Foreword

It is with great pleasure that I present the Vol. 11. No. 2 of the Sri Lanka Journal of Advanced Research Studies in Humanities and Social Sciences (SLJARS) to mark the continuation of the Academic tasks undertaken by the NCAS. With the belief that the ongoing dialogue within the realms of Humanities and Social Sciences is to be continued beneath the idealistic understanding of intellectual curiosity and critical examination, we present the continuation of our esteemed journal. The vibrant knowledge always dealing with resolving the complexities of human existence, culture, and society, especially in an era of technological advancements and involvements, to overcome the global challenges, the insights and perspectives offered by the humanities and social sciences have become more crucial than ever, as we highlighted in our previous volume.

In this edition, we have endeavored to include a wide array of research that reflects the interdisciplinary nature of these fields. The contributions span across disciplines such as anthropology, sociology, history, philosophy, political science, literature, and cultural studies, among others. This diversity not only highlights the interconnectedness of different areas of study but also demonstrates the multifaceted approaches required to address complex questions about humanity and society.

The National Center for Advanced Studies in Humanities and Social Sciences (NCAS) being the only Research Institute of Sri Lanka governed by the Universities Act No. 16 of 1978, is happy to thrive and embark novel studies in Humanities and Social Sciences under its broader objectives to enhance the capacities and the equilibrium of such studies. Thus, the Annual Research Journal of the NCAS aims to be a beacon for scholars, researchers, and practitioners who delve into these profound and diverse areas of inquiry. Established in 2005, the NCAS commenced its first Journal in 2007, and continues to publish every year in two (02) Parts, with the blind review by the local and overseas subject experts. We are happy to announce that the Sri Lanka Journal of Advanced Research Studies in Humanities and Social Sciences (SLJARS) has been recognized by the 'Sri Lanka Journals Online' since 2007.

It is important to note that each article of the journal represents a significant contribution to our understanding of the human condition, showcasing rigorous research, having unique and innovative methodologies with critical analyses. While some are so significant on exploring historical pathways, and cultural phenomena, some are pillars of examining contemporary social issues and policy impacts.

However, the depth and the breadth of topics covered here showcase the richness and diversity inherent in the humanities and social sciences.

A special note is endorsed with regard to the Vol. 11. No. 1 & 2, which was expected to be published in 2021. Due to the COVID-19 pandemic, the routine work and tasks were collapsed, and many of us joined on virtual platforms and accepted the virtual reality at its zenith. The research collaborations and field research are not exempted in the particular setting. The NCAS continued its tasks and performances at its best and obtained the research articles remotely from the scholars and researchers. However, the process was not that efficient due to certain other hindrances i.e. the Wi-Fi facilities and the economic crisis, yet were are happy to announce that now in 2023, we are ready to publish the Vol. 11. No. I & II after having a thorough review process. SLJARS is peer reviewed and follows double blind review process.

I extend my deepest gratitude to the authors, reviewers, and editorial team whose dedication and hard work have made this edition possible. Their commitment to scholarly excellence ensures that this journal continues to be a vital platform for intellectual exchange and discovery. I am confident that the insights and findings presented in these pages will inspire and inform future research, contributing to the ongoing dialogue that shapes our understanding of the world.

Professor (Mrs.) Prashanthi Narangoda
Director/NCAS

Contents

Sadia Shepard's Memoir *The Girl from Foreign:* A Quest for Cultural Roots

Ramesh Prasad Adhikary
Department of English, Tribhuvan University,
Mahendra Multiple Campus, Nepalgunj
rameshadhikary29@gmail.com

Abstract

The primary objective of this research is to investigate the ineffectiveness of searching for cultural roots in Sadia Shepard's literary work, A Girl from Foreign, and its correlation with the narrator's sense of dislocation and rootlessness. The researcher has utilized the perspective of diaspora and postcolonialism to analyze the protagonist's journey from America to India in pursuit of her cultural roots. The study entails a thorough analysis of the novel to identify the narrator's motivations, experiences, and discoveries. The findings indicate that the narrator's quest for cultural roots is bound to fail due to her mixed cultural upbringing and lack of a sense of belonging. The protagonist's journey to India to explore her family history and ancestry leads to a distressing realization of her Jewish and Muslim religious background. The research demonstrates that the narrator's feeling of rootlessness and dislocation in the foreign land is the driving force behind her search for cultural roots. In conclusion, the study affirms that the search for cultural roots is an evasive and ultimately futile undertaking in Sadia Shepard's *The Girl from Foreign*. The narrator's experiences underscore the intricacies of cultural identity and the challenges of reconciling numerous cultural influences. The research also emphasizes the significance of comprehending the effects of diaspora and postcolonialism on cultural identity and the search for roots.

Keywords: *cultural roots, diaspora, postcolonialism, dislocation, genealogy, expatriation.*

Introduction

The research investigates how immigrant Indian women feel exiled in western metropolises and yearn for an imaginary homeland. Shepard expresses dissatisfaction with the fragmented situation, hybridized identities, plural identities, and rootlessness in *The Girl from Foreign*. Her attempts to live in the diasporic land have resulted in some of these displacement and dislocation situations. This project is based on Sadia

Shepard's novel *The Girl from Foreign*, which is about an immigrant family's search for cultural roots in America.

As her father relocates to America, the major character is compelled to stay there. Her father is a Christian from Colorado, while her mother is a Muslim. Her maternal grandmother is a Bene Jew married to a Muslim. She has hazy memories of Pakistan after leaving, and she is unaware of her father and mother's cultural roots. Sadia's obscure memories and dislocation cause her to seek cultural roots to which she belongs. She travels to India and Pakistan to look for relatives and ancestors. The postcolonial theory's search for cultural roots is utilized as a method to study the text. Based on Edward Said, Bhabha, Rushdie, and Fanon's theories, Sadia Shepard suffers from rootlessness, identity crisis of displacement, alienation, and breakup with her real ancestors.

There are no cultures that merge to generate hybrid forms. Cultures are the result of attempts to stop the flow of cultural hybridity, rather than starting with the concept of pure cultures interacting. Bhabha calls our attention to what happens on the borderlines of cultures. He is curious to see what takes place in-between cultures.

The narrator is well aware of her inner mental state. She is not uninformed about how she is impacted by nightmare and confusions. She continues in her internal monologue that as a child, she used to spend hours playing with her shadow, which her father warned may cause her nightmares, dreams like watching voices spin in a cyclone of rainbow colors and hearing unusual shapes of things come up and talk to identify themselves. Playing with her shadow made her feel less alone as an only child. The aftereffects of her parents' deaths left her in a disturbed and tortured state. This project contributes significantly to several aspects of migration. First, the project intends to concentrate on the female character during the critical analysis preview. It also establishes an important theoretical link between the quest for cultural roots and the postcolonial critique of British imperialism. The objective of this study is to deconstruct the colonial effect and cultural binaries.

Shepard addresses the issues of adaptability, cultural dispossession, and diasporic agony in her writing. She is an author who focuses on cultural roots. Furthermore, it elucidates the source and consequence of rootlessness. She travels to India and Pakistan in quest of relatives and ancestors, the ultimate source of her cultural heritage. Andrea Plaumer is a well-known critic of Sadia Shepard. He praises Shepard for his ability to express his unwavering faith in the subtle power of personal

mystery. In addition to dealing with personal mysteries, she raises geopolitical concerns.

Shepard's upbringing may be traced back to the Indian subcontinents shared past. She gets double exposure to not just the culture of Hindus but also to the culture of Islam. That is why she has such a soft spot for cultural upbringing. Shepard is asked to relate her grandmother's narrative in her grandmother's dying years. The elderly lady sends the young woman on a perilous physical and emotional quest to trace her grandmother's ancestors. She embarks on a journey that turns out to be a journey of self-discovery.

Emily Cappo is the author of Sadia Shepard's biography. Cappo thinks that Shepard's personal past has to be investigated for the sake of the full study of her book. Cappo offers the following remark in this connection:

> For a start, Sadia Shepard is a very clever woman. She is a filmmaker who came back to India on a Fulbright scholarship and she clearly understands communication. You cannot fault her writing, which is lucid, honest and bare of unnecessary adjectives. She also has an attractive humility. And on top of this, as all families have secrets, at least as strange as fiction; she also has a story to tell. (17)

They are not familiar with the virus of Muslim-Jewish enmity. Shepard describes the people she meets as well-rounded individuals. The head of the family tells her that their forefathers were shipwrecked off the Indian coast many centuries ago. Shepard's positivity and sensitivity are mirrored in all she meets.

Objectives of the Research

1. To explore the experiences of immigrant Indian women in western metropolises, specifically their feelings of exile and yearning for an imaginary homeland, as depicted in Sadia Shepard's novel *The Girl from Foreign.*
2. To examine the themes of rootlessness, identity crisis, cultural dispossession, and diasporic agony in Shepard's writing, and to analyze the ways in which postcolonial theory can be used to understand these themes.

3. To deconstruct the colonial effect and cultural binaries through the lens of Shepard's work, with a particular focus on the female character and the quest for cultural roots.

Review of Literature

Numerous critics have analyzed the memoir of Saida Shepard from different theoretical perspectives. Elizabeth A. Brown provides a positive review of Sadia Shepard's memoir, The Girl from Foreign, describing it as a beautiful tribute to her departed maternal grandmother and a compelling narrative. Brown also praises Shepard's skills as a filmmaker and photographer, stating that she knows how to capture the essence of a scene and keep readers engaged with her writing. Brown ends the review by expressing anticipation for more work from Shepard in the future. (28)

Samantha Ellis analyzes Shepard's book as a subjective perspective on the emerging concept of multiculturalism. The benefits and drawbacks of diversity are analyzed with a critical eye. About the multicultural aspect of this memoir, Ellis expresses the following views:

> The word diversity has been so often used to describe a blithe multiculturalism that it has lost its edge. What does it mean to really long to belong to more than one place, to be part of more than one culture? It becomes impossible to be anything but in awe of the bravery with which she tries to understand her grandmother's doubts, and to work through her own. (47)

This memory is also a love story. But, it is veiled under Shepard's subjective experiences. Multiculturalism is an indisputably growing phenomenon. As a result, it is not surprising that certain features of multiculturalism may be found in this narrative. Though it is not Shepard's main focus, it looks to be a major thematic component. There are many other factors that are as important.

Carolyn See observes the memoir's meditative aspect. Religion, culture, political backdrop, and a life-affirming point of view are among the topics on which the first person narrator expresses her opinion. Carolyn See projects her point of view as follows:

> Besides being a personal memoir and a portrait of a family that includes the world's three major monotheistic religions, The Girl from Foreign is a meditation on how our individual memories inevitably slip away, either into oblivion or into that dull collective consciousness we call history. But Indians have the nerve to be fascinated by the events that occurred in their own country that

year, the public history that overlaps, vividly, with their personal memories. (15)

Indian culture and the possibility of Jewishness evolving in an Indian cultural context are two thematic clues around which the narrator's mediation revolves. Though the meditative dimension is more prominent in the story, other parts are equally important. Though they are subordinate to the meditative aspect of the story, the value of the other aspects cannot be neglected.

Shepard's dissatisfaction with his unique and solitary identity is highlighted by Peter Smith. Smith hints to the conclusion that in the globalized community, finding a distinct identity is difficult. Everyone who makes an attempt to obtain it is condemned to fail. Shepard indicates at her proclivity to place a priority on the requirement of fluid, multiple hybrid identity by adopting a tacit tone. Smith makes the following claims concerning *The Girl from Foreign Country*:

> Little Sadia Shepard and her younger brother, Cassim, grew up first in Denver, then Chestnut Hill, Mass., in what she considered to be a wonderful and normal life with three terrific adults: her American dad, a tall, rangy, white Protestant; her beautiful Muslim mother, who was born and raised in an affluent home in Karachi, the first capital of Pakistan; and her sweet maternal grandmother, who raised the kids and kept the house while the adult couple ran an architectural firm. This grandma has a set of slightly dissonant memories. (31)

People might forget their ethnic origins over time. People are tempted by beautiful modernism and wealth, and they forget their great origins. As they were confronted with a crisis of conscience, they couldn't help but delve deeply into their racial background, cultural conventions, and religious faith. They had forgotten their religion. Sadia's grandmother had spent her early adulthood as a Muslim wife in a lovely seaside villa in Bombay. People are only persuaded to reflect on their condition at the eleventh hour.

Francis Ferguson extensively investigates Shepard's narrative's use of direct speaking. According to Ferguson, the constant use of direct speech seeks to create an atmosphere of open-mindedness. The tale features a dialogic framework, which allows for a wide range of interpretation alternatives. Ferguson expands on this point:

> In her memoir, Shepard uses direct and reported speech to create the background necessary for her own voice. She repeats and

refashions the words of resistance that are the legacy of her own community, giving special attention to the words of love and support from her mother, her father and her husband. Self is crafted in dialogue with the voices of fellow slaves and the voices of the world that opposes it. (160

The ego that the narrator presents in this book is entrenched in the words that she uses. The narrator's subjectivity is shaped by the words she is forced to employ. She must consider various factors while describing events in order to build a sense of resistance. The use of direct speaking is effective in emphasizing the historical feeling of urgency to initiate resistance.

Francis Douglass is tremendously grateful of The Girl from Abroad Foreign. India is represented as the homeland that nourishes Shephard's strong desire to return home. The basic component of narrative is this unwavering desire to return to one's past. One feature of Douglass' analytical account is illuminated by the following excerpt:

Shepard's memoir reveals a profound identification with the India as a territorial cradle. The trope of return to one's native land is fully formed here as a return to the west Indies-past, present, and future. Shepard is born of intercultural breeding and union; her estranged past and necessary future is located geographically and historically in India. India is a means to an end; it is not the fulfillment of her dream of freedom. (3)

The narrator's recurring sensation of affinity with territorial cradle propels her forward in her quest for mental relief. The geographical purity and historical roots have a great feeling of effect on her. The memoir alludes to the potential of self-realization.

Although all of these reviewers discussed various aspects of the novel, none of them dealt with the subject of diaporic pain caused by immigrants' self-fragmentation. Immigrants must deal with feelings of alienation, estrangement, cultural dislocation, and rootlessness. In the midst of these challenges and crises, immigrants are obliged to recreate their imaginary homeland. They're conflicted between nostalgia and memory. Immigrants' defining qualities include dilemma, indecision, and a vacillating trend. Shepard is also facing similar difficulties. This research is centered on this topic, drawing on the theoretical insights of postcolonial theorists such as Rushdie, Bhabha, Fanon, Naipaul, and Bill Ashcroft. The issue is worthy of investigation because it is new and authentic.

Research Method

The research employs a qualitative approach to investigate the ineffectiveness of searching for cultural roots in Sadia Shepard's literary work, A Girl from Foreign, and its correlation with the narrator's sense of dislocation and rootlessness. The study utilizes the perspective of diaspora and postcolonialism to analyze the protagonist's journey from America to India in pursuit of her cultural roots. The researcher conducts a thorough analysis of the novel to identify the narrator's motivations, experiences, and discoveries.

Data Collection

The primary data source for this research is the literary work, A Girl from Foreign by Sadia Shepard. The researcher conducts a close reading of the novel and employs critical discourse analysis to identify the themes related to the narrator's search for cultural roots, sense of dislocation, and rootlessness. The data collection also includes the collection of secondary sources, such as scholarly articles and books related to diaspora, postcolonialism, and cultural identity, to support the analysis.

Data Analysis

The research analyzes the data through critical discourse analysis, which involves the deconstruction and interpretation of the text to identify the underlying themes, motifs, and symbols related to the narrator's search for cultural roots, sense of dislocation, and rootlessness. The analysis utilizes the perspective of diaspora and postcolonialism to examine the protagonist's journey from America to India and her search for cultural roots. The research also employs thematic analysis to identify recurring themes in the text related to the narrator's experiences, motivations, and discoveries. The findings are presented in a narrative form, supported by quotes from the novel and secondary sources.

Theoretical Tools Used in This Research

Exile, diaspora, and migration are only a few examples of the dislocations that have been actively and thoroughly discussed in postcolonial philosophy and literary works. Diaspora has definitely brought about enormous changes in the demography, cultures, epistemologies and politics of the post-colonial globe. The postcolonial

predicament is accurately represented by the only focus on relocation. Unquestionably, due to significant political upheavals, the past century has seen widespread population dispersal and relocation around the world. Diaspora is viewed as historically diverse and heterogeneous phenomena rather than as a "single phenomenon. People's cross-border movement may be the consequence of expulsion, self-exile, or forced migration (Reflection on Exile 23). War, interethnic conflict, and natural disaster are the causes of refugees and persons in transit.

Theorizing the new phenomena of borders and borderlands, mixing, hybridity, language for translation, double consciousness, history and its absence, and the emotive components of migration and diaspora are of particular interest to postcolonial cultural studies. It discusses sorrow, nostalgia, homesickness, and memories. Diaspora studies spans several academic disciplines. Bhabha elaborates on "the liminal or interstitial category that occupies a gap between opposing cultural traditions, historical periods, and critical techniques" in The Location of Culture (The Location of Culture 65).

Bhabha analyses "the ambiguity of colonial rule and suggests that it offers a potential for resistance in the performative mimicking of the English book," once more using intricate semiotics and psychoanalytic criteria. Bhabha aims to locate culture in the unsettling, eerie areas between dominating social structures while discussing artists (47). For his idea of cultural hybridity, Bhabha is the most well-known. He contends that diverse types of colonization lead to hybridity. Cultural scuffling and mingling result from it. In an effort to establish colonial dominance in order to produce Anglicized people

Salman Rushdie's hybrid space project adapts poststructuralist challenges to stable or fixed identities, allowing sustained attention to the ways in which race, gender, community, and nationality converge. In *Imaginary Homeland*, he examines the curious position of the migrant or exile, which transforms their relationship with both their home country and new host country. This new diaspora identity is seen as potentially a position of strength.

Migrants are not dressed in continuity and belonging. They are able to see life in a different way from anybody else. It gives them greater insight and perspective. They are able to combine aspects of both their home culture and their host culture in their life. It enables them to exploit their diaspora identity. In Rushdie's imagining therefore migrants with

their diaspora identity occupy a curious position that is a site of great opportunity.

Exile is a dream of a glorious return. Exile is a vision of revolution. It is "an endless paradox: looking forward by always looking back. The exile is a ball hurled high into the air" (Imaginary Homelands 76). Rushdie therefore argues that being a migrant is "a ball hurled high into the air,"(Salman Rushdie 54) with massive potential and possibilities. What the migrant does with those possibilities is up to them, according to Rushdie.

A magnificent return is a fantasy of exile. A vision of revolution is exile. Looking forward while always gazing back is "an eternal contradiction. The exile is a ball thrown into the sky high (Imaginary Homelands 76). So, according to Rushdie, being a migrant is like "throwing a ball high into the air" (Salman Rushdie 54), with a lot of potential and opportunities. According to Rushdie, the migrant is free to decide what to do with those options.

Textual Analysis
Saida Shepard's Search for cultural Roots

The narrator of *The Girl from Foreign* describes grief and helplessness, nostalgia and memory, despair and hope, and the dream of cultural rootedness and cultural rootlessness. In addition to pleasure and optimism, the narrator's existence as an immigrant in America is also filled with displacement and dislocation. She yearns for her own country despite the comfort and hope around her. The narrator hopes to mentally reassemble a vision of her own country through the narratives and narrative recollections told by her mother and grandmother. The literature of the descendants is replete with references to the historical brutality of the age of empire and colonies. The literature that has come to be referred to as post-colonial is replete with the voices of its victims. The term "postcolonial" falls short of encompassing the depth and range of the authors who have been assigned it. The writings of those writers have something in common. The narrator skillfully demonstrates how the experience of exile and its ramifications continue to be relevant to the creation of fiction beyond national lines. She draws important parallels between exile's role in their literature as a circumstance and as a concept.

With a postcolonial lens, the book examines the violence and discrimination faced by immigrants. While they have been uprooted and cut off from their homes, the immigrants are united by their language,

cuisine, history, and culture. At trying circumstances, memory is viewed as a source of strength. The narrative focuses on displaced populations and their relocation to new nations, a typical topic in literature from the diaspora. A cross-cultural or cross-civilizational crossing is crucial for the particular awareness of the diasporic, and the quest for roots and a sense of belonging are significant features of diaspora literature. The only family member who is knowledgeable of the protagonist's family's American heritage is her grandmother.

The researcher makes use of theory of diaspora, hybridity and certain theoretical insight from postcolonial theory and diaspora. *In Culture and Imperialism,* Said captures the basic thought behind colonization and imperialism. This line "They're not like us,' and for that reason deserve to be ruled." Shows the basis on which the project of imperialism is constructed. "The colonized, Said maintains, "becomes the other, the not me. Hence, the established binary opposition of "the West"/"the Other" must be abolished along with its intricate web of racial and religious prejudices" (64). This erroneous view of humanity creates a simplistic interpretation of human experience.

Postcolonial theory is a historical view that emphasizes the variety of human experiences in all cultures and seeks to present them in an objective way. It moves beyond traditional literary studies by investigating the social, political, and economic concerns of the colonized and the colonizer. Cultural imperialism is a part of the system of oppression and genocide, and Western literature is an integral part of that system. Postcolonial theory can play an important role in the ongoing struggle for political and economic freedom of the Third World. African criticism is a practice that has its own analogue in postcolonial theory, and white racism against Africa is a normal way of thinking.

