatic cells and increase the production of insulin. fruits mainly have Gallic acids and help to reduce blood glucose levels and are used as a supplement for diabetic patients. according to the above evidence, *ficus racemosa* is effective for diabetic Mellitus which is occurred by oxidative stress.

Keywords: Gestational diabetes mellitus;*Ficus racemosa* Linn; Antioxidant effect; β -sitosterol; hypoglycemic activity.

A COMPARATIVE STUDY OF THE CLINICAL IMPORTANCE OF GARBHAVAKRANTHI: AYURVEDA PERSPECTIVE

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Abstract - The word *Garbhavakranthi* means descending of the soul into the womb, implantation after fertilization and then till birth of the child. Reproduction is an essential process in which the establishment of human pregnancy depending on two most critical steps; implantation and decidualization. This literature study is based on the views of the great *Acharya* towards fertilization and implantation. Problem identification: No distinctive clarification regarding the interrelationship between the testimonies of prior *Acharya* on *Garbhavakranthi*. Objective: To develop a common concept on *Garbhavakranthi* and to fill up the shortage of the knowledge on *Garbhavakranthi* by reviewing and analyzing via a comparative and relevant scientific approach. Findings: According to different *Acharya* there was a common explanation about conception through a general idea with respect to many special factors that contribute to the creation of the fetus by union of male and female "*Beeja*" with the entry of "*Atma*" followed by fetus entering the uterus. Regarding the *Avayava Utpatti*, Ayurveda defines this in terms of different combinations and architectures of *Dosha*, *Dhatu*, *Upadhatu* and *Mala*. According to modern embryology, the formation of body and organs is based on trigeminal disc and tissue differentiation theories. Conclusion: After close correlation and discussion on comparison between *Garbhavakranti* and modern embryology theory, it could be concluded that Ayurveda theory of *Garbhavakranti* closely resembles with modern embryology which would be clinically imperative in finding solutions for various congenital abnormalities that contribute for long-term disability.

Keywords: Garbha; Garbhavakranti; Garbhadana; Fertilization; Implantation

PHYLLANTHUS NIRURI LINN: A NOVEL INSIGHT WITH THE PHYTOCHEMICAL PROFILE, THERAPEUTIC POTENTIAL AND FUTURE PROSPECTIVE

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Abstract - *P. niruri* is used as remedies for many conditions due to its richness of efficient medicinal metabolites. This study reviews the standardization process of the Ayurveda therapeutic potential of *P. niruri* using the phytochemical profile, to assess its quality, purity, safety and efficacy that promote better commercial exploitation. In the present review study, an attempt was done to evidence based scientific investigations on physico & phytochemicals, heavy metal and pharmacological activities of *P. niruri* Linn. The results indicate that the high total ash content of the *P. niruri* in Indonesia (7.93 ± 0.21), Sri Lankan study ($7.7 \pm 0.2\%$) is composed of physiological ash than Indian study sample (6.23 ± 0.41). However, the water soluble ash content was significantly higher in *P. niruri* grown in Sri Lanka compared to that grown in India. Sri Lankan phytochemical screening confirms the presence of tannins, flavonoids, steroid glycosides, coumarins, saponins and cardiac glycosides in both hot water and hot methanolic extracts. The heavy metals such as Pb (0.5 mg/kg) were detected in *P. niruri* grown in Sri Lanka. The TLC fingerprint profile of the methanolic extract of *P. niruri* consists of 8 and 9 prominent spots at 254 nm and 366 nm respectively. Many studies suggest that flavonoids possess antioxidative, hepatoprotective, anti-inflammatory, and anticancer activities, coronary heart disease preventions, antiviral, antiallergic, antithrombotic, antispasmodic, and immunomodulatory capacities. *P. niruri* potentially being an important drug lead, it should be reiterated that novel therapeutic agents and new chemical entities should provide direction for future research in the development of new *Phyllanthus*-based drugs.

Keywords: *P. niruri*; Standardization; Chemicals analysis; Pharmacological activities; Ayurveda

SYSTEMATIC REVIEW ON RELATIONSHIP OF MONTHWISE DEVELOPMENT OF FETUS AND CLINICAL CHANGES OF PREGNANT WOMEN WITH RESPECT TO GARBHINI PARICHARYA

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Abstract - Ayurveda gives precise description of *Masanumaska Garbha Vriddhi* though there were no modern imaging techniques like ultrasonography, MRI etc. It's a true that modern medical methods for this purpose had been developed today using advanced technology and combinations. Data were collected from the main texts of Ayurveda literature, reliable journal articles, reports and websites. The main purpose of this was to explore the mutual relationship between the monthly growth of the fetus and the physical and mental changes occurring in the body of the pregnant woman. Data was analysed by scientific basis systematically. The Ayurveda suggest that the protest of the pregnancy period controlled by various approaches like; Dietary regimen related to *Garbhini Paricharya*, avoiding *Garbhopghatkarbhava* and *Tridosha* vitiating. The healthy progeny may also be achieved by obeying rules of Ayurveda. For achieving this one is special think know about *Garbha* and its *Masanumashika* development. *Masanumasikahara Paricharya* if properly followed will not only avoid the defects in the fetus but also help in normal delivery. So, an anatomically *Garbhaja Vikrti* are prevented by the proper knowledge of development stage with proper life style, diet as indicated in Ayurveda. The monthly development of the fetus analyzed through the literature investigation with a scientific basis, and the monthly physical and mental changes of the pregnancy were confirmed. There was a hormone based relationship between mother and child. There was a relationship between mother and child based on nutrition. There was a reciprocal relationship between mother and child that operates on moods/thoughts.

Keywords: Garbhini Paricharya; Masanumasika; Monthly growth; Garbha

A CONCEPTUAL STUDY OF ERABADU (*ERYTHRINA VARIEGATE*) LEAVES AGAINST HELMINTHIC INFESTATION OF CHILDREN (*PURISHAJA KRIMI*) – REVIEW

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Abstract - Worm infestation present all over the aged group people, but they are mostly problem in children. According to Ayurveda *Kirimi* is a broad term it includes all the worms which may be pathogenic or nonpathogenic Pathogenic harmful to human beings helminthiasis specifically can be correlated to *Pureshaja* type *Kirimi*. Use of herbal medicine in treatment of worm infestation has been growing because of fewer side effects of molecular medicine. *Erythrina variegata* is commonly used for traditional medicinal especially Indian type of *Erythrina variegata* leaves is used for roundworm and thread worm.

