

# EXPERZIO '22

## RESEARCH MAGAZINE



In Affiliation with



# **All-Island Research Competition and Research Symposium – 2022/2023**

To aspire young researchers in the field and to make a strong research culture in Sri  
Lankan school community.

## **Experzio 22**

March 29, 2023

All-Island Research Competition and Research Symposium of  
Kingswood Research Unit, Kingswood College Kandy

Kingwood Research Unit  
Kingswood College Kandy

March 2023

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To

*Aspiring Young researchers in the field and to build a  
strong research culture in Sri Lankan school  
community*



## Message from Prof. Lakshman Dissanayake



I would like to express my sincere gratitude to the members of the Kingswood College Research Unit (KRU) for organizing the EXPERZIO'22 all-island research symposium for the benefit of school students and young researchers. Your hard work and dedication to this event are truly admirable, and I am so impressed by the level of organization and professionalism you have brought to make this a reality. As a researcher myself, I know how important it is to have opportunities to share the research ideas, collaborate with peers, and learn from experts in the field. Thanks to your efforts, so

many school students and young researchers will be able to do just that, and I am confident that the impact of your symposium will be recognized and felt for years to come.

Participating in the symposium will help students build a range of research skills, such as identifying research questions, conducting literature reviews, designing research projects, collecting and analyzing data, and presenting findings. These skills will be invaluable to students as they continue their academic and professional journeys. The symposium will provide a platform for students from different colleges to come together and collaborate on research projects. This will help them build networks, share ideas, and learn from each other's research experiences. Encouraging curiosity-driven research ideas is essential for school students to develop critical thinking, problem-solving, creativity, and self-motivation skills, which will help them excel in their academic and professional lives. Organizing this EXPERZIO'22 all-island research symposium for students on inculcating independent research is an excellent way to encourage students to develop independent research skills, build networks, collaborate with one another, enhance their career prospects, and promote academic excellence.

So once again, thank you for all that you did to make this event a success. I wish you all the best in your future endeavors, and I have no doubt that you will continue to make a positive impact on the world around you.

*Vidya Nidhi* Prof. M.A.K.L. Dissanayake  
*B.Sc.(Ceylon), M.S., Ph.D. (Indiana, USA), D.Sc.(Wayamba, SL), D.Sc. (OUSL, SL)*  
Research Professor, National Institute of Fundamental Studies, Kandy &  
Professor Emeritus, University of Peradeniya.



## Message from the Director of the NIFS



As the Director of the National Institute of Fundamental Studies (NIFS), I am delighted and honored to bring this message to the EXPERZIO 22. This year has been a significant year, as the young scientist of the Kingswood College Kandy, have decided to hold this annual research symposium and competition. The primary goal of this event is to broaden the knowledge and experience of young school children.

EXPERZIO 2022 has been structured to address those challenges faced by young generation. This symposium and competition will provide some valuable opportunities for young school children to improve their soft skill such as communication skills, leadership skills and team work which is an essential to face the challenges in the modern society. With a record number of participants expected this year, I hope that this annual symposium and competition will becoming larger and more substantial in next years to come. I hope that this symposium and competition will allow the participants a productive discourse not only in aspiring excellence in research, but also in managing scientific research. As the Director/(NIFS), I know that the success of the symposium depends ultimately on the many people who have worked in planning and organizing the symposium. I'm constantly amazed by the support given by the scientists, research assistants and many others who have a very clear desire to upgrade scientific research in the community in which we live in. In particular, I thank the committee and the NIFS staff for their wise advice and brilliant suggestions on organizing the symposium and competition. All recognition should go to the committee members who have all worked extremely hard on the details of important aspects of the programs. A note of appreciation to the researchers for their thorough and timely reviewing of the papers.

Most of all, I thank you, the presenters, for enriching the symposium by your presence. As is a tradition with the symposium, I hope you will enjoy the content, renew old fellowships, make new fellowships, get new ideas, and above all, have a great deliberation. On behalf of the NIFS, we're looking forward to see more and more improvements in the future.

*Prof. Saluka R. Kodituwakku,  
Director and CEO,  
National Institute of Fundamental Studies (NIFS)*

## Message from the CEO of BCAS



As a director and CEO of British College of Applied Studies (BCAS Campus), I add this message to the magazine of EXPERZIO' 22 with great pleasure. In a period of turbulence and economic instability Sri Lanka is facing as a country, also the World is at the forefront of modern as well as unpredictable challenge. In a public education system which is based on theoretical knowledge as the mainstream education, whereas practical knowledge and skills are given less prominence, the initiative taken by young school students to bring forward the term “research” and its values to the attention of the

society and their fellow colleagues is something that should be highly appreciated, and they deserve all due respect for it.

However, I would like to highlight the fact that in Sri Lanka most research is limited only to publications and texts where the practical implication of the work is ignored and remains unutilized. With over 25 years of experience in sectors such as Construction, Engineering, Trading, Apparel Manufacturing and Education, it's my personal belief that this has hindered our growth as a nation. Therefore, my first and foremost advice to all the young researchers who have contributed to this research symposium is to work to bring your hard work to the light of practical usage. Show your work to the world and make your research work serve mankind.

Talking about **BCAS Campus**, we ourselves are a research-based Higher Education Institute which has been serving the Sri Lankan higher education sector for more than two decades. BCAS focuses on delivering real world, relevant business and technological programs with a balance of theory and applied learning, providing students with both strategic and soft interpersonal skills. With our own annual research symposium of BCAS Campus we provide a solid platform for our young researchers and emerging scientists to take their work to international levels. As BCAS we are ready to support and guide all researchers who have contributed to the EXPERZIO' 22 to take your work to the next level.

I would like to appreciate the efforts of the Kingswood College Research Unit and all their hard work put into making this research symposium a success. I wish you all the best for your future endeavours.

*Susil Kumara Silva (PhD)*  
*CEO and Executive Director of BCAS campus*

## Message from the Principal



It is with great pleasure that I address you in parallel to Experzio'22 all island research competition and symposium. Which brings researches of the school community all around the country to a single location.

Since the dawn of time human curiosity was the factor which drove humankind to develop systematically to the world power they are today. Researching, 1<sup>st</sup> reported in the Roman civilization was a result of an organized interpretation of above-mentioned curiosity. And since then, research has deviated to various different fields and contributed to made the advanced world we see today. From the pen you write from to the international space station, research is what made it possible. Research fuels humans towards progress.

Kingswood Research Unit is one of the prominent co-curricular associations of the Kingswood circle, Experzio'22 Sri Lanka's 1<sup>st</sup> and largest and first research competition and symposium organized by a school. It is my opinion that these activities and programs are essential to provide a platform for students to become great personalities in the future. And also, it is important to be in touch with the modern world and be updated with new education methods. And researching is the way to the future. So, it is commendable that our students attempted at an such an event and publishing a research magazine as the final result.

I would like to appreciate the efforts of all committee members and the staff advisors of the research unit who rendered their utmost support to make the event a success. I wish you all the very best in your future endeavours!

*Mr. K.W.D Upali Chandrakumara,  
Principal,  
Kingswood College Kandy*

## Message from Teacher-In-Charge



I'm truly delighted to include this message in the research magazine of EXPERZIO'22 as the Teacher in charge off the Kingswood Research Unit. Since its inception in 2020 the Kingswood research unit has made a massive headway in the discipline of school research. Through many collaborations with other peer research organisations as well as participation in many inter school research related competitions, we have managed to build an interest for research and a passion for innovation within Kingswood.

I must say, it has been an absolute pleasure working as the teacher in charge off the Kingswood Research Unit and it has been a delight to see young Kingswood gentlemen spreading their wings in the world of research. It is true that research at Kingswood is still in its early days with only two years of history under its belt. But in its short history it has managed to rise to the ranks of one of the most as one of the most prominent clubs within the Kingswood circle. This project EXPERZIO'22 has been one of the most important milestones in school research not only within the Kingswood circle but also on an all-island level. The committee of Kingswood Research Unit have been able to provide an opportunity for students from schools all over the island to take their first step in the field of research. In my humble opinion I think that research and development are two fundamentally linked concepts. Not only for development in academics but also for national development I think research it's a fundamental necessity. It has been an amazing journey working with the organising committee of EXPERZIO'22 towards the common goal of uplifting research within the school community both within and out of Kingswood grounds. To wind up I would like to thank everyone who worked behind the scenes off EXPERZIO'22, with special thanks to external resource persons from the NIFS and the school administration for their unwavering support and mentorship in making this event a staggering success.

*Mrs. Erandi Ranasinghe,  
Teacher-in-Charge,  
Kingswood Research Unit,  
Kingswood College Kandy.*

## Message from the Project Managers

We are delighted to include this message to the magazine of “EXPERZIO'22” as the co-presidents of the Kingswood Research Unit. Since it's reestablishment in 2020, Kingswood Research Unit is one of the most prominent clubs our school. Within it's 3 years of existence the Kingswood Research Unit has carried out numerous number of events and have published many research papers. But “EXPERZIO'22” is our biggest project yet. As a researching society we always give attention towards promoting of the researching habit of students and inculcating a research culture within the school community of Sri Lanka. As we step into the new world, we see that it is very much salient that as students we step away from the traditional syllabus-based education and embrace researching. And “EXPERZIO'22” was our golden opportunity to do so. Throughout a 5-to-6 month process, we slowly introduced researching and research method to the school population of Sri Lanka and encouraged them to participate in our event. As a result, we were able to gather over 150 submissions. And after evaluating and reviewing those researches we decided to include the top 50 researches to the magazine. So, this research journal would be the end product of the Sri Lanka's first and largest All Island Research Competition and Symposium.

We are very much pleased that we were able to provide a significance to researching within the school community of Sri Lanka within our limited capabilities and we would like to thank the organizing committee of “EXPERZIO'22” for their immense contribution in making this event a success.



Co-President  
**Anupama Mallikarathne**



Co-President  
**Sathmika Gunawardhane**



Secretary  
**Laknath Bandara**



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**Yasasvi Wijekoon**



Vice President  
**Dinsara Ariyawansha**



Editorial Chairman  
**Gangasara Jayawickrama**



# Kingswood Research Unit – Introduction

It is in primal human nature to wonder, to search, to explore and to conquer. Over many millennia our definition of searching for the infinite truth of the universe, evolved as the generations came and went. It was through this curiosity that Science, in its truest form was born. And today Research continues to shape and sculpt our understanding of our existence. Today, Research is one of the fundamental branches of science and is of utmost importance both as a community and a nation.

Re-established in 2020 under the guidance of Mrs. Erandi Ranasinghe. The Kingswood research unit is currently one of the most important societies within the Kingswood circle. Nurturing our young Kingswood gentlemen to become the next generation of industry leaders in the world of research is our sworn duty. It is with this in mind that we go about our duties and projects. The research unit of Kingswood College, as one of the first ever school-based research programmes in Sri Lanka is a pioneer and an innovator in school research. Extending our support to aspiring researchers both within and out of the school walls we have had massive success in the short history of the club in building a Research culture within the school community. Our past projects have brought together researchers of many different pedigrees to culminate a positive and forward-thinking group of young innovators and possibly some of Sri Lanka's future greatest minds.

Headed today, by Kingswood gentlemen Master Sathmika Gunawardhane and Master Anupama Mallikarathne under the watchful eye of our staff counsellor Mrs. Erandi Ranasinghe and Principal, Mr. K.W.D.Upali Chandrakumara the Kingswood Research unit is the legacy of the inaugural committee of 2021.

## Vision of the Kingswood Research Unit

- To nurture and culminate research values within the Kingswood Circle, creating an innovative research culture within the school community, and to produce outstanding Kingswood Researchers spanning across the many disciplines of Science.

## Mission of the Kingswood Research Unit

- Being the stepping stone into the realm of Research for Kingswood gentlemen by providing dynamic, high value, innovative experiences and applicable skills necessary to become the future industry leaders of Research.



# Kingswood Research Unit – Committees

Principal

Mr. K.W.D. U. Chandrakumara

Teacher in Charge

Mrs. Erandi Ranasinghe

## **Executive Committee**

Co – Presidents

Anupama Mallikarathne

Sathmika Gunawardhana

Secretary

Laknath Bandara

Treasurer

Kushen Dulanga

Vice Presidents

Dinsara Ariyawansa

Gangasara Jayawickrama

Yasasvi Wijekoon

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Hasira Mahakumbura

Asst. Secretaries

Chethiya Bandara

Malith Jayasinghe

Assistant treasurers

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Chanuka Senewirathne

Main Coordinator

Himakara Vihanga

Main Organizer

Hirusha Ranveera

Main Editor

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Kushen Dulanga

Gangasara Jayawickrama

Sathmika Gunawardhana

Sathira Tennakoon

Omindu Perera

Sandun Kodithuwakku

## **Organising Committee**

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Dineth Sankalana Dharmasena

Manula Ranhotige

Nawam Halangoda

Sandev Bandara

Inura Wathsuka

Shamal Keerthibandara

Yuvim Basnayake

## Experzio '22 – Project Review

EXPERZIO'22 is in essence a research competition organised by the research unit of Kingswood college with the sole intent of uplifting and nurturing a passion for research and a desire for new discovery within the school community both at Kingswood and out of school grounds. Drawing inspiration from the past project Ingratus'22 which was organised by the research units of Kingswood College, Kandy, Girls' High School, Kandy and Mahamaya College, Kandy Experzio'22 builds upon it's exponential success in creating a school research culture. Staying true to the values of the Kingswood research unit Experzio'22 was carefully crafted with the support and mentorship off the National Institute of fundamental Sciences.