Anthony Brewer identifies several important indicators as to how cultural representation occurs in speech and how the process of cultural interpretation ends up being problematic. Brewer develops a strategy to bridge the cultural gap between the culture portrayed in the book and other cultures. According to Brewer, the system of representation creates meaning. The code, which establishes the connection between our mental and linguistic systems, constructs and fixes it. One approach to think about culture is in terms of shared conceptual frameworks, lingua francas, and the rules that control how words are translated between them.

The narrator muses about all of the written or spoken discourses in an effort to create identity. "The things my grandma told me are outlines,

markings in black ink on a paper, the essential information," she admits. The narrator searches for a resolution while torn between hopelessness and dream, nostalgia and remembrance. She cannot escape her western identity at this time. She also lacks the ability to embrace her native roots and traditions. She is aware of the circumstance. She nonetheless strives to engage with the idea of a blended identity. The following extract shows how the narrator raises questions about who she is and what she is expected to do in her present predicament:

> I worried that someday, when I needed to tell these stories to explain who I am, I would wonder about the color of the dress she wore in a certain black-and-white photo and she would no longer be alive to tell me. The sum total of what I could imagine about India was contained in my grandmother's brown vinyl album, hundreds of tiny prints with scalloped edges. What comes in between these details is my own invention; the shape and shade are the work of a grandchild to embroider. I have spent years trying to paint the colors in. (2)

Shepard is nostalgic for her homeland, India, but feels a deeper sense of lag. To come out of her restlessness, she makes an excursion to India, where she realizes the root cause of her sufferings is cultural imperialism.

According to Edward Said's theory of orientalism, the division of the world into the civilized West and the uncivilized East by Europeans served as justification for the latter's colonialism. The idea of "them" and "us" served as the foundation for this artificial border. Orientalism was a strategy employed by the Europeans to establish their superiority over the orientals and to defend their need to civilize them. The generalization of features attributed to orientals, however, resulted in the depiction of manufactured traits in the West via various media outlets. Said contends that rather than accurately representing reality, orientalism produces politically charged realities about oriental cultures and histories that support colonial goals.

The narrator, who lives in a remote area of the transatlantic country, cherishes the notion of being near to Chestnut Hill. Her upbringing was in Chestnut Hill. Each fleeting memory of her grandmother makes her happy. Behind this exhilaration comes the misery of cultural and psychological uprooting. She completely relies on her imaginative mode to delve into the origins of her upbringing. In her monologue, she states, "I feel very distant from Chestnut Hill, from the white clapboard house where I was raised, yet the vigilant, golden mansion clings with me, its small eyes

of Mughal miniature paintings" (93). When the narrator gets closer to Mumbai, memories start to become more vivid and recent. The narrator seeks to rebuild the entire using his or her memories. The narrator journeys from America to Bombay in search of a coherent self and identity. She constructs a fictitious whole, but it does not give her a complete sense of understanding who she is. It is an attempt to impose a gloss and glitter on the already anarchic turbulence.

According to Robert Young, diaspora and transnationalism notions have functioned as significant study lenses through which to analyze the consequences of international migration and the shifting of state borders among populations during the past several decades (76). Delineating the origins and perpetuation of transnational social forms has been the researcher's main concern. The idea of diaspora is frequently used by nationalist organizations or governments to further their goals of creating new nations or governing populations overseas.

It is obvious that the narrator is obsessed with the portrait of her mother and other family members who passed away. By means of portraits and photos, she wants to penetrate the mystery that encircles the lineage and genealogy. In her musings, she says, 'in the upstairs front hallway of my childhood home near Boston there hung a large, vivid portrait of my mother. The following extract clarifies the things related to the explorative search of the narrator:

> The house looks familiar, as if I have seen it a million times, and I realize that I must have seen photographs of it passed into my grandmother's album. Where it should say "Rahat Villa" it now reads "Shandilya Villa", but it is unmistakably the same house. I ask the driver to stop and I send him away, before realizing that I do not know where I will find a taxi back. But I am here. I walk up driveway, toward the house, with the sea at my back. (10)

As the narrator drives closer to Bombay, her memories become more vivid and meaningful, but also raise new questions. She tries to explore their significance, but ultimately fails. Despite this, a sense of unexpressed excitement and possibility remains, grounding her in the present.

The most crucial technique employed in this research is the idea of third space. Bhabha develops a number of ideas in *The Location of Culture* that aim to challenge the straightforward division of the world into self and other. He places a strong emphasis on the cultures' hybridity, which alludes to a fundamentally mixed nature of every aspect of identity. Although many

writers of literature have expressed a desire to use and express hybrid cultural forms, Bhabha stresses on hybridization as opposed to pure or true cultural identities. He focuses on what occurs at cultural borders and approaches this through the concept of the liminal, which emphasizes the idea that what is in-between settles.

Even though her grandfather is no longer alive, she starts talking to him because of her frantic feeling of devotion to her ancestral roots and origin. She occasionally imagines the scene. She often speaks while she is in a state of pleasure. In this regard, the excerpt that follows serves as an illustration:

> We walk up a central staircase, and my breath catches when I recognize a low set of drawers in one of the rooms; it has the same inlaid ivory pattern and carving as an armoire my grandmother had in our family home in Karachi, where she kept her jewelry and important papers. I motion to the house boy to ask him if I may enter the room, and he nods. I imagine this could have been her bedroom. I post imaginary telegrams to her in my mind. (12)

She seems to find perpetual happiness and support in all the valuable and non-valuable items connected to her Nana's life. The narrator follows evidence of ancestral importance from jewelry and ivory pattern to bedrooms and paperwork. Yet nobody investigates this issue. It is easy to observe how the narrator rushes for items that are both urgent and valuable in the long run. All of these efforts are intended to stabilize her mental state.

For Bhabha, the postponement of hybrid identity is essential to comprehending dialectical thought. Deferral is crucial for Bhabha and Fanon in regard to the demands of dialectical Marxism. Fanon replies to the universal needs of Marxist humanism in Black Skin, White Masks. Humanist accounts of anti-colonial struggle begin by imagining the racial language's transcendence and the emergence of unity. According to these stories, there is just one race of people. Fanon emphasizes the unique historical situations and cultural settings. The surface of the skin contains the essential identity. This really inhibits solidarity and recognition. That messes up the story of that fundamental identity.

The narrator recalls how Urdu, English, and Hindi were spoken in her home at the time as she reflects on her upbringing in Karachi as a youngster. She has access to a variety of languages, including Urdu, Hindi, and English, since she was a little child. She manages to instill a desire for

many language speaking cultures as a result of her accessibility. The passage below demonstrates the point:

> With Mama she spoke quickly, in Urdu, and often seemed to be angry. That day, I guessed that they were talking about the property disputes surrounding Siddiqi House, our family home in Karachi, shared among my grandfather's three widows and ten children. Nana's sons, my mother's four younger brothers, were scattered across Europe and the United States. Often we would not see them for long periods, and then they would arrive with presents, driving fancy cars and wearing nice clothing. (16)

Since her early years, the narrator has been able to enjoy diversity and a voracious appetite for experience because to her multilingual background and international environment. She would benefit from having a strong enthusiasm for family history, genealogy, and cultural roots. At the period of her upbringing, several cultural forces coexist. She adopts a variety of ethnic customs from her upbringing. She overcomes the strict cultural barriers as a result. No culture can impose its rigorous rules and standards. She has the ability to act without being constrained or constrained by the rigid restraints of culture and tradition.

The Imaginary Homeland by Salman Rushdie explores the unease that comes with having many identities as an immigrant. The historical brutality of empire and colonies resounds in the writing of the descendants, and the literature that has come to be referred to as post-colonial is replete with the voices of its victims. Rushdie offers a clear and succinct analysis of exile, and his choice of writers is both noteworthy and innovative. He draws important parallels between the way exile serves as both a theme and a precondition for their work and the ongoing applicability of the experience and consequences of exile to modern fiction writing.

Shepard has been exposed to poly identity, whether consciously or unconsciously. Heterogeneous factors exert enormous impact on the building of her identity. She occasionally feels uncomfortable with the many different sources that support her identity, which has lost its originality and distinctiveness. She yearns for a particular, distinct identity at one point. Yet contemplating on this element of solitary identity, she feels stifled and constrained. She then yearns for the composite identity that her cultural and comfortable upbringing has given her. This situation of the narrator is described in the following excerpt:

> I chose India to fulfill my promise to Nana, but there is another reason, one I feel almost guilty about. I have a mobility here that I will never have in Pakistan. In Pakistan I am Samina's daughter, I am Rahats' granddaughter, and I am the American cousin, the unmarried oddity, the occasional visitor. When we arrive in Karachi, we are met by my mother's friend Nariman's head sevant, Sajjad, no matter what kind of ungodly not-morning-not night it is. As we drive to uncle Nariman's house, I always look out the window and marvel at the new buildings that have sprung up since my last visit. (23)

Timelessly, India tempts her. Pakistan tempts her as well. The thought that it is very impossible to pinpoint the source of pure origin and identity thrills the narrator as they reflect on the beginnings of Jewish history. The narrator feels both pride and grief in her current American identity. She is drawn to the culture of the Indian subcontinent. Something that causes her to get linked to India and the Indian subcontinent is buried deep within her.

According to V. S. Naipaul, the postcolonial criticism embraces globalism but ignores the earlier concepts of colonialism and imperialism. While active colonialism still exists in the form of transnational corporatism, the nominal freedom obtained by colonial populations does not immediately entail decolonization and independence. The "representational systems of colonialism and imperialism" and the contestation of ideologically fabricated information are postcolonial preoccupations. It also signifies the end of the necessity to investigate the political economics and international social linkages of neo-colonialism.

She becomes increasingly conscious of her hybridized identity as she considers how her name is put together. Several of her family members call her and let her know that Sadia is a Muslim name. The passage that follows serves as a good example:

> I take a seat in the phone booth and look up the phone number of one of the two Pune synagogues in my notebook. I dial the number of its director. I explain who I am and why I have come to India, and ask if I can make an appointment to come and see the synagogue the following day. I hear him put the phone to one side and say to someone else in the room. It is Muslim name. Sadia is a Muslim name. Someone else says something muffled that I cannot hear. (29)

Cultural practices might be used to contest, confront, critique, and denounce imperialist ways of seeing, but it's important to realize that representation itself is inextricably linked to imperial enterprise.

The world of reading, writing, and representation does not totally transcend global social, historical, and material concerns. According to Edward Said's argument in Companion to Postcolonial Studies, culture might very easily normalize, justify, and promote European colonialism. At least on one level—certainly not the only one, but still a significant one—colonialism was a representational issue. The production of culture may also perpetuate imperial ideological ideals, and cultural inventiveness contributed much to greasing the motor of colonization.

No doctrine is required when in exile. To maintain one's religious history and heritage, one does not need to adhere to any particular religious religion or creed. The Jews in India kept doing well without the Torah. The narrator says:

> What did it mean to be Jewish, growing up in India? How did her ancestors practice their religion without a Torah? When Nana was in the mood to tell me about her childhood, she always began with the same story: the tale of her first prophetic dream. She told it quietly and urgently, to reaffirm for herself that it had happened, to warn me to careful. (35).

This finding triggers the unpleasant realization. Diasporic personalities with divided selves find it difficult to handle this circumstance. When synagogue and mosque cannot coexist, a great and novel vision emerges.

According to Bhabha, realism and colonial discourse are intimately related. He makes reference to stereotypes and reified versions of realism. If colonial discourse is not necessarily realism, then realism is always a type of colonial discourse. In other words, while colonial discourse consistently asserts that it accurately represents colonial reality, not all realistic stories have links to colonialism. The impacts of a number of religions may be plainly observed in the narrator's family history, including Judaism, Christianity, Islam, and Hinduism. She was rarely conscious of this reality for as long as she had been an American resident. She finds it very beneficial that she realized this lesson while traveling to Mumbai. This kind of epiphany, in her view, is the wellspring of pride and power, creativity and chaos. Nonetheless, she stays away from chaos and focuses on the innovative aspect of hybridity. The next passage demonstrates how different religious philosophies inspire her artistic endeavors once more:

> Three parents, there religions, it sounds fantastic and unusual to me now. As a child, it was merely our topic sentence. Whereas other children we knew had two parents, perhaps two pairs, Cassim and I had three: a grandmother, a mother, and a father. Two related by blood-my grandmother and mother; two related by temperament-my grandmother and father; and two related by devotion-my mother and father. An idea to explain our private world grew like an insatiable, invisible beanstalk in the spiral staircase of our house.

Religions such as Islam, Christianity, Hinduism, and Judaism had an impact on early human history. She is astounded by the discovery of this reality herself. She used to believe that her parents and grandparents had Indian ancestry before moving to India. But, she is astounded by the unexpected results of her trip to India. She expresses her emotion of astonishment on the spontaneity of the moment.

During the period of European colonization, the Europeans encountered less developed countries in the east and found their civilization and culture to be exotic. They established the science of orientalism, which studied the people of these exotic civilizations. The Europeans created an artificial boundary between the east and the west or the civilized and the uncivilized based on the concept of "them and us" or "theirs and ours". The Europeans used orientalism to define themselves and associated particular attributes with the Orientals, defining themselves as a superior race compared to them. This concept justified their colonization as their duty to civilize the uncivilized world. The Europeans started generalizing the attributes they associated with Orientals and portrayed them through their scientific reports, literary works, and other media sources in the Western world.

Against a tumultuous backdrop, Rachel Jacobs' Muslim spouse moved their family to Pakistan. The narrator ponders how Jacobs came to her conclusion. The Bene Israel identify with ancient Jewish customs, where polygamy may not have been as unusual or forbidden as it is today, especially under Israeli law. Her decision to marry a wealthy man during financially unstable times is understandable. Shepard, the narrator, lived among the Bene Israel for two years, seen largely as an outsider among outsiders in a foreign land. Shepard visits her mother's home in Pakistan and discovers that even her beloved relations have embraced a

fundamentalist version of Islam, imposing its constrictive tenets on the most joyous of occasions.

Although the experience of researching and writing this book could have been disorienting, the narrator's growth and self-discovery are evident. She has been able to integrate her discoveries into her life, which allowed her to affirm a unique identity as an American writer with Indian-Jewish roots.

Home and dislocation are central themes in Indian diasporic writers. Diasporic memoir often acts as a bridge between two different cultures and is an extended form of return. Shepard's memoir reflects the freedom-oriented spirit of dislocated self and the entire spectrum of cultural thought. The narrator undergoes the harsh and harrowing process of enslavement and the idea of being free from slavery fills her with thrill and adventure. The chance of emancipation is the outcome of tripartite relation amidst culture, history, ancestry and genealogy.

The narrator's journey creates a tapestry in which each thread has its own appeal, exclusivity, and uniqueness. Islam was the religion of her father. Yet strangely, she has settled in America and became a Christian. The excerpt that follows details her father's conversion to Islam:

> My father used to recite a hadith of the Prophet Muhammad. Difference of opinion is a mercy for my community. That is the way we were raised. He put his children in different kinds of schools-Catholic schools, British schools-just so that we would have different opinions. So that we could debate! That is the way I was raised. That is the faith that I know, that my father practiced. (55)

The narrator is driven by a feeling of dislocation and alienation in a foreign land, resulting in pain, alienation, identity crisis, and other feelings to the acculturated ones. The immigrants and expatriates face cultural dilemmas in the foreign system, but Shepard gradually imbibes the cultural ways of the host country.

To sum up, people internalize nostalgia or suffer from forgetfulness when cultures migrate and take root or become dislocated. This is Shepard's main argument. This assertion is supported by her memoir. The experiences of the narrator and her ancestors, who reside in various socio-cultural contexts, are documented in *The Girl from Foreign Country*. Her decision to travel to India is motivated by her sense of displacement and rootlessness.

Conclusion

The main conclusion of this study is that the narrator's quest for cultural roots reveals a plethora of amazing facts about her ancestors. *The Girl from Foreign* Country is a classic illustration of how someone without roots from a western metropolis visits her ancestral home and learns a number of amazing facts. The realization that Sadia Shepard's South Asian grandmother was Jewish and from the Bene Israel community of India has inspired her to research her genetic history. This memoir examines the dwindling Jewish culture and what became of it in the religiously divided nations of India and Pakistan. Migration is a process of social change in which a person moves from one location for an extended period of time or permanent residence in another location. Migration is a transnational process that entails leaving social networks and going through things like loss, dislocation, alienation, and isolation before settling down and going through acculturation. Shepard, who was raised by a Pakistani Muslim mother and a Protestant American father, offers a unique viewpoint to the table.

Communities that have been uprooted and their relocation have an important role in it. All fall under the umbrella of diasporic literature, from indentured servants to educated persons seeking a better life abroad. The theme of diaspora literature is rootlessness and the quest for origins. Diasporic discussion must include both the quest for home and the shifting of identities. A cross-cultural or cross-civilizational transit must occur throughout the diaspora. Only such a crossing gives rise to the distinct diasporic awareness. Diasporic literature often focuses on the significant conflict between the source and recipient cultures. The memoir of Shepard effectively makes this argument. This book is Shepard's way of expressing the dislocation and ambivalence she experienced. People carry their knowledge and displays of pain when they travel from one country or culture to another. They try to settle down by either assimilation or biculturalism, but as they get more ingrained in the new culture, their cultural identity is likely to shift, which fosters a sense of belonging.

References

Ashcroft, Bill. Key Concepts to Postcolonial Studies. New Delhi: Vivian Publication, 2003.

Bhabha, Homi K. *The Location of Culture.* New York: Penguin, 2004.

Brewer, Andrew. *Imperialism Isolation.*and New Delhi: Pilgrim Publication, 2007.

Brown, Elizabeth. A. *Representation and Rapture*. London: Macmillan, 2004.

Brubakar, Around. *Rootedness and Rootlessness*. Ontario: Ontario University Press,2007.

Cappo, Emily. *Shepard and Silence.* New Delhi: Vivian Publication, 2014.

Douglass, Francis. *Cultural Fertility and Schizophrenia*. New Delhi: PilgrimPublication, 2001.

Ellis, Samantha. *Exploration and Ecstasy*. New Delhi: Diamond Publication, 2014.

Fanon, Franz. *Black Skin, white Mask.* New Delhi: Penguin, 2002.

Ferguson, Francis. *Diaspora and Fragmentation.* New York: Norton, 2003.

Gilroy, Paul. *Multiculturalism.* New York: Penguin, 2008.

Moore, Gilbert. *Postcolonial Pride and Powerlessness.* London: Harper Collins, 2004.

Naipaul, V.S. *The Mimic Men.* London: Seagull, 2007.

Plaumer, Andrea. *Rootlessness and Diaspora*. New York: Penguin, 2012.

Rushdie, Salman. *The Imaginary Homeland.* London: Macmillan, 2003.

Said, Edward. *Orientalism.* New York: Penguin, 2002.

See, Carolyn. *Conviction and Culmination.* Tokyo: Maizi Publication, 2012.

Shepard, Sadia. *The Girl from Foreign*. Penguin Books, 2008.

Smith, Peter .*Postcolonial Studies*. New Delhi: Norton, 2012

Young, Robert. *Hybridity and Horror*. London: Sea Gull Publication, 2003.

Indian Knowledge Tradition and its Contribution to Development of Medicinal Sciences

Dr. Rewant Vikram Singh
Director, Swami Vivekananda Cultural Centre, Colombo, Sri Lanka

Abstract:

In 15th century, the Renaissance generated immense curiosity in Europe about India's knowledge tradition. The development of maritime sciences encouraged overseas expeditions. Eventually, in 1498, a new sea route via the Cape of Good Hope to India was discovered. The arrival of Europeans ultimately led to the establishment of European colonial rule in India, and drain of its wealth to Europe. The colonization process also initiated a new phase of globalization and multi-culturalism. In this research paper, the relationship between colonization of India and development of modern medical science in the west is reviewed by investigating the role of Garcia d'Orta, a Portuguese physician, herbalist and naturalist, who introduced the Indian indigenous medicinal systems to Europe.[1]

Keywords: *Colonization, Coloquios, Indian Knowledge Tradition, IKT, Medicinal Systems.*

Arrival of Europeans in India

The riches and mystical charm of India encouraged Europeans to undertake maritime expeditions to India. Portuguese King John II initiated the plan for reaching India via the Cape of Good Hope[2] to save trading cost as well as monopolize the spice trade. He ruled from 1481 to 1495, and also for a brief time in 1477. He is known for re-establishing the power of the Portuguese monarchy, strengthening the Portuguese economy, and renewing his country's exploration of Africa and Asia, reviving the work of Henry the Navigator, his great-uncle. Henry the Navigator was a central figure in the 15th century European maritime discoveries and maritime expansion and is regarded as the main initiator of what would be known as the Age of Discovery (Elbi: 1991.73-89).