Objective To use the *Erythrina variegata* leaves for the worm infestation in children as a home remedy and reducing the use of molecular medicine and preventing the complications which can arise from modern medicine and to develop a drug from *Erythrina variegata* leaves as a pill form

Methodology: Ayurvedic literature, web-based database searches and published papers data were collected.

Results: Phytochemical analysis of *Erythrina variegates* leaves extract it shows alkaloids, flavonoids, glycosides, saponins, steroids, tannins and terpenoids. Chemical contents, nutrition values and inorganic ions were presented. Higher concentration of *Erythrina variegata* leaves produced paralytic effects on worms much earlier. Aqueous and methanol extracts of *Erythrina variegata* leaves exhibited anthelmintic activity Maximum efficacy at 100 and 200mg/ml concentration for worms. More investigation of these *Erythrina variegates* leaves extract against the helminthic infestation considerate impact on developing clinically achievable strategies to treat children with worm infestation and developing into pill form.

Keywords: *Erythrina variegates* leaves; *Pureshaja kirimi*; children; helminthiasis; anthelmintic activity; Home remedy

H.H. MUNRO'S *THE LUMBER ROOM*: A LACANIAN READING

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Abstract - The association of psychoanalysis and literature is a common thing which comes for a long period. This paper attempts to discuss the engagement of Lacanian concepts of psychoanalysis with H.H Munro's (Saki) one of the notable short stories "*The Lumber Room*". The story depicts the powerful imaginative power of the main character named Nicholas and his authoritative aunt. The main character: Nicholas' aunt draws him into a psychological collapse and he escapes from that affliction, with the support of his imaginative power. As the methodology it is followed the method of textual analysis, giving attention to the protagonist's traumatic experience of *The Lumber Room* and his imaginative power under Lacanian psychoanalytic criticism. Therefore the keen attention is given only for Lacan's concepts, not for the ideas which generated by the father of psychoanalysis: Sigmund Freud. Further the study provides a clear alignment on the character Nicholas, his traumatic experience which undergoes due to his aunt and how he escapes using his affluent imagination collaborating psychoanalytic criticism of Jacques Lacan. Finally the story is observed through the Lacanian perspective in order to fulfill the objective of the study.

Keywords: Psychoanalysis; Jacques Lacan; The Lumber Room; H.H. Munro; imaginative power

EXPERIMENTING SOFT CLIL AS A MOTIVATING FACTOR TO LEARN ESL AMONG TAMIL MEDIUM UNDERGRADUATES

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Abstract - Motivation plays a vital role in learning any language. The success and failure of learning a language highly depend on motivation. There are several divisions of motivation as “intrinsic motivation”, “extrinsic motivation”, “integrative motivation” and “instrumental motivation”. In this research what I perceive as motivation in a language learning context is having a goal or a purpose to learn a language. The undergraduates who follow their degree in Tamil medium hardly find a strong purpose to learn English. Even without the English language proficiency they can pass out and find a career. Having noticed this problem, a short Soft CLIL course has been experimented in this research as a motivating factor to learn ESL. In order to analyze the research question; what is the impact of soft CLIL on motivating students to learn ESL?, this study was designed as experimental research. A mixed method approach has been adopted to collect data. Pre-test, post-test, semi-structured interviews, focus group discussion and questionnaires were used as research tools. Statistical analysis of the data of pre and post tests proved that the mean gain of the experimental group is higher than that of the controlled group. Analysis of qualitative data also endorsed that the integration of content gives the students a chance to experiment with the learnt language in order to fulfill their content area needs. Since the soft CLIL lessons were prepared in accordance with the SIOP model, students couldn't escape from actively participating in the classroom activities. Integration of content: students' preferred subject, gives a purpose e.i motivation to be in the ESL classroom and actively learn English along with the main subject. The findings of this research recommend that introducing a soft CLIL course is much required in order to improve the ESL performance of the undergraduates whose medium of instruction is their L1.

Key words: motivation; soft CLIL; ESL; undergraduates; L1

INVESTIGATING THE IMPACT OF RUBRIC-REFERENCED SELF-ASSESSMENT PRACTICES ON THE SECOND LANGUAGE WRITING SKILLS OF MIXED-ABILITY LEARNERS

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Abstract - This study examined the impact of rubric-referenced self-assessment practices on the writing skills of a selected mixed-ability group of ESL students enrolled in the Faculty of Arts, University of Jaffna, Sri Lanka. A mixed-method approach was adopted, employing participants' pre- and post-intervention scores, informal classroom discussions, teacher observation, and participants' scores for all seven write-ups. Twenty-three male (04) and female (19) students from the second year of the Bachelor of Arts degree programme enrolled to participate in an eight-week study. Students were oriented to the rubric-referenced self-assessment framework in two-hour sessions to get introduced to the novel self-assessment practices, co-construct the rubrics, and learn the procedures of rubric-referenced self-assessment practices. Following the orientation programme, the participants produced seven descriptive writings on different functions conducted at the university, and self-assessed their write-ups with the aid of the rubric, co-constructed by them to create self-generated feedback to inform revision. Subsequently, self-generated feedback was viewed by the teacher and teacher feedback was provided for further revision and improvement. Data collected were analyzed quantitatively as well as qualitatively to report the impact on writing skills. The findings indicated that self-assessment practices significantly impacted the writing skills of a particular group of participants.