The project was initiated on the 14th of July 2022 with a series of workshops related to research within the Kingswood circle. Registrations for Experzio'22 were opened on the 17th of November 2022. We saw a massive interest in the school community towards research with over 150 registrations from schools all over the island. The opening ceremony of the competition was held on the 25th of November 2022 where a further workshop an introductory session was held in the presence of external resource people. The registered contestants carried out their research studies between the dates of the 28th of November 2022 and the 19th of January 2023. We saw a staggering output off nearly 100 successful research projects being carried out under Experzio'22. At the time of writing the symposium of Experzio'22 is due to be held on the 29th of March 2023. The timeline of the project is given below. This book includes a collection of Abstracts of all the successful research projects carried out under the project.

Awareness programme chapter 1	14 <sup>th</sup> July 2022
Awareness programme chapter 2	18 <sup>th</sup> August 2022
Registrations calling	16th November – 21 <sup>st</sup> November 2022
Registration close and experzio 22 opening ceremony	22 <sup>nd</sup> November 2022
Making project proposals	06th December – 10 <sup>th</sup> December 2022
Making final reports and abstracts	10th December– 10 <sup>th</sup> January 2023
Submitting abstracts and final	10th January – 14 <sup>th</sup> January 2023
Research symposium	29th march 2023

## Lakshman Dissanayake Challenge Trophy



Prof. Lakshman Dissanayake who's ranked among the top 2% of the worlds scientists is an imposing personality not only in Sri Lanka but also throughout the world. He graduated from the First Physics Special Batch from Peradeniya. And he received his M.S. (1974) and his Ph.D. (1977) from Indiana University, Bloomington. After he returned back to Sri Lanka, Prof. Lakshman Dissanayake served for 40 years at Peradeniya University in Sri Lanka. And after his retirement he's employed as a Research Professor, at

NIFS (National Institute of Fundamental Studies & Team Leader, Condensed Matter Physics & Solid State Chemistry Division). And he is one of the most senior members providing his service at NIFS. In short Prof. Lakshman Dissanayake is a

fountain of researching knowledge. Some of the major accomplishments he gained during his career are given below.

- Vidya Nidhi National Award 2005
- CVCD Award for the Most Outstanding Researcher in Physical Science – 2010
- Awarded Hon. D.Sc. By Wayamba University of Sri Lanka – 2013
- Presidential Awards for Research Publications, November – 2017
- NIFS Most Outstanding Researcher - 2017
- Recipient of the National Science Foundation (NSF) Lifetime Award - 2018
- NSF SUSRED Award – July 2018

## Experzio'22 - Academic programme

Out of all the submissions we chose the top 12 researches to be presented on the day of the symposium, as it provides the researchers a platform to show their findings. The presentations are carried out in the international format providing the participants a valuable experience. The list of presentations is provided below.

### Agenda

8:00 – 8:10	Arrival of Guests and Starting the event
8:10 – 8:15	Lighting Oil Lamp ceremony
8:20 – 8:35	Welcome Speech by the Principal of Kingswood College
8:35 – 9:20	Presentation 01, 02, 03
9:20 – 9:35	Speech by Director of NIFS (Prof. Saluka Kodithuwakku)
9:35 – 9:40	Certificate giving
9:40 – 10:10	Presentation 04, 05
10:10 – 10:25	Music Event by Mr. Isuru Withanage
10:25 – 10:55	Presentation 06, 07
10:55 – 11:00	Presentation by Grade 05 students
11:00 – 11:30	Speech by the Chief Guest, Dr. Harsha Subasinghe
11.30 – 11.35	Certificate giving
11.35 – 12.05	Presentation 08, 09
12.05 – 12.20	Speech by the CEO of BCAS university
12.20 – 12.25	Certificate Giving
12.25 – 12.40	Music Event by Mr. Ramesh Ukwatta
12.40 – 1.05	Lunch Break
1.05 – 1.20	Presentation 10
1.20 – 2.00	Presentation by the YES Association
2.00 – 2.15	Presentation 11
2.15 – 2.25	Practical Session by Prof. S.B.Weerakoon
2.25 – 2.30	Certificate giving
2.30 – 2.45	Documentry about Prof. Lakshman Dissanayaka
2.45 – 2.50	Awarding the Trophy
2.50 – 3.00	Vote of Thanks and National Anthem



## Presentations

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# 01. Natural Science – Research Abstracts

## NSCR01

### **Astounding Impacts of Growing Plants Under Different Colours of Light** *Manindri Epakanda*

There are countless ways to flourish crops in a very short time with the present day technology. Growing plants under different colours of LED lights helps to protect the natural significance of the plant and uplift the quality of it in a nature friendly way. Nowadays it's pretty hard to grow any sorts of plants in compacted places where there's no way to get sunlight in a proper way as sunlight is the main energy input that powers photosynthesis. This is the problem that inspired this research. To conduct this research efficiently, Lettuce or commonly known as salad leaves were chosen as the sample. After that, I picked out three different LED light colours (blue, red and ultraviolet). For nine weeks three sets of lettuce plants grew under those light colours. In the meantime, another set of lettuce plants grew under the normal sunlight. Growth charts, bar charts and pictures were used to collect the needed data. After nine weeks all the leaves flourished to an edible state. The plants that grew under blue LED lights grew very quickly and had large lettuce leaves, while the plants that grew under red LED lights produced more leaves. But those leaves were a lot smaller in size. On the other hand, the leaves that flourished under the UV LED light tasted less bitter than the blue ones did. The consideration of the above mentioned data suggests that growing plants under blue LED lights is a very fruitful way to create high quality crops with high nutrients. To expand this research, I suggest doing this experiment in various climate types and using the other colours of the light spectrum as well.

**Keywords** - Visible light spectrum, wavelengths, photosynthesis, LEDs (Light Emitting Diodes), Ultraviolet (UV) lights, Intensity

## **NSCR02**

### **Study on the microbiological quality assessment of fermented dairy products**

*Anupama Illankoon, Kaveesha Ariyaratne, Guwani Nawarathne, Methma Kasundi, Dulanjalee Banneka.*

Milk is a complete food for all ages of individuals as it contains ideal balanced nutrients for growth and development. Varieties of milk are marketed under different brand names like cow's milk, sheep milk, camel's milk, and milk obtained from plant sources such as almond, oat, soya, and rice milk (Zivkovic and Barile 2011). Different cultural origins, sources, and processing methods have diverted soured milk into a variety of products such as dahi, dadih, ker, koumiss, langley, and viili (Mistry 2004; Chen et al. 2006; Dharmawan et al. 2006). Viili is aropy fermented milk that originated in Scandinavia. The name viili is Swedish and describes mesophilic fermented milk that is claimed to have various functional benefits and the potential to improve health (Kitazawa et al. 1991, 1993, 1996; Nakajima et al. 1992; Ruas-Madiedo et al. 2006; Chiang et al. 2011). Dairy products in general have been documented to show various health benefits. Many of these benefits relate to the fact that dairy foods are good source of several essential nutrients such as protein, calcium, and vitamin D. These nutritional benefits can be enhanced by fermentation. The fermentation enhances the shelf life of products along with the improvement in the taste and digestibility of milk. Several lactobacilli strains are involved in the production of a wide range of cultured milk products with different tastes. Fermented milk products have long been well documented as the important components of our nutritional diet, and their medicinal properties have been experienced since the ancient days of civilization. Evidences show that fermented milk products have been produced since around 10,000 BC. Fermented milk products are popularly known with the names of cultured dairy foods, cultured milk, or cultured dairy products. Mainly, such kind of dairy foods are produced by the process of fermentation using lactic acid bacteria (LAB). Fermentation of foods is the conversion of raw materials by microorganisms and value addition to the end product, along with extending the shelf life of perishable raw food substrates. The question this research aims to answer is why the consumption of some curds causes diseases.

To find the causes, we investigated the Lactobacillus, Bifidobacteria, and Coliform spp. abundance and their colony count in commercially available 2 curd brands and yogurt brands. 1 g of the sample was dissolved in 10mL autoclaved distilled water. Two subsamples were taken from each brand. Afterwards samples were diluted and were measured accurately to make equal plates subsequently. Spread plate technique was used and 50µL from selected dilution, plated in specific agar medium: *Lactobacillus* MRS agar, Bifidobacterium agar, MacConkey agar were purchased from HIMEDIA laboratories, India. And specific media were used to find the population of Lactobacillus, Bifidobacteria and to confirm whether there is *E.coli* which considered to be the species of coliform bacteria that are found in the soil, in water that has been

influenced by surface water, and in human or animal waste. The samples were incubated for 24hrs for *Lactobacillus* and Coliform and 48hrs for Bifidobacteria and observed within 24 hours and 48 hours. *Lactobacillus* spp. counts were not significantly different among the three samples. One sample contained a significantly higher amount of Bifidobacteria and Coliform population than the other two samples. That curd brand had been contaminated with *Escherichia coli* also. This experiment conducted at the Nutritional Biochemistry Division of the National Institute of Fundamental Studies, Kandy. According to the above study the conclusion was made not to consume curd brands without standardization. Suggestions were made to hold awareness programs for the regional producers of curd brands, to guide Public Health Inspector to maintain the standard of regional curd brands and to advise the customers to examine standards and quality level before consuming.

**Keywords** - fermented dairy products, specific media, *Lactobacillus*, Bifidobacteria, *E.coli*

## NSCR03

### Natural dye for different applications

H.K.D.W.M. Tharushi Dewmini Diwarathna

Natural dyes are usually better than the synthetic dyes, because natural dyes are mostly biodegradable, eco-friendly, non-toxic, non-chemical which is harmful to health and non-allergic in nature. However, uses of natural dyes are not very common in now a day. Hence the aim of this research is to identification of natural dyes and their applications. As such products are healthier and more reliable than synthetic dyes. In this research, mainly used the latex which was gained by stem of "GOCATU" (*Tribulus terrestris*) tree and the latex of "GAMMALU" (*pterocarpus marsupium*) tree was used mainly. In past era had used this Gocatu dye solution had been used to paint wall arts in public and religious places. It is yellow in colour. The latex of "GAMMALU" And also, when getting is maroon colour natural dye. can be used the latex of "GAMMALU" (*pterocarpus marsupium*) tree. When taking these latexes were collected from the trees by cutting a small line and setting a cup under it. The one cup of dye could be collected within 2-3 hours. can be take cup of dye. Methods were developed to apply both of these natural dyes can be applied to their different applications like such as a fabric painter, earthenware painter, water colour, paper colorant etc. Methodology which was used to conduct this research was as following. When the dye is used as fabric painter, three parts of the dye was combined with one part of vinegar and four parts of water. And then the fabric was boiled the fabric in the dye mixture for one hour. After fabrics were done, and rinsed it the fabric out under with cold water. and dried for four days before used. it and after four days can be used them. When it the dye is used as earthenware painter, put dyes were applied on the outer surface of the pot (before that pot should be painted by with white colour and dry well) by using with any any preferred design and dried it for 2 hours under sun light. Added few amounts of water was added to the dye when it these dyes were used as water colours. Red and yellow colour papers can be obtained by using these dyes, when it used as paper colourant. For that, the mixture made by adding an extra amount of water and put that mixture in to white colour papers. after making mixture by adding an extra amount of water to those certain dyes separately, with the help of spray bottle, spray that mixture in to could produce different arts by spraying on white colour paper with a spray bottle. By following above methodology, the results were, by using natural dyes can be applied to different applications successfully It could be concluded that Gcocatu and Gammalu latexes are eco- friendly, and cheaper natural sources that could be successfully used as dyes in different applications and could be an alternative for synthetic dyes. and can be produced eco-friendly, natural products.