In 1498, Vasco da Gama, sailed to India by circumnavigating Africa via the Cape of Good Hope. He arrived in Calicut (Kozhikode in Kerala) on

---

1 Disclaimer: The views and opinions represented in this research paper are personal and belong to the author. They are not intended to malign any religion, ethnic group, club, organization, company, individual or anyone or anything.
2 A rocky headland on the Atlantic coast of the Cape Peninsula in South Africa.

the west coast of India. His expedition established a direct sea link between Europe and Asia. This development initiated a new phase of globalization, colonization, and multi-culturalism (Cliff (201). The search for sea routes to India also led to accidental discover of Americas by Christopher Columbus in 1492.

The Portuguese, with their galleons[3] loaded with potent cannons, ended the Arab dominance in the Indian Ocean, and in 1510, they took control of Goa. Soon, Goa became a center of their commercial and political power in India. Over the next couple of centuries, the British successfully challenged the Portuguese and other European powers in India and established their political power. Nevertheless, the Portuguese continued to control Goa for nearly four and a half centuries. After a long struggle, Goa was finally liberated from Portuguese colonial rule on 19th December, 1961, that is, more than 14 years after India's independence.

Garcia d'Orta's Study of Indian Indigenous Medicinal Systems

In the early sixteenth century, there was a growing interest in plants and herbs of the orient. It was a period when the academics of Italy, France, Portugal, Spain, Netherlands, and Germany were revitalizing the botanical sciences. The Portuguese physician, herbalist and naturalist Garcia de Orta arrived in Goa in 1534 as a personal physician to M. A. de Sousa, who had been appointed "captain general by sea" of the Portuguese in India and who later became the viceroy of Portuguese India. Goa had become a strategic commercial hub, where due to trade linkages peoples representing different cultures interacted and lived side-by-side. Over next 30 years, Garcia de Orta extensively studied herbs, spices and the indigenous medicinal systems of India. He never returned to Portugal and died in India in 1568. But before his death, he compiled his research works in a volume titled '*Coloquios dos Simples e Drogas da India'* (Conversations on the Simples, Drugs and Medicinal Substances of India)[4], which was published in 1563 in Goa by the German or Dutch printer Johannes van Enden. He initiated the investigation of Indian diseases and medical conditions, such as chronic dysentery, cobra bite, and datura poisoning. These were new to European medicinal system. is description of Asian cholera and its symptoms became a standard medical reference.

---

[3] Galleons were sailing ships used both in trade and war between 15th and 18th centuries. They were typically square-rigged and had three or more decks and masts.

[4] The 'conversations' refer to the dialogues, and the 'simples' refer to the wild varieties of plants and their medicinal properties.

Garcia d'Orta traveled extensively in India, particularly along the western coast of India and Sri Lanka, attending M. A. de Sousa on his campaigns. During his travels, he met and provided medical treatment to some of the leading rulers of Indian princely states, such as Burhan Nizam Shah, the sultan of Ahmadnagar, who became Garcia d'Orta's close friend.

'Portuguese Medicine' (1906), by José Maria Veloso Salgado (1864–1945)
(Garcia de Orta is standing in the center with a book in his left hand)

In 1538, Garcia d'Orta settled permanently in Goa. In 1554-1555, the King of Portugal, through the Viceroy Dom Pedro Mascarenhas, granted a lifelong lease to Garcia da Orta for the Ilha da Boa Vida ("the Island of the Good Life") which became a part of Bombay (Malabari,:1910. 21). Garcia describes the people around Bassein[5] and their traditions in his book. (Cunha, & Gerson: 1900. 98-114). He spoke several languages which helped him interact and work closely with local community, such as Hindus, Muslims and Parsis, and learn about their indigenous medicinal systems, diet and local herbs and spices.

Owing to his services with the Portuguese East India Company, Garcia de Orta had the advantage of exploring and study the Indian plants, animals, and minerals, some of which had been exported to Europe for centuries, while many others that were unknown to the western world. He strived to revise and amend the misunderstandings about the Indian natural history and *materia medica* in Europe, and provide detailed explanation about the Indian indigenous medicinal systems and the herbs and spices used in these systems (Friedenwald, 1941: 9: Kapil &

---

[5] Bassein (Vasai) is a historical place and a town near Mumbai (Bombay)'s western suburbs, locate in Palghar district which was partitioned from the Thane district in 2014. The Portuguese in Goa and Daman built the Bassein Fort to defend their colony and participate in the lucrative spice trade and the silk route that converged in the area.

Bhatnagar:1976. 449-452; Paiva:2018.:Mathew, 1997: 369-376; Pimentel & Soler, 2014: 101-120; Cabral: 2015).

Military expeditions of Garcia de Orta (as a personal physician to M. A. de Sousa in India) as well as his associations with the Indian elites and practitioners of Indian indigenous medicinal systems helped him gain a fundamental understanding of India as well as its fauna, flora and materia medica. His book *Coloquios dos Simples e Drogas da India* is in the form of dialogues between Garcia de Orta and , and an imaginary physician Ruano (his alter ego) who had recently arrived from the Iberian Peninsula to Goa and was anxious to know about the materia medica of India.[6] It has 57 chapters elucidating the physical and medicinal properties of about 6 dozen plants, drugs, and minerals from Asia, particularly India. These are arranged in alphabetical order and cover plants, drugs, and minerals, such as aloes, amber, benzoin, calamus, camphor, cardamom, cassis, cinnamon, galangal, ginger, opium, pepper, rhubarb, sandalwood, senna, similax china, stramonium, and tamarind. Most of the discussions in the book were about the origin and properties of the herbs and spices, however, ivory, amber, and pearls were also discussed. For each variety, Garcia d'Orta mentioned its local as well as Greek and Arabic names. He referred to areas where it is grown and the method of its cultivation. He also elucidated the sizes and forms of various types of plants, their leaves, flowers, and fruit. He explained the various parts of a plant that should be used, the method of their preparation, and the medical cases in which they should be used. His book was the first western treatise on Indian indigenous medicinal systems, which played a key role in the establishment of the fundamental principles of modern phytotherapy and pharmacology. His works established a medical science that was based on plant preparations and derivatives studied and manipulated through botany and chemistry – the key antecedents of pharmacology.

Garcia de Orta set up a scientifically organized herbarium. He observed, analysed, experimented, contemplated, and then made conclusions. He compared his observations and learning in Asia with what he studied in Europe, with Dioscorides' Pharmacopeia and with Latin translations of Arabic and Medieval works. Based on his findings, he acknowledged that the medieval Arabic scholars on materia medica had a better understating of India than the Greeks, and challenged the authority of classical texts.

---

[6] It was a common convention during this period to write books in the form of a dialogue.

In addition to South Asian fauna, flora and materia medica, Garcia de Orta also studied the role of social practices, such as chewing betel (locally called *supari*) and the use of cannabis (locally called *bhaang*). Though he patriotically referred to Portuguese accomplishments, one notices that he was quite appreciative of local cultures as well as the indigenous medicinal systems of India. He was one of the first few western academics who believed that European medicinal systems would benefit from closer contact with Asia. Some scholars have argued that "this cultural relativism and skepticism toward Western tradition may be attributed in part to his origins."[7] The parents of Garcia de Orta, Fernão and Leonor d'Orta, were Jews from Spain. When the Jews were expelled from Spain in 1492, his parents took asylum in Castelo de Vide, Alentejo province of Portugal. Later, in 1497, his parents were again forced to make a choice between converting to Christianity or take asylum somewhere else. They eventually converted to Christianity. His family religious background finally caught up with Garcia de Orta. Inquisition investigations by the Holy Office scrutinized his family background and socio-religious beliefs. It seems that it was only due to his influential position that he was able to protect himself and his family. However, after his death in 1568, his sister Catarina da Orta was arrested on 28th October, the same year. During her interrogations, she testified against her brother for following Judaism.[8] On 25th October, 1569, Catarina da Orta was convicted of following Judaism and was burnt at the stake as 'an impenitent Jewess' in Goa. The Inquisitor who convicted Catarina da Orta left office in 1572. The new Inquisitor filed a lawsuit against Garcia de Orta, and in 1580, Garcia de Orta's remains were exhumed from his grave, brought before the Inquisitional tribunal, and he was convicted for following Judaism. His bones were thrown into fire and burnt during an 'act of faith', auto-da-fé, at Goa, as a posthumous punishment for being a crypto-Jew during his life. (Luis s,n, p. 68).. This 'deed of faith' was performed on December 4, 1580, that is, about twelve years after Garcia de Orta's death (Ficalho:1886: D'Esaguy:1937. 43-487; Friedenwald: 1941.487-504; Dias: 1964. 18-21;Kapil & Bhatnagar: 1976.

---

[7] https://www.encyclopedia.com/science/dictionaries-thesauruses-pictures-and-press releases/orta-garcia-dor-da-orta. Last Accessed on 9th November, 2021.

[8] It must be noted that it was common to forcefully obtain testimonies through torture. When Catarina da Orta was taken to be burnt at the stake, she confessed that "the reason of her false denunciations was because it appeared to her that she might receive mercy and would save her life, and the devil would refrain from tempting her". (Source: https://daortagoa.wordpress.com/catharina-da-orta/ Last accessed on 11th November, 2021)

449-452; D'Cruz:1991. 1593-4; Mathew:1997'372; Pearson: 2001. 112; Cohen: 2010. 104, 118;; Liberato: 2011. 115; Pimentel & Soler: 2014. 101-120).

It seems that Garcia de Orta's book was suppressed, and the original edition of the book was lost until a copy of the book was discovered and acquired by a French botanist Charles de l′Écluse (1526-1609) during his visit to Lisbon, the capital of Portugal, in 1564.[9] Charles de l′Écluse was also famous by his Latin name, Carolus Clusius. He translated Garcia de Orta's work in Latin and published it in 1567.[10] A summarized and annotated version was published three years later, which was widely distributed throughout Europe. Italian and French translations were also published. A large portion of Garcia de Orta's data later reappeared in a Spanish work. Though the engaging dialogue and insightful annotations were lost in translations, Garcia de Orta's contributions to botanical and medicinal sciences survived and immersed into the mainstream of modern natural history.

Concluding remarks:

In sixteenth century, the Renaissance and maritime discoveries generated interest in India's knowledge traditions. Colonization started a new phase of globalization and multi-culturalism. Working in India for more than thirty years, Garcia d'Orta created his legacy - his book, which described tropical diseases as well as medicinal plants and drugs that were not known to Europe. He introduced the Indian indigenous medicinal systems to Europe. Through his works, he demonstrated how inadequate were the classical Greek and medieval Arabic sources on Indian botany and pharmacology. He strongly believed that western medicinal systems could benefit from Indian indigenous medicinal systems. Eventually, further investigations in the Indian indigenous medicinal systems and the rich fauna, flora and materia medica of India played a key role in

---

[9] This original copy is currently archived in the library of University of Lisbon. It must be noted that it was common to forcefully obtain testimonies through torture. When Catarina da Orta was taken to be burnt at the stake, she confessed that "the reason of her false denunciations was because it appeared to her that she might receive mercy and would save her life, and the devil would refrain from tempting her".(Source: https://daortagoa.wordpress.com/catharina-da-orta/ Last accessed on 11th November, 2021)

development of modern botanical and medicinal sciences in the western world. This research is a humble attempt to investigate the contribution of ancient Indian knowledge traditions in the development of modern medicinal science.

References

Cabral, J. P. S. (2015). Tradicao e inovacao na botanica dos Colóquios. Os cocos e as palmeiras segundo Garcia de Orta. In A. Cardoso, & P. F. da Costa (Eds.), Botanica, Medicina e Cultura nos 'Colóquios' de Garcia de Orta (pp. 85-112). Lisboa: Colibri.

Cohen, H. F. (2010). How Modern Science Came into the World. Four Civilizations, One 17th-Century Breakthrough. Amsterdam: Amsterdam University Press, 99-156.

Da Cunha, J. Gerson (1900). *The Origin of Bombay*. Bombay: Bombay Branch of the Royal Asiatic Society. pp. 98–114.

D'Cruz, I. A. (1991). Garcia Da Orta in Goa: Pioneering Tropical Medicine. *British Medical Journal*, 303, 1593-1594. https://doi.org/10.1136/bmj.303.6817.1593

D'Esaguy, A. (1937). Garcia Dorta and the Inquisition. *Bulletin of the Institute of the History of Medicine*, 5(5), 483-487.

Dias, J. L. (1964). O Renascimento em Amato Lusitano e Garcia d'Orta. Estudos de Castelo Branco: Revista de História e Cultura, 11, 5-34.

Ficalho, C. D. (1886). Garcia da Orta e o seu tempo. Lisboa: Imprensa Nacional.

Friedenwald, H. (1941). The medical pioneers in the East Indies. *Bulletin of the History of Medicine*, 9, 487-504.

History, 18, 101-120. https://doi.org/10.1163/15700658-12342386

Ivana Elbl, 'Man of His Time (and Peers): A New Look at Henry the Navigator'. Luso-Brazilian Review 28.2 (1991): 73-89.

Kapil, R. N., & Bhatnagar, A. K. (1976). Portuguese Contributions to Indian Botany. Isis, 67, 449-452. https://doi.org/10.1086/35163

Liberato, M. C. (2011). Contribuicao para o conhecimento de Garcia de Orta. Revista de Ciências Agrárias, 34, 110-119.

Malabari, Phiroze B.M. (1910). *Bombay in the making*. London: T. Fisher Unwin. p. 21.

Mathew, K. S. (1997). The Portuguese and the study of medicinal plants in India in the sixteenth century. *Indian Journal of History of Science*, 32, 369-376.

Nigel, Cliff (2011). *Holy War: How Vasco da Gama's Epic Voyages Turned the Tide in a Centuries-Old Clash of Civilizations.* Harper.

Paiva, J. (2018). Introducao aos Colóquios dos Simples de Garcia de Orta. Obras Pioneiras da Cultura Portuguesa, volume 15, Primeiro livro de botanica. Lisboa: Círculo de Leitores. Mathew, K. S. (1997). The Portuguese and the study of medicinal plants in India in the sixteenth century. Indian *Journal of History of Science*, 32, 369-376.

Pearson, M. N. (2001). Hindu Medical Practice in Sixteenth-Century Western India: Evidence from Portuguese Sources. *Portuguese Studies*, 17, 100-113.

Pimentel, J., & Soler, I. (2014). Painting Naked Truth: The Colóquios of Garcia da Orta (1563). *Journal of Early Modern History*, 18, 101-120. https://doi.org/10.1163/15700658-12342386

Veni Vidi.Goa, by Luis S.R Vas, Travellers Views of Goa, Ancient and modern. p. 68

Anthropological reflections on water consumption patterns around CKDu in Ginnoruwa

Upul Kumara Wickramasinghe
Department of Anthropology, University of Durham, UK.
upulkw@gmail.com

Abstract

Chronic Kidney Disease of uncertain etiology (CKDu) has become a major public health burden in Sri Lanka over the last three decades. Out of many proposed causative factors, polluted water has been attracted by far the most as the main source of CKDu causation, hence providing safe drinking water has dominated disease prevention interventions carried out by state and non-state actors. In light of the concept of "Appropriate Technology", in this paper, I review RO-filtration and rainwater harvesting – two major alternative drinking water supply methods in use to address CKDu epidemic. Based on my ethnographic study in Ginnoruwa, a CKDu-affected village in the dry zone, I suggest that rainwater harvesting could be more appropriate as a drinking water supplying method compared to RO-filtration, under the condition of proper maintenance and a financial support system.

Key words: *CKDu, Appropriate Technology, RO-filtration, rainwater harvesting*

Introduction

Chronic Kidney Disease of uncertain etiology (CKDu), arguably one of the most serious public health issues in Sri Lanka, has disproportionately affected rural, poor, male farming communities mainly in the dry zone of Sri Lanka (de Silva et al., 2017). CKDu was first identified in the early 1990s, as a form of kidney failure not linked with known causes of chronic kidney disease such as Type 2 diabetes mellitus, hypertension, and obesity (Athuraliya et al., 2011; H. Ranasinghe & Ranasinghe, 2015). In chronic kidney disease of known causes, it is usually the glomerulus or blood vessels of the nephron that are damaged; hence, it is also often called as glomerular *nephritis*[11]. However, in CKDu, damage usually occurs to the tubules and interstitial tissues of the nephron, and as such the disease may also be called as *tubular nephritis.*

More than thirty scientific hypotheses have sought to explain the cause/s of the disease (de Alwis & Panawala, 2019), including agrochemical toxicity (Jayasumana, Gunatilake, et al., 2014), dehydration/heat stress (Johnson, 2017), fluoride toxicity (Chandrajith et al., 2011; Ileperuma et al., 2009), heavy metals such as cadmium, arsenic, lead and mercury (Bandara et al., 2010; Jayasumana et al., 2013; Jayasumana, Gajanayake, et al., 2014; Wanigasuriya, K.P. , Peiris-John, R. J. and Wickremasinghe, 2011), and algal toxins (Kulasooriya, 2017). Drinking water, food, and contamination of water sources through rat droppings are some of the possible mediums that spread the disease. However, in public and scientific discourses, contaminated drinking water has dominated as the main medium that would cause CKDu as most scientific studies on CKDu causation are focused on the quality of drinking water (de Silva, 2019; de Silva et al., 2017). The domination of public and scientific discourses by drinking water hypotheses does not mean that other hypotheses do not have a scientific basis. Most of the proposed hypotheses are backed by scientific rationales and may explain the cause of the disease in certain social and geographical settings. However, hypotheses that propose contaminated drinking water, particularly with agrochemicals (mainly glyphosate) have gained significant media attention compared with other hypotheses due to its political sensitivity (Bandarage, 2013).

This paper focuses on drinking water sources that most researchers have proposed as the most likely medium of CKDu causation. In doing so, I particularly focus on the emergence of Reverse Osmosis (RO)-filtered water as a dominant CKDu preventive measure and its domination over rainwater harvesting. The concept of "Appropriate Technology" is used to understand the social, economic, and political implications of drinking water supply mechanisms in relation to CKDu prevention.

First, the paper briefly discusses existing literature on CKDu and its connections with drinking water. In the next section, I will outline fundamental features of the concept of "Appropriate Technology". This will be followed by a discussion on technologies of supplying 'safe' drinking water for communities at risk of CKDu with particular reference to RO-filtration and rainwater harvesting. This discussion draws from the author's ethnographic fieldwork in Badulupura village in Ginnoruwa Grama Niladhari Division in Mahiyangane, a CKDu-affected rural community in the Uva Province. The paper concludes by highlighting the importance of rainwater harvesting as a simple technological fix that may contribute in

abating CKDu effectively in Sri Lanka, compared to technically sophisticated RO-filtering systems.

CKDu and drinking water

There is a lack of accurate epidemiological information indicating the prevalence and spread of CKDu. Even though there has been progress in registering CKDu patients at kidney clinics in government hospitals in affected areas, many patients do not attend clinics due to various practical reasons and most deaths take place at home. As a result, data on the number of people affected by the disease is underestimated and occasionally contradictory (de Silva et al., 2017). However, according to rough estimates, it is reported that the number of CKDu patients in endemic areas was 20,336 by 2013 (Elledge et al., 2014), while according to the Government Medical Officers' Association, there were more than 400,000 people affected country wide. The annual death rate due to CKDu is indicated to be 1400, while around 22,000 may have died over the last two decades (H. Ranasinghe & Ranasinghe, 2015). One of the reasons for this large discrepancy between different estimates of CKDu patients may be the complexity in differentiate between kidney patients who got the disease through known causes i.e. diabetics and hypertension, and the patients whose cause of the disease is none of those already identified causes. Thus, a CKDu patient recognized by one research group may not be recognized as a CKDu patient by another group. This confusion can be enhanced further by misunderstanding other kidney-related diseases with CKDu. For instance, during my fieldwork, I came across with several patients who were having kidney stones, but erroneously categorized as CKDu patients.

The main reason for the domination of polluted water as the main source of CKDu in both scientific and public discourses is that many scientific studies conducted on the issue have proposed possible connections between contaminated water and the disease. As a vast majority of CKDu-affected areas coincide with the areas irrigated under the Accelerated Mahaweli Development Project (AMDP), it is speculated that polluted water distributed through the AMDP is causing the disease. Bandara et al. (2011) argue that pollution of Mahaweli River water and farmlands under irrigation by cadmium from irrigation inputs, mainly contaminated phosphate fertiliser, is a main factor behind the chronic renal failure epidemic among farmers in the region.

A group of scientists from the University of Kelaniya and Rajarata, including Nalin de Silva and Channa Jayasumana, suggested a link between

arsenic and hardness of drinking water as a causal agent of CKDu (Jayasumana et al., 2013). Another strong linkage between polluted water and CKDu has proposed by Oliver Ileperuma and scientists at the University of Peradeniya through fluoride toxicity. According to them, when sub-standard aluminium vessels are used to cook and store water with high fluoride contents, there is a greater possibility of forming aluminium-fluoride complexes, which may play a significant role in causing chronic renal failure (Ileperuma et al., 2009). More recently, diverting for a certain extent from their earlier focus on arsenic as the major causal agent of CKDu, Jayasumana and Rajarata University-based scientists insisted that there would be a strong connection between pesticides residues, mainly glyphosate, hard water and CKDu. As they hypothesise, glyphosate, nephrotoxic metals and hard water combine to form complexes that have the potential to destroy renal tissues of humans (Jayasumana, Gunatilake, et al., 2014). In addition to these factors, freshwater sources contaminated by cyanotoxins produced by cyanobacteria (blue green algae) are also proposed as a possible causal agent of CKDu (Kulasooriya, 2017).