Keywords: descriptive writing; feedback; rubric; self-assessment; writing skills

**ESL ACTIVITIES FOR INTER-CULTURAL COMMUNICATION
BUILDING MUTUAL TRUST AND UNDERSTANDING:
A STUDY AT THE FACULTY OF SCIENCE,
UNIVERSITY OF JAFFNA**

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Abstract - The emerging trends of ESL pedagogies advocate the need of incorporating intercultural awareness and knowledge in language classrooms for proving learners with interpersonal tolerance. English is regarded as a lingua Franca all over the world and it also serves as a link language in most of the Sri Lankan socio-economic and political contexts with utilitarian values. At the tertiary level, undoubtedly, English is the only language that binds students from all parts of the country and the globe. The misunderstanding and adverse cultural perceptions can be eliminated through activities in the ESL classroom. This study was undertaken to strengthen social harmony among the undergraduates of the University of Jaffna through mutual trust and understanding. Systematic methods were applied providing avenues for critical thinking and cross-cultural communication breaking communication barriers such as stereotypes and ethnocentrism. A descriptive analytical approach was adopted for this study using qualitative and quantitative data.

Keywords: ESL pedagogies, interpersonal tolerance, cross-cultural communication, social harmony, critical thinking

VOCABULARY LEARNING STRATEGIES EMPLOYED BY THE STUDENTS OF UNIVERSITY OF JAFFNA

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Abstract - Vocabulary knowledge facilitates the learners of English as a Second Language (ESL) to communicate effectively, conveying their ideas in both oral and written form. Learners with insufficient vocabulary knowledge often find difficulties in expressing their views and ideas. Numerous strategies are employed by the ESL learners to determine the meaning of new words and consolidate them. The purpose of this study was to investigate about the strategies used by the ESL learners to develop their vocabulary. The subjects of the study included sixty five first year students of Faculty of Management Studies and Commerce, University of Jaffna, Sri Lanka and they belonged to a diverse mix of ethnic groups and cultures. Data were collected through a triangulated approach employing focused group interviews, questionnaires and classroom observations. Questionnaires, which were administered using the Google Forms, consisted of three parts: demographic information about the subjects, vocabulary learning experiences of the participants and their reflections on the strategies used in vocabulary enrichment. The results indicate that the memorization strategy, though considered as a traditional way of learning, is still used widely among the tertiary level learners. The results also suggest that students don't prefer cognitive or meta-cognitive strategies as they deal with hard working and independent learning. Language teachers need to be aware of the significance of vocabulary learning strategies and guide the learners with various strategies to produce independent and self-directed learners during the process of learning English as a Second Language.

Keywords: vocabulary learning strategies, English as a Second Language, independent and self-directed learners

INVESTIGATING CUSTOMER ADOPTION TO DIGITAL BANKING PLATFORMS IN THE POST COVID –19 PANDEMIC IN SRI LANKA

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Abstract - The younger generation becomes more dependent on new technology as digitalization, is pervasive, in Sri Lanka. Because customers are more conversant with the banking industry's digitization platforms field. People are very much familiar with new digital banking platforms such as Automated Teller Machine services, SWIFT transfers, electronic fund transfers, digital wallets, cards, and digital bill payments

People who enter the banking industry also Researchers think about ATMs (Automated Teller Machines), SWIFT transfers, bank credit debit transfers, and electronic fund transfers, online transactions, digital wallets, cards, digital bill payments. In present study researchers intend to find whether rural area customers in Sri Lanka have adopted for digital banking platforms in the same level as the urban area customers and researchers needed to identify what were the barriers which effected customer adoption and with the intention of that customers targeted on finding how each six independent variables Perceived Ease Of Use, Perceived Usefulness, Perceived Trust, Perceived Risk, Accessibility & Digital Literacy how these factors have related to customer adoption, the dependent variable and how each factors have impacted to “customer adoption “the independent variables have been short formed as “Customer Perceptions”. So, with the research objectives, results revealed that there is a positive relationship of variables towards customer adoption and only Perceived Ease of Use, Accessibility & Digital Literacy have an impact towards customer adoption.

Keywords- Digitalization; Digital Banking; Post COVID-19 pandemic Sri Lanka; Customer Perceptions ; Customer Adoption

SMART CHEMICAL PLANT

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Abstract - Supervisory control and data acquisition (SCADA) system can be used in the chemical plants. The demand for the household products are increasing with the growth in the population. SCADA systems can be used to automate the manufacturing industries. The SCADA system has a central control unit and the remote terminal unit. The central control unit is handled by the plant operator. The remote terminal unit is attached with the field devices. The SCADA actuators are connected with the remote terminal unit of the SCADA system. A communication link can be used to connect the central control unit and the remote terminal unit of the SCADA system. The chemical plants can be efficiently operated using the SCADA system. Lot of developed and developing countries are using SCADA system to automate their industries. The efficiency, capacity, and throughput of the manufacturing plant can be increased by the SCADA system. Sever client programing can be used to develop the SCADA system. The system contains one single central control unit and multiple remote terminal units. The central control unit and the remote terminal units are connected with communication protocol via wide area networks. Genesys protocol is used to transmit messages between central control unit and the remote terminal units.

Keywords: SCADA; Central Control Unit; Remote Terminal Unit; Emulator; Genesys.

ESTIMATION OF APPARENT METABOLIZABLE ENERGY (AME) IN BLACK SOLDIER FLY LARVAE (*Hermetia illucens* L.) FULL-FAT MEAL FOR BROILER CHICKENS

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Abstract - Broiler production plays a vital role in human protein supplementation. Ever increasing cost and supply chain issues of key poultry feed ingredients, especially the protein sources have demoted the profit margins of the poultry industry. Therefore, the industry is always encouraged to seek alternative crude protein (CP) sources like Black soldier fly (*Hermetia illucens* L.) larvae (BSFL) meal for its sustainability. The purpose of this study was to determine the nutritional composition of BSFL and the apparent metabolizable energy (AME) value of BSFL meal fed to broiler chickens prior incorporating into feed formulation. The proximate composition, minerals, and fatty acid profile of BSFL full-fat meal produced from kitchen waste as a substrate were evaluated. Eighty, 21-d old unsexed Cobb-500 broiler chickens (BW $\pm$ SD: 665.8 $\pm$ 14.3 g) were assigned randomly into 16 battery cages (04 replicates, five birds/replicate). A maize-soybean meal-based diet was partially substituted by pre-analyzed BSFL meal at rates of 5%, 10%, and 15%, respectively. The birds were fed in a completely randomized design for 7 days, with a 4-day adaptation period. Excreta were collected for three days from day 25 to 28. The results revealed that the BSFL meal comprised 34.4% CP and 47.3% ether extract (EE) when analyzed. The approximate AME of the BSFL full-fat meal fed to broilers was 15.66 MJ/kg. The BSFL full-fat meal can be used sustainably in feed formulation and has the potential to replace more expensive feed ingredients.