**Keywords** - Natural dye, GOCATU, *Tribulus terrestris*. GAMMALU, *pterocarpus marsupium*

## NSCR04

### Effects of human activities on aquatic eco systems around Kandy

S.T.L Gunawardhane, H.G.W.A.T.Laknath Bandara, J.M.M.R. Jayasinghe, M.T.E. Nethmina, S.D. Wickramasooriya

Sri Lanka is a highly bio diverse, 3rd world country with many different eco systems. Among them various types of aquatic ecosystems are significant. Kandy is a district in Central province of Sri Lanka with many different aquatic eco systems which are paramount to the whole country. But various human effects such as water pollution and introduction of invasive species have caused havoc on aquatic ecosystems around Kandy, drastically reducing their bio diversity. In order to prove that human activities cause wreckage in aquatic habitats we conducted 2 experiments. In the 1st experiment our team collected water samples from 3 different aquatic eco systems (Kandy Lake, Mahaweli river and Udaperadeniya stream) and tested them for pH level, hardness, turbidity, nitrite, ammonia, E-coli and total coliform. Then the above results were compared with each other as well as with earlier test results. In the 2nd experiment we calculated the growth rate of a invasive species and a local species of aquatic plants. The pH levels of the Mahaweli river, Kandy Lake and Udaperadeniya water stream have increased. The turbidity level is in the adverse range. Hardness level is average. The amount of ammonia is reduced. But nitrate is at a very abnormal and adverse level. According to above results Mahaweli river and Kandy Lake are clearly polluted. Because both of above eco systems are situated in urban areas. Udaperadeniya water stream is comparatively less polluted, as it's situated in a area with less population density. In the 2nd experiment we calculated the growth rates of *Hydrilla sp.* and *Cryptocoryne wenditii*. The growth rate of *Hydrilla sp.* was 20.33% and the growth rate of *Cryptocoryne wenditii* was 4.18%.

According to the results obtained by above tests and experiments we can conclude that pollution rates have increased up to a certain level. For example, the pH of Kandy Lake in 1986 was 8.5 and in 2022 it has increased to 7.5 proving that the pH is gradually reaching an acidic level. Adding waste water from various human facilities can be depicted as the main reason for the deviation in above parameters. Though it's still ill-suited for aquatic organisms, concentration of pollutants in Mahaweli river has reduced during 2019 to 2022. This clearly show that pollution is notably decreased with the reduction of human activities in the vicinity of aquatic eco system. Also as shown by the 2nd experiment, the growth rate of invasive species is very much higher than that of local species. So, the invasive species easily populate at higher rate over competing the local species. Due to human activities in the vicinity of water bodies they have become densely polluted, causing harsh living conditions for the aquatic organisms. Introduction of invasive species have reduced the population density of the native species in the water bodies. So it is evident that human activities directly affect the organisms in the aquatic ecosystems and thus, responsible for the rapid deterioration of those organisms.

**Keywords** - Kandy, Aquatic eco-systems, Pollution, Invasive species

## **NSOR3**

### **Caterpillars**

*D.P.Manudi.M.Peiris*

Caterpillars are the larvae stage of butterflies. Though caterpillars are the larvae stage of butterflies there are many differences between butterflies & caterpillars. So, this research is to learn more about the physical characteristics of caterpillars, learn the differences between moth caterpillars & butterfly caterpillars, learn the differences between butterflies & caterpillars & to save the red listed caterpillars etc. protecting the red listed caterpillars, reducing harmful caterpillars, increasing natural pollination & maintaining the equilibrium of the biodiversity are the importance of this research.

Caterpillars eat a lot. They have 6 eyes called ocelli. They don't have lungs or teeth. They are Arthropods. They can be easily found on lime, lemon, mulberry, parsley & clean estate trees. There're around 180 000 species of caterpillars in the world & 245 of them can be seen in Sri Lanka too. 23 of them are endemic to our country.

**Keywords** – Caterpillar, Moth, Butterfly

## **NSOR04**

### **Effects of selected plant extracts on growth of chilly plants**

*Sanuki Jayasuriya, Hesara Rajakaruna, Aravind Samarasinghe, Govindi Bandara*

General public believe that forage spray of various plant extracts (Banana peel extract, onion peel extract, Gliricidia leaf extract) enhance the growth of crop plants. Thus, improves the yield. However, these claims have not been tested scientifically. Nevertheless. If these extracts improve the yield, they can be used in organic. Agriculture as they are non-sympathic enhances. After 20 days of experiments, we came to our conclusion that from the visual observation, it can be concluded that Gliricidia extract affect positively on the chilly plant growth. Plant height and number of leaves revealed that chili plants threated with banana extract performed better than the controlled treatments. However, experiment has to be conducted in a proper manner to come to a firm conclusion.

**Keywords** – Effects, Gliricidia, Extract, Chilly Plants



## NSOR09

### **Bacteria-Natural Environmentalists**

*Minidi Vitharana, Inuki Jayaweera, Thesara Wickramasinghe, Nethuli Pallewela Gamage, Pahandee Rambukwella, Thiseni Hewa Diyagahage*

Microbes can degrade oil spills. It is just a matter of how, when, and how long it takes. This literature review is an exploration of different experiments scientists have carried out to find out the best solution for cleaning oil spills in an environmentally friendly way, known as bioremediation, which utilizes oil-degrading bacteria to clean up our anthropogenic mess.

Method 1 was to take a sample from a water source contaminated with oil and use commercially available oil-degrading bacteria to see whether it is possible to degrade the oil in the sample.

Method 2 was to take a sample, from a water source contaminated with oil, to see if there were naturally occurring oil-degrading bacteria. To do this, we can use a culture medium to grow the bacteria, isolate the colonies that are formed, and test which of these colonies is best at degrading the oil.

We were unable to do the above experiments due to not having access to a lab that provides a sterile environment and lab equipment, but we intended to propose the idea through this literature review of using oil-degrading bacteria in Sri Lanka to clean the environment on occasion where large Oil spills such as X-Press Pearl Spill and MT New Diamond Spill occur. Bacteria groups such as *Alcanivorax borkumensis*, *Cycloasticus*, *Oleispira antarctica*, and *Oleiphilus messinensis* have been identified as key groups that help in the degradation of oil spills. These kinds of bacteria rapidly multiply in oil and engage in the task of degrading hydrocarbons and digesting their elements to create more microbial cells. Studies have been conducted to find out whether humans can help increase the rate of oil degradation. Considering such studies, scientists have found out that using man-made biosurfactants can help microbes degrade the oil faster, reducing the amount of pollution caused by the oil spill. As a developing nation that can't even afford to buy harmful dispersants, we must understand that this is a sign; we must use what we have in our environment to stop pollution. The initialization of projects like these in Sri Lanka will require generous sponsors, however, we can start a revolution at a small scale using the bacteria we have in our oceans. If importing oil-degrading bacteria from another country is too risky or growing large quantities of bacteria is difficult, using biosurfactants can help bacteria do their job faster and, in the end, will benefit both humans and the marine ecosystem.

**Keywords** - Oil-degrading Bacteria, Oil Spills, Bioremediation, Hydrocarbonoclastic Bacteria

## NSOR13

### **Movement of aerial animals & machines**

*W.M. Hirosh Nividu, M.D. Ameesha Induwara, N.N. Thathmira Bandara, D.T. Sathsara Dineth, M.A. Pramodh Salgadu, W.Viruja Nethsuka*

Among the traveling methods Air traveling is a one of the fastest methods. Animals that use Air traveling method called Aerial animals such as birds, bats, and insects. Aerial machines, such as helicopter and airplanes, use aerodynamic forces to generate lift and thrust in order to move in the air.

Animals also use flying for many of the same reasons as humans. Birds and insects have been using flight for millions of years to migrate, find food, build nests, and protect themselves from predators. Flying allows animals to move quickly and efficiently over large distances, which is necessary for survival in many cases. Additionally, flying can be used as a form of communication or to attract mates. China had invented first flying object in 400BC, which called kite. And after that lot of other scientists start finding a way to human to fly. Now human flight is also very advanced. Our aim is finding out what's the best way of flying right now. Our objectives are demonstrating the navigation of aerial animals, identifying What helps them to fly like that, compare human flight to animal's flight. then we can recommend something useful human's flight in the future.

There are various types of flying among different animal and machine. Our team have needed to identify what is the best type of flying. Therefore, we researched few animals and machine such as crow (Aves), house fly (arthropod), bat (Mammalia) and an Airplane (Machine), So, in our research We recorded take off, landing and flying methods of crow, house fly and plane. But we unable to record bat since we could not record their flying at night. Therefore, we found some video clips.

**Keywords** – Air traveling, bird, helicopter, kite, airplane, crow, housefly, bat

## NSOR14

### Analyzing the Effectiveness of Natural Disinfectants

Chandrasekara. E. G. V. P. , Liyanage. U. L. V. I, Pathirana. N. N, Dissanayake G.W. D. M. P. B, Kalusinghe. K. B. B

Synthetic disinfectants are widely used nowadays to prevent microbial contamination on inanimate objects in the environment and a higher demand has been observed after the covid pandemic. Phytochemicals have the ability to inhibit or kill pathogens and their efficacy depends on their biocomponents. The main aim of this study is to evaluate the effectiveness of phytochemical disinfectants commonly used in household applications and uplift the use of them in possible occasions, while minimizing the usage of synthetic disinfectants.

Dried Turmeric (*Curcuma* sp.), fresh leaves of Guava (*Psidium guajava*) and Neem (*Azadirachta indica*) were used to prepare extracts (45 g in 50 ml water). The microbial samples were collected from the general household and were streaked on nutrient agar plates (n=3). Plant extracts were applied on the selected point of the streaked lines. Commercial sanitizer (70% ethanol) and water were used as control. Guava extract highly reduced the growth of microbial colonies compared to turmeric and neem. Commercial sanitizer (70% ethanol) showed zero growth. Only guava and neem were conclusive against the microbes. Advance studies, research and technical knowledge will be needed to develop these phytochemicals as commercial disinfectants.

**Keywords** - Phytochemicals, Microbes, Household applications, Disinfectants, Effectiveness

## NSOR16

### බිජ පුරෝහණයට ආලෝකයේ බලපෑම.

අයි ගම්ලත්, එන් බස්නායක, එස් අමරවංශ, ඩී නිරාශා, ආර් වාසල.

මෙම පරීක්ෂණයෙන් මෑ,අබ,මිරිස්,බෝංචි යන බිජ වර්ග පුරෝහණයට ආලෝක වර්ණයන්ගේ බලපෑම සොයා බැලීම සිදු කරයි.ඒ අනුව බිජ පුරෝහණයට වඩාත් ඵලදායී ආලෝක වර්ණය මෙහිදී සොයා බලයි.ඒ සඳහා බිජ පුරෝහණයට ප්‍රධාන වශයෙන් බලපාන උෂ්ණත්වය,ජලය,ඔක්සිජන් යන සාධක නියතව පවත්වා ගනිමින් ආලෝකය පමණක් විචල්‍ය සාධකය ලෙස ගෙන සැලසුම් කරන ලද පරීක්ෂණ ආධාරයෙන් ආලෝකයේ බලපෑම පරීක්ෂා කරන ලදී.එහිදී එක් එක් බිජ වර්ගයට වෙන වෙනම පරීක්ෂණ සිදු කරන ලදී.එක් බිජ වර්ගයක් සඳහා සමාන බිජ සංඛ්‍යාවක් යොදාගෙන සමාන උපස්ථරයක් භාවිතා කර සමාන තත්ව යටතේ ඇති ඇටවුම් 5ක් සකසා එක් එක් ඇටවුමට වෙන වෙනම රතු ආලෝකය, කහ ආලෝකය, නිල් ආලෝකය,සාමාන්‍ය ආලෝකය සහ අදුරු තත්ව සපයා නිරීක්ෂණ මගින් නිගමන ලබා ගන්නා ලදී.ඒ අනුව බිජ පුරෝහණයට ආලෝක වර්ණයන්ගේ බලපෑම බිජ වර්ගය මත රඳා පවතින බව සොයා ගන්නා ලදී. බෝංචි බිජ සහ අබ බිජ අදුරේදීත් , මිරිස් බිජ සාමාන්‍ය ආලෝකය යටතේදීත් අඩුම පුරෝහණ ශීග්‍රතාවයක් පෙන්වන අතර බෝංචි බිජ රතු,නිල් සහ සාමාන්‍ය ආලෝකය යටතේදීත්, මිරිස් බිජ රතු ආලෝකය යටතේදීත්,අබ බිජ නිල් ආලෝකය යටතේදීත් වැඩිම පුරෝහණ ශීග්‍රතාවයක් පෙන්වා ඇත.එහෙත් ලබා ගත් නිරීක්ෂණයන්ට අනුව මෑ බිජ පිළිබඳව පැහැදිලි නිගමනයක් ගත නොහැක.මෙම පරීක්ෂණ සඳහා යොදා ගන්නා බිජ සංඛ්‍යාව වැඩි කිරීමෙන් හා පරීක්ෂණය කිහිපවතාවක් සිදු කිරීමෙන් වඩාත් නිවරදි දත්ත ලබා ගත හැක. මෙම පරීක්ෂණ සඳහා රතු,නිල්,කහ ආලෝකයන්ට අමතරව තවත් ආලෝක වර්ණයන් භාවිත කිරීමෙන් හා තවත් බිජ වර්ග භාවිත කිරීමෙන් පරීක්ෂණය ඉදිරියට ගෙන යා හැක.මෙම පරීක්ෂණයේ වැදගත්කම වන්නේ වගා කටයුතු වලදී බිජ පුරෝහණයට වැඩි කාලයක් ගත වන බිජවලට සුදුසු ආලෝක තත්ව සපයා පුරෝහණ වේගය වැඩි කර ගත හැකි වීමයි. තව ද මෙය බිජ පුරෝහණ ප්‍රතිශතය වැඩි කර ගැනීමට ද යොදා ගත හැක.