Apart from the fact that majority of scientific hypotheses that explain the etiology of CKDu have focused on polluted water as the main medium of disease, the politicised and contested nature of agrochemical-polluted water hypothesis has also contributed to the wider public media attention for CKDu and polluted water discourse. Agrochemical pollution of water became a hot topic in recent presidential election campaigns, for example, former President Maithripala Sirisena's 2015 Election Manifesto (Sirisena, 2015: 30). As a result of the growing public pressure, former President Maithripala Sirisena banned five agrochemicals in 2015 including glyphosate, which is the main active ingredient of Roundup, a commonly used herbicide in agricultural activities in Sri Lanka by then. Moreover, as glyphosate and many other agrochemicals are produced by western multinational corporations like Monsanto, it has been speculated as an 'agrochemical mafia' and 'a crime against humanity' (Jayasumana, 2016a).

The concept of 'bio-media citizenship' (de Silva, 2018) would help to understand how and why polluted water is believed to be the main causal agent of CKDu at public level. According to this concept, affected people and their behavioural patterns construct a politically informed, 'informational bio-citizenship' through the information gained from clinics, media reports, and local health personnel and it opens a door to understand how particular types of information are popularised and readily available for affected people. On one hand, being paddy farmers,

most people in the affected areas are closely connected with agrochemicals and irrigation water in their day-to-day life. On the other hand, in most of these affected areas, the hardness of drinking water is relatively high compared with most of the non-affected areas, which have created a common perception among people that the water tastes bitter and may not be safe for drinking. Therefore, it can be assumed that biomedical explanations of CKDu complements with the experiential knowledge of people about water, which has led to an ideological solidarity around the understanding that polluted water is the cause of the disease (ibid).

In most parts of the dry zone, access to safe drinking water, both in terms of quality and quantity, has been a major issue in people's day-to-day life. The risk of getting CKDu in which drinking water is suspected as the main source of causation has made the situation worse. In this context, there is a huge demand for drinking water supplies which are more cost-effective and user-friendly. In the next section, I briefly discuss the concept of "Appropriate Technology" as it would provide some valuable insights to understand better alternative drinking water supply methods.

Appropriate Technology

In parallel with the rising demand for 'safe' drinking water in CKDu-affected areas, a debate has emerged both at village-level and scientific and policy-making circles on what should be the appropriate technology or technologies to meet that demand. How do we decide whether a particular technology is appropriate or not? What criteria may use to define appropriate technologies? The concept of "Appropriate Technology" (AT) would shed some lights to respond to those questions effectively. The term "appropriate technology" is often used synonymously with many terms such as "intermediate technology", "rural technology", "low-cost technology", "alternative technology", "grass-root technology", and "barefoot technology" (Jequier & Blanc, 1983), which has caused a confusion around the exact meaning of the concept. This confusion around the definition of AT can be mainly attributed to changing social, cultural and political circumstances as its context of implementation is crucial (Murphy et al., 2009).

According to Peter Dunn, the fundamental development aims of AT are to improve the quality of life, maximise the use of renewable resources, and create workplaces in the neighbourhoods where people live (Dunn, 1978: 5). In pursuing those aims, AT methods are expected to employ local skills, local material resources and local financial resources, which are

compatible with local culture and practices (ibid). Resonating with Dunn's ideas on AT, Murphy et al (2009) points out that AT methods seek to build individual, institutional, economic, and/or governance capacity, while making use of available resources in an environmentally sustainable manner.

For the purpose of this paper, to discuss the appropriateness of techniques which are used to provide 'safe' drinking water for people in CKDu-affected areas, I would focus on some of the main aspects of AT such as sustainability, affordability, local participation, use of local and renewable resources, gender considerations and meet local capabilities. It should be noted that these aspects are related with each other and often, if not always, interdependent. Sustainability has two major elements in terms of AT: environmentally sustainable and locally sustainable (Murphy et al., 2009). The environmental sustainability refers to the point that the use of a technology should not cause significant harm to the environment in which the technology is implemented, and meeting current needs of the community should not comprise the needs of future generations. The use of local and renewable sources is also closely connected with the element of environmental sustainability as it helps to cut down the cost of production and reduce the dependency on outside sources. The second element of locally sustainable means, once a technology is introduced and outside designers left, the local community should be capable of maintaining, reproducing, and repairing (Murphy et al., 2009).

Local participation in the process of design, implementation and maintenance is an essential prerequisite if a technology to be an AT. Without the willful participation of the community in which a technological intervention is exercised, it is merely impossible to make that technology locally sustainable. For instance, as I discuss in this paper, maintenance and follow up plays a key role in ensuring the success of rainwater harvesting. The failure of many rainwater harvesting programs in different parts of the country, which critics like Channa Jayasumana referred to, could be mainly attributed to the lack of maintenance, and follow up. Regarding gender concerns around AT, Murphy et al. point out that it is pivotal as women play a crucial role in new technological interventions as majority of those interventions, particularly in Africa, Asia and Latin America target activities performed by women such as collecting water, gathering firewood, agricultural activities and caring for domestic animals as well as children and elderly people (Murphy et al., 2009).

While achieving sustainable and safe access to drinking water in CKDu-affected areas in the dry zone depends on many socio-economic and ecological factors, appropriate technologies may play an important part in that effort. RO-filtration and rainwater harvesting are two major solutions which have been popular and in practice to address the drinking water issue in the dry zone over the last couple of decades. In the next section, I briefly discuss the status of RO-filtration and rainwater harvesting as means of abating CKDu in Sri Lanka.

RO-filtering versus Rainwater harvesting

Among those who recommend providing safe drinking water as a major preventive measure of CKDu, a vast majority back and promote RO-filtered water as the most appropriate way to address the issue (Jayasumana et al., 2016; Ranasinghe et al., 2015; Wimalawansa Foundation, 2013). According to the Wimalawansa Foundation (2013), other than provision of pipe-borne water by the government and/or private sector involvement or purified water via RO-plants, there is no other sustainable way to provide safe water for CKDu-affected communities and RO is the most cost-effective system that can remove all toxic components from brackish water in affected areas.

Consequently, Wimalawansa Foundation has launched a charity project to install 450 plus RO plants in affected areas which is estimated at around US$4,500,000 (Wimalawansa Foundation, 2013). It is apparent that the government has also paid a special attention towards supplying RO-filtered water for CKDu-affected communities as a major disease preventive measure. According to Harsha Kumar Suriyarachchi, former Vice-Chairman of the National Water Supply and Drainage Board (NWSDB), RO filters can significantly reduce Total Dissolved Solids (TDS) content, which is the main element in brackish water harming those affected by CKDu. As RO filters became popular, in 2013 the government allocated 900 million rupees to purchase RO machines for the worst affected areas (Suriyarachchi, 2014), and there were around 50 large-scale RO machines, 500 middle-scale machines and around 50,000 domestic RO machines in use (Jayasumana, 2016b: 169).

Although Sri Lanka is famous for its ancient hydraulic civilisation which consisted of thousands of large rainwater collecting tanks, at present, compared to RO machines, rainwater harvesting systems are less popular as a preventive measure of CKDu. However, there are several advocates of rainwater as a safe drinking water source for CKDu-affected communities.

As rainwater is almost free from chemicals such as fluoride, calcium and magnesium, according to Stanley Weeraratne, Director of Lanka Rain Water Harvesting Forum, rainwater could be used to reduce the severity and incidence of CKDu (IWMI, 2014). It is reported that more than 30,000 rainwater harvesting systems have been established by the NWSDB, Lanka Rain Water Harvesting Forum and many other private and public institutions (Ariyananda et al., 2010). Rainwater harvesting has been suggested as a simple, practical remedy for those people with renal failures and the lack of attention for rainwater is even attributed to the influence of big companies who produce RO plants (Dharmasena, 2015). One of a few prominent advocates of rainwater harvesting as an effective mean of providing safe drinking water for affected people was the late Ranjith Mulleriyawa, an agriculturalist, farmer, researcher and rural development activist. He founded the Rain Drops Project, which I discuss in the next section, a community-driven rainwater harvesting project, with the aim of providing rainwater for CKDu-affected people in Ginnoruwa.

Rain Drops Project

The Rain Drops Project was initiated under the leadership of Ranjith Mulleriyawa, who was also a member of the Centre for Education, Research and Training in Kidney Disease (CERTKiD) at the University of Peradeniya, with financial support from the Commercial Bank PLC, Sri Lanka, and other well-wishers. The project site was Badulupura, a village in Ginnoruwa Grama Niladhari Division in Mahiyangane, where around 30% of households said to have at least one CKDu patient (Balasooriya et al., 2019). In contrast, in the adjacent village of Sarabhoomi, there was only one positively diagnosed CKDu patient and he too moved there after about 10 years of living in Badulupura.

Both villages were established in 1982, within the Mahaweli C zone, as part of the AMDP. Both villages have their paddy fields located in the same tract of land and growing the same paddy varieties using same agrochemicals. Moreover, food patterns and other lifestyle patterns were also almost similar in both communities. The only obvious difference between the two communities was their topographic difference as Badulupura was in the upper slope of the rolling landscape, whilst Sarabhoomi was located on a relatively flat land in the closer proximity to the bank of Mahaweli River. Until recently, people in Badulupura used shallow dug wells in their homestead as their drinking water sources while

Sarabhoomi villagers use river water from the Mahaweli River (Mulleriyawa, 2016c).

The project began as a pilot project in January 2016 by providing rainwater harvesting facilities for 25 households with CKDu patients, while another 25 households without CKDu patients were studied as the control sample (Mulleriyawa, 2016a, 2016b). The author conducted a brief ethnographic study in between November 2016 and March 2017, mainly focusing on villagers' perceptions on drinking rainwater and its effects on the disease.

Methodology

As noted above, rainwater collecting tanks, each with 5000L storage capacity, were donated to families with at least one CKDu patient in Badulupura village. As a result, by the end of 2016, around 90 people, including both CKDu patients and non-patients, were consuming rainwater for their drinking and cooking purposes for almost one year. As part of my ethnographic study, I conducted semi-structured interviews with 20 people affected by CKDu in Badulupura village in Ginnoruwa Grama Niladhari Division who had received rainwater tanks and 5 people from the same village who had not received tanks at that time. The interviews with patients who received rainwater collection tanks were particularly focused on the taste of water, quantity of water intake, physical features of prepared meals and tea, and health impacts, whilst the interviews with people who did not have those tanks were mainly focused on their perceptions and interest/enthusiasm to consume rainwater for their drinking and cooking purposes.

Apart from those semi-structured interviews, during my stay in the community, I conducted a participant observation of kidney patients, their family members, rainwater tank holders and other villagers. I observed their behaviours, perceptions, and ways in which they expressed their views particularly on CKDu and its relationship with water, rainwater harvesting and RO-filtration, rainwater quality and other matters related to the Rain Drops Project, the CERTKiD group and the Commercial Bank. Most of the times, these observations carried out at community meetings, such as Death Donation Society, Rain Drops Project, and Farmer Organization, at *kadamandiya* (village shop complex), and at community events and functions.

Critical reflections: why rainwater harvesting could be more appropriate compared to RO-filtration?

In his recent book, *Wakugadu Satana (The Battle Against Kidney Disease)*, an ambitious intervention on CKDu issue, Channa Jayasumana vehemently opposes rainwater harvesting approaches and promotes RO machines as the best available option in supplying safe drinking water for disease prone communities (Jayasumana, 2016b). However, my own study at Ginnoruwa poses the opposite view. Commenting on rainwater harvesting, Jayasumana writes,

> "During the dry season, algae and fungi grow on the roof [of the house]; birds and other wild creatures excrete on the roof. Someone could say that collecting water after letting the first few rainfalls wash away/clean the muck on the roof may be a solution for this, but according to villagers it is just bypassing the real problem... within several weeks of collecting water, its taste changes due to the growth of fungi, cyanobacteria and other types of microorganisms (Jayasumana, 2016b: 163). **[The original text was in Sinhala and the English translation was done by the author].**

However, my ethnographic fieldwork in Badulupura disproves Jayasumana's above claim. None of the rainwater users had experience a bad taste in collected water. Moreover, in most households, they were drinking and using rainwater for cooking purposes, with the condition of not using for washing and other purposes, even up to 5-6 months since the time of collection without any shortage of water. In terms of the desire for water, all the people I interviewed were of the view that they are very comfortable with drinking rainwater instead of well water. According to their perception, new practice has increased the amount of daily water intake, and consequently, there is an increase in the volume of urine excreted. Gunadasa and Sumanadasa were siblings, who were 55 years and 63 years old respectively and were in an advanced stage (IV) of kidney disease **[All names of the informants are pseudonyms to protect their privacy].** According to them, there was a clear difference in the taste of rainwater compared with well water, and they felt very comfortable with drinking rainwater. Both claimed that their daily water intake had increased significantly with rainwater, and consequently, passing out a higher volume of urine, in comparison to when they were drinking well water. They haven't come across fungi or algae growth in their tanks either, contrary to the Jayasumana's claims (Field Notes 2017). Jayasumana further argues that,

[…] according to these western pundits- people who are promoting rainwater harvesting as the solution for CKDu and writing articles to newspapers… the suggestion is to collect water through gutters and store in a large, pot-like concrete tank. The Rajarata receives rainfalls only for a limited period of the year and the rest of the time receives intense sunlight." (Jayasumana, 2016b: 163).

However, the Rain Drops Project in Badulupura has shown that this was not as much of a problem as it may seem. My ethnographic observations on families who were using rainwater confirm that a fully filled 5000L rainwater tank was enough for a family with an average of four members to cover their drinking and cooking needs at least up to four months. During the dry season in the field study period (August to December 2016) only three tanks were completely exhausted and there was enough water in other tanks to meet people's water needs. Out of those three empty tanks, one tank was exhausted because of a social function, while in the other two households, they had shared their water with neighbouring families who did not receive rainwater tanks by then (Field Notes 2017).

Referring to the failures of previously established rainwater harvesting systems elsewhere in the country, Jayasumana declares that "These loquacious pundits who advocate rainwater harvesting should understand that although many nongovernmental organizations tried their best to implement it over the last 30 years, it has proved completely unsuccessful." (Jayasumana, 2016b: 163). It is true that many of the rainwater harvesting projects implemented over the last three decades have failed or not up to the expected standards, mainly due to the poor management (Ariyabandu 1999). However, before writing it off, the reasons behind those failures should be deeply studied. The successful experience of the Rain Drops Project in Badulupura shows that if there is a proper maintenance and follow-up, rainwater harvesting could be a viable solution for providing safe drinking water in CKDu-affected areas.

It may not be possible to derive conclusions on CKDu preventive measures from the results of a one-year pilot intervention, which is relatively a short period of time compared to the time takes to manifest CKDu. However, I would contend that there are several important ethnographic observations and findings of the Rain Drops Project that may contribute to establish rainwater as an effective preventive approach in mitigating CKDu in the long run.

One such observation is the zero identification of new patients from the group who were drinking rainwater. During the pilot project, on 31st of March 2016, a screening clinic was conducted in the village by Girandurukotte Base Hospital and thirteen new patients were identified. Importantly, all those newly identified patients were from families who were drinking well water, and no one was identified from families who were in the test sample consuming rainwater for drinking and cooking purposes. Moreover, in one hand, many patients, and people, both men and women, who were drinking rainwater, did not experience burning sensation after urination even in the dry season as they previously experienced when consuming well water. On the other hand, there were still many users of well water who felt burning sensation when urinating in the dry season.

Another effect of the use of rainwater for cooking instead of well water was the positive improvement in appetite. As per several female participants, when they cooked with rainwater instead of well water, they felt a very clear difference in the physical appearance and texture, as well as the quality of meals which are more delicious. Moreover, when they prepared tea with well water, there was an oily film on the tea, which also had a bad taste. However, when rainwater was used to prepare tea, this was not the case. As Malini put it,

> "Tea is the main drink in our culture… we have tea at least three, four times per day. With well water, we didn't feel the real taste of tea and there was like an oily surface in the tea. But when prepared with rainwater, tea is clear and tastes much better" (Field Notes 2017).

Two main aspects of AT are sustainability and the use of renewable sources. In that sense, it is obvious that rainwater harvesting is much better compares to RO filters. In rainwater harvesting, water is collected from natural rainfalls and directly utilised, whereas in RO filtration, the contaminated groundwater is artificially filtered after releasing concentrated toxic waste back into the environment. As RO filtering technologies are more sophisticated, it requires changing filters frequently and continuous maintenance which is very expensive. On the contrary, rainwater harvesting involves simple and user-friendly technology, and it can be maintained at a low cost by any villager. Further, the plastic tanks used in the Badulupura project were guaranteed for minimum of 10 years by the company that produced it. Moreover, for the operation of RO filters,

a continuous supply of electricity is required, while rainwater harvesting does not require this at all.

However, in terms of the cost-effectiveness, it should be noted that the initial cost of installing a rainwater harvesting system for an individual household is relatively high. In Badulupura, in 2016, it was around 70,000 rupees. It can be argued that, from an economic perspective, it would be difficult for affected villagers, given their relatively low socio-economic background, to afford the initial cost of rainwater harvesting system, thus it is not economically viable option. Undoubtedly it is a valid argument, and it should be taken into consideration before recommending rainwater harvesting as an effective CKDu prevention strategy. However, it should also be noted that there are different ways to address this financial hindrance. For instance, in addition to providing rainwater harvesting tanks for free, government or philanthropic organizations may encourage tank receivers also to contribute through either financially and/or labour. Interestingly, such programs have already implemented in some other parts of the country (Ariyabandu, 1999).

In many developing countries, women are mainly responsible for collecting, transporting and managing water for domestic purposes including drinking and cooking (Upadhyay, 2005). A similar type of relationship between women and domestic water use can be found in Ginnoruwa and many other rural areas in Sri Lanka as well. Having a rainwater collection tank on the doorstep would significantly reduce the burden of women in terms of time and labour. This was confirmed by many women in Badulupura who received rainwater tanks from the Rain Drops Project. For instance, Karunawathi, a tank holder in the first round of the Project, happily shared with me, "My sister, who is living in Dehiattakandiya, needs to travel 2km daily to the RO plant to bring water. If it is not for this Project, we may also have to do the same" (Field Notes 2017). As it is evident in Karunawathi's statement, this is not the case in relation with large RO plants. Women may still need to walk long distances or travel by other modes such as bicycle or motor bike or trishaw to where the RO plant is located and collect and bring water in large amounts making their quotidian life more complicated and troublesome.

Conclusion

CKDu is considered to be a burning public health issue in Sri Lanka at present, but the etiology of the disease is yet to be scientifically confirmed. There have been more than thirty scientific hypotheses

proposed to explain the etiology of CKDu and both scientific and public discourses on CKDu are dominated by the discussions around polluted water. This has led to significant lifestyle changes around water consumption patterns of people by creating a fear of the water they traditionally used. Contaminated water is suspected as the main factor that cause CKDu, and therefore, the provision of "pure", "safe" drinking water for CKDu patients and people in affected areas has accepted as a major preventive measure in abating CKDu by all stakeholders including state authorities, NGOs and philanthropic organisations. Following this line of thinking, over the last two decades, there have been many efforts and interventions taken place to provide "safe" drinking water, mostly focused on RO-filtered water.

The literature on Appropriate Technology emphasises the importance of focusing on sustainability, affordability, local participation, use of renewable resources, gender considerations and meeting local capabilities when selecting one technology over the other. Based on these factors, in this paper, I have argued that compared to RO-filters, rainwater harvesting may be a more appropriate approach in providing "safe" drinking water for CKDu-affected communities in the dry zone of Sri Lanka. My ethnographic study of the Rain Drops Project and its impacts on CKDu-affected Badulupura community indicates that if there is proper maintenance and follow up, and a supportive system to afford the financial cost, rainwater harvesting is likely to be effective and successful.

Ethnographic observations of Badulupura on consuming rainwater instead of well water tend to suggest that there is a correlation between switching from well water to rainwater and reduction in the spread of the disease. However, those positive impacts in terms of disease burden may not necessarily be due to the consumption of rainwater, but due to something else. Thus, further biomedical studies are required to confirm that the consumption of rainwater causes the reduction in CKDu disease burden. What these ethnographic observations do confirm is almost all the people who use rainwater instead of well water feel comfortable doing so and have enhanced their intake of water. However, before generalising these findings, it is necessary to conduct further studies in different social, economic and environmental contexts. Only then it can be known whether there are any context-specific factors that may explain the success or failure of rainwater harvesting systems as an appropriate technology over RO-filtration, and an effective CKDu prevention strategy.