Keywords: Apparent metabolizable energy; Black soldier fly larvae; Broiler; Crude protein; Nutrition

EFFECT OF MARINATION METHOD, HOLDING TEMPERATURE AND HOLDING TIME ON SENSORY ATTRIBUTES OF JAPANESE QUAIL BREAST MEAT

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Abstract - The effect of four marination methods (unmarinated control, immersion, injection and tumbling), three different holding times (4 h, 8 h and 12 h) and two temperatures (4°C vs. 8°C) on sensory attributes of quail breast meat was assessed. The experiment design was 4 x 3 x 2 factorial arrangement of treatments. Pectoralis major muscles of 42-days old unsexed Japanese quails were collected. Deboned meat was cut into 10 g pieces. The meat samples were evaluated for sensory attributes after marination and holding at respective holding temperatures and holding times. A marinade mixture prepared at a concentration of 20% was applied using either of the marination method. Cubic chunks made from each treatment were evaluated. Meat toughness, aroma, flavor, surface color, marinade penetration and overall acceptability were assessed. Aroma, flavor, toughness, surface color, marinade penetration and overall acceptability differed ($P < 0.05$) between treatments. Meat marinated using injection method and held for 4 h at 4 °C resulted the highest score for aroma. Immersion (4 h at 4 °C) and injection (4 h at 8 °C) resulted the highest toughness ($P < 0.05$). The highest score for surface color ($P < 0.05$) was observed in meat marinated by immersion (12 h at 8 °C) and tumbling (4 h at 4 °C) methods. The overall acceptability was the highest ($P < 0.05$) in meat marinated using injection (4 h at 4 °C) method. The present study concluded that, holding meat for 4 h at 4 °C after injection marination is the best in developing meat organoleptic qualities.

Keywords: Breast meat; immersion; injection; marination; quail; Tumbling

EFFECT OF 1-METHYLCYCLOPROPENE ON SHELF-LIFE AND POSTHARVEST QUALITIES OF THREE LEAFY VEGETABLES

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Abstract - 1-Methylcyclopropene (1-MCP) is a nontoxic commercial product, suggested as a postharvest treatment for fresh horticulture commodities. Current research on the use of 1-MCP on leafy vegetables in Sri Lanka is limited. This study was conducted to extend the shelf-life while maintaining postharvest qualities in three leafy vegetables; Leeks (*Allium ampeloprasum*), “Kang Kung” (*Ipomea aquatica*) and “Kathurumurunga” (*Sesbania grandiflora*), by using 1-MCP at ambient conditions (27 ± 1 °C). The experiment was done using four 1-MCP treatments: 0, 50, 75, 100 μL L-1 for Leeks with 12 hours exposure time and 0, 5, 10, 15 μL L-1 for “Kang Kung” and “Kathurumurunga” with 5 hours exposure time. Colour (L^* , a^* , b^* values), fresh weight loss (%) and chlorophyll content (mg g^{-1}) were evaluated before and daily after treatments. The results revealed that all the colour values in Leeks, L^* , b^* values in “Kang Kung” and a^* , b^* values in “Kathurumurunga” were significantly affected by the treatments. Leeks treated with 50 μL L-1, “Kang Kung” treated with 5 μL L-1 and “Kathurumurunga” treated with 15 μL L-1 reported the lowest fresh weight loss. Leeks treated with 75 μL L-1, “Kang Kung” and “Kathurumurunga” treated with 5 μL L-1 showed the highest chlorophyll content. In general, the shelf-life and postharvest qualities are most favourably affected by 50 and 75 μL L-1 in Leeks, 5 μL L-1 in “Kang Kung” and “Kathurumurunga”. Application of 1-MCP increases the shelf-life of Leeks by two days (66%), “Kang Kung” and “Kathurumurunga” by one day (33% and 50% respectively).

Keywords: 1-Methylcyclopropene; Ethylene; Leafy vegetables; Postharvest quality; Shelf-life

IMPACT OF MEDICINAL PLANTS CULTIVATION IN LIVELIHOOD ENHANCEMENT

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Abstract - Medicinal Plants make up an important component and play a vital role in the Ayurveda system of treatment. Of over 160 species of plants that were used in Ayurveda medicine preparation in the eastern province 75 percent of plants obtain by tender process. The rich natural resources in the eastern province and Medicinal Plants are one of them. Unfortunately, the support through systematic efforts in the cultivation & preservation of the plants did not meet the pace of domestic utilization for Ayurveda medicine preparation. The availability of so many varieties of medicinal plants in the province indicates that the climate and soil conditions are very supportive of the sustainable development of medicinal plant cultivation. Since the demand for medicinal plants is ever increasing as people are more and more fascinated by herbs, the Demand for herbal raw products has increased every year and it is estimated that the herbal market would be worth 5Mn expenditure in the year 2019 at drug production unit Trincomalee. In the present study, 7 selected medicinal plants benefit both medically and commercially among selected 25 farmers in order to measure the level of knowledge of selected herbs through dimensions such as identification of herbs medicinal commercial value of the plants harvesting and storage of the herbs, and environmental concern about the plants Most of the responders does not identify the plants and its medicinal commercial value, harvesting and storage of the herbs. Cultivation of medicinal plants offers opportunities for crop diversification and income generation to the farmer, however, the development of sound agro-techniques for the plants has been a major challenge in promoting the cultivation. Face-to-face training with live demonstration, group discussion with successful members of herbal cultivation, website, app, and call center establishment of herbal marketing are some recommendations for overcoming the challenges

Keywords - Medicinal Plants, plant Cultivation and harvesting, commercialization

INTERNATIONALLY ORIENTED CASHEW TECH-INNOVATIVE SMES: A CRITICAL ANALYSIS OF TEMPERATURE AND RAINFALL VARIATION ON CASHEW (ANACARDIUM OCCIDENTALE) YIELD IN SRI LANKA