සුවිස - පුරෝහණය, වර්ණය, ආලෝකය, බිජ

## NSOR17

### **Adaptations and Behavioral patterns of desert animals**

*Achini Nimashi Hapuarachchi*

Desert is a hostile environment. Even though it is a hostile environment, it is full of life. The creatures living in the desert possess different adaptations as well as some special behaviors to survive in this ecosystem. Some common features of these desert animals are being nocturnal, having light colored skin or fur, having super hearing, Living in sandy areas as well as camouflage. In my research I have studied about the five animals including Golden mole, Kangaroo rat, Thorny devil, Desert meerkat, Fennec fox. Golden mole has super hearing, Kangaroo rat is faster than the blink of an eye, Thorny devil can absorb water that get contacted to its body, Desert meerkat work in groups to get protected and to hunt, Fennec foxes have 20 times more sensitive ears than human. These animals use these adaptations and behaviors to survive I the desert, to get food, to protect their babies. Most of the animals living in the desert are subjected to extinction. We should take measures to protect the animals living in the desert.

**Keywords** - Desert, Animals, Environment

## NSOR18

### **Life cycle and Reproduction of Sri Lankan freshwater crabs**

*Sandul Dissanayake, Chathura Sandeepa, Tishan Ariyaratna, Kaveen Nandasiri, Lasith Buddhika, Kaveesh Gunathilaka, Anusara Wijeynayaka*

Sri Lanka is a highly bio diverse country and it is considered as a bio diversity hot spot. And freshwater crabs are a front running reason for Sri Lanka's bio diversity. Sri Lanka's freshwater crabs show the highest endemism for any group of animals, where 51 out of 52 freshwater crab species are endemic. The endemic rate of freshwater crabs is 98%. But 34 species of them are critically endangered and 12 species are endangered. A reason for this is these kinds of species are neglected by respective authorities, the lack of awareness among the locals and because of that they live in unprotected areas. In order to conserve them we thought that it would be important to study about their reproduction and life cycle. The true freshwater crabs (Crustacea, Decapoda, Brachyura) are highly adapted to life in freshwater and complete their life cycle entirely independently of sea water. All true freshwater crabs exhibit direct development and lack the free-living larval forms (zoea and megalopa) typical of most other brachyurans. After a prolonged embryonic period (during which they pass through the typical brachyuran larval forms embryologically) the eggs of true freshwater crabs hatch to produce juvenile (hatchling) crabs. Development of freshwater crabs is characteristically direct, where the eggs hatch as juveniles, with the larval stages passing within the egg. The broods comprise only a few hundred eggs (compared to hundreds of thousands for marine crabs) each of which is quite large, at a diameter of around 1 mm (0.04 in). As in other decapods, the females are smaller than the males (they can however occasionally reach larger dimensions). This may be determined by a lengthening of the molting interval in the females, by their higher energetic cost of reproduction (since reproduction occurs simultaneously with molting) and/or by a higher mortality rate resulting from the risks associated with carrying eggs and vagility.

Mature males have sperm available for mating throughout the year. The deposition of yolk in females takes place mostly from April to June, with most of the eggs reaching maturity at the end of June. The main breeding season is from late June to October, although mating can occur all year round. Discernible courtship behaviour is absent and a forced copulation strategy is practiced by males. Ovigerous females return to the stream a few hours before hatching of the eggs. Most young crabs are released after mid-September, which is the end of the rainy season. This is believed to be a strategy to avoid destructive flash floods which are common from mid-May to early September. The number of eggs carried by each ovigerous female ranges 9–117, fecundity being highest for females of about 30-mm carapace width.



## 02. Applied science – Research Abstracts

### ASCR01

#### **Finding out the cases of oral cancer**

*C.Manuli Sahanya , Dahami Siriwardhana*

Cancer is a disease when abnormal cells grow uncontrolled and spread to other parts of the body. Cancer can start almost anywhere in a human body. There are many different types of cancers. 19.4 million new cancer cases detected in 2020 globally. In Sri Lanka Oral cancer is the most common. Oral cancer is formed in tissue of the oral cavity and oropharynx. Causes for Oral cancer can be divided into two as, Non-modifiable causes and Modifiable causes. Incidence of oral cancer in 2020 is 377,713 among them 177,757 patients died.

Our objective of the research is finding the causes for oral cancer; find the geographical distribution, gender variation and their socio-economic status.

We collected data by internet, literature review and by a questioner.

In the questioner we included patient's age, sex, monthly salary, job, and living area, whether patients use betel, arecanut, alcohol, and whether smoking or not, if so, how long they use them.

To come to conclusion from our research that many Oral cancers were caused because of the usage of betel, areca nut and lime, so the main causes of Oral cancers is usage of betel, arecanut and lime. Also, we found out that many Oral cancer patients are found in Estates, because the people in those areas use betel arecanut and lime for more than 4 hours per a day. When they are working, they eat betel nut and lime to reduce their tiredness. Estate worker get only Rs.10, 000 to Rs.25, 000 as monthly salary, which is come under low income category.

**Keywords** - Oral cancer, cancer



## ASCR02

### **Importance of living fossils in the studies related to prehistoric era**

*Nethaya Minadi*

Living fossils are an organism that has remained unchanged from early geological times and whose close relatives are usually extinct. The aim of this study was to reconstruct the climatic, atmospheric and geological conditions which prevailed within the prehistoric era and to find out about the evolution of organisms by using living fossils.

From studying the amount of CO<sub>2</sub> that a living fossil plant intake it was able to find that the CO<sub>2</sub> percentage during the prehistoric era was higher than the present and O<sub>2</sub> percentage in the past was low. This implies that the temperature was high due to the high amount of CO<sub>2</sub>, resulting in the organisms in water who couldn't bear the temperature and less dissolved oxygen to eventually transit to land.

By studying the factors that living fossil plants need for their growth it was able to get an idea about the soil structure. The overall nature of soil which needed for living fossil plants to grow was acidic, alkaline, loamy, moist, rich, sandy, silty loam and clay soils and it is somewhat similar to present soil. So, with that we can understand that the soil structure hasn't changed a lot over the time. By the study of living fossil organisms, it was found that the fishes have evolved a lot over time and the present fish is completely different from the fishes who were in the past. And it was also found that arthropods haven't changed much compared to the prehistoric organisms. And was also able to find that prehistoric organisms reproduced by hatching their young inside their body. By all that information it was able to reconstruct the life conditions that prevailed in the prehistoric era.

**Keywords** - Living fossils, prehistoric life, evolution

## ASCR03

### **The effectiveness of online academic complex among the pupils, living in a recessive country**

*Yogarasu Kavinyaa, Dikshana Ravindrean, Ayuni Fernando*

This survey research concentrated on the process of online education, which is a recently introduced in Sri Lanka, and its effectiveness. The research conducted a survey and distributed questionnaires among seventy students and teachers who use the online educational hub very often. The questionnaires were provided to the students of five different grades and the teachers to get variable reviews and the survey was conducted through social media expecting for effective responses. The availability of Internet facility, and devices were also focused by the research to find out how does the online education effect and benefit the users. It was found that those who have the appropriate devices do prefer online education over the physical education. Then the project compared the online educational and on-site educational platforms. About 70% of the responses were in favour to the online academic complex. When comparing the online and on-site educational modes, the research was able to observe that a large number of students and teachers use the online platform to learn or to teach. Many students prefer online education, due to the reason of travelling from a far distance. These observations state that the online educational method is effective than the on-site educational method and also online education reduces the wastage of time and money that is spent during physical classes.

**Keywords** - online, on-site, educational platform, effective, user

## ASCR04

### **Development of a novel processing method to improve the sensory quality of green tea and comparison of green tea processed by different methods in Sri Lanka.**

*Kaveesha Rajapakse*

Green tea is a popular herbal beverage rich in a variety of important plant chemicals that are proven to have number of health benefits. Though Sri Lanka is famous for branded black tea in the world market, Sri Lanka does not produce the best quality green tea, based on the sensory properties. Even though several physical and chemical parameters in green tea are used to determine its quality, preference of the consumers on the sensory parameters can also be used as a method of quality assessment. There are several processes to produce green tea in different countries and those methods contribute to develop unique sensory characteristics. Inactivation of polyphenol oxidases, a group of enzymes present in the fresh tea leaves is vital to process good quality green tea. These enzymes get activated upon tissue damage and lead to develop brown colour, black tea aroma and black tea flavor due to promotion of fermentation. Therefore, in green tea processing polyphenol oxidases are inactivated using different heat treatments and the process is referred to as blanching. After blanching, tea leaves are rolled and dried in dryers, under the sun or shade. This research was carried out to improve the sensory quality of green tea by drying tea leaves under low temperature conditions using a refrigerator after blanching, assuming low temperature would preserve its colour aroma and the flavor compared to the other drying methods. Accordingly, eight different green teas were produced following two industrial methods, two cottage-scale methods and four refrigerated drying methods with or without a blanching pretreatment. Green tea samples were brewed with boiling water and the tea liquor was analyzed for the sensory parameters using 12 panelists. The highest preferred colour in brewed tea liquor was found in green teas processed by blanching in hot water followed by shade drying and blanching on a hot pan followed by refrigerated drying, compared to all the other green teas tested. Steam blanching followed by oven drying and hot water blanching followed by shade drying were also exhibited a similar preference for flavor, to the green tea processed by blanching on a hot pan followed by refrigerated drying. Overall the highest preference for all three sensory parameters including colour, aroma and flavor, was observed for the green tea processed by hot pan blanching followed by refrigerated drying, which is one of the refrigerated drying methods introduced in this research. It can be presumed that hot pan blanching is a better method to inactivate polyphenol oxidase enzymes compared to the other blanching methods and refrigerated drying preserves volatile compounds that are responsible for flavor and aroma in green tea compared to the other drying methods with elevated temperatures. Finally, it can be concluded that hot pan blanching followed by

refrigerated drying is a novel low temperature green tea processing method to improve the sensory quality of green tea at an affordable price.

**Keywords** - Green tea, Sensory quality, Aroma, Flavour, Blanching, Polyphenol oxidase

## ASCR05

### **Study on effects of pet therapy on human blood pressure levels and human mental health.**

*K.D.Ramanayake, T.L.Bandara, M.R. Jayasinghe, A. Mallikarathne, T. Thilakaraathne, P.D. Ariyawansa*

Pets provide their owners with both physical and emotional benefits. Therefore, Pet therapy is a medically approved method of diagnosis, in which adore animals are brought to visit confined humans, such as children in hospitals or people with mental disorders or elders in nursing homes, or even people who have gone through extreme surgeries. Pet therapy utilizes trained animals and handlers to achieve specific physical, social, cognitive, or emotional goals with patients. Our study will concentrate on examining the variations in blood pressure levels when people interact with pets and the advantages of pet therapy in managing noncommunicable diseases like stress and hypertension.

Under the direction of Dr. Arjuna Thilakarathne and the medical staff of Peradeniya Hospital, a specific patient group's blood pressure was monitored as they interacted with a set of fish bowls and a kitten that was introduced in accordance with our preferences. Blood pressure readings were recorded on 15 patients with impairments. According to the graphs and charts that show the results, 12 patients had low-pressure counts when compared to the pressure readings that were recorded before the trial. Variations around healthy blood pressure readings of 130/80 give a positive note to our research findings. Due to a few exceptions and testing mistakes, the other 3 patients exhibit positive deviations. Sex, age, drugs, disease count, and patient diet control are just a few examples of the exclusions from taking blood pressure. We are eager to enhance our method for gauging pressure levels and extracting precise data. The remarks of patients from the psychiatric ward were collected for the research's next phase under the supervision of Dr. Vipula Wijesinghe, a psychiatrist at Peradeniya Hospital. According to observations and final comments, the majority of patients admitted for illnesses such as anxiety disorders, depression, bipolar disorder, post-traumatic stress disorder (PTSD), schizophrenia, eating disorders, disruptive behavior and dissociative disorders, and neurodevelopmental disorders. The questionnaire results included comments about the advantages of owning a pet as a treatment for the aforementioned illnesses. The study work's observations part also includes attachments including voice clip excerpts, comments, and patient image attachments. The following collection of observations was collected at the Kundasale care facility. Foster children, elderly individuals, and those with disabilities had the opportunity to interact with a cat and a dog (a Golden Retriever) under the care centre's medical staff's supervision. A survey was done with a sample size of children and seniors, and observations and medical records were obtained. The most common responses were that having a pet improves mental health, keeps our feelings alive, and offers us hope. In conclusion, the research topic "effects of pet therapy on human mental health and blood pressure variations" is a good opportunity for society to comprehend the value of owning a pet. One of our goals is to raise public awareness of pets and the benefits

of pet ownership from a medical standpoint. Some noted observations of the benefits of owning a pet include improved patient satisfaction, energy levels, self-esteem, and mood, as well as decreased depression, increased motor skills and movement, improved social skills and verbal communication, decreased boredom, and a more optimistic outlook. Because all animals seek and give affection, which is very healthy for our mental health, it is our job to care for each and every animal, whether it be a stray puppy or a golden retriever.