Acknowledgement

References

Ariyabandu, R. de S. (1999). Problems and Prospects of Rainwater Catchment for the 21st Century Sri Lanka. 9th International Rainwater Catchment Systems Conference. http://www.eng.warwick.ac.uk/ircsa/9th.html

Ariyananda, T., Wickramasuriya, S., & Wijeyesekera, D. (2010). Rain Water Harvesting for Water Efficiency and Management. International Conference on Sustainable Built Environment (ICSBE-2010). http://www.civil.mrt.ac.lk/conference/ICSBE_2010/vol_02/26.pdf

Athuraliya, N. T. C., Abeysekera, T. D. J., Amerasinghe, P. H., Kumarasiri, R., Bandara, P., Karunaratne, U., Milton, A. H., & Jones, A. L. (2011). Uncertain etiologies of proteinuric-chronic kidney disease in rural Sri Lanka. Kidney International, 80(11), 1212–1221. https://doi.org/10.1038/ki.2011.258

Balasooriya, S., Munasinghe, H., Herath, A. T., Diyabalanage, S., Ileperuma, O. A., Manthrithilake, H., Daniel, C., Amann, K., Zwiener, C., Barth, J. A. C., & Chandrajith, R. (2019). Possible links between groundwater geochemistry and chronic kidney disease of unknown etiology (CKDu): an investigation from the Ginnoruwa region in Sri Lanka. Exposure and Health, 0123456789. https://doi.org/10.1007/s12403-019-00340-w

Bandara, J. M. R. S., Wijewardena, H. V. P., Bandara, Y. M. A. Y., Jayasooriya, R. G. P. T., & Rajapaksha, H. (2011). Pollution of River Mahaweli and farmlands under irrigation by cadmium from agricultural inputs leading to a chronic renal failure epidemic among farmers in NCP, Sri Lanka. Environmental Geochemistry and Health, 33(5), 439–453. https://doi.org/10.1007/s10653-010-9344-4

Bandara, J. M. R. S., Wijewardena, H. V. P., Liyanege, J., Upul, M. A., & Bandara, J. M. U. A. (2010). Chronic renal failure in Sri Lanka caused by elevated dietary cadmium: Trojan horse of the green revolution. Toxicology Letters, 198(1), 33–39. https://doi.org/10.1016/j.toxlet.2010.04.016

Bandarage, A. (2013). Political economy of epidemic kidney disease in Sri Lanka. SAGE Open, 3(4). https://doi.org/10.1177/2158244013511827

Chandrajith, R., Nanayakkara, S., Itai, K., Aturaliya, T. N. C., Dissanayake, C. B., Abeysekera, T., Harada, K., Watanabe, T., & Koizumi, A. (2011). Chronic

kidney diseases of uncertain etiology (CKDue) in Sri Lanka: Geographic distribution and environmental implications. Environmental Geochemistry and Health, 33(3), 267–278. https://doi.org/10.1007/s10653-010-9339-1

de Alwis, A. A. P., & Panawala, P. V. S. (2019). A review of the national response to CKDu in Sri Lanka. Sri Lanka Journal of Social Sciences, 42(2), 83–100. https://doi.org/10.4038/SLJSS.V42I2.7966

de Silva, M. W. A. (2018). Bio-media Citizenship and Chronic Kidney Disease of Unknown Etiology in Sri Lanka. Medical Anthropology: Cross Cultural Studies in Health and Illness, 37(3), 221–235. https://doi.org/10.1080/01459740.2017.1311886

de Silva, M. W. A. (2019). Drinking water and chronic kidney disease of unknown aetiology in Anuradhapura, Sri Lanka. Anthropology and Medicine, 26(3), 311–327. https://doi.org/10.1080/13648470.2018.1446822

de Silva, M. W. A., Albert, S. M., & Jayasekara, J. M. K. B. (2017). Structural violence and chronic kidney disease of unknown etiology in Sri Lanka. Social Science and Medicine, 178, 184–195. https://doi.org/10.1016/j.socscimed.2017.02.016

Dharmasena, C. (2015). Rainwater: A quick remedy for kidney disease. The Island Online. https://island.lk/?page_cat=article-details&page=article-details&code_title=123806

Dunn, P. (1978). Appropriate Technology: Technology with a Human Face. The Macmillan Press.

Elledge, M., Hoponick Redmon, J., Levine, K., Wickremasinghe, R., Wanigasariya, K., & Peiris-John, R. (2014). Chronic kidney disease of unknown etiology in Sri Lanka: Quest for understanding and global implications. RTI Press Research Brief, March, 1–90. ftp://ftp.fao.org/codex/meetings/CCCF/cccf5/cf05_INF.pdf%5Cnhttp://www.rti.org/publications/rtipress.cfm?pubid=22766

Ileperuma, O. A., Dharmagunawardhane, H. A., & Herath, K. P. R. P. (2009). Dissolution of aluminium from sub-standard utensils under high fluoride stress: A possible risk factor for Chronic renal failure in the North-Central Province. Journal of the National Science Foundation of Sri Lanka, 37(3), 219–222. https://doi.org/10.4038/jnsfsr.v37i3.1217

IWMI. (2014). Increasing Sri Lanka's rainwater storage will help protect people from floods and droughts. International Water Management Institute. https://www.iwmi.cgiar.org/2014/10/increasing-sri-lankas-rainwater-storage/

Jayasumana, C. (2016a). Supporting chemical industries and obstructing research on CKD a crime against humanity. Daily FT. https://www.ft.lk/article/577788/Www.aquavista.lk

Jayasumana, C. (2016b). Wakugadu Satana (The Battle against Kidney Disease). Sarasavi Publishers.

Jayasumana, C., Gajanayake, R., & Siribaddana, S. (2014). Importance of Arsenic and pesticides in epidemic chronic kidney disease in Sri Lanka. BMC Nephrology, 15(1), 1–5. https://doi.org/10.1186/1471-2369-15-124

Jayasumana, C., Gunatilake, S., & Senanayake, P. (2014). Glyphosate, hard water and nephrotoxic metals: Are they the culprits behind the epidemic of chronic kidney disease of unknown etiology in Sri Lanka? International Journal of Environmental Research and Public Health, 11(2), 2125–2147. https://doi.org/10.3390/ijerph110202125

Jayasumana, C., Paranagama, P. a., Amarasinghe, M. D., Wijewardane, K. M. R. C., Dahanayake, K. S., Fonseka, S. I., Rajakaruna, K. D. L. M. P., Mahamithawa, A. M. P., Samarasinghe, U. D., & Senanayake, V. K. (2013). Possible link of Chronic arsenic toxicity with Chronic Kidney Disease of unknown etiology in Sri Lanka. Journal of Natural Sciences Research, 3(1), 64–73. http://www.iiste.org/Journals/index.php/JNSR/article/view/4193

Jayasumana, C., Ranasinghe, O., Ranasinghe, S., Siriwardhana, I., Gunatilake, S., & Siribaddana, S. (2016). Reverse osmosis plant maintenance and efficacy in chronic kidney disease endemic region in Sri Lanka. Environmental Health and Preventive Medicine, 21(6), 591–596. https://doi.org/10.1007/s12199-016-0580-9

Jequier, N., & Blanc, G. (1983). The World of Appropriate Technology: A Quantitative Analysis. Development Centre of the Organisation for Economic Co-operation and Development.

Johnson, R. J. (2017). Pro: Heat stress as a potential etiology of Mesoamerican and Sri Lankan nephropathy: A late night consult with Sherlock Holmes. Nephrology Dialysis Transplantation, 32(4), 598–602. https://doi.org/10.1093/ndt/gfx034

Kulasooriya, S. A. (2017). Toxin producing freshwater cyanobacteria of Sri Lanka. Ceylon Journal of Science, 46(1), 3. https://doi.org/10.4038/cjs.v46i1.7413

Mulleriyawa, R. (2016a). A Raindrops project- a community-based approach to understand and resolving CKDu problem. The Island. http://cea.nsf.ac.lk/bitstream/handle/1/18076/E_2016_APR_24_SUNDAY_ISLAND.pdf?sequence=1&isAllowed=y

Mulleriyawa, R. (2016b). Living among CKDu patients. Daily News. http://www.dailynews.lk/2016/01/06/features/living-among-ckdu-patients?page=3

Mulleriyawa, R. (2016c). Most likely cause of CKDu: compelling evidence from the field: Rooted in troubled waters. Daily News. https://dailynews.lk/2016/08/05/features/89540

Murphy, H. M., McBean, E. A., & Farahbakhsh, K. (2009). Appropriate technology - A comprehensive approach for water and sanitation in the developing world. Technology in Society, 31(2), 158–167. https://doi.org/10.1016/j.techsoc.2009.03.010

Ranasinghe, H. R. A. L. N., Lokuge, L. D. M. N., Edirisinghe, J. C., & Bandara, L. (2015). Water Treatment, Preventive Measures and the Chronic Kidney Disease in the Farming Community in Sri Lanka. Journal of Agricultural Sciences, 10(2), 98. https://doi.org/10.4038/ jas.v10i2.8055

Ranasinghe, H., & Ranasinghe, M. (2015). Status, Gaps and Way Forward in Addressing the Chronic Kidney Disease Unidentified (CKDu) in Sri

Lanka. Journal of Environmental Professionals Sri Lanka, 4(2), 58–68. https://doi.org/10.4038/jepsl.v4i2.7863

Sirisena, M. (2015). A Compassionate Maithri Governance: A Stable Country. https://groundviews.org/wp-content/uploads/2014/ 12/MS-2015.pdf

Suriyarachchi, H. (2014). Is reverse osmosis (RO) treatment the answer to solving the CKDu riddle? IWMI. https://www.iwmi.cgiar.org/ 2014/10/reverse-osmosis-ro-treatment-answer-solving-ckdu-riddle/

Upadhyay, B. (2005). Gendered livelihoods and multiple water use in North Gujarat. *Agriculture and Human Values*, *22*(4), 411–420. https://doi.org/10.1007/s10460-005-3396-6

Wanigasuriya, K.P. , Peiris-John, R. J. and Wickremasinghe, A. R. (2011). Chronic kidney disease of unknown aetiology in the North Central Province of Sri Lanka: trying to unravel the mystery. *The Ceylon Medical Journal*, *56*(4), 143–146. https://doi.org/10.4038/cmj. v56i4.3891

Wimalawansa Foundation. (2013). *Cost-Effective Solutions for Safe, Pure Drinking Water*. https://wimalawansa.org/community_projects/ water_sanitation_and_kidney_disease

Blended Method of Assessment: A Success
Case study based on Engineering Faculty Students

BHJ Pushpakumara[1], Faiz MMT Marikar[2]
[1]Faculty of Engineering, General Sir John Kotelawala Defense University
[2] Faculty of Health Science, The Open University of Sri Lanka
faiz@kdu.ac.lk

Abstract

Study was carried out at General Sir John Kotelawala Defence University, Sri Lanka. this study was done at the Faculty of Engineering. A course outline containing these details is given to the students at the beginning of the semester. Relative weights of the mark allocations for this module are 70% for end semester examination as written examination and 30% for continuous assignments. There were 150 students at one single batch and 30% continuous assessment was converted for one group as paper based and other group breakdown for two in class online virtual assessment and a group practical where it can be done online for online and another group physically. We observed that students who split assessment perform extremely well and got higher scores gives the significant difference. Stress level also minimal level when compared to physical examination. We have introduced distribution of marks in a table with the module content to student at the beginning of the lecture series. It helps students to identify their targets and the type of assessments. Further, use of formative assessment in this manner provides several numbers of opportunities for improvements. Student can identify their weaknesses and area for improvement with this way of assessment.
Keywords: *Blended, Assessment, Online, End Semester, Sri Lanka*

Introduction

The ultimate goal of teaching is understanding. If we, as teachers, do not teach properly, students will not be able to understand the lesson. In such bad situations, students may tend to bend for self-teaching methods, they will read more books, do searching in the Internet, have peer discussions so that they could be able to avoid or escape from bad teaching (Cole & Chan, 1994. 125: Marikkar *et al.,* 2014, pp 13-26) But can they escape from bad assessment? Therefore assessment should be taken very seriously. Because teaching, and most importantly assessments decide student's future.

Assessment in the field of education can be defined in many ways. Simply we can define it as the wide variety of methods or tools that educators use to evaluate, measure, and document the academic readiness, learning progress, skill acquisition, or educational needs of students (Gronlund & Linn: 1990, pp 138-149). Assessments are typically designed to measure specific elements of learning. These evaluation methods can also use to test individual student strengths and weaknesses, and so the teachers can provide appropriate support or use specialized teaching methods for them.

Learner Centered assessment can be considered as the most effective way of assessment, since whole teaching and learning processes are there to encourage learners. Learner centered assessment will provide opportunity to both teachers and students to evaluate learning together. With the online teaching this study was concentrated towards online assessment as well.

We may need to know the level of the students or we may need to rank the students for a selection. Normally we hold assessments to measure the progress of the students (Race, 2001, 124). Also we conduct assessments in order to motivate the students. According to the objective, we can categorize assessments into two categories.

Summative Assessment:

In this type of assessments, the objective is to evaluate student learning and marks are taken for decision making. A summative assessment can be a midterm exam, a final project or a paper.

Formative Assessment:

The main objective of formative assessment is to monitor student learning. In this type of assessments, the teacher's intention is to provide ongoing feedback which can be used both teaching and learning of teachers and students. The marks of formative assessments are not taken for grade calculations. More specifically, formative assessments: Help students identify their strengths and weaknesses and target areas that need work [5]. Help faculty recognize where students are struggling and address problems immediately with physical and online system.

In this study we have checked whether online assessment can be done efficiently. Continuous assessment was converted for one group as paper based and other group breakdown for two in class online virtual assessment and a group practical where it can be done online for online and

another group physically. Analysis were done to check whether there is a correlation between virtual assessment and physical assessment.

Methodology
Research Design

In this study, we have examined General Sir John Kotelawala Defence University's (KDU's) cadet and civilian students' response to virtual and physical assessment, especially whether there is a correlation between continuous and final examination results platform in the Defence university system. This topic was judged to be extremely important to have a conceptual understanding of what is teaching methods and to find out whether it involves in evaluation by virtual examination. The study design in this study is presented in the **Figure 1.** Approval for the study was obtained from the Staff Development Center. Target population of this study represents 30 cadet and 120 civilian students following a Engineering undergraduate course. All students assessed from the results of their continuous and final examination marks were considered. 150 students, who participated in the study and gave their consent, were included in the study. The purpose of the study was explained to the students at the beginning of collecting data. The cadet students who consented to participate in the study were individually tagged and given them a tag. (n=150).

Research Context and Participants

150 cadet and civilian students took part in this study. All cadet students were employed at the university as cadet officers enrolled as students. The civilian students were second year Engineering students. KDU's student population is a socially and economically diverse community in Western Province of the country in the one and only Defense University in Sri Lanka.

Continuous and Final Assessment

Continuous evaluation consisted of two different parts: the first one corresponded to open exercises in the classroom and homework physically and virtually; the second one consisted of individual tests, performed in a Web self-assessment tool, using Moodle. To conduct these intermediate assignments, we have used the Learning Management System (LMS) of the KDU. The final exam was the same and was held at the same time for all the students independently whether the student is following or not the

continuous evaluation process. Three hour written examination paper with four questions were given and analyzed the results with respect to blended it means virtual and physical together.
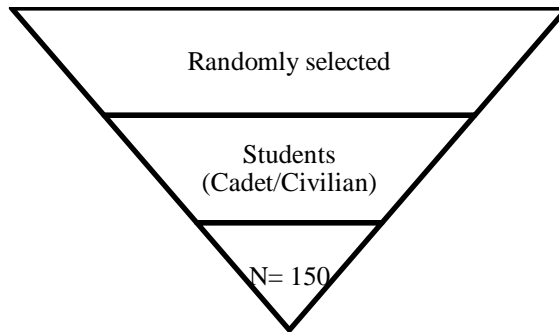
Figure 1. Study Design

Data Presentation and Analysis

To analyze the questions, we compared informal reasoning displayed by individuals representing high and low level of understanding of teaching methods with respect to assessment by physical and blend method. The validity of the translation was independently assessed by two observers competent in the English language. We analyzed our data as a balanced figure in a percentage of application. For statistical analysis, we transformed all our data using the basic statistical analysis package

Results

In statistics, the correlation coefficient `r' measures the strength and the direction of a linear relationship between two variables on a scatter plot. The correlation value is always between +1 and -1. The correlation between continuous assessments (CAS) and end semester (END S) marks for the course Engineering is 0:78 (Figure 2). This indicates that there is a strong uphill (positive) linear relationship between two components. That is, the student performance for both CAS and END S is somewhat equal. Standard deviation for CAS is 11:34004237 and for END S, it is 10:31174139. These indicate that the performance of the students for CAS and end semester are mostly equal.
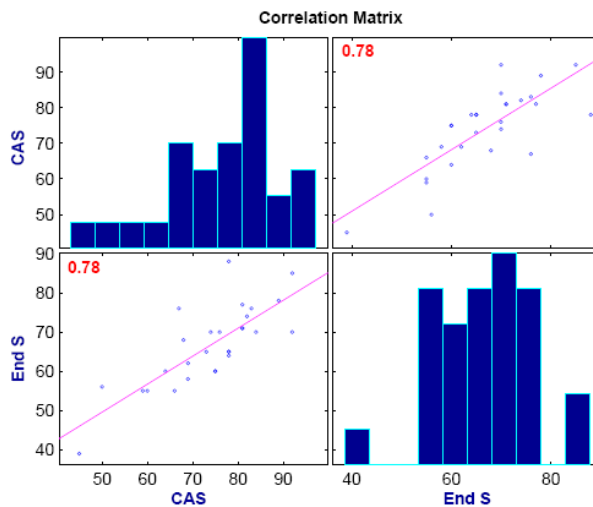
Figure 2- Correlation Matrix between CAS and End semester marks for the course Engineering students physical examination

For this course Virtual and blend assessment the correlation between CAS and end semester marks is 0:57(Figure 3). Figure 2 this indicates a moderate uphill (positive) relationship, which means the two are not having a good relationship. The standard deviations 10:52705006 and 13:98009734 also verify the above decision with respect to physical examination.
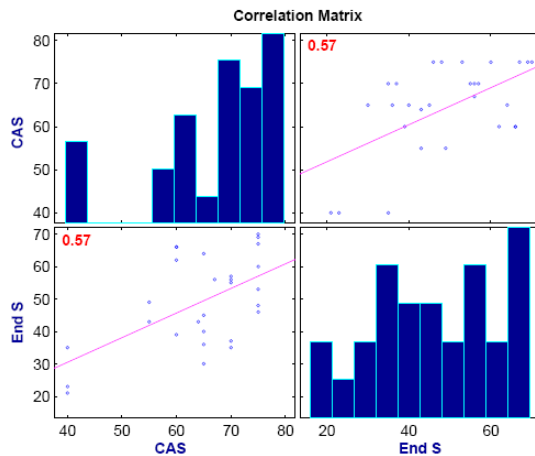
Figure 3. Correlation Matrix between CAS and End semester marks for the course Engineering student Virtual platform

Conclusion

Overall, there is a positive correlation between continuous assessment and final assessment with respect to blended method. For the Engineering students have performed equally for CAS and end semester in this virtual platform. The reasons can be CAS included a mid-semester examination. Therefore, there can be some similarity between the assessment methods used. Students learning abilities may not much improved during the course. Or students different learning styles lead them to grab the course differently. For the Engineering course physical examination there is no such strong relationship. The reasons can be having used take home assignments for CAS therefore most of the students scored better for CAS and a written exam for the end semester. Different assessment method may lead them score differently. Or students may pay less interest to the subject.

Acknowledgement

References

Cole, P.G. and L.K.S. Chan (1994). Teaching Principles and Practice. Sydney, Prentice Hall of Australia. pp 125-128.

Marikar, F.M.M.T., I. P. W.Piyumi, S.H.K.M.N. Ilangakoon, D. Jaliya, l, D. Jayasena, S.K.P.B. Kalavitigoda, S.P.S.N. Kulathunga, 2014. Sri Lankan Medical Undergraduates Awareness of Nanotechnology and Its Risks, Education Research International, pp 13-26.

Gronlund, N.E. and R.L. Linn,1990. Measurement and Evaluation in Teaching. New York, Macmillan., pp 138-149.

Race, P., 2001. The lecturer's toolkit, 2nd Ed. London, Kogan-Page, pp 124-126.

Van Duzer and F. McMartin, E. 2003. Methods to Improve the Validity and Sensitivity of a Self/Peer Assessment Instrument. IEEE Trans. Educ., 43(2), pp 153-158.

Enduring death and bereavement: An Analysis of Sinhala Buddhist Funerary Practices and Worden's 'Four Tasks of Mourning'

Vishanka Gunawardana
Navy Headquarters, Colombo, Sri Lanka
gunawardanavishanka@gmail.com

Abstract

Cultures across the world practice diverse funerary rites to cope with death and bereavement with respect to how the 'death' is contemplated in their socio-religious context. In Sri Lanka, 'death' is viewed by the Sinhala-Buddhist community along with the principle of impermanence in Buddhist *dhamma* and hence their funerary practices have a socio-cultural support system to manage their negative feelings and emotions of the immediate family members of the deceased and to move on with life. In the studies of psychology, the negative consequences concerning human behavior in utmost needy situations are addressed through different models and theories as a guiding method and one of such concerning death and bereavement has been discussed in the 'four tasks of mourning' model introduced by J. William Worden. Therefore, this study comparatively analyzes the potential of Sinhala Buddhist funerary practices and the model of 'four tasks of mourning' to endure death and bereavement by analyzing four modes; accepting death, working through the pain, adjusting to life, and moving on with life. Participatory observation has been used to collect primary data for Sinhala Buddhist funerary practices while literature on psychological treatments has been used to collect secondary data. The study focuses on Worden's model as a scientific and gradual process while Sinhala Buddhist funerary practices are a ritualistic process that is mostly influenced by the Buddhist philosophical concepts. The social support system also helps the enduring process of the immediate family and adjusting to the new reality of living in the absence of loved ones as in the Worden's model. Hence, the features of Worden's flexible model can be identified in the inherent Sinhala Buddhist funerary practices of Sri Lanka. When a methodical process aids to cope with the death and bereavement of the person who seeks psychological support, Sinhala Buddhist funerary practices provide the same as a cultural practice.