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Abstract - Cashew is an important tropical perennial tree crop and is a major export crop in terms of foreign exchange earnings in the countries like Brazil, India and Vietnam. Cashew is a multipurpose tree crop from which almost all parts are used, the nut is to be considered as the most valuable and commercialized product of all. Cashew production and tech-innovative cashew products exportation can be affected by the variability of climatic changes and climatic factors. This study aimed at analyzing the variation of the cashew yield of internationally oriented cashew TSMEs on temperature and rainfall variation in Puttalam District of Sri Lanka. Relevant theories and empirical reviews pertaining to the study was referred in order to grasp available knowledge. In Puttalam District of Sri Lanka, totally, there are 16000 Hectares of cashew plantation is existed (Sri Lanka Cashew Corporation, 2018). In this study, it aimed a total of 1466.61 Hectares belonging to small and medium scale internationally driven technopreneurs. Simple random sampling method was utilized for data collection. This research study has collected 8 years data in relation to the cashew yield, rainfall and temperature. For the data analysis, used a time series analysis plus a regression analysis. Results revealed, the increment in annual rainfall leads to drop the annual cashew yield where decrease in annual rainfall leads to increase the annual cashew yield (Negative Relationship). The temperature variation does not materially impact upon cashew yield except the extreme increment or decrease in temperature. But temperature carries a positive relationship with the annual cashew yield. As far as the effects of rainfall and temperature on variation of the cashew yield, the rainfall effected 0.776 where temperature effected only 0.343 on the cashew yield over the concerned time duration in internationally oriented cashew TSMEs. Moreover it is highly recommended to reconsider the both given climatic factors by the entire internationally oriented cashew TSMEs with adequate up to date technologically improved machinery, tools and equipment, storage facilities for better international market performance.

Keywords: Internationalized TSMEs, Tech-Value Addition, Cashew, Weather parameters, TSMEs

“EMOTION DRIVEN OR BRAIN DRIVEN?” : A STUDY OF MOTIVES OF SOCIAL ENTREPRENEURS IN SRI LANKA

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Abstract - This research investigated the motives of social entrepreneurs in Sri Lanka. This research used a conceptual framework comprising of entrepreneurial self-efficacy and perceived feasibility to analyze the antecedents of social entrepreneurial intention in Sri Lanka. A randomly selected sample of 74 social entrepreneurs in Sri Lanka were analyzed using Partial Least Squares Structured Equation Modelling (PLS-SEM) method. Results indicate that 81% of the social entrepreneurs are male indicating the traditional gender bias which is common in business entrepreneurship also. Exploratory Factor Analysis (EFA) of social entrepreneurial intention indicated a four-factor loading pattern in contrast to the previous research. The four dimensions of entrepreneurial intention (EI) were named as Social-purpose EI, Profit-seeking EI, Psychological EI and Autonomy EI. This study empirically established that entrepreneurial self-efficacy and perceived feasibility have a significant positive influence on social entrepreneurial intention. Entrepreneurial self-efficacy and perceived feasibility together explained 39% of the variance in social entrepreneurial intention. The outcome of this research will enhance the understanding of social entrepreneurship behavior and will provide valuable insights for policy makers in Sri Lanka

Keywords: social entrepreneurs, entrepreneurial self-efficacy, entrepreneurial intention, perceived feasibility

INVESTIGATING THE RELATIONSHIP BETWEEN ACCOUNTING SOFTWARE AND THE BUSINESS PERFORMANCE OF SMALL AND MEDIUM SCALE ENTERPRISES (SMES) IN KANDY DISTRICT, SRI LANKA

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Abstract - The adoption and effective use of accounting software is a form of business innovation, but also a prerequisite and further driver of other forms of business innovation. In addition, it has become an obligatory trend within all over the world & the use of this software is common for most modern organizations but it can be noted as a novel method for most SME'S in Sri Lanka. Since this research, study's main purpose is to investigate the relationship between Characteristics of Accounting Software and the business performance of SMEs in the Kandy District .Moreover, while the literature on Computerized Accounting characteristics in Sri Lanka is growing; no study has so far tried to explain the relative contribution of the maintainability factor to the business performance. The proposed model can explain 67.8% variation of Business Performance toward characteristics of accounting software. The results of this study designate that there is a relationship between Software Maintainability and Business Performance.

Keywords: Computerized Accounting System, Small and Medium Enterprises, Business Performance.

YOUNG'S MODULUS AND THERMAL CONDUCTIVITY OF FIBERGLASS MATERIAL REINFORCED WITH EPOXY BASED COMPOSITE

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Abstract - Fiberglass material has specific resistance greater than steel, good electrical insulator even at low thickness, naturally incombustible, does not emit smoke or toxic products when exposed to heat, low linear expansion coefficient, unaffected by the action of rodents and insects, highly useful in the building industry and suitable for produce electromagnetic windows. In this Research work, an investigation was made on the mechanical properties such as Young's Modulus and Thermal Conductivity of fiberglass reinforced with Epoxy resin and hardener gum. Composites made up with Epoxy resin: hardener gum is 10:1 ratio for dog bone type specimen with end tab samples. A good-quality specimen was prepared with the Epoxy resin and hardener gum mixture by applying smoothly and slowly on the fiber mat. Initial layer of the mould was filled with the mixture and then the appropriate quantity of fibers was placed such that the mixture completely spread over the fibers. Finally, the compression pressure was applied evenly to achieve the uniform thickness and cured for 24 hours at room temperature. The experimental samples were prepared in different layers to find the Young's modulus and Thermal conductivity. Results show that the Young's Modulus increases with increasing the number of layers. However, the thermal conductivity depends on the thickness of fiberglass mat reinforced with hardener gum and Epoxy resin mixture and increases with increasing the number of layers.

Keywords: Young's Modulus; Thermal conductivity; fiberglass mat; hardener gum; Epoxy resin.