**Keywords** - Pets, Pet therapy, Blood pressure, Mental health

## **ASCR 06**

### **Development of eco-friendly edible tableware using food waste- by adding natural flavours and natural colours**

*J.H.N.T. Hansamali*

Development of edible tableware is a relatively novel concept in which involves cups, plates, saucers and cutlery which can be consumed with the meal. Post-purchase food loss in Sri Lanka is fairly high. It is observed that tons of food, especially rice and bread go wasted every year. In the past left over rice used to prepare snacks and various other foods, thus minimizing the loss. However, at present no one is interested in utilizing. Furthermore, use of plastic in the country is another serious issue. Plastics are highly persistent and as a result they stay without being degraded for hundreds of years. Heavy usage of plastic bags has led to many environmental issues as they clog drain leading to stagnation of water, thus paving way for mosquito breeding and many environmental issues. In this backdrop the current project was carried out with the aim of developing tableware using household food waste. The tableware was developed using dried rice flour, dried bread flour, small amounts of salt, pepper, curry leaf powder, cinnamon powder and rosemary oil. The mixture was kneaded into a dough sheet and different cutleries were cut out using molds and add different solutions of colour.

The resulted cutleries were dried in an oven for 20 minutes at 200 °C. The storability of the cutleries was monitored by keeping them at ambient conditions for a period of three months. No mould growth, colour or flavor change was observed during the three-month storage period. This study concludes that edible tableware such as plates and cutleries can effectively be made using rice and bread that go into waste. Furthermore, it can be concluded that tableware produced using food waste can be stored for nearly three months safely. Production of tableware using food waste can be suggested as an environmental friendly alternative for the use of plastics.

**Keywords** - Plastic, edible, cutlery, tableware, culture

## ASOR01

### **How does Proximity affect Stellar Scintillation? [A study conducted by examining M-Type spectral class stars]**

*W.W.M. Ruvindi Wekadapola*

The goal of this study is to investigate how the observer's proximity to a star influences the scintillation process and to evaluate the apparent distance of a star from the earth using its scintillation intensity. Considering stellar scintillation, this research examined the apparent magnitude, absolute magnitude, and distance of stars. As a result of this research, an equation for scintillation frequency was constructed using M-type spectral class stars. And a catalogue was created using that scintillation frequency formula, which also will assist many astronomical observers in their work.

**Keywords** - Stellar Scintillation, Distance, Catalogue, Scintillation Frequency, light years



## ASOR3

### **Dealing with Diabetes and, To Develop an Artificial Pancreas**

*Aknula Lankeshwara, Shenethra Darandakumbura, Riviru Manthilake, Pawan Niyandagala, Yasitha Pahalage, Dulane Samarakoon*

People with diabetes must manually inject insulin into their body after each meal, as well as monitor and adjust their dosage depending on their blood glucose levels and activities. This tedious process is a regular part of life for those with diabetes. Fortunately, improvements in insulin pump and glucose sensor technology have led to smarter "hybrid loop" systems that can automatically adjust and administer insulin in response to changes in blood glucose levels. Because this type of system attempts to mimic the way the human pancreas works to regulate blood glucose, it is sometimes referred to as an artificial pancreas. The research conducted explores some of the complexities engineers and scientists face as they develop artificial pancreas technologies such as adjusting the pump according to the time period over which insulin works etc. It also demonstrates a model version of this artificial pancreas system.

**Keywords** – diabetes, hybrid loop, blood glucose

## ASOR06

### Energy and Future of the Universe

*W.M.E.G. Pavithra Bandara Elliyadda*

Energy crisis was a big topic in discussion lately in Sri Lanka. This is mainly due to economical interruptions. But this is a problem that Humans need to face globally in one day. Also, the way now energy generated has very bad impacts for earth. If it will keep happening the future of the world will be a tragic. Since energy is crucial to maintain life on earth, this catastrophe needs to be solved. The correct understanding about energy is a way how we can approach this problem. The energy generation statistics is the way case to investigate what's the best option. In global aspect, the ecological problems are rising day to day and there isn't any way to stop this rather than modifying our energy sources. Energy generation is the main contribution for climate change. How energy works and how it'll affect our future is a way we can educate people about this problem. In this approach I dived deep into the concepts of energy and how it's behaving all the way up to definitions. One of the main goals of this is to make public awareness in our country. Everything in universe relies on energy. In present, human energy consumption is increasing with the population. Food is the main source of energy for most living beings to sustain their life. The foods get their energy from sun. In earth, most of the energy we consuming coming from sun. It is the reason for life to exist in earth. And it is the greatest energy source we have in the least distance. Rather than foods, the humans as a civilized society use energy for countless number of applications. We are using energy to make comfort and sustain our lives. This begun as humanity discovered fire and keeps going to the advanced technology now we have. As population rises the energy need of the world become increased exponentially. The first industrial revolution happened in about 1750. According to historians there are three things need for in order to initiate industrial revolution. The most crucial one is a new energy source. For first revolution it was coal and it was used power up steam engines. In second industrial revolution which happened around 1870, it was electricity generated by fossil fuels. In present it is stepping into third revolution which uses Smart equipment and Internet and many other. According to the data that I analysed it should be the Nuclear Power and Renewables will be the future of Energy. The world needs to switch to these energy types and need to reduce the use of deadly Fossil fuels. Green lights are ahead because in present this is one of the major topics that people discussing on. What's happening on microscopic level will solve so many mysteries about how energy works. This can explain how it distributes and what qualities do efficient fuels need to have. And what the fuels in future will be. Also in future, Humans will civilize other planets which will be then having huge technological development than today. In that time also the energy needs will fulfilled by giant mega structures.

**Keywords** – Energy, Green energy, Energy and Universe

## ASOR9

### **Effects of prolonged mask usage on patients with Respiratory disorders. (Regardless of Covid-19 virus)**

*Dinu Dissanayake*

This research was conducted over the effectiveness of the prolonged usage of the face mask on patients with respiratory disorders. It's a known fact that through the usage of the MNC (Mouth and nose covering) mask any cure cannot be gained but prevention for a certain extent by getting infected by disorders which are caused by external factors including droplets and polluted air irritants. In fact as the whole world of people was compelled to wear mask during the Covid-19 epidemic considering the guidelines provided by the WHO, both the respiratory patients who did and didn't wear a face mask earlier also had to wear a face mask. Through this study which was conducted by considering a sample of 60 patients with respiratory disorders, the weakness of the social awareness on the positive effects of the mask before the covid-19 period, how the mask usage positively affected the respiratory patients varied according to their face masking frequency, demographic factors such as their (age and sex), the special health conditions such as , autism spectrum disorder, low motor skills (which directly affected their face masking habits and awareness), low immunity levels and breathing difficulties were tracked by conducting an interviewer based verbal questionnaire and by examining the hospital admissions frequency of the sample of respiratory patients and then comparing those statistics taken upon both before and during the face masking period. Furthermore, this study resulted that the respiratory patients who wore the mask during Covid in a frequent mannerism got astonishingly positive effects on their disorder which was not a cure but prevention provided by not getting infected by any other disorders which in a way could worsen their disorder, the frequency of their disorder getting worsen, the number of the hospital admissions or visiting a general practitioner were utterly decreased. Apart from the targeted results that were listed under hypothesizes, which have mentioned this study resulted in so many other imported investigations. This research resulted that females has had better mask using habits throughout the pandemic and most of the respiratory disorders were inherited and also worsen by external factors by time. As I could track that most of the respiratory patients were not asked to wear a mask even though it was clear that they could get a good prevention through it or they have ignored the instructions provided by the medical officer by refusing to wear a face mask due to different reason mostly such as social anxiety. Also I could track an important result that some people, who suffer from respiratory disorders which are not inherited, are patients of non-communal disorders.

**Keywords** - Respiratory Disorders, External factors, face masking frequency, disorder getting worsen, non-communal disorder.

## ASOR12

### Underutilised fruits and tubers of Sri Lanka

*Sayumi Munasinghe, Tharushi Nethmini, Dinali Doolwela, Apoorwa Bandara, Nimnadi Dissanayake*

Underutilised plants species have local or regional importance, but generally lack recognition and appreciation, the underutilised crops are the plant species that are traditionally used for their foods, fibre, fodder, oil or medicinal properties. However, those species have under-exploited potential to ensure food security, nutrition, health, income generation and environmental services, not only that the potential role of underutilised plant species to contribute to global food security and nutrition. Buffering against the consequences of climate change. But the main issue is the lack awareness of school students about underutilised fruits and different kind of yams. The data collection methods were observations, interviews, questionnaire, document analysis. This study reveals the importance of underutilised fruits and traditional yams in many ways. Such as health benefits preventing heart diseases, cancers, high blood pressure, diabetes etc.

Many important bioactive organic properties included in underutilised fruits and yams like Antioxidants as well as other nutrients and they may help us preventing diseases with fighting against free radicals when comparing other fruit with Himubutu has antioxidants up to some certain extent and Dandila is a kind of yams has considerably high amount of Antioxidants than other kind of yams. Samples were taken among other underutilised fruits like Lovi, Mora, Uguressa, Welianoda, Madan. Himubutu is a very good rare underutilised fruit and Dandila also very rare one of other yams like Hulankeeriya, Buthsarana, Bathala, Red Bathala, Ini Ala, Nelum Ala, katu Ala, Raja Ala, Kalu Ala, Manioc.

**Keywords** – Underutilised, Antioxidants, Dandila, Himubutu, food security, bioactive, Lovi, Mora, Uguressa, Welianoda, Madan, Buthsarana, Bathala, Red Bathala, Ini Ala, Nelum Ala, Katu Ala, Raja Ala, Kalu Ala, Manioc



## 03. Social science – Research Abstracts

### SSCR01

#### **Disordered Eating; The First Steps Towards an Eating Disorder**

*Lashini Pethiyagoda*

Eating disorders (ED) are by far the least discussed and least known subsection of psychological disorders in Sri Lanka. An eating disorder is simply a condition where the person suffering exhibits severe disturbing behavior related to eating habits, accompanied by distressing thoughts and emotions. The question this research aims to answer is; how often does disordered eating show up in young adults, and what are the outcomes of these behaviors.

The methodology used was a google form which was a questionnaire collecting data from 100 participants (between the ages 13 and 25), a basic literature review, and an interview with a psychiatrist. Out of those who participated in the survey, 79 were female, 11 were male and the rest were of other genders. The majority of the participants fell into the age group of 17 – 20.

According to the survey, it was discovered that a significant number of participants exhibited disordered eating habits and unhealthy relationships with food and their body. Furthermore, there was a lack of male participants in the online survey. Finally, the results of the survey were compared to the literature review and interview. The study of outcomes of disordered eating could not be carried out to term as there was less information to build up the certain conclusion on. However, it is quite clear that many young adults exhibit disordered eating habits that could easily lead to eating disorders. By conducting a survey, interview, and literature review, it can be concluded that; a significant number of young adults exhibit disordered eating habits which could lead to eating disorders.

**Keywords** – Eating Disorder, Disordered Eating

## **SSCR02**

### **Monkey menace**

*Akeeshi Baduraliyage , Omandee Dissanayake , Himaya Perera*

Monkeys are a menace to the school. As solutions we provided a few methods to avoid them but also not harm them. We also invented a siren using the latest technology that will scare them of without harming them. Sadly, we didn't have the budget to make it but hopefully someone in the future will use our idea and make the world better. We found out why monkeys come to our homes and where they come from we also found out how to monkey-proof our home.