Keywords: *Death, bereavement, Four tasks of mourning, Funerary practices, Sinhala Buddhists*

Introduction

Empirical evidence indicates that the death and bereavement of a loved one usually brings about both short-term and long-term negative impacts on the physical and mental well-being as well as the social well-being of other members of the family or society. Courtney (2020) states these negative impacts under two main aspects as mental impacts and physical impacts. Mental impacts include shock and disbelief, feeling numb, sadness, despair, loneliness, feeling empty, regret, shame, anger, feeling resentful, anxiety, helplessness, insecurity, and fear whereas physical impacts include fatigue, nausea, sickness, weight loss, or weight gain, aches and pains, night sweats, heart palpitations, feeling faint or lightheaded, insomnia. Deveney (2021) explains that grief and mourning are common terms to describe feelings and behaviors following a loss. Grief is a common and normal psychological response following a death or loss and some consequences such as sadness, longing to be with the person who was lost, thoughts and memories of the person, anxiety, and also anger. While grief refers to the internal experiences of loss, mourning is best defined as acts or outward expressions of grief. Grief and mourning which occur with death and bereavement bring a considerable negative impact on the relatives. As Moor and Graaf (2016) explain, these negative impacts are different according to some facts such as kinships, gender, time period, and closeness but, death and bereavement lead to negative consequences because the death of someone means loss of social and economic support for a family or a society.

Funeral rituals help people to minimize the aforementioned negative impacts by understanding the concept of death, and gradually getting adjusted to their mundane lives without the dead person. The purpose of the funerary rituals describes as follows;

> "Mortuary rituals involve how the remains of the dead are handled in different cultures. These rituals help the members acknowledge their loss, maintain a link with the dead, and help the bereaved continue with their normal life." (UKEssays: November 2018)

The importance of funerary practices can be recognized by paying attention to the deaths during the Corona pandemic. According to Rodrigues (2020), Many people have felt that they are unable to mourn for their significant others properly because many funerals have been prohibited or postponed due to the spreading of the virus. Even though this prohibition is for the safety of people, it can have a significant impact on the well-being of the distressed. By studying on the *Javanes* death rites, Geertz

(1973) also explains the importance of the culture patterns for social and psychological processes which shape public behavior. He explains how the members of the family of a dead person are preparing themselves for the worst and how the whole neighborhood gathered and supported them to adjust by minimizing negative psychosocial impacts as follows;

> "She seemed to lose her bearings entirely and began to move about the yard shaking hands with everyone, all strangers to her, and saying, "Forgive me my faults, forgive me my faults." Again she was forcibly restrained; people said, "Calm yourself; think of your other children, do you want to follow your son to the grave?." (p.159)

Above statement shows that society plays an important role towards family members of the deceased person. As Greertz elaborates, ritual is not just a pattern of meaning, it is also a form of social interaction, and it provides a meaningful framework for facing death. Greertz further states that rapid social change has disrupted *Javanese* society and this is reflected in a disintegrated culture the rituals themselves become matters of political conflict. Therefore, *Javanese* find it increasingly difficult to determine the proper attitude toward a particular event. By refering to a functionalist perspective, Abramovitch (1973) explains how death rituals provide a unique opportunity for studying the core values of any culture while counteracting the centrifugal forces of fear, dismay, and demoralization associated with death.

Therefore, funeral rites have a specific health value as well as a cultural value in societies. These symbolic activities help human beings to get together and share their thoughts, and feelings about important life events. According to Wolfelt (2016), individuals, families, and ultimately society as a whole will suffer if we do not reinvest ourselves in the funeral rituals. When considering the importance of funerary practices, Herath (1996) states two types of objectives as follows;

(i)   Not only should death be made known to society as a universal event, but everyone should be aware of death.

(ii)   That after every death society must be restructured for future survival.

As per above mentioned discussion, the funerary practices are an important aspect of civilizations. Cultures around the world practice different funerary rites to cope with death and bereavement.

Similarly, Sri Lankan Sinhala Buddhist funerary practices have their inherent way of managing the negative emotions and feelings of people who suffer at their loved one's death. The Sinhala Buddhist funerary

practices have a strong Buddhist philosophical background and Herath (1996) states as follows,

> "The ritual of death found among Sinhala Buddhists is very clear in line with the existing belief system about this world and the hereafter and the existing cycle of ideas about the universe" (p. 117)

Accordingly, it is evident that the Buddhist teaching of human rebirth and cycle of countless lives (*samsara*) has an impact on exercising funeral practices. Sinhala Buddhist funerary practices can be studied with its process from the moment of death to the process after the funeral as follows,

(i)   Moment of death
(ii)   Funeral home
(iii)   Last day
(iv)   Post-funeral activities

All the above events have a strong Buddhist religious background. According to De Silva (2002), Family members arrange some religious activities such as chanting *pirith,* reading the good merits book (*pin potha*), chanting stanzas, and worshiping Lord Buddha in front of the bed to bless the person who is in the moment of death. Sinhala Buddhist funerary home is also very specific due to its collaborative environment. According to Herath (1996), the ritual of death is caused by an individual event but represents a collective process.

The Sinhalese' funeral arrangements are also different from other cultures. On the last day of the funeral, whole villagers get together to pay last respect to the dead person and Buddhist monks conduct the religious observances. The relatives and friends also make speeches by remembering the deceased's good qualities and contribution to the society. Depending on the last wishes and circumstances, burial or cremation is the decomposition mode of Sinhala Buddhist culture. As De Silva (2002) explains, on the sixth day a Buddhist monk is invited to deliver a sermon (*hath dawasa bana*), and the next day few Buddhist monks are invited for almsgiving (hath *dawasa dāne*). Further, he explains that alms are also offered after three months, one year, and annually. The purpose of all these processes is to transfer good merits to the loved one who passed away and to make his afterlife better and prosperous.

The Sinhala Buddhist funerary practices have their inherent features to cope with death and bereavement and they eventually lead to

minimize negative psychological impacts and help the family members to adjust to a new life without the dead person. This will be analyzed broadly in the discussion part.

The negative psychological impacts of death and bereavement are common in every person in any culture. According to Gire (2014), regardless of how or where we are born, what unites people of all cultures is the fact that everyone eventually dies. Therefore, the negative impacts which occur with relatives due to the loss of a loved one are also common in every cultural context. Different cultures have different meanings for 'death' and bereavement as well as different types of coping strategies depending on their cultural beliefs. Kuehn (2013) describes that there is a useful connection between the positive coping strategies that exist in multiple cultures and the grief therapy models used in western culture.

Therefore, in modern societies, people tend to obtain psychological support as a coping strategy. According to Stillion (2015), grief-related psychological knowledge has rooted in the Freudian works and Freud emphasizes grief as necessary after the death of a loved one. He believes that a grieving person's emotional energy can be reinvested in new relationships and activities. He has termed these mourning activities as "grief work." Freudian works helped many scholars to create their theories and models. For example, John Bowlby's attachment theory, Elisabeth Kubler's five stages of dying, Therese Rando's six "R" model, Simon Rubin's two task model, Stroebe and colleagues' dual-process model, and William Worden's 'four tasks of mourning'. People in modern societies are led to get these model-based psychological treatments to manage negative consequences in their utmost needy situations.

Catherine & Dykeman (2017) explain three metatheories in grief work such as stage-based models, task-based models, and idiographic models. Among them, psychologist J.W. Worden's model of 'four tasks of mourning' is one of the effective treatment models to endure death and bereavement which is included in task-based models. Stillion (2015) has stated it as follows;

> "Worden's task model has been widely used around the world as a standard reference on grief counseling and grief therapy and has been translated into 14 languages."

This model is flexible for healthy grieving as well as adjusting to life without any enforcement. Worden (2008) describes this model as follows;

Task 1: To accept the reality of loss.
The Survivors need to believe in the impossibility of reunion, at least in this life, and beginning the journey of healing.

Task 2: To process the pain of grief.
The survivor needs to analyze the pain of loss to fulfill the pain process and inhibit suppressing or ignoring the pain.

Task 3: To Adjust to a world without the deceased.
The survivors need to be concerned about three types of adjustments such as internal adjustment, external adjustment, and spiritual adjustment.

Task 4: To find an enduring connection with the deceased in embarking on a new life.
Providing the survivors with a place to lead a fruitful life in the world.
The above-mentioned model is considered an effective model in the western psychotherapeutic field to treat people who are in need in their most difficult time due to the loss of their loved ones. Basically, this is a cognitive process that restructures the thoughts of the deceased, the experience of loss, and the altered world in which the survivor must now live on.

This study consists of a comparative analysis of Sinhala Buddhist funerary practices and J.W. Worden's model of 'four tasks of mourning' to endure death and bereavement. Hence, the main objective of the current study was to examine how the features of Warden's model of four tasks of mourning are included in the Sinhala Buddhist funerary practices. Another objective of the study was to examine how the Sinhala Buddhist funerary practices work for forming social interaction and social harmony in the community while helping individuals to reduce negative consequences of a death. The existing studies have separately studied both Sinhala Buddhist funerary practices and Worden's four tasks of mourning. Hence, the specialty of the current study was comparatively studying both east-west practices in the same study.

Methodology
Participatory observation has been used to collect primary data for Sinhala Buddhist funerary practices. The primary data has been collected from two funerals i.e. (i) a suicidal death of a young girl (17 years old) in Mihinthale, Sri Lanka in on 28 August, 2021, and (ii) a death of an old man

(75 years old) who lived in Kandy, Sri Lanka on 18 December 2021. The secondary data has been collected from books, research articles, journal articles to analyze Worden's task based psychological treatments. A limitation of the current study occurred with the difficulty to collect data from various geographycal areas due to the restriction of Covid pandemic during the selected period of this study.

Discussion

This paper analyzes two modes of overcoming grief and bereavement caused due to the loss of closed ones including (i) accepting death and working through the pain, and (ii) adjusting to life and moving on with life. It has been comparatively analyzed with Sinhala Buddhist funerary practices and the Worden's model based psychological process that helps people to endure negative psycho-social consequences of a death.

Accepting death and working through the pain

The death of a loved one is unbearable for anyone in any society since humans are not capable of immediately forgetting the memory of the person when he or she was alive. Therefore, accepting the death of the loved one is hard for the survivors and primarily affects them negatively. Making the survivors aware of the fact that the dead person can never return to the family or the society is the very first task among Worden's model of four tasks of mourning. This task was named "accepting the reality of loss" and in this, the therapist makes an effort to assist the survivors by making them believe in the impossibility of reunion, at least in this life. As Gernon (n.d) explains, this task is more complicated due to some facts such as if people cannot accept the death in a relationship and confront the full impact of the loss, and if they are unable to accept the reality of how the person died. He further explains that to some people 'acceptance' implies agreement or approval or to others, the severing of ties with the past. However, the meaning of acceptance is none of them and it is simply the moment that people are ready to begin the journey of healing. The therapist uses necessary therapeutic skills as well as therapeutic tasks such as letting the clients talk about the dead person in past tense and actively listening, making them write, and providing them with adequate social support. This therapeutic intervention leads them to heal gradually and become aware of the reality while healing.

While western psychotherapy focuses on scientific methods to persuade people to accept their loss, Sinhala Buddhist culture has its inherent process to educate people about the ultimate reality of everything in the world. Mainly, the majority of Sinhalese in Sri Lankan society follow Buddhism, and the philosophy of Buddhism influences every aspect of the lives of Sinhala Buddhists. Death is understood as an inevitable phenomenon of life by the Sinhalese Buddhists from their childhood since they are educated by the religious corporation. One of the examples of these Buddhist concepts is, that "life indeed is uncertain, death is certain."[12] Therefore, the followers generally understand that there is no way to immortalize an individual who has been born into this world. According to Gunarathne (2005), Buddhism explains that the nature of anything in the world has three stages: birth, existence, and loss or death. He further explains this idea deeply as, "all physical and mental things are inevitably changing. It can be very fast. It also can happen slowly. But it will inevitably happen" (Gunarathne: 2005, p. 25).

One of the main concepts of Buddhism is 'impermanence', meaning that there is nothing permanent in the world, and everything is subjected to change and decay. As this is a part of Buddhist concepts, it often connects to the events of life; birth and death, and in between constant change. This eventually leads to the acceptance of losses in life after the death of a loved one, though the death has been caused unexpectedly or naturally. In order to cope with that, there are specific rituals in the Sinhalese Buddhist society that have been influenced by the Buddhist concepts to both a dying person and the survivors to accept the reality. One of them is leading the dying person to listen to the good works that he or she has done in life. This activity is named "reading the good merits book at the death moment." This is done because of the Buddhist belief in their next birth. De Silva (2002) explained this as follows:

> "It is believed that if the dying person makes a *prārthanā* (wish) aspiring to be reborn in a particular state (as a human or in the realm of god) his wish will become effective. A person who has led a meritorious life, according to the Buddhist way of life may summon his powers of concentration to remember a good deed and wish for a pleasant rebirth (…)" (p.146)

According to the above statement, it is proved that the Sinhalese culture considers death as not the end, but a transition to another birth. As

---

[12] Ven. Mahasi Sayadaw, "Gatha"(verse) on mindfulness/contemplation of death

Wood and Mastrangelo (2020) explains, research suggests that death accepting cultures are less anxious compared to the cultures that are not willing to accept death.

Apart from the above-mentioned ritual, a Buddhist monk is invited to the household for chanting *pirith* (stanzas chanted to bless) in front of the dying person. Engaging in religious activities at the last few hours of the life of a person is also helping both the dying person and survivors to reduce the negative mental outcomes. According to the observation at the funeral of the old man (as described in the methodology), family members revealed that they console because they have done their level best to make the dying father's last moment comfortable both mentally and physically. Further, the members of the family accept the loss by arranging religious rituals when their loved one prepares for the next birth. The effect of these types of rituals are as follows:

> "At the moment of death, Buddhist monks chant and preside a sermon to counsel, console, and provide a conceptual mental framework for the grieving relatives regarding the cycle of birth, death, and rebirth." (Silva: 2002, p.146)

The above statement indicates that the religious activities at the death moment are also important to the mental well-being of the relatives. According to the observations of this study, all the family members are getting together around the bed and they are sharing their bereavement feelings, and that has helped them to accept the loss and manage the negative outcomes that follows. It has also been proved that relatives often get together and treat the dying person in the buddhist culture and this collective behavior is leading people to cope with loss and accept the loss.

According to the observations of the two funerals, (i.e 17 years old girl in Mihintale and the 75 years old man in Kandy in the study) it was evident that traditional funeral arrangements also contribute to accepting the loss or making the family members aware of the reality. One such arrangement was the display of banners around the funeral home which relates to the Buddhist impermanence concept. They remind people that death cannot be prevented and people must accept it. The banners display at the entrance to the funeral home contains the following phrases or stanzas to name a few;

All compounded things are impermanent (Pāli: "අනිච්චා වත සංඛාරා")

Everything must be left (Pāli: "සබ්බන් පහාය ගමනීයන්")

As it conveys, the change and impermanence of life is emphasized to the living others.

The funeral environment and the people's behavior show some symbolic features in Sinhalese society. As Palliyaguru (2007) explains, the colour white represents the unfortunate and sorrowful expression in Sinhalese society. In this study, it was observed that people of the village decorated the environment with white colour flags and streamers. People dress in white and women aviod wearing jewelers. According to Wijesekare (1983), mirrors, pictures, and calendars hanging on the walls of the funeral home are turned to face the wall. According to the participatory observation, the funeral process included traditional music using an instrument pipe and two drums. This sound of music is called *mala bera* (a sorrowful beat made with drums and pipes). These symbolic rituals are signs of Sinhalese culture that remind people of the impermanence of life and also lead them to accept the loss.

The Sinhalese-Buddhist society can be recognized as a community with collaborative behavior. They support each other to perform rituals in their life events from birth to death. Similarly, in funerals, the neighbors come to the funeral home and talk about the deceased and the circumstances of the death with family members and therefore, it helps family members to accept the loss which is essential to reduce their pain. In particular, the majority of the villagers attend the funeral and engage in work at the premises as an extra helping hand. According to De Silva (2002) meals are not prepared in the funeral home and neighbors bring the food for both family members and visitors. This meal is called *mala batha*. In Sinhalese culture, funerals are held at home and the body is kept for over two days to let people pay their last homage to the dead person. All the relatives and villagers take responsibility during these days and members of the family of the dead person are provided with care and special attention. This social support system has an impact on helping the family members to accept the reality and cope with the negative mentality caused immediately after the loss.

The second task of Worden's four tasks of mourning is working through the pain and it is named "process the pain of grief." According to Williams (2013), people have to acknowledge negative emotions such as sadness, fear, loneliness, despair, hopelessness, and anger to guilt, blame, and shame, though they accept the loss. The therapist's contribution is to make them focus on their normal life while helping them acknowledge the

pain caused by death, by talking about, and understanding these complex emotions to work through them.

Similarly, Sinhalese Buddhist funerary practices have their inherent way to encourage survivors to reinstate their normal condition while they suffer and worry about the immediate loss . As William (2013) explains, to acknowledge negative emotions, both the therapist and the client should talk about them. It has been observed that the Sinhalese funeral home has a support system in which survivors can express their emotions to their neighbors and visitors in informal discussions. It has also been observed that the neighbors and visitors are crying and weeping with family members of the deceased and share their feelings and emotions with them with empathy. This process can be observed as follows:

> "The effectiveness of the cultural traditions of various rituals and ceremonies encourage the building of a supportive group of relatives and friends. These emotional bonds are displayed on this occasion." (Silva: 2002, p.146)

According to the above statement, people get shocked and weep just after realizing that their loved one has gone from their family forever but, the cultural pattern influences them to control themselves and work through the pain. The Sinhalese culture has a social support system that helps people to survive even in their worst situations.

The observations in the study have identified that the neighbors of the family express their empathetic feeling with their inherent ways of funerary practices. At the funeral of the old man in Kandy, neighbors expressed their feelings to young children as follows,

"That is his *karma* (*Kamma*). What to do now? You should think about your mother. When *māraya* (death) calls, no one can avoid it. This is the nature of everyone." (An attendee, man, at the funeral on 28 August 2021)

The above type of expression could also be observed at the funeral of the young girl in Mihintale, who committed suicide, and it was as follows,

> "That is the life-span she possesses. We should collect merits for her to make her next birth a pleasant one. Now that is what we can do. You have other children and members to look after them now." (An attendee, a woman, at the funeral on 18 December 2021)

According to the above expressions, it can be recognized that folks have a deep understanding of the concept of impermanence which they have culturally absorbed from Buddhism, and they possess an inherent knowledge on how to make the family members strong to bear their losses.

Survivors can also reduce their pain and obtain some comfort with these empathetic approaches as well as focus on the future of others in the family of the deceased.

Another observation was that relatives treated the visitors who were coming to pay their last respects to the dead person by greeting and offering food and drinks. Sinhalese culture is reputed with their good hospitality that can be observed in every event in their life events. The family members also did not forget to talk to the visitors and treat them. They were supporting relatives to do the arrangements at the funeral though they were in a mentally difficult situation. It seems that, though survivors suffer from negative emotions, they have opportunities to express them as well as work through the pain according to funeral cultural patterns. Williams (2013) states that there are some basic ways that one can accept the reality of a loss, and work through the pain, such as going through the rituals of a funeral or memorial. Hence, it is evident that the Sinhala Buddhist funerary practices have an inherent process to fulfill the first two tasks of Worden's model, i.e. accepting death and working through the pain, and there are both similar and different features that can be identified.

Adjusting life, and moving on with life

After the death of a loved one, family members should adjust to the normal lifestyle and move on with life. By referring to Worden, Williams (2013) explains that the survivors are impacted by the loss, depending on the person who has died, as well as the roles that he or she has played in their lives. Survivors need to learn new skills and tasks to fulfill those roles such as bill paying, parenting, and taking care of the home. The challenges such as living alone, doing things alone, and redefining the self without the other person makes the lives difficult to the survivors. Therefore, the therapist helps survivors to focus on the usual lifestyle that they had previously as well as to move forward with new hopes. This process also included adjusting to a new spiritual environment, which may have been influenced by the experience of death. Therefore, Worden explains this process as all internal, external, and spiritual adjustment.