A STUDY OF PERFORMING ARTS UNDERGRADUATES' NEEDS AND PERCEPTIONS OF LEARNING ESL AT THE TERTIARY LEVEL: INSIGHTS FOR SYLLABUS DESIGN

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Abstract - Prior to any revision or redesign of a syllabus, it is crucial to conduct a needs analysis in order to gather the expected requirements of a course. The objective of the research was to investigate the needs and perceptions of a group of dance and drama students as ESL learners of a tertiary-level English language programme. The research focused on the students' language learning requirements, their motivation to learn the L2, their preference for learning different language skills and tasks, perceptions about the existing English program, and preferred learning styles. Using the purposive sampling technique, data were gathered through a survey-type questionnaire. The research comprised a sample of 215 performing arts undergraduates majoring in either dance or drama at a Sri Lankan state university. The research findings revealed that these students need to learn English primarily for purposes of verbal communication. They preferred to learn by doing presentations in English and also indicated their willingness to adopt computer-assisted language learning to develop ESL proficiency as autonomous learners. The majority expressed their satisfaction with the existing English programme although some were of the view that it should be more speech-oriented. The overall research results indicated that the students preferred an activity-based curriculum that focused more on developing their English-speaking skills. Moreover, it showed that the respondents were highly motivated and aware of the importance of developing their English language skills to function in their general and academic contexts.

Keywords: ESL curriculum; language learning needs; performing arts undergraduates; syllabus design

ONLINE LEARNING AND ITS IMPACT ON STUDENTS' SATISFACTION IN THE PRESENT ECONOMIC CRISIS IN SRI LANKA

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Abstract - A combination of the COVID-19 widespread and financial emergency drive to continue online learning among the higher educational institutions in Sri Lanka. The design of the traditional face-to-face physical classroom learning framework has been changed into an online learning framework. Therefore, the main purpose of the study is to examine the online learning system and its impact on students' satisfaction and to evaluate the level of student satisfaction with the implemented online learning system. Data analysis of the study is based on 282 students who are pursuing a higher national diploma in management at Advanced technological institute (ATI), Dehiwala. Based on the analysis, the mean value of 4.03 shows that the majority of the students faced challenges during online learning. It also found that challenges, the effectiveness of instructor, knowledge, and skill development are significant where p values are less than 0.05. The result of the analysis shows that the effectiveness of the instructor is the most vital factor that affects the satisfaction of students during online learning. Thus, instructors need to be very efficient and attentive while conducting online lessons. Findings also demonstrate that a point increase in the effectiveness of instructors and knowledge and skill development lead to an increase in students' satisfaction by .355 and .251 respectively. Further, 92 students are dissatisfied with online classroom interaction and 79 students were unsatisfactory with gaining knowledge and understanding of lessons. Therefore, it is necessary to identify reasons for the lack of interaction, knowledge and understanding of lessons by gathering regular feedback from the students.

Keywords: Student satisfaction; Online learning; Effectiveness of instructor

THE EFFECT OF THE WORKPLACE STRESS AND SUBJECTIVE WELL-BEING OF MYANMAR MIGRANT WORKERS IN THAILAND

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Abstract - Migration process takes place almost around the world throughout centuries for various purposes. Some people migrate from one place to another to get new opportunities, to overcome poverty and food insecurity, to avoid armed conflict, persecution, human rights violations as well as abuses in their homeland. As a fundamental survival strategy, labor migration to Thailand has increased in Myanmar since 1990s. The migration could be defined as economic migration and forced migration. Thailand has made significant progress in establishing basic labor rights protections for migrant workers within its legal framework. The study was concerned with the unfair working conditions of Myanmar migrant workers in Thailand which may affect their stress level and well-being. Although migrant workers have jobs, livelihood opportunities for themselves and their families, they also tend to experience labor rights violations at the workplace as workers. The researcher assumed that unfair working conditions which migrant workers were facing now may lead them to higher level of stress which could expose them to exceptional risks for their physical and psychological well-being in the long term. The objective was to determine the workplace stress and subjective well-being of Myanmar migrant workers in Thailand. Results from these findings would contribute to raise the awareness of migrant's workplace, stress and their subjective well-being, to provide important new insights for the social workers, policymakers and some organizations when implementing the mission for migrant workers. Moreover, the researcher hopes to contribute to raise self-awareness of Myanmar migrant workers, their present working conditions, coping strategies and positive social support.

Keywords: work place, stress, subjective, well-being and migrant

BE SMART IN WRITING WITH DIGITALIZATION; IMPROVING ESSAY WRITING SKILLS OF THE SENIOR SECONDARY ESL LEARNERS UTILIZING BLOGGING

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Abstract - Essay writing is considered as one of the advanced skills that requires learner to have the knowledge of both macroscopic and microscopic writing skills. Research studies conducted in Sri Lankan context show that the secondary learners are reluctant to write essays in English (Second Language/L2), and they do not have sufficient essay writing skills in relation to English language. With the sudden burst out of COVID 19 global pandemic, the conventional methods which were implemented to enhance the essay writing skills of the learners who learn English as the second language (ESL) were transferred into virtual/online methods. This study focuses on improving essay writing skills of the senior secondary ESL learners using BLOGGING as a supplementary digital tool. It was conducted as action research using a sample of senior secondary ESL learners (N=15) who were randomly selected. Their proficiency in English essay writing was analyzed based on the pretest. Intervention lasted for 10 weeks moving through a cycle; planning, implementation, observation, and reflection. After introducing blogging to the students with authentic examples, the learners were directed to discover most appropriate applications to be utilized in creating blogs. While engaging in blogging, their own reflections and peer evaluations were integrated into further improvement of their essay writing skills. The gathered data of the research was analyzed both qualitatively and quantitatively. Based on the findings of this current study, this paper emphasizes the significance of blogging in relation to improving essay writing skills of present senior secondary ESL learners (Digital Natives) while improving both macroscopic and microscopic writing skills, achieving higher order cognitive skills (Analysis, Creativity) and facilitating them to become self-regulated learners who motivate themselves intrinsically.