**Keywords** - Monkeys, technology

## SSCR04

### **Different views of students on self- study.**

*Dahamsa Arambegoda, Methmini Gunasekara, Imandi Palihawadana*

Self-study is a method of learning in which students direct their studies outside of the classroom and without direct supervision. Our problem here was how easy self-study is. Many students find it difficult to engage in self-study outside of school. Therefore, we polled the selected students for that purpose. We decided to prepare a questionnaire to ask for opinions. Then we gave those questions to selected students and got their answers. We collected data from selected students representing schools in a small area of Kandy district. We give them some time for them to give us the answers. Here are the results we got; most of the students selected for our sample answered that school education is easy . But self-study is very easy and useful when you can't go to school. But according to our data, we found that it is not 100% as good as schooling, about 60% successful. Based on the answers of the students, we can conclude that it is a successful learning method that can only be used for a short period of time and can be used as a solution when not going to school. We have come up with some suggestions for students to improve their self-study process. [They are, Study in a different way, Self-realization, make notes every day, Test yourself regularly, watch videos related to the subject you read.

**Keywords** - Difficult, Direct Supervision, Neglected, Mostly Successful



## SSCR05

### **Tourists Perception of Post Pandemic Tourism in Sri Lanka**

*Apsara Wijesekara, Dulanji Amunugama, Sathmi Galagama, Panchali Wijesundara, Yashushi Kumarawadu, B.M.I.U.K. Bandaranayaka*

Sri Lanka is a popular tourist destination across the world, because of its great tourism industry. Sri Lanka is well known for its unique wild life and the rich biodiversity, golden beaches, tropical forests, rich cultural heritage and for its amazing landscapes. Tourism industry has fallen drastically after the COVID-19 pandemic and it is considered as one of the major reasons to the prevailing economic crisis in the country. After two years of limited recovery the tourism industry is affected by to the latest crisis of long duration power cuts, fuel shortage and the protests against the government. A survey was conducted to collect data for a sample of 100 people including tourists and tour guides. Based on the gathered information, it is clearly visible that majority of foreign tourists refuse to visit Sri Lanka due to the current situation, while only 30% of foreigners having positive thoughts. But it was also noticed that regardless of the crisis, tourists love Sri Lanka very much as they could get a diverse range of experiences with local culture and cuisine. Several online sources and Sri Lanka Tourism Development Authority website [SLTDA web] were used to collect statistical data. Based on the findings of the research, it clears that government and relevant authorities try to mitigate these problems in order to attract more tourists towards Sri Lanka. Also the contribution of ourselves as citizens in this situation is another crucial factor. In addition to spreading good words Sri Lankans could also use social media platform to create awareness among tourists.

**Keywords** - Tourists, industry, Sri Lanka, Crisis

## SSCR06

### **A Study of the Effect of the Covid-19 Vaccination Program on the Youth Community of Sri Lanka**

*Rashini Vihanga Senevirathne, Ayuni Senanayake, Achini Wijethunge, Dinsara Ariyawansa, Sathmika Gunawardhana, Laknath Bandara*

The Covid-19 vaccination program, carried out using multiple vaccination types in Sri Lanka has been one of the most successful programs in the world. Now after 2 years from the viral pandemic, in the midst of the ongoing vaccination program we have carried out this study to determine the effectiveness of the vaccination program and its effect on the youth community of Sri Lanka. While we carry out this study in multiple avenues including side effects, mental health and attitudes of the population set of individuals between the ages 16 and 22, we have used anecdotal reports from subjects as well as information provided by the government to tabulate this information. This study sought to identify the prevalence of side effects due to the vaccine in the youth community, to identify whether the youth community is reluctant for vaccinations and their opinions on side effects of Covid-19 vaccines and to determine the level of awareness for vaccines in youth community through an online survey through which data was collected over a 2 week period. This study report includes the summation and descriptive statistics of the responses of 200 subjects of which more than 50% of them belong between the 25th and 75th percentiles of the afore mentioned population set, island wide. Of the subjects 56% were female, 42% were male and represented 7 out of the 9 provinces in Sri Lanka. We have concluded through the results of the survey that the vaccination program was a huge success in the youth community and that it was an excellent tool in mitigating the risk of the Covid-19 pandemic. We can also conclude that there is a high level of awareness regarding the vaccine in the youth community of Sri Lanka. Apart from the common side effects including acute soreness at the site of injection and fever several uncommon side effects such as hair loss were observed. So, we can conclude that effects of vaccines on the youth is ambiguous as we haven't fully understood about side effects and the probability of their appearance. The study was carried out in affiliation to the research units of Kingwood College, Kandy and Mahamaya Girls' College, Kandy.

**Keywords** - Vaccine, Covid-19, Side effects, Youth, Immunization, Community, Survey

## SSOR01

### **Finding the basis on which students choose A/L subject stream**

*K.A.L.J. Kulathunga*

In the Sri Lanka education system, there are 3 main stages. They are Primary, Junior Secondary and Senior Secondary. When the students shift from junior secondary to senior secondary, they are getting an opportunity to choose their A/L subject stream. There are four subject streams in AL exam. They can be introduced as arts stream, Science Stream, Commerce Stream and Technology Stream. Most of the students are choosing their A/L subjects without any concern or acknowledgment. So, I carried out my research to find the basis of which those students choose A/L subject streams. I took samples of the age group between 18 and 16 students who are doing A/L and O/L. Also, I got half of the sample from boy's schools and the other half from girl's schools. I checked them throughout a google form questionnaire. According to my research I found that most of the students choose their A/L subject stream just thinking only about their convenience. Only a few of them think about their future job or their skill. This may escalate to acute job shortages in the future. Also, none of them will follow their own path as they ignore their talent. Because of this their future will not be very stable and the country will lose the talented people in some fields. There are several possible solutions for this. Before students choose their A/L subject, they can be informed about the new job opportunities which have arisen nowadays and the teachers or the relevant education authorities can inform the students about their skills and also they may help students to select the appropriate scope for them. So, I hope the findings of this research can be useful for the relevant educators to identify the basis of the student selection in A/L subject streams.

**Keywords** - basis, A/L subjects, job opportunities, job shortages, skills, educator

## SSOR02

### **Today a Reader Tomorrow a Leader: A Study on the Reading Habits of School Children**

*Pinidi Omaththage, Disini Thilakarathne*

Reading is the ability to understand something written using letters and symbols. Reading is a complex process that involves the brain. Reading, writing, speaking and listening are the basic language skills of humans. Out of these, reading is considered the most important skill, because it is the best way to spread knowledge among humans. Reading is the ability to understand something written using letters and symbols. Reading is a complex process that involves the brain. Reading, writing, speaking and listening are the basic language skills of humans. Out of these, reading is considered the most important skill, because it is the best way to spread knowledge among humans. The aim of this study was describe the reading habits of schools children. The research study was carried out by collecting data using a questionnaire in Google forms. Data analysis was done using Microsoft Excel. According to this study 80% of the study group reads books that are not related to lessons. 74% reads additional books related to school work. 82% reads to enjoy. 19% of the group likes reading very much and 78% likes reading quite a bit. 40% of avid readers say that they got the ability to read with parental guidance. 45% of the study group reads 4 or more books per month while 46% reads 2-3 books per month. 38% consider reading as their best hobby. According to these results a reasonable number of participants are having a good interest for reading. 84% of the study group gets books from libraries. 54% has a library membership other than the school library. Considering the library facilities at school 67% says they don't have enough time to spend in the library. 47% says the library doesn't have enough books. It gives an idea about the importance of improving library facilities for children. In conclusion, the hypothesis that children nowadays don't read much, is not proven correct.

**Keywords** - reading, reading habits, school children

## SSOR03

### **The Effects of a Constructivist Teaching Approach on Student**

*S. Kaushini, M. Samaraweera, R.M.D. Minduli Ratnayaka, Anjani U. Ranasinghe*

Constructivism has been widely adopted as a referent for research, curriculum development and recommended pedagogy in education. This chapter considers key issues relating to the adoption of constructivist thinking in education which has arisen within the field of science education. Constructivism has been mooted as a dominant paradigm in science education, where it has informed a major research programme over some decades. However, the application of constructivist ideas in science education has also been subject to a range of critiques. This chapter gives an outline of the developing influence of constructivism in science education, and the common understandings of the term in relation to science teaching and learning; it reports on the main areas where the influence of constructivist thinking has been heavily criticized, and discusses how these criticisms are countered within the research programme; it considers some major directions for research within the research programme; and it evaluates the level of influence of constructivism in contemporary science education practice. The purpose of this research is to present a brief review of the various streams of constructivism in studies of education, society, science and technology. It is intended to present a number of answers to the question (what really is constructivism?) in the context of various disciplines from the humanities and the sciences (both natural and social). In particular the discussion will focus on four varieties of constructivism: philosophical, cybernetic, educational, and sociological. Constructivism has been widely adopted as a referent for research, curriculum development and recommended pedagogy in education. This chapter considers key issues relating to the adoption of constructivist thinking in education which have arisen within the field of science education. Constructivism has been mooted as a dominant paradigm in science education, where it has informed a major research programme over some decades. However, the application of constructivist ideas in science education has also been subject to a range of critiques. This chapter gives an outline of the developing influence of constructivism in science education, and the common understandings of the term in relation to science teaching and learning; it reports on the main areas where the influence of constructivist thinking has been heavily criticized, and discusses how these criticisms are countered within the research programme; it considers some major directions for research within the research programme; and it evaluates the level of influence of constructivism in contemporary science education practice.

**Keywords** – Constructivism, education, research, Science

# SSOR04

## Covid-19 ආගමනයක් සමඟ වෙනස් වූ කුණු ජීවන රටාව ළමා මනසට කළ බලපෑම කෙසේද?

කේෂලා දිසානායක, ධනංජී ගඟමිණි ද සිල්වා, පවති නිසඳිමා බණ්ඩාර, යසස්මි අධීෂා අස්වැද්දුමගේ, කාවින්දී සන්සරණ රණතුංග

Covid-19 ආගමනයක් සමඟ වෙනස් වූ ජීවන රටාව අධ්‍යයනය තුළින් සිදු වූ සෘණාත්මක බලපෑම් හා ධනාත්මක බලපෑම් සොයා බැලීමට අපි මෙම පර්යේෂණයේ නියැලුණෙමු. එහි දී ඇති වූ සෘණාත්මක බලපෑම් ප්‍රමාණය වැඩි වුවහොත් ඊට පිළියම් යෙදීම අත්‍යවශ්‍ය වේ. Covid-19 ආගමනය ළමා මනසට බලපෑ ආකාරය පිළිබඳ විවිධ මත පැවතුන ද එය පැහැදිලිව හඳුනා ගැනීමට ලංකාව තුළ පර්යේෂණ කර නොතිබූ හෙයින් මෙම පර්යේෂණ සිදු කිරීම වඩා වැදගත් වේ. එම නිසා මෙම ගැටලුව නිරාකරණය කර ගැනීමට අපි මෙම පර්යේෂණයේ නියැලුණෙමු. මෙම පර්යේෂණය කිරීමෙන් අපගේ අරමුණ වූයේ Covid 19 ආගමනය ළමා මනසට සිදු කළ බලපෑම් සොයා බලා සමාජයට එමඟින් සිදු වූ යහපත සොයා බල අයහපත අවම කිරීමට පිළියම් ඉදිරිපත් කිරීමයි. මෙම පර්යේෂණයට අවශ්‍ය තොරතුරු ලබාගැනීම සඳහා මනස, අධ්‍යාපනය, ආර්ථිකය සම්බන්ධ ප්‍රශ්නාවලියක් ඇතුළත් ධ්‍යද්ධකැ ඤරප වයස අවු: 10 සිට අවු: 20 දක්වා සිසුන් අතර හුවමාරු කරන ලදී. එයින් ඉතමත් සාර්ථක පිළිතුරු අපට ලැබිණි. එම තොරතුරු තුළින් එසමයෙන් පසු ළමුන්ගේ ජීවන රටාව හා අධ්‍යාපනයේ වෙනස්කම් විශ්ලේෂණය කළෙමු. මෙයින් අපට අනාවරණය වූයේ ළමුන්ගේ හැසිරීම් වෙනස් නොවී ඇති බවත් අධ්‍යාපන මට්ටම වෙනස් වී ඇති බවත් ය. ලාංකික භෞතික ඉගැන්වීම් ක්‍රමය තුළින් ළමුන් අතර ඇති වූ සුපුරුදු තරගකාරී බව අවම වීමත් ගුරුවරු සමග තිබූ සබඳතා අවම වීම නිසාත් පාසලේ හොඳ මට්ටමක සිටි ළමුන් ද පහත වැටීමට හේතු වී ඇති බව දක්නට ලැබේ.

මෙ අනුව “Covid-19 ළමා මනසට සිදු කළ බලපෑම්” යන පරාමේෂණය සිදු කිරීමට පෙර තිබූ කල්පිතය වෙනස් කරමින් “ ළමුන්ගේ ජීවන රටාව හා හැසිරීම් වෙනස් වීමට කොරෝනා අර්බුදය බලපා නොමැති බවත් ශ්‍රී ලංකාවේ අධ්‍යාපන ක්‍රමයට මෙමඟින් බලපෑම් ඇති වූ බවත් අපට නිගමනය කළ හැක.