Worden's tasks of adjusting to life and moving on with life can be seen in the Sinhalese Buddhist cultural ritualistic process with both similar and different aspects. Especially, the family members of the dead person are educated by both religious corporations and social systems to adjust to life with new skills to fulfill tasks that had been formerly undertaken by the

dead person. In the Sinhalese society, people play different roles as parents, children, supportive neighbors, benefactors in the temple, and social workers. As Herath (1996) explains, the death of a person in old Sinhalese society is an unbearable decrement since Sinhalese society has a corporate culture. Therefore, society often expects family members to play the roles which have been played by the dead person. The process that funerary rituals educate family members to adjust to life can be identified with last-day funeral activities. In Sinhalese Buddhist funerary practices, Buddhist monks are invited to perform religious rituals on the last day before burial or cremation. This process is known as *pansakūlaya*. According to the observations of this study, and Wijesekare's (1983) explanation, Buddhist monks are offered a white cloth which is known as *mathakawasthra*. After that, the closest relatives slowly pour water from a pitcher into a cup while Buddhist monks are chanting stanzas to convey the merits to the deceased as follows,

"යථා වාරි වහා පූරා - පරිපූරෙන්ති සාගරන් -

ඒව මේව ඉතෝ දින්නම් - ජේථානම් උපකප්පති

The meaning of the above-mentioned stanza is as the full water-bearing from rivers to fill the ocean, so indeed does what is given here benefit the dead. This can also be identified as a moment in which the family members are satisfied with what they did for the loved one on the last day at home. It also helps them to adjust their spiritual life by knowing that they can do good deeds for the person though the person is no longer with them.

The observations of the study further proved that speeches are conducted to tribute to the deceased by both Buddhist monks and laymen in the village, after all the religious activities. They express their sentiments on all good deeds done by the deceased and request family members to continue those good conduct of life by fulfilling duties on behalf of the dead person. This moment of the funerary practices' inherent process educates survivors to adjust to life and continue the roles played by the deceased. The laymen who make speeches promise on behalf of the relatives and neighbors to look after survivors and provide necessary social security. The old Sinhalese culture had a great social security system since the people are inter-connected in the community. Therefore, it was evident that these funerary practices lead survivors to adjust to life from internal, external, and spiritual aspects.

By referring to Worden, Williams (2013) explains that moving on with life means finding an appropriate, ongoing connection in survivors' emotional lives with the person who died while allowing them to move

forward. It also allows for thoughts and memories while starting new meaningful things, or new relationships. Similarly, some post-funerary rituals allow survivors to maintain a connection with the deceased while focusing on new things. The Sinhalese culture has a process as its people can maintain their relationship with dead relatives and it begins from the sixth day of the death. De Silva (2002) states the process as follows,

> "On the sixth night after the occurrence of death, a monk is invited to deliver a sermon. The sermon usually will be on the subject of coping with the loss of a loved one (...) traditional *dāne* or alms are offered to monks on the seventh day, three months, and one year after the death of a family member. From then onwards, an annual *dāne* is offered to the monks on the death anniversary.

The above process is the one in which Sinhalese Buddhists can engage with dead members of the family though they died many years ago. The Buddhist belief is that people who offer alms and do good deeds can convey the merits to their loved ones who are not in a position to do so, and hence the soul will be satisfied as well as focus on new lives with a gear of spiritual pleasure. In traditional almsgivings, Buddhist stories are preached by the Buddhist monks to make laymen cogitate the impermanent. De Silva (2002) explains the Buddhist story of *kisāgōtamī* as an example. In the Lord Buddha's era, a woman known as *Kisāgōtamī* has come to meet him to find medicine to cure her dead child, thinking that she can heal them to live again. The Lord Buddha had asked *kisāgōtamī* to bring mustard seeds from a family in which no death occurred, to make her realize that it is very common to everyone and unavoidable. As the story ends, *Kisāgōtamī* has realized the definite factors of life; if there is birth, death follows. According to Buddhism, everything in the world is subjected to change since impermanence is the reality and the universal truth. Therefore, these preachings make people aware of the reality and accept the loss as well as adjust to life and move on with it. The Sinhalese Buddhist funerary practices have a systematic way from the beginning to the end of a funeral that can help people to reduce pain and adjust to life step by step.

Conclusion

As per the discussion, it was proved that the Sinhalese Buddhist funerary practices had many similar features to Worden's four tasks of mourning which could help people who suffered the loss of their loved ones. It was also proved that there are some different features of the ritualistic process when compared to the psychological process as it is practiced in the private sphere whereas ritualistic processes are embedded

in social and cultural spheres. Additionally, when theories and concepts on grief work based on scientific processes have been developed in the Western world, Sinhala Buddhist culture practices an inherent process that helps people to overcome grief and mourning as well as overcome negative psychological issues on a Buddhist philosophical basis. Sinhala Buddhist funerary practices have rooted from Buddhist philosophy and most of the features have meanings, but they also have strong social cultural values as well. In the Sinhala Buddhist culture, funerals were a reason to renew social relationships and remind people of the society's role towards individuals when they are in difficult situations.

References

Abramovitch, H. (1973) Anthropology of Death. Annual Review of Anthropology, *Annual Review of Anthropology*, ResearchGate, Retrieved from:https://www.researchgate.net/publication/ 346446240_Anthropology_of_Death_Annual_Review_of   Anthropology/ citation/download

Courtney, E. A. (2020) 3 grief counseling techniques & interventions, *PositivePsychology.com*, Retrieved from: https://positivepsychology. com/ grief-counseling/

De Silva, D. (2002) Life cycle rituals among the Sinhalese, *Sridevi printers (pvt) Ltd*, Pepiliyana Road, Nedimala, Dehiwala.

Geertz, C. (1973) The Interpretation of cutures, New York, *Basic Books, Inc,* Retrieved from: https://is.muni.cz/el/1423/jaro2018/ SOC757/um/clifford-geertz-the-interpretation-of-cultures.pdf

Gunarathne, V. N. (2005) The Buddhist teaching on death, Association of Buddhist book publication.

Gire, J. (2014). How Death Imitates Life: Cultural Influences on Conceptions of Death and Dying. *Online Readings in Psychology and Culture*, 6 (2). Retrieved from: https://doi.org/10.9707/2307-0919.1120

Herath, M.M.D.R (1996), Sociological Analysis of Sinhala Buddhists' Funerary Rituals, Buddhism and Sacrifice Rituals, Colombo: Ministry of Buddhist and Cultural Affairs

Khosravi M. (2021). Worden's task-based approach for supporting people bereaved by COVID-19. *Current psychology (New Brunswick, N.J.)*, 1–2. Advance online publication. Retrieved from: https://doi.org/10.1007/s12144-020-01292-0

Langer, R (2007) Buddhist Rituals of Death and Rebirth, Taylor & Francis e-Library, Retrieved from: http://ahandfulofleaves.org/ documents/Buddhist%20Rituals%20of%20Death%20and% 2Rebirth_Contemporary%20Sri%20Lankan%20Practice%20and%20its %20Origins_Langer.pdf

Moor, N.& De Graaf, P.M. (2016) Temporary and Long-Term Consequences of Bereavement on Happiness. J Happiness Stud 17, 913–936 Retrieved from: https://doi.org/10.1007/s10902-015-9624-x

Palliyaguru, C. (2007) An Anthropological classification on using color in Sinhalese rituals, *Essays in History and Sociology in honor of professor W.M. Sirisena*, Rathnayake printers, Nittabuwa.

Patterson, B. (2021), A Buddhist Approach to Grief Counseling, *Academia Letter,* Retrieved from: https://www.academia.edu/45689563/ A_Buddhist_Approach_to_Grief_Counseling?auto=download&email_wor k_card=download-paper

Rodrigues, L.C (2020) The importance of mourning rituals to the dead, *Journal of Medical Ethics*, Retrieved from: https://blogs.bmj.com/ medical-ethics/2020/08/17/the-importance-of-mourning-rituals-to-the-dead-2/

Sayadaw, M (n.d) "Gatha"(verse) on mindfulness/contemplation of death, *Buddhism*, Retrieved from: https://buddhism.stackexchange.com/ questions/9215/gatha-verse-on-mindfulness-contemplation-of-death-ven-mahasi-sayadaw

UKEssays (2018) Purpose of Death Rituals in Different Societies. Retrieved from https://www.ukessays.com/essays/anthropology/purpose-of-death-rituals-in-different-societies.php?vref=1

Wijesekare, N. (1983) Selected writings, Vol.1, *Tisara Press*, Dutugemunu street, Dehiwala, Sri Lanka.

Williams, L. (2013) Worden's four tasks of mourning, *what's your grief*, Retrieved from: https://whatsyourgrief.com/wordens-four-tasks-of-mourning/

Wolfelt, A. D, (2016) Why Is the Funeral Ritual Important? Centre for Loss & Life Transition, Retrieved from: https://www.centerforloss.com/ 2016/12/funeral-ritual-important/

Worden, J. W. (2008) Grief counseling and grief therapy: A handbook for the mental health practitioner, *Springer publishing company*, New York, Retrieved from https://books.google.no/books/about/GriefCounsel ingandGriefTherapyFour.html?id=cRStL8oURqoC&printsec=front cover &source=kp_read_button&hl=en&redir_esc=y#v=onepage&q&f=false

Stillion, J. M. (2015) Death, dying, and bereavement, Pp, 91-101, *New York: Spring Publishing Company,* Retrieved from: https://books.google.lk/books?hl=en&lr=&id=KkkrBQAAQBAJ&oi=fn d&pg=PA91&dq=J.W.+worden%27s+four+task+mourning+to+endu re+death+and+berevement&ots=Qi24nY3-1k&sig=TxhbwIZSJLD vlozKFHNZ04MGSq4&redir_esc=y#v=onepage&q&f=false

The Prospects of Translanguaging in the second language learning classroom: Undergraduates' Perspectives and Experience

Himesha Prabodini Alahakoon
General Sir John Kotelawala Defense University,
himeshaprabo@gmail.com

Abstract

In the context of second language learning in Sri Lanka, Translanguaging in its multilingual nature, means the process of mediating between several languages or language related gestures. This takes place in the instances where the utilitarian languages of the majority are either Sinhala or Tamil but still when they are supposed to communicate in English. This study focuses on the students' indicating resistance in the use of their first language in the English language classroom, owing to the second language learning and teaching culture and some other issues surrounding English language learning in Sri Lanka. Thus, the objectives of the study were to examine the perspectives of students on the utilization of translanguaging and to see whether it can be used as an effective pedagogical tool in language classrooms. Following a qualitative approach of using self-reflective essays and classroom observations, this research was conducted with the participation of 30 undergraduates as the entire study sample. The results of the study revealed that the students are willing to alternate between languages for the purposes of communication, meaning making and to acquire a better understanding of language pedagogy.

Keywords- *English as a Second Language, Language Resistance, Tertiary Education, Translanguaging, Undergraduates*

Research problem and Research Background

All language learners translanguage overtly in their speech and writing but also covertly in their thinking. The majority has been socialized into fearing mixing and meshing their languages, desperately trying not to translanguage. The classroom interaction appears as bilingual across the modalities of listening, speaking, reading and writing. Rather than seeing this as a problem, translanguaging can be utilized as an effective pedagogical strategy to maximize the use of the student's, and the teacher's, linguistic, social, and cognitive resources in learning. When considering a context like Sri Lankan higher education sector, language diversity exists in

a larger scale more than in its secondary education surrounding. Specially, the language classroom is a highly complex, multimodal environment, with multiple meaning-making signs. Therefore, by allowing, better still encouraging, the students to use all their linguistic and other resources in learning, they can be empowered, and their full potentials can be exhibited.

However, the resistance of using L1 (first language) is highly rampant in the Sri Lankan higher education environment, when the medium of instruction and the medium of degree program arrives in English Medium. This causes ideological stances and some other circumstances like higher education culture and language hierarchy; considering English as the paramount language. Subsequently, after having thirteen years of secondary education in Sinhala or Tamil medium, the undergraduates have to study for their higher education in English medium which put them into a challenging and a difficult period of time of learning. Although English exists as one of the main subjects in their secondary education, due the lack of resources, lack of English trained teachers and other demographic circumstances in Sri Lanka, the majority is not being able to obtain a sound English language learning experience during their school time.

Introduction

In the concept of 'Translanguaging' all languages are considered as equal capitals. Hereby, students are asked to alternate languages for the purposes of receptive or productive use. It aids to go beyond the boundaries between language and other meaning-making (semiotic) and thinking (cognitive) resources. Translanguaging can be considered as the buzz word in Language teaching pedagogy. There is an increased presence of diverge languages in the general society that had been previously relegated to private domains and now they accentuate the hybridity, variability and sense making process of literacy practices nowadays. Despite the concept of bilingualism and biliteracy, the terms of plurilingualism and pluriliteracies more precisely indicate the complexity of language practices and values of speakers in multilingual communities. Plurilingualism involves practices and values that are not equivalent or even homologous in different languages, but that are integrated, variable, flexible and changing (Coste, 2001).

Thus, translanguaging carries not only the baggage of bilingual aspects, but also the cultural hybridity. The act of translanguaging constructs a social space for bilingual individuals within families and

communities that grants them the opportunity to bring together all their language and cultural practices. A translanguaging space is where the interactions of multilingual individuals break down the artificial dichotomies between the macro and the micro, the societal and the social and the psyche in studies of bilingualism and multilingualism (Wei,2011).

Transidiomatic practice is a jargon which entails with translanguaging and it suggests the communicative practices of transnational groups that interact using different languages and communicative codes (Jacquemet,2005). Translanguaging differs from code switching because it is not a shift between two languages but a use of original and complex interrelated discursive practices that cannot be easily assigned to one or another traditional definition of a language.

Translanguaging entails the multi-competence of all language learners and users. Multilingual skills and competencies defy purities, boundaries, and strictly linguistic communication. Hence, the objective of this study is to depict how translanguaging can be utilized to maximize the students' full linguistic, cognitive, semiotic and socio-cultural resources in knowledge construction pertain to English language learning by identifying the ways of mitigating the issues that arise in the due course through the viewpoints of the research participants and with the aid of the previous literature reviews. Therefore, the study expects to see whether translanguaging can be utilized as a bridge which connects the processes of sound communication, student interaction and successful English language learning environment.

Literature Review

Prior literature reviews suggest that 'translanguaging' can be used as an effective pedagogical tool in the sphere of English language learning and teaching. Language is not a fact, a system of syntactic, semantic and phonetic rules. 'Languaging' is thinking and writing between languages and speech and writing are strategies for orienting and manipulating social domains of interactions (Mignolo, 2000). As defined by Baker (2011), 'translanguaging' is the process of making meanings, shaping experiences, gaining understanding and knowledge through the use of two languages.

Moreover, it is the ability of multilingual speakers to shuttle between languages, treating the diverse languages that form their repertoire as an integrated system (Canagarajah, 2011). Translanguaging can be considered as multiple discursive practices in which bilinguals engage in order to make sense of their bilingual worlds (Garcia, 2009).

Moreover, it can be further elaborated as the deployment of a speaker's full linguistic repertoire without regard for watchful adherence to the socially and politically defined boundaries of named (and usually national and state) languages (Otheguy, Garcia et al 2015). They further intricate translanguaging as an approach to the use of language, bilingualism and education of bilinguals that considers the language practices of bilinguals not as two autonomous language systems as has been traditionally the case, but as one linguistic repertoire with features that have been societally constructed as belonging to two separate languages.

As indicated by Li Wei (2011), the act of translanguaging creates a social space for the multilingual user, by bringing together different dimensions of their personal history, experience and environment, attitude, belief and ideology, their cognitive and physical capacity into one coordinated and meaningful performance. From a dynamic systems theory perspective, translanguaging is a creative process in which the property of the agents' way of acting in interactions, rather than belonging to the language system itself (Shanker and King, 2002).

According to Garcia (2009), it is natural that students and teachers move among their linguistic repertoires to fulfill their communicative demands for the purpose of scaffolding in the absence of required proficiency in the language of medium or English in the present context. Thus, this navigation among languages is called 'translanguaging.' Though, the majority of the language users are utilizing this, they are not aware of the concept and some of them claim that using translangauging can hinder the process of proper second language acquisition and its enhancement.

Elaborating further, translanguaging considers linguistic systems as no separate entities but meaning making tools in a heteroglossia which is natural in bilingual or multilingual communities (Garcia, 2009). Contrary to the monoglossic environment, in a transglossic environment, the boundaries demarcating linguistic identities may blur.

In such a context, teachers and students will shuttle between languages to achieve pedagogic communicative objectives in a more democratic and equitable approach. Hence, this heteroglossic, cross-linguistic flexibility becomes potentially a path for mutual understanding (Creese and Blackledge, 2015).

Translanguaging creates fluid space for the interlocutors to shuttle between the languages (Garcia & et al, 2017). Therefore, it defies prevailing dominant ideologies and resists powers it may have been subjugated to in

monoglossic contexts where languages are reflected as separate entities. Accordingly, Richie and Bhatia (2010) argue that this choice is not random but relies on several phases such as bilingual pragmatic competence, which entails in a complex set of implicit socio-psychological determinants.

Therefore, it is evident that in language learning pedagogy, students being multilingual will naturally use whole linguistic repertoire available to them (in this case Sinhala, Tamil and English) to achieve communication purposes. In brief, they would translanguage, unless restrictions are imposed (Creese & Blackledge, 2015; Garcia, 2009; Sayer, 2013).

Similarly, studies have indicated that, mother tongue is used mainly for classroom management, marking the transition points of a lesson structure, encouragement, summary/review (johnson 1983). Thus, it can be confirmed that it is natural for the students and teachers use any language in the ESL class. They may engage in translanguaging in the absence of restrictions.

In such contexts, languages are not considered as separate entities when students and teachers freely navigate between linguistic symbols in their linguistic repertoires. In this context, their ethnic identities demarcated by languages may also become fluid.Thus, translanguaging is "both going between different linguistic structures and systems, and going beyond them for the purposes that transcend the combination of structures, the alternation between systems, the transmission of information, and representation of values, identities and relationships (Wei, 2011).

Theoretically, Garcia and Wei (2015) contend that languages are not monolithic, but make meanings in contexts, subsequently meanings are situated and conceived dynamically. In effect, languages as separate entities are not a natural phenomenon as Makoni and Pennycook (2007) claim. Specifying languages as different entities, such as English, Sinhala, Tamil or German, is an invention of Eurocentric thinking. contrastively, in a heteroglossic context when (named) languages are considered as one single system with different symbolic signs meant for communication in a social space, the individuals who inhabit that social space may become a new linguistic community.

Research Methodology

The study has been conducted in a qualitative approach. The entire sample of the research was 30 first year undergraduates of a state university in Sri Lanka. As per the previous evaluations the participants

belong to the CEFR (Common European Framework Reference for Languages) B1 intermediate level in their second language proficiency. Among them, the voluntary participants were asked to write self-reflections based on their English as a second Language (ESL) classroom learning experience. Specifically, they were supposed to express their sentiments on translanguaging. Before conducting the study, ethical consent has been taken from all the participants. The voluntary participants were given freedom to write their reflections on behalf of their preference.

The teacher of the study also represents the role of the researcher of this study and while the lectures are going on throughout a period of 15 weeks (one semester), classroom observations have been done by the researcher. Based on the observations, the scenarios and the nature where the process of translanguaging was taking place were noted down. When utilizing these qualitative research tools, attention has been driven to the following aspects and the gathered data were thematically analyzed.

- The extent in which L1 and other languages are being utilized in classroom activities other than L2.
- Preference/reluctance of students in utilizing other languages in the circumstance of L2 learning procedures.
- The ways in which translanguage does take place in the classroom context
- How can teachers contribute positively to the realization of all students' full multilingual potentials in learning?
- The opportunities and challenges for the students to purposefully engage in translanguaging at the ESL context
- The extent in which the integration of translanguaging as a pedagogical tool in English language learning/ teaching has have a positive/negative impact upon the students.

Results and Discussion

1. Prevalence of Translanguaging in the ESL Classroom

All students, irrespective of their ethnolinguistic orientations, equally claimed that the translanguaging environment is prevailed in the ESL classroom. From the gathered results it has become evident that the students are using their full linguistic repertoire without regard to watchful adherence to the socially and politically defined boundaries of Sinhala, Tamil and English.

2. Translanguaging as a scaffolding tool in learning English

The students have mentioned a number of advantages of this approach, in which languages act as scaffolding tools. Translanguaging has been aided them to complete the cognitively and academically demanding classroom tasks (Kramsch & Whiteside, 2007). Moreover, it supports to academic knowledge comprehension via the use of different languages.

Furthermore, according to the students' responses translanguaging has helped them with language recognition and improvement, especially in relation to the language of the 'other'. It paves the ways to deduct the hierarchy or language and language diversity is promoted by ratifying the sole purpose of learning and teaching languages; sound communication and proper meaning making in the long run. They also talked about how it helped them in various ways, for example in grasping subject matter more effectively when peers translate and explain. In fact, they have declared that "it's like learning in all three languages".

Translanguaging has been moving between different genres of discourses – from the written discourse of English to the spoken discourse of their first language, and then to the written discourse in English. Specially during the processes of learning grammar and meaning making, students have expressed a higher range of preference in using translanguaging.

3. Translanguaging as a supportive aid in collaborative second language learning

When focusing on classroom observations, it can be seen that translanguaging is mostly happening during group work and pair work in which the shuttle between different discourses or genres such as written texts, spoken discourse in the same language and also in different languages do occur. Specifically, when group activities are taking place, students are effectively communicating 'in all three languages': Sinhala, English and Tamil along with their feasible gestures in their ESL classroom. They are describing a heteroglossic environment in the classroom, in which there is free navigation between languages and where languages are considered as meaning making tools without boundaries.