Keywords: Essay Writing Skills; Blogging; English as a Second Language (ESL); Supplementary Digital Tool; Digital Native

STUDY ABOUT THE STRATEGIES USED FOR CULTURE COMMUNICATION IN INTERNATIONAL MEDIA: SPECIAL REFERENCE TO CRI-SINHALA SERVICE

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Abstract - This research has been conducted to identify the communication strategies of China Radio International Sinhala Service for educating the Chinese Culture on international audience. The research's main aim is to identify the communication strategies for cultural communication towards an international audience. The research has selected Chinese New Year 2022 as the case study to indicate the communication strategies of cultural communication. This is qualitative research and the data has been collected through secondary content such as the CRI website, Facebook page, and radio. This study has used content analysis to get the findings. The radio can be identified as the highest reported media of CRI- Sinhala Service. Further, it follows the website and Facebook. They were reporting about several sectors of culture such as food, language, decorations, celebrations and etc. to create an image of the Chinese New Year in international audience. They have been using different communication strategies such as multi-ethnic presenters, typography, infotainment, neutral and persuasive language, conversational texts and etc. These all the strategies CRI has been used to send the message clearly to the international audience. There are a few limitations in the research as this has been conducted about particular international media and the communication strategies have been identified in the culture communication only. Further, this has been selected only for the 2022 Chinese New Year. This is using only the secondary data to do the content analysis and, in the future, this can be expanded. As overall it can be mentioned that the Radio reported higher than the new media, but the Facebook audience responses were high though the limited posts created about the New Year.

Keywords: Culture Communication, Communication Strategies, CRI-Sinhala service

CAMERA WORK IN THE SRI LANKAN HORROR MOVIE 'BANDANAYA': A CONTENT ANALYSIS

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Abstract - Camera work is one of the most essential ingredients in filmmaking. All renowned horror cinematic creations have employed great camera shots, movements and angles. Even though, Sri Lanka does not have a larger film industry, directors and cinematographers experiment with this particular genre to a certain extent. However, researchers in Sri Lanka have not explored to understand the Sri Lankan camera work used in the Sri Lankan horror genre. Sometimes pre-planned technical script shots change according to the situation in the shooting locations. Therefore, it is difficult to get an overall idea of the camera work used in the film by looking at the technical script in the first place. The main objective of the present study is to understand the camera work (camera shots and movements) used in the Sri Lankan horror movie 'Bandanaya' and it will be benefitted to the researchers and filmmakers to understand the Sri Lankan filmmakers' flavor of the camera shots and movements in the making of horror movies. Video observation and content analysis methods were used. 74 scenes were identified. The unit of analysis was the camera shots and movements used throughout the scenes. 12 terminologies were adopted for the analysis. The study revealed that 1182 camera shots were employed in the entire movie. There were 396 (35%) Medium Close Up shots, which was the maximum percentage followed by 214 (18%) Medium shots, 204 (17%) Long shots, 136 (12%) Medium Long shots, 132 (11%) Close Up shots, 31 (3%) Big Close Up shots, 28 (2%) Extreme Close Up shots, 24 (2%) Point of View shots & 13 (1%) Very Long Shots whereas there are only 4 (0.33%) Extreme Long shots used in the entire movie, which is lowest in percentage. Scene no 65 has employed the maximum number of camera shots and the Pan Left was the most used camera movement in the film. In Conclusion, Sri Lankan filmmakers mostly used Medium Close Up shots and Pan Left camera movement in the horror movies.

Keywords: Horror; Camera Shots; Camera Movements; Genre; Films

MANIRATNAM'S RAVANAN FILM VS KAMBARAMANAYANA- COMPARATIVE STUDY ON CHARACTERIZATION

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Abstract - Film is one of the effective communication tools. Adaptation is one of the methods used by all industry film makers. Especially in Kollywood industry, they have adapted mythological texts, biographies, epics, novels and stories for their films from earlier eras. These films were portrayed the same way of the written texts. But after the 1980s, written text adaptation films came with a different form. One of the directors of that era, Mani Ratnam came to the industry in 1983. Different methodologies have been used in films by him. He directs adaptation films based on Novels, biographies, Mythological Texts, and on true incidents. One of the famous adaptation film in his direction career is film Raavanam (2010). He used a different adaptation method in film Raavanam (2010). It was adapted from the famous Hindu mythological epic text Kamba Ramayana. He plugged the important characters from the Kamba Ramayana. The researcher analyzed and studied the use of adaptation in Film Raavanam, Mani Ratnam's characterization, and the translation of the characters from the written text to the screenplay, similarities of the characters and comparison of the characters from Kamba Ramayana with film Raavanam through comparative analysis method and compare and contrast approach. And found that, film Raavanam is visualized as a modern era's Kamba Ramayana and it is portraying the written text's aspects through 53% in 44 scenes in entire film. And specifically portraying the characters/ characterization through 40% in 33 scenes in entire film (85 scenes).

Keywords: characterization; comparison; Kamba Ramayana; Raavanam; Mani Ratnam

REPRESENTATION OF MENTAL DISORDER PEOPLE IN SRI LANKAN FILMS

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Abstract - The study examined the Representation of mental illness people in Sri Lankan Films and investigated How Sri Lankan films represent mentally illness people. The study takes qualitative methods and non-probability purposive sampling was used to 3 selected films. A purposive sample of 20 key informants. The study used framing theory, media labeling theory, and critical disability theories. Findings indicate that most Sri Lankan films portray mental illness characters to awaken the audience's humor in the first 30 minutes. Also, the study stated that the accuracy has kept of particular mental illnesses portrayed in Sri Lankan films. Also, proper treatment methods are not given in many films. According to this study, Sri Lankan films are not providing sufficient space for characters within films, and the local industry does not give equal opportunities to mental disable characters compared to other international film industries.