මූලපද - Covid-19, බලපෑම්, ආගමනය, අධ්‍යාපනය, ජීවන රටාව, ළමා මනස

## SSOR06

### **Effects of Internet-Based education in Sri Lanka**

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Sri Lanka was known to be a country that only accepted the traditional way of teaching. However, Sri Lanka managed to rank 39th in the literacy rate in the world. When government decided to shut down schools with the covid-19 outbreak, schools started to use internet-based education. For some students, it was convenient and for some students, it was useless since they couldn't afford for such kind of education. In order to find out if internet-based education is suitable for Sri Lanka, we conducted 2 experiments. One to find the opinion of teachers and parents. Another to find if Sri Lanka's internet quality is suitable for internet-based education. After we finished our experiments, we found out that teachers and parents loved internet-based education. But, after examining the results of the second experiment, we realized that Sri Lanka's internet quality was indeed low (especially when it came to rural areas.). As we were running out of time, half of the results of the second experiment were obtained by getting the information via our team's relatives living in those areas (not by an online survey.). But, we think that we managed to get accurate results. In the end, we concluded that internet-based education is 80% suitable for Sri Lanka. Since many families which live in rural areas are moving to urban areas to deliver their children a better education there are very few families which have school-going students in rural areas compared to the urban areas.

**Keywords** - Education, Internet, Student

## SSOR7

### **Influence of K- dramas and K-pop in Sri Lanka**

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The rapid spread of K-pop in our country has made a great impact on our people. More and more students in our schools are being influenced by the groove and rhythm of K-pop music and films. K-pop fits in our generation particularly in the 21st generation which has already accepted the K-pop civilization.

Most schools in the Sri Lanka have been also conquered by the K-pop drama, it has ruled the school. K-pop generation is caused by globalization through the use of internet. That is why most of us people are updated in the happenings in our world. And like many other organizations in the internet, organizations' regarding K-pop is one of them. Facebook, Twitter and many other are social networking cities where group of people in favor of K-pop are present.

We had made questions concerning about what are the psychological effects of K-pop and will it affect the academic performance in the students in our schools. We gathered concepts regarding pop culture (how Korean drama is accepted and talked from the people) and fandom theory (how fandom was utilized and enacted throughout people) to further analyze and to complete this research. This study will contribute for better understanding of people about the significance of K-pop on the fans, and how it will affect people's lives.

**Keywords** - Students, K-pop influence, Globalization



## **SSOR08**

### **Online Education And Students**

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Briefly this can conclude how online education has effected students in both favorable and unfavorable ways. When using devices, good or bad should be identified by the students, so we as students should try to use the device properly with the advice of adults. It can also be concluded that more number of students do not like online education.

**Keywords** – Online education, device, adults

## SSOR09

### **Major factors affecting the mental depression of secondary school students in Kandy city limit.**

*Shashendra Thilakarathne*

Depression is recognized as one of the major public health issues affecting millions of people worldwide in this regard, one particularly vulnerable group is young adults. Several studies have highlighted the increasing levels of depression symptoms among young individuals. This study is mainly targeting to find and identify the major factors which are affecting mental depression of secondary school children in Kandy city limit. Secondary school children are the generation which will undertake the future of the country as well as economy of the state. Through the research following factors were identified as the major factors for affecting mental depression among secondary school children in Kandy city limit. Exams, The competition between students, Family problems, The caged life and loneliness, Parental Pressure, Financial worries, Bullying or abuse and past experiences.

**Keywords** - Mental Depression, Secondary School Children, Kandy city limit, Factors affecting for mental depression.

## SSOR10

### **The changes in the human lifestyle of Sri Lanka with Covid-19**

*J.G.Sithum Pahasara ,Dinath Mandiv, Pulitha Sethnindu, Tadeesha Nithesh Binuditha, Nisandu Athsara, Jinuka Nethvindu*

The headline during the past few years was Covid 19 break out which started in late 2019. With the arrival of Covid 19 to Sri Lanka new safety rules and regulations came into practice. Our research's, "Change in human life style of Sri Lanka with Covid 19" aim was to identify how people have changed their lifestyle plus the way of thinking. In order recognize one by one these changes, the research was divided into sections. The main experiment of our research was done through a digital questionnaire using a popular method. Through simple questions we were able to gain and overall cover-up about our theme. The data collection processed gave us some so many important facts. The next experiment done through close observations helped us to prove our conclusions and furthermore helped to clear doubts. Through the analysis of data gained, we were able to address the question in an orderly manner. Online questionnaire was distributed using social media where we obtained a crowd more than 100. The questions were categorized into main categories. The main category was health based changes. Here we targeted new health habits and practices came up during last few years. It was significant that even at present where the Covid 19 risk has goes to a minimum level, a total of 42.2% still tend to where masks while nearly 45% said that they wear mask on public gathering sometimes as a practice. The use of sanitizers, practice of health habits like washing hands are appreciated by many after an outside walk. Through observatory experiments conducted it was visible that people maintain a proper distance within banks, supermarkets and much more as companies try to maintain their customer satisfaction and standards. The next focused area was education based changes within past years. Simply everything has gone online.

Through the data collection methods, we asked our audience to rate how you feel about online learning and working in range 1-5 or more than 75% rated it as more valuable than physical learning. Furthermore, it was significant that many attain online tuition classes rather than physical ones now a day. Online working is also still in use to gain and larger employee service. Studies done showed us how cultural norms have come close with the time. Many new trends came up during the time where covid safety rules were activated. These changes affected us in many ways. During the research we considered how new cultural food and beverages came closer to our daily routine. We were able come to conclusions that nearly 50% of the people appreciate these changes and taken as a habit to use them further. The later part of the research took a concern on how people have come up with new hobbies like home gardening etc... The responses taken using depicted than nearly 40% of citizens has gain the habit of engaging in a home garden plus many have taken/taking an economical benefit of it as well. Other new hobbies include interests in IT field technologies, stamp collection, electronic designing, playing music instruments etc... At last what we took to consideration is that how economy and relations have been affected mainly in

focused areas. The results emphasized that many had face various problems in withstanding economic crisis that came up. Many said that during these periods in order to overcome challenging situations they came up with new occupations and new ideas which are still in use. Through focusing general ideas of how people think about their relationships at present after effects of corona virus spread, the results gained were different from each other. Some said that their relationships between the family member grew stronger while outside relationships and their spiritual wellbeing went down. Another group of people informed us that both the interpersonal social and spiritual wellbeing grew stronger. In conclusion this is due to different thinking patterns. Through analyzing data, the most affected part of the society was recognized as people who live in urbanized areas. When taking aims and objectives of our research into consideration, hopefully we acquired conclusions as we expected. It is obvious that the society has been forced by both negative and positive forces. Overall it is clear that many of us have accepted the new lifestyle in a patient manner adapting to new changes. Looking at them by a positive angle has been able to gain much longer valid positive outcomes.

**Keywords** – Covid 19, Human life-style, new trends, changes in life, human life.

## SSOR11

### පිළිකා

කේ ජයසුන්දර, මහිලා ප්‍රේමරත්න, දනුශිකා නවරත්න, සෙනායා රත්නායක, නිමිතර වෙල්ලප්පිලි

පිළිකාව යනු 100 කටත් වැඩි රෝග ගණනාවක එකතුවකට ඇති පොදු නමකි. ඕනෑම පිළිකාවක් ඇතිවන්නේ අසාමාන්‍ය ජෛල පාලනයන් තොරව වර්ධනය වීමෙනි. ප්‍රතිකාර නොකිරීමෙන් බරපතල තත්ත්වයට සහ මරණයට වුව ද පත් විය හැකිය. පිළිකාව ඇරඹෙන්නේ ශරීරයේ කොටසක ජෛල පාලනයකින් තොරව වර්ධනය වීම නිසා ය. සාමාන්‍ය ජෛල මෙන් නොව පිළිකා ජෛලවල වර්ධනය වෙනස්ය. ජෛල මිය යාම වෙනුවට, පිළිකා ජෛල වැඩියෙන් වර්ධනය වී නව අසාමාන්‍ය ජෛල වර්ධනය කරයි. පිළිකා ජෛලවලට අනෙක් පටක තුළට ද වර්ධනය වීමේ හැකියාව ඇත . සාමාන්‍ය ජෛල හට එසේ කිරීමේ හැකියාවක් නැත . පාලනයෙන් තොරව වර්ධනය වීම සහ අනෙක් පටක තුළට වර්ධනය වීම යන කරුණු නිසා එවැනි ජෛලයක් පිළිකා ජෛලයක් ලෙස පිළිගැනේ. පිළිකා ජෛල සාමාන්‍යයෙන් ශරීරයේ අනෙකුත් කොටස් කරාද පැතිර වර්ධනය වී සාමාන්‍ය ජෛල වසා එතිරෙයි. මෙලෙස සිදුවන්නේ පිළිකා ජෛල ශරීරයේ රුධිර සංසරණය හෝ වසාගැටිති දක්වා පිළිකාසල වර්ධනය වූ විටය. පිළිකා වර්ධනය වන මෙම තත්ත්වය හඳුන්වන්නේ මෙටස්ටාසිස් යනුවෙනි. පිළිකාව වර්ධනය වන ස්ථානය කුමක් වුවද සෑම විට ම එය නම් කරන්නේ එය හට ගත් ස්ථානයේ නමින් ය. විවිධාකාරයේ පිළිකා හැසිර නිරන් විවිධ අයුරිනි. පෙනහළු පිළිකා සහ සමේ පිළිකා බොහෝ සේ වෙනස්ය. ඒවා වර්ධනය වන්නේ වෙනස් වේගයන්ගෙන් හා ප්‍රතිචාර දක්වන්නේ වෙනස් ප්‍රතිකාර ක්‍රමයන්ට ය. මෙම නිසා රෝගීන්ට ඔවුන්ගේ පිළිකා රෝගයට ගැලපෙන ප්‍රතිකාර ලබා දිය යුතු ය. බොහෝ පිළිකා කලින් හඳුනාගෙන ප්‍රතිකාර කළහොත් සුව කළ හැකිය. පිළිකා කලින් හඳුනා හොත් ඒවා ශල්‍යකර්මයකින් ඉවත් කිරීමට හෝ කීමෝ විකිත්සාව හෝ විකිරණ විකිත්සාව මගින් හැකිලිය හැකි තරම් කුඩා ය. ඇතැම් බරපතල පිළිකා ද ප්‍රතිකාර මගින් සුව කළ අවස්ථා ද ඇත . ඒ අනුව අපගේ පර්යේෂණ මගින් පිළිකා පිළිබඳව වැඩිදුර අධ්‍යයනයක් අප විසින් සිදු කර ඇත .

**සුවය** - පිළිකා, ජෛල වර්ධනය, පැතිර යාම, ප්‍රතිකාර ක්‍රම

## SSOR12

### **How Depression Impacts the Young Generation**

*Kavya Pallewaththa, Himaya Karunarathne, Sawandi Thennakoon, Helani Warakagoda, Abimani Wijekoon, Kalani Herath.*

Nowadays most people all over the world are having depression and among them, Young Generation is highlighting it. So we carried out our research on How Depression Impacts the Young Generation & Found some reasons why depression impacts the young generation more than the others in society. Youth depression is a serious mental health problem that causes a persistent feeling of sadness and loss of interest in activities. It affects how the teenager thinks, feels, and behaves, and it can cause emotional, functional, and physical problems. As a result of that suicide has become the fourth leading cause of death among the Young Generation all over the world. According to the World Health Organization, about 15% of the Young Generation suffer from Depression. We have collected data over 2 weeks through an online survey by collecting information from the Young Generation based on how they feel depressed and what are the reasons behind their depression. We also referred to websites, books, and research papers on the internet which is related to youth depression. During our research we get to know that enhancing alternatives to risk-taking behaviors, Strengthening an individual capacity to regulate emotions, and Manage stress by balancing studies and extra curriculum activities helps young ones manage their stress levels and reduce depression. So, we hope the findings of this research can be useful for youth to find a way to manage their depression & experience the best of their lives.

**Keywords** - Depression, Youth, Stress, Young Generation, Suicide, Survey

## SSOR14

### **88/89 JVP insurrections in the aspect of present Sri Lankan society and its impact on the modern society after three decades**

*Janindu Karunathilaka, Sadil Yamasinghe, Senura Illesinghe, Janiru Wijeecon, Harindu Dilsanda*

The growing disbelief about the current politics of Sri Lanka is observable due to the continuous failure of leading political parties in the country. In such an environment, Janatha Vimukthi Peramuna (JVP) is emerging in people's minds as a better option, but the role played by the JVP during 88/89 insurrection stand against in their way to success. Some previous research indicate that the ideology of JVP is misunderstood by the society whilst another shows that educated unemployment facilitated the mobilization opportunities for the Marxist-Leninist JVP for an armed struggle and were amplified by the Indo-Sri Lanka peace accords. Another research shows how Janatha Vimukthi Peramuna has won the will of people again after the insurrection. These studies had mainly relied on a one aspect and were conducted few years ago. At that time these research were conducted, circumstances were different from today and cannot mostly rely as they only reveal a one aspect of the insurrection. In this paper, we use both data obtained from the people and the former JVP members and we bring our conclusion based on the percentage of respondents who justify the 88/89 JVP insurrection and the reasons they present in justification. In this context we argue that the rise of JVP in late 1980s could be justified but the way they conducted is not justifiable.