Keywords: Films, Mental disorder, Representation

IMPACT OF THE VIDEO GAMES PLAYING ON SCHOOL STUDENTS' BEHAVIOUR

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Abstract - This research is an attempt to investigate impact of the video games on students' behavior. Currently relationship between technology and the child needs to be managed due to some of incidents reported regarding children. Through the research investigates whether there are positive effect or negative effect on children's' mentality and the physical behavior. Simple random sampling method was used to select the sample of 200 students between age gaps 10 years to 14 years students. Purposive method under the non-random sampling method was selected student that have weird or noted, confused behavior in class room. Interviewing and questionnaire were used to identify the particular team of students. The students who used to play video games were identified by giving questionnaire to the students. Interviewing process with the teachers of in charge selected students was used to recognize the students' behavior. According to the research there is a link between video games playing and the violent, agitated, inattentive students. Majority of the students who identified as more violent, agitated and inattentive in behavior are belongs to the group of the students that playing video games more than one hour. Majority of the other students who have normal behavior play video games less than one hour. While there is no significant effect on students who play video games for a short period of time, there is some negative effect on students who play video games for a longer period of time.

Keywords: Video games

A FEASIBILITY STUDY FOR ESTABLISHING WASTE PAPER RECYCLING PLANT AT TRINCOMALEE CAMPUS AS THE INITIATION OF SUSTAINABLE CAMPUS MODEL

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Abstract - Sustainable Developments Goals are adopted globally to end all forms of poverty, fight inequalities and tackle climate change while ensuring that no one is left behind (United Nations, 2020). Being the demonstrated model by carrying out SDG activities, Higher Educational Institutions could disseminate knowledge and improve their position in global rankings (ISCN, 2018). HEIs could lead to the actualization of the environment and sustainability-related SDGs 6, 7,9,11,12,13,14 and 15 by taking measures regarding waste management which is a challenge to the environment (Dharmasiri, 2020). Open space burning, which is detrimental to the environment and living is currently in practice as a waste disposal practice at Trincomalee Campus. Based on observation and interview paper-based waste are the major solid waste sent for disposal. Hence, paper recycling was identified as the alternative to reduce the effect of open-space burning due to its potential to reduce environmental pollution while saving natural resources with economic benefits to the campus by reducing the expenditure on paper. Therefore a desktop study was done to analyse the feasibility of establishing a wastepaper recycling plant at Trincomalee Campus at technical, institutional and socio-economic aspects. Literature survey, interviews and observation were used as the data collection method and the text-based analysis was done. The resources such as land and building, raw materials and human resources required and potential risk analysis with the identification of the remedies were identified as the factor determining the technical feasibility. The aim and the significance of the proposed project were considered to determine the possibility of adopting the project into the institutional strategies, policies and plans. Having professionals as experts, the potential of Trincomalee Campus in developing mobile applications and in culturing microbes required in the project were taken into account for deciding the institutional potential of implementing the project. The proposed project is technically feasible and it is feasible according to the institution, as this is able to be incorporated with the strategies, plan and activities and as the potential of the institution is good enough to implement the project. As this project would be more advantageous regarding environmental and health benefits, the socio-economical feasibility is identified with the suggested remedies for the identified health and environmental risks. Further, Lanka Environment Fund is identified as an appropriate funder. Future studies could be done to analyse stakeholder impact and the environmental and legal feasibility.

Keywords: Sustainable Development Goals, Paper recycling, Environment and sustainability, Trincomalee Campus, Waste management, Feasibility analysis.

FLOOD SUSCEPTIBILITY MAPPING USING THE ANALYTICAL HIERARCHY PROCESS FOR MANDIPATTU ARU RIVER BASIN, EASTERN PROVINCE, SRILANKA

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Abstract - Though Sri Lanka is a water-rich country, still water management is not efficiently enforced. Sri Lanka is highly vulnerable to climate change and it will affect huge livelihood within a very short period. During heavy rainfall events, there is a major responsibility for keeping the reservoirs safe. Otherwise, the agricultural lands, lots of accommodations, and most life forms will be wiped out. Flood susceptibility mapping functions as a significant alternative for flood prevention and mitigation strategies. This study aims to delineate the flood susceptibility zones for the area of Mandipattu Aru River Basin situated in Eastern Province, Sri Lanka using a multi-criteria approach, particularly the Analytical Hierarchy Process (AHP) technique, and Geographic Information Systems (GIS). Nine flood causative Criteria were adopted for this study: Topographic Wetness Index (TWI), Elevation, Slope, Precipitation, LULC, NDVI, Distance from River, Drainage Density, and Soil Type. All factors were input as raster datasets in ArcGIS. The AHP technique was used to calculate the factor weights. For that, the relative importance of the selected factors was ranked. The flood hazard map developed from the AHP technique was examined for verification with a satellite-based historical inundation map. Further, this study shows that 89% of flooded historical areas were located on the created flood map. Therefore, assessments suggest that the presented flood hazard model has been accurately predicted.

Keywords: Flood; Precipitation; AHP technique; Overlay; Risk

IDENTIFICATION OF URBAN EXPANSION PATTERN IN MATALE MUNICIPL COUNCIL USING GIS AND REMOTE SENSING DATA

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Abstract - Urbanization is implies the different factors in the society. Quality of urban is somewhat different among the developed and developing countries but urbanization is common title to the any county in the world with the development. This can measure using different methods and different aspects. In that spatial and temporal changes can be detected using GIS and remote sensing technology. Study area is Matale division of the Matale district and special attention given to the Matale municipal Council (MC). Main objective of this study is to identify the Spatio-temporal urban expansion of Matale MC using multispectral band images within past 25 years. Landsat 5 TM and Landsat LC9 satellite images were downloaded from USGS web site. Normalized Different Building Index (NDBI) classification method selected to detect that changes. NIR and SWIR bands used to analyze it. According to this method three main categories are selected, Vegetation, Non-urban and Urban area. Generally NDBI image classification range expand from -1 to +1. In this analysis 1996 range was from 0.14 to -0.6, 2009 -0.053 to -0.45 and 2022 0.27 to -0.44. Result define the gradual urbanization process with the time passed. Natural reasons was affected to creation of urbanization pattern, as a result town is expanded along the road and small market places are developed in to small towns. This growing pattern is similar to the central place theory.

Keywords: Urbanization; GIS and Remote Sensing; Land Use; NDBI; Matale Town



**PEOPLE'S
BANK**
THE PULSE OF THE PEOPLE

TRINCOMALEE CAMPUS, EASTERN UNIVERSITY, SRI LANKA.