**Keywords** - Politics, society, people

## SSOR17

### සමාජ මාධ්‍ය ජාලා අපගේ සමාජයට ඇතිකරන බලපෑම

දිනුම් වරකාගොඩ, කංසිකා ජයසිංහ, ටිනි රණසිංහ, සුදර්ශනී දිසානායක, වමල්ෂා බණ්ඩාර

ලොව සිදු වූ තාක්ෂණික විපර්යාසයන් සමගින් සියවස් ගණනාවක සිට මිනිසා විසින් දැරූ සන්නිවේදන උත්සාහයක ප්‍රතිඵලයක් වශයෙන් සමාජ මාධ්‍ය ජාල බිහිවීම සිදුවිය. පෞද්ගලික හෝ වෘත්තීය අවශ්‍යතා, ක්‍රියාකාරකම්, ජීවිත සම්බන්ධතා වැනි දේ අනෙකා සමඟ හුවමාරු කර ගැනීමට භාවිතා කරන වේදිකාවක් ලෙස සරල අර්ථයෙන් සමාජ මාධ්‍යය හැඳින්විය හැකියි. ජනගහනයෙන් බහුතරයක් සමාජ මාධ්‍යය භාවිතයට යොමුව සිටින අතර ඔවුන් එය සන්නිවේදනයේ මූලික පරමාර්ථ වන තොරතුරු සම්පාදනය, සමාජානුයෝජනය සහ විනෝදාස්වාදය යනාදිය උදෙසා නිතැතින්ම භාවිතා කරනු ලබයි. WhatsApp, Facebook, YouTube, Twitter යනු එවන් වූ සමාජ මාධ්‍ය වලට උදාහරණ කිහිපයකි. අද වන විට සමාජ මාධ්‍ය වර්තමාන මිනිසුන්ගේ ජීවිතයේම කොටසක් වැනිය. ඒවා නොමැති වූවහොත් අපගේ ඵදිනෙදා වැඩ කටයුතු පිළිබඳව සිතීම කිසිසේත්ම කළ නොහැකිය. කෙසේ වෙතත් සමාජ මාධ්‍ය වලින් සිදු වන වාසි මෙන්ම අවාසි ද ඇත. වැදගත්ම දෙය වන්නේ වඩාත් සැලකිල්ලෙන් මේවා පරිහරණය කිරීමයි. ඒ අනුව සති දෙකක පමණ කාලයක් සමාජ මාධ්‍ය භාවිත කරන පුද්ගලයන්ගෙන් සමග ඒවා ජීවිතයට බලපාන ආකාරය විමසා බැලීම මගින්, යදදටකැ ඤරපි හරහා ප්‍රශ්නාවලියක් සකස්කර මාර්ගගත ක්‍රමයට තොරතුරු එක් රැස්කර ගැනීම මගින් සහ පොත් පත් කියවීම මගින් තොරතුරු එක් රැස් කර ගැනීම මගින් සමාජ මාධ්‍ය ජාලා අපගේ සමාජයට සුදුසුද නුසුදුසුද යන්න අධ්‍යයනය කර එමගින් හඳුනාගෙන එම අහිතකර බලපෑම් වළක්වා ගැනීමට අපට සමාජයක් වශයෙන් ගත හැකි ක්‍රියාමාර්ග අපගේ පරීක්ෂණ ඔස්සේ අප විසින් ඉදිරිපත් කර ඇත.

**සුවිස** - සමාජ මාධ්‍යය, තාක්ෂණික විපර්යාසයන්, සන්නිවේදනය



## SSOR19

### **Safety Features of Commonly Used Passenger Transport Vehicles in Sri Lanka**

*Chenuka Thilakarathne*

Every year in Sri Lanka, around 3000 deaths happen due to road accidents. Around 800 pedestrians die, while 1200 motor cyclists die every year. Around 300 drivers die each year, while around 400 passengers die every year. Among many other causes, the use of unsafe vehicles on the road appears to be one major cause for these deaths. This is commonly observed with most of the deaths that happen in road traffic accidents involving three wheelers.

The objectives of the study is to find out the safest production vehicles used in Sri Lanka, and also the least safe production vehicles used in Sri Lanka. The hypothesis of this study is that there are a lot of unsafe vehicles driven on Sri Lankan roads. 20 commonly used vehicle models of different makes were chosen. The safety features used for this research were seat belts, driver air bags, passenger air bags, backup cameras, parking sensors, traction control, automatic high beam, emergency brakes, lane departure warning and tire pressure monitors. Data was collected on the safety features of commonly used passenger vehicles in Sri Lanka. The relevant manufacturer's specifications were used. The latest version of a particular vehicle was used for data collection. 10 common safety features were selected. 1 point was given for each available feature. Total marks out of 10 was calculated for each vehicle. An arbiter scale was used to categorize each vehicle into 3 groups according to the level of its safety. The least safe vehicles identified by the study were the Bajaj three wheeler and the Indian made Suzuki Alto.

All European vehicles used in this study got an Excellent safety rating, while all Japanese vehicles got Average or Excellent safety ratings. The least safe vehicle of the study is the Three Wheeler, which has a safety rating of 0 out of 10. This study proves the hypothesis that there are a lot of unsafe vehicles on Sri Lankan roads.

**Keywords** – Safety, Safety features, Vehicles

## SSOR22

### **The online learning satisfaction among the students**

*Pimalya Gunasekara*

For the past two years the world has been suffering from the Covid-19 virus. Lockdown and self-quarantine were imposed by all the countries to control the pandemic. As a result, the students had to continue their studies using online platforms. Online learning is the education that takes place using electronic devices. The aim of this study was to find the effectiveness of the online education system. Data was collected from 40 students of grade eight of a school. It was collected through a questionnaire given to them. Satisfaction was measured using marking systems to evaluate the effectiveness of the lessons. The majority were dissatisfied with online learning. In this research, I suggest the teachers to find ways to improve the student-teacher interaction and the quality of E-learning while encouraging the students to lead a healthy and active lifestyle without being addicted to devices.

**Keywords** - Students, online, education

## SSOR23

### දිළිඳුකම නිසා පාසල් දරුවන්ට ඇතිවන බලපෑම

*දිල්ශා ගයත්‍රි රත්නසක , සෞනලි අලුත්ගෙදර, දර්ශිකා තල්ගස්පිටිය*

ඕනෑම සමාජයක විවිධත්වයෙන් යුතු පුද්ගලයින් ජීවත්වීම හේතුවෙන් සෑම සමාජයක් තුළම අසමානතාවයක් දැකගත හැකිය. මේ හේතුවෙන් දිළිඳුකම සමාජයක පවතින ප්‍රධාන ගැටලුවක් වී ඇත. අප දිළිඳුකම හේතුවෙන් පාසල් දරුවන්ටවන බලපෑම පිළිබඳව පර්යේෂණයක් කර එයට විසඳුම් සෙවීමට කටයුතු කරන ලද්දේ බොහෝ පාසල් දරුවන් ප්‍රමාණයක් දිළිඳුකම හේතුවෙන් අසරණභාවයට පත් වී ඇතිබව අපට පෙනුණු නිසාය. තවද මේ නිසා පාසල් දරුවන්ට බොහෝ ගැටලුවලට මුහුණ පාන්නට සිදුවන බවත් අපට පෙනී ගියහ. අප මෙහිදී දත්ත එක් රැස් කර ගැනීමට අහඹු ලෙස තෝරා ගත් වැඩිහිටියන් 50 කට සහ පාසල් සිසුන් 50 කට ප්‍රශ්නාවලියක් ලබා දී අපට අවශ්‍ය දත්තයන් එකතු කරගනු ලැබුවා.

එහිදී වැඩිහිටියන් සඳහා ඉදිරිපත් කරන ලද්දේ පවුලේ ආර්ථික ක්‍රියාකාරකම් පිළිබඳ ප්‍රශ්නාවලියක්වන අතර සිසුන්ට ලබා දුන්නේ දිළිඳුකම නිසා ඔවුන්ට ඇතිවන ගැටලු පිළිබඳ ප්‍රශ්නාවලියක් ය. එහිදී පාසල් සිසුන්ගෙන් 20% ක් පමණ පාසල් යාම නතර කර ඇතිබව අපට ඉහත ප්‍රශ්නාවලියට ලබා දුන් පිළිතුරු අනුව තහවුරු විය. තවද එවැනි දරුවන්ගේ පවුල්වල ආර්ථික මට්ටමද පහත් මට්ටමක තිබුණුබව වැඩිහිටියන්ට දුන් ප්‍රශ්නාවලියේ පිළිතුරු මගින් අපට පෙනී ගියහ. එහිදී අපට පෙනී ගියේ වැඩිහිටියන්ට ලබා දුන් ප්‍රශ්නාවලියෙන් 40% ක් පමණ පහත් ආර්ථික මට්ටමක සිටින බවය. අපගේ පර්යේෂණය අවසානයේදී, දිළිඳුකම හේතුවෙන් පාසල් දරුවන්ට බොහෝ ගැටලු ඇතිවන බව පෙනී ගියහ. එසේම රජයත්, දෙමාපියාණන්, ගුරුවරුන් එක් වී දිළිඳුකම හේතුවෙන් පාසල් දරුවන්ට වන බලපෑම අවම කිරීමට ක්‍රියාමාර්ග ගතයුතු බව අප විසින් මෙම ගැටලුවට යෝජනා වශයෙන් ඉදිරිපත් කර සිටීමු.

**සුවිස -** දිළිඳුකම, පාසල් සිසුන් , වැඩිහිටියන්

## SSOR24

### **Investigating binge-watching addiction to Korean television dramas by young teenage students**

*P. G. Yenuli Bavanya*

Korean teledramas have been frequently telecasting in local television channels in recent years and have become popular among young teenage students. Parents and teachers have expressed their concerns about students developing binge-watching behavior towards Korean teledramas. Binge-watching refers excessive watching with addictive tendencies resulting negative impact on health, behavior, and cognitive functions. This study used scientifically designed questionnaire to test whether binge-watching addiction exist among young teen students. 25 female students in grade 11 participated in this study were analyzed using a four-factor model. Four factors include craving, dependency, anticipation, and avoidance, which represent common characteristics of an addiction. Level of binge-watching was evaluated on a 1 to 5 scale in the questionnaire. A participant was considered positive for an addiction factor when the person received a score over 75% for more than 50% of specific questions. According to the results, 20% of students who participated in this study became positive for anticipation. One student became positive for both craving and dependency. Another student became positive for three factors, including craving, dependency, and anticipation. 80% of the participants did not become positive for any factor. Students can use this questionnaire for self-evaluation. Students who are in denial of a binge-watching addiction to Korean teledramas may benefit from this approach because they now can see scientific evidence of potential addiction without being subjected to harsh criticism and judgement. It could be prudent providing counseling help for students those who became positive in this study to bring about positive changes in their behavior. Kye words: Binge-watching, addiction, Korean teledramas, questionnaire.

**Keywords** – Binge watching, k drama, behavior

## SSOR26

### **Acceptance of e-learning among school students during covid-19 and economic crisis: a case of kandy education zone**

*N.G. Indupuli Amaya Gamage*

A learning system based on formalized teaching but with the help of electronic resources is known as E-learning. E-learning is most popular in this period of Covid 19 pandemic and economic crisis in Sri Lanka. Therefore teachers and students both have to enhance the computer literacy than previously, willingly or unwillingly. This study examines the acceptance of E-learning among the school students in Kandy zone. Primary data were collected from google forms and 50 students were randomly selected via online. Study revealed several issues arising among the students. Low level of computer literacy, poor internet facilities, feeling isolation, less interaction between teacher and students and monotonous teaching patterns are most of among them. Research suggests to overcome issues, enhance the computer literacy for both teachers and students, develop the infrastructure facilities and teaching methodologies, introduce new activities to improve the teacher-student interaction during online sessions to strengthen the acceptance of e-learning among school students.

**Keywords** - E-learning, School students, Covid-19, Economic crisis, Kandy

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**EXPERZIO'22**

After a six-month-long journey, the Kingswood Research Unit celebrate the passion for new discovery and curiosity for the unknown with the final outcome of Experzio '22. Included within this publication are the abstracts of the research projects carried out under the Experzio '22 umbrella. We hope this marks the beginning of a long and fruitful journey in the field of research for all the young researchers who were a part of Experzio '22.