4. Translanguaging as a solution in overcoming the shortcomings of second language education

As per the written reflections of the participants, the tool of translanguaging has aided them in a great deal to understand, memorize and catch up the content of their main subjects and components in their degree program. Therefore, this paves them the way to overcome the difficulties that arise when they are entering to the university and when they are supposed to study the degree program in English medium after having their secondary education in either Sinhala or Tamil medium for thirteen years.

Conclusion, Implications and Significance

From the study, it has become evident that 'translanguaging' better captures the sociolinguistic realities of everyday life. It has the capacity to broaden the scope of contemporary linguistics, to look at linguistic realities of the world today and how human beings use their linguistic knowledge holistically to function as language users and social actors.

Translanguaging offers a transdisciplinary lens that combines sociolinguistic and psycholinguistic perspectives to study the complex multilingual interactions as social and cognitive acts able to transform not only semiotic systems and speaker subjectivities but also socio-political structures.

As an effective implication, the pedagogical tool of translanguaging is envisaged as a phenomenon which grants equity to all languages by reducing inhibition and language anxiety of the students. It promotes students' self- esteem, inclusivity, autonomous learning, and creative thinking. It leads to create a hetroglossic environment contrary to monoglossic environment.

In the context of Sri Lanka, whereas many multilingual discourses do take place and specially in the arena of higher education in which the diversity exists at its higher level, the research has attempted to indicate the significance of introducing translanguaging as a didactic device that almost all the students do prefer to use and are already being using with the blindfold standpoint that it might obstruct the accuracy of second language advancement. The teaching practitioners and educators also should be aware of this stance and with the aid of research studies and practical implementations, they should be able to find the most apt tools in English language teaching (ELT) process.

The results and findings suggest the significance of promoting 'translanguaging among ESL classrooms by rectifying the issues that arise when practically implementing it as a pedagogical tool under the existing circumstances. Hereby, the teachers and the teacher trainers, are needed to think more of the actual pedagogical practices and how to make sure that those pedagogical practices are inclusive and encourage and enhance the learners' translanguaging competence and potential.

Limitations and future work

The entire research sample was not enough to generalize the opinion of the majority those who are currently engaged in their tertiary education in Sri Lanka. In the study, attention has been entirely driven to the perspectives and usage of translanguaging among the undergraduates and the viewpoints of those who are engaging in English Language teaching (ELT) were not taken into consideration. As future studies, the extent in which textbooks and learning materials allow Translanguaging practices can be explored as a significant factor in the jargon of translanguaging. Moreover, the impact of translanguaging on testing and evaluation can be studied as another future work.

Abbreviations

ESL-   English as a Second Language

ELT-   English Language Teaching

CEFR -Common European Framework Reference for Languages

L1-   First Language

L2-   Second Language

References

Baker,C (2011). Foundations of Bilingual Education and Bilingualism (3rd edition). Clevedon: Multilingual matters.

Canagarajah,S.(2013).Translingual Practice:Global Englishes and Cosmopolitan Relations. New York: Routledge.

Coste,D. (2001). The notion of plurilingual competence, The teaching of living languages: perspectives.

Creese, A.,Blackledge,A.(2015).Translanguaging and identity in educational settings. Annual Review of Applied Linguistics, 35, 20-35.

Garcia, O. (2009). Education, multilingualism, and translanguaging in the 21st Century. In T. Skutnabb-Kangas, R. Phillipson, A. K. Mohanty and M. Panda, (Eds.), Social Justice through Multilingual Education, 140-158. Bristol, UK: Multilingual Matters.

García O,Wei L. (2014). Translanguaging: Language, education, and bilingualism. Houndsmill, Basingtoke: Palgrave Macmillan.

Kramsch C,Whiteside A. (2007). Three fundamental concepts in second language acquisition and their relevance in multilingual contexts. The Modern Language Journal, 91, 907–922.

Otheguy, R, Gracia, O et al. (2015). Clarifying translanguaging and deconstructing named languages: A perspective from linguistics. Applied Linguistic Review, 6 (3), 281-307.

Pennycook, A. (2010) Language as local practice. NY:Rooutledge.

Sayer, P. (2013). Translanguaging, TexMex, and bilingual pedagogy: Emergent bilingual learning through the vernacular. TESOL Quarterly, 47(1), 63-88.

Wei, L. (2011). Moment analysis and translanguaging space: Discursive construction of identities by multilingual Chinese youth in Britain. Journal of Pragmatics. 43, 1222–1235.

Wijesekara H. (2018). Students' ethnolinguistic identities in multiethnic, Bilingual Education classrooms in Sri Lanka.

Review of Prevailing Trends in Online Learning amidst COVID-19 Pandemic: Empirical Study in Higher Education Sector in Sri Lanka

S. Chandrasena[1] , W.A.R. Senevirathne[2]

[1]University of the Visual and Performing Arts
[2] Faculty of Management Studies, Open University of Sri Lanka,
[1]schandrasena@gmail.com [2]wasen@ou.ac.lk

Abstract

The purpose of this study is to review the prevailing trends in online learning amidst in COVID-19 Pandemic, in the higher education sector in Sri Lanka. It has been observed by higher educational institutes in Sri Lanka, who replaced traditional pedagogical approaches with online learning that the learners' engagement has not been satisfactory in the online platforms irrespective of the fact that so many measures have been taken to develop and expand online learning. Quantitative research approach based on cross-sectional research design was used in the study. Data was collected via electronic survey using a questionnaire and it consisted of multiple-choice, Likert Scale, and open-ended questions. It was distributed via Google form among the private and public sector university undergraduates and postgraduates in Sri Lanka, who are engaged in learning activities in the higher educational sector in Sri Lanka. Data gathered on demographics, socio and economic background, ability to access technological resources, study habits and purpose of using online platforms, etc. Descriptive statistics were calculated and trends were analysed accordingly. The findings revealed that many of respondents had spent considerable amount of time for online learning by shifting from traditional classroom based learning. The most popular video conferencing tool is Zoom Meeting. It occupied 94.70% of preferences out of 429 respondents. The most popular online resources and portals are Google (82.5%), YouTube Channel (35.4%), and Spoken Tutorial (9.3%). The main device used by learners to login online sessions is smart phone (71.7%) comparative to laptop computers used by 52.6% and desktop and tablet used by 8.6% and 1.8%. At present, the smart phone has being utilized a vital role as a multi-functional device. Challenges mainly existed from incapability of technological adaptation. Many had environmental challenges to learn from domestic places at different geographical locations which were not supported for frequent online accessibility. This led to poor

communication between educators and learners and engagement was negatively affected. Development of information technology infrastructure and affordable package systems at concessional rates were requested by many participants. Further, inclusion of interactive attributes of online learning tools and delivery patterns of lecturers were suggested to enhance engagement in online learning. The study has been limited to higher education sector in Sri Lanka. The study would assist policy makers, The Government, financial institutes and key players in telecommunication industry to frame new strategies and implement intervention controls in online education. The present study examines the changes of behaviour patterns of learners amidst COVID-19 pandemic and its impact on their social and economic wellbeing. The COVID-19 has significant threats on traditional classroom based learning and created opportunities for online learning platforms. This study is to investigate novel trends in online education around the globe in 21st Century. The findings will pave the way to many stakeholders to reengineering their strategies and reach to unreached opportunities.

Keywords: *COVID-19, Pandemic, Online Learning, Technology, Learner Engagement, Higher Education*

Introduction

Learning is a main part of a person's lifestyle and his/her behaviour is dependent on the knowledge a person possesses. The on-going COVID-19 pandemic has greatly damaged the life styles of the people around the world, specially the way they pursue education. "The COVID-19 is a disease caused by severe acute respiratory syndrome coronavirus 2(SARS-CoV-2), originated in Wuhan city of China, has already taken on pandemic proportions, affecting across all the continents mostly spread among individuals during close contact now resulting in millions of death" (Remuzzi & Remuzzi,2020, p.1225). The latest updates by the WHO as on 13.08.2021, the total confirmed cases of COVID-19 are 205,338,159 and confirmed deaths falls 4,333,094 (WHO, 2021). The virus has been spread around 223 countries, areas or territories with fast paced. Most of the countries all around the world have closed educational institutions to control the spread of COVID-19 virus, considering the safety of students, educators and all associated stakeholders. There is a severe short-term disruption that has been felt by families across the globe. Education at home has brought a lot of shocks not only to students but also to their

parents 'productivity hence, Burges and Sievertsen (2020) emphasized parents have responsibility to understand prevailing situation and encourage children to continue their studies. COVID-19 is a serious global pandemic penetrated to each and every continental in the world at the end of second decades of 21st Century. The novel coronavirus Delta and its variants have negatively impact on social and economic activities of the world. When the COVID-19 pandemic rapidly spread all around the world, schools, colleges and universities have suspended in person teaching in order to maintain social distancing. Online learning at present has increased students' retention and grasping information at a faster pace (Li and Lalani (2020). The Government organizations and technology-led start-ups have introduced online courses. Those are free and some have a very minimal fee; which is helping students and educators to temporarily cope with stress due to lockdown and shutdown of all workspaces. One such is Byju's, a Bangalore, India–based digital educational platform founded and started by Byju Raveendran, who has announced to give free access to children from its learning app (Lewis, 2020).

As this coronavirus is new, the challenges are also new (Shereen et al., 2020). It is very disappointing to hear that gathering and working at one place like offices, shopping malls, colleges, banks will escalate the spread of this virus. WHO has recommended social distancing (Hageman, 2020). Avoiding close contact leads to nearly total closure of schools, shops, colleges, universities etc. All these gave a rise into a sudden increase in online classes as only alternative to traditional classes. With more than 25% of the total number of students in higher education receiving instruction online and ever increasing online student numbers projected(Allen & Seaman, 2010).

Learners at online platforms can share their knowledge and experiences with increasing higher order thinking and greater personal satisfaction (Engstrom, et al., 2008). According to Ascough (2007) and Liu et al. (2007), a welcoming teaching and learning community is central to online student knowledge acquisition, which in turn leads to meaningful learning experiences.

During this lockdown era the closing of educational institutions hampered the education system and therefore the teaching-learning methods. Understanding the novel trends in teaching-learning methods amidst this crisis is imperative. Here at, the academics should be creative for effective interventions for the smooth running of teaching and learning

platforms. Therefore, the aims of this study are to review the trends in online education, patterns of students 'engagement, students learning interest and enthusiasm towards online forums and classroom community in on-line courses conducted in the higher educational sector in Sri Lanka. The outcomes of this study with understanding of online trends may enable and strengthen scholars, learners and relevant stakeholders.

Literature Review
Beginning of E - Learning or Online Learning in Higher Education

Internet revolution has made online learning as an alternative option to face-to-face learning. As a form of distance education, online learning can be defined as ''any class that offers its entire curriculum in the online course delivery mode, thereby allowing students to participate regardless of geographic location, independent of time and place'' (Richardson & Swan, 2003, p. 69). Most, if not all, aspects of a course, including discussions, assignment submission, and communication with the instructor, tends to be facilitated through online course management platforms such as Moodle, Blackboard, Web board, and supplemental communication technologies such as Elluminate, Skype, and others. Given this context, online courses are different from their on-campus counterparts in several aspects (Muilenburg & Berge, 2005). The internet has become a medium of delivery for online teaching. To date, online learning has received considerable attention as a means of providing alternatives to traditional face-to-face, instructor-led education (Douglas & Van Der Vyver, 2004).

Educational institutions now implement online learning technologies as a part of their growth strategy for delivery of teaching and learning to domestic and overseas students. Goodfellow (2004) describes the "e-learning revolution", as "an inexorable process of penetration of technical processes into all aspects of course development, production, delivery, quality assurance, assessment, validation etc." "As these technologies pervade educational organizations, there is a critical factor in the process which is reshaping and transforming higher education teaching and learning, impinging on both organizational structures and individual functions" (Conole, 2004, p. 5).

E-learning in Sri Lanka

Sri Lanka is a country in the developing world with a high level of print and digital literacy. According to the Department of Census and

Statistics, the digital literacy rate of Sri Lanka is 46% in 2019 (DCSSL, 2019). The Central Bank of Sri Lanka states that the country's print literacy as 92.5% in 2018 (CBSL, 2020). Human capital of ICT has potential itself to gain benefits from the emerging global knowledge. Primary and secondary schools are free and accessible for all, but far from everyone leaves secondary schools with career opportunities. When it comes to higher education the situation is different and the actual intake to tertiary education for the year 2018/2019 was 31,902 while the number of students left out of the university system was 29,841 in 2019 (From the Open University of Sri Lanka 6,795, external degrees in Government universities 6007 and internal degrees in Government universities 17039) (UGCSL, 2019). During the last two decades the country's use of information and communications technology (ICT) has increased and the infrastructure has improved not only urban areas but also in rural areas also. There are many reasons to pursue online teaching, learning, and student assessment. Online courses make learning accessible to students who cannot be on campus during regular hours or at all (Lei & Gupta, 2010). Instructors can use online courses to accommodate increasing class sizes and reduce the associated high instructor workload (Earl, 2013). These assessments can be completely online (such as online exams) or just require online submission (such as essays). Assessments can be either formative, designed to monitor students' progress in a low or no stakes environment, or summative, designed to evaluate students against a standard or criteria (Dixon & Worrell, 2016).

Personalized Learning

Personalized learning involves extending the educational concepts of differentiation (teaching tailored to the learning preferences of different learners) and individualization (teaching paced to the learning needs of different learners) to connect to the learner's interest and experiences and meet the needs, abilities and interests of every student through tailoring curriculum and learning activities to the individual. The ultimate aim of a personalized learning environment is to create an educational system that responds directly to the diverse needs of individuals rather than imposing a 'one size fits all' model on students (Bates, 2014).

Personalization of a learning environment allows for a personal learning experience as it allows the learner to access content that meets his needs (Childress and Benson, 2014). In a traditional classroom setting, such personalization is not possible. Thus, the personal learning environment is

a radical shift from traditional learning, providing learners with content adapted to meet their needs (Childress and Benson, 2014).

Artificial Intelligence (AI) in Education

From the very beginning of computer science, researchers like Alan Turing considered the possibility for a computer to play chess, as a test of the machine's intelligence. Thus, he published "Intelligent Machinery" in 1948 and "Computing Machinery and Intelligence" in 1950, both of which will inspire future scientific research in Artificial Intelligence AI (Turing, 2009). Literally, AI means the use of technological devices aimed at reproducing the cognitive abilities of humans to achieve objectives autonomously, taking into account any constraints that may be encountered (Benko and Lanyi, 2009).

Artificial intelligence (AI), in which machines exhibit aspects of human intelligence (Syam and Sharma, 2018), is set to radically transform the marketplace. It is part of the fourth industrial revolution, along with other transformative technology such as three-dimensional printing and the internet of things (i.e. extending connectivity into devices such as security systems and electric appliances to provide the ability to send and receive information over the internet). The potential for disruption by AI is particularly high in services.

AI support of online learning is especially important with the growth of Massive Open Online Courses (MOOCs), where enrolment in the most popular MOOC platforms averages over 40,000 students (Ferenstein, 2014).

Virtual Reality (VR) in Education

VR is an interactive experience within a computer-generated three-dimensional environment that can be a representation of either a real-life or an imaginary environment (Freina and Ott, 2015; Ke et al., 2016). The term "virtual" means computer-generated, while the term "reality" refers to the similarity of objects or of the environment to the physical world (Cheng, 2014). Another significant advantage of VR technology is that it allows the creation of virtual worlds that mimic real-life situations and events, not otherwise possible to simulate, offering users a safe space with room for error to be trained and learn. For instance, simulating in physical space fire situations, earthquakes or terroristic attacks is impossible due to the high danger and cost (Bailenson et al., 2008; Freina and Ott, 2015).However, using VR technology, it is possible to offer the opportunity to develop a

virtual world that represents real-life events, allowing fire-fighters or terrorism response units to be trained in dealing with chaotic crisis within a safe yet stressful environment (Bailenson et al., 2008; Freina and Ott, 2015).

Most importantly VR offers the possibility of visualizing events and situations, allowing the users to step inside the event or situation and examine it from different perspectives, maximizing in-depth understanding of the conceptual framework (Marks et al., 2017). VR technology not only allows to make the unseen visible (Marks et al., 2017) but also makes possible to overcome the restrictions of time and physics and be transferred for instance to the past experiencing historical eras such as the world wars (Eschenbrenner et al., 2008). An important aspect of using VR-based training systems is the fact that knowledge acquired within a VI can be applied to the real context but also the opposite (Huang et al., 2013).

Internet of Things (IoT) in Education

The Internet of Things (IoT) "is not a single technology; rather it is an agglomeration of various technologies that work together in tandem" (Sethi & Sarangi, 2017, p. 1). Mitew (2014, p.5) clarifies the parameters in more detail. IoT stands for the connection of usually trivial material objects to the internet – ranging from tooth brushes to shoes or umbrellas. At the very least, this connectivity allows things to broadcast sensory data remotely, in the process augmenting material settings with ambient data capture and processing capabilities. Once connected, each thing acquires a network address making it uniquely identifiable. The object usually has some sort of layered sensing capacity allowing it to dynamically register changes to its environment and transmit that information over the internet.

Digital technologies such as multimedia projectors, interactive smart boards, and content management had already revolutionized teaching and learning systems. Content management tool, a centralized software application, which provide course creation, delivery, management, tracking, reporting, and assessment, made reality of distance education and online courses. Educational systems embracing learning environment methods rather than focusing only on the learning contents, in a peer-learning environment is quite important (Kamar & Ali, 2017).

Abbasy and Quesada (2017) says IoT is transforming traditional education system into a scalable, adaptable with rapid dynamic changes, flexible and more efficient e-learning with a topology where the huge

number of physical and virtual interacting objects are involved in the process of learning. Making IoT in learnings systems would open up new pathways to proffer effective learning. It helps to create energy-efficient and cost-efficient education system through automation of common tasks outside of the actual education process. The influence of IoT can be seen in many aspects of education from student engagement in learning and content creation, helping teachers in providing personalized content and improve student outcomes (Wellings & Levine, 2009).

Opportunities in Online Learning

Online media can ensure multiple benefits for both students and teachers in supporting teaching and learning (Graham & Misanchuk, 2004). Different studies reveal that online courses have been found to be conducive to students who favour self-regulated learning (You & Kang, 2014). In a study conducted by Kirtman, a student responded to online coursework by stating, "It is more self-guided so I can spend more time on the concepts that I need help with and less on concepts that I can pick up quickly" (Kirtman, 2009, p. 110). Self-regulated learners have a tendency to use various "cognitive and metacognitive strategies to accomplish their learning goal" (You & Kang, 2014, p. 126).

Another benefit of e-learning is reduced off-task behaviours of students. Cooney (1998) and others (Bonk, Hansen, Grabner-Hagen, Lazar, & Mirabelli, 1998) discovered that students in computer conferencing environments stay on task more than 90% of the time. Students in these studies were so task driven that they often failed to interact beyond basic task requirements. To nurture student interpersonal skills and knowledge, therefore, instructors might consider using tools that foster socially related interactions, such as coffee houses and icebreaking activities. In contrast to the above asynchronous learning studies, a recent study of student synchronous training in the military found that students were off-task about 30% of the time (Orvis et al., 2002). These findings, in fact, approximated what had been the norms of face-to-face training.

Challenges in Online Education

Online learning process has many challenges coming from internal and external factor of the user. These challenges will have negative impact on learners expected outcome or quality of engagement. With COVID-19 pandemic, it has become clearer that education system is susceptible to external dangers (Bozkurt & Sharma, 2020). Ribeiro (2020) rightly noted

that this digital transformation of instructional delivery came with several logistical challenges and attitudinal modifications.

Inequality in the socio-economic status of students, some rely on the computer and free internet in school (Demirbilek, 2014), and due to the closure of schools, the migration process of these set of students is expected to be slow. It becomes undeniable that students with low socioeconomic background will definitely find it difficult to migrate as early as expected since they cannot come to school due to the pandemic. Fishbane and Tomer (2020)'s research findings on what students with no internet access are to do during this Covid-19 pandemic show that as the level of poverty increases in the community, the rate of internet accessibilities declined rapidly and by implications, students with no or low socio-economic power to afford broadband connection are most vulnerable to fall behind or encounter additional challenges to meet up with others in online learning.

Research Methodology
Population and Sample Design

This research adopted quantitative method. Quantitative methods include the techniques associated with the gathering, analysis, interpretation, and presentation of numerical information (Johnson & Turner 2003). According to Saunders et al (2014), the target population is the full set of cases taken into consideration from the total population. The present study focuses on learners who are engaging in certificate courses, diplomas, undergraduate and postgraduate of higher educational institutes in Sri Lanka. When the sample size is high, its representativeness will be higher hence would be able to expect reliable results (Saunders et al., 2009). The sample size of this study is 429 respondents.

Research Instruments and Data Analysis

In this study primary data was collected for addressing the problem of lower engagement to academic programs via online. The secondary data was collected for purposes other than the problem at hand. The primary data gathered by using a self-administrated questionnaire. The data was gathered during the months of November 2020 amidst in COVID-19 second wave in Sri Lanka. Questionnaire was distributed via Google Form covering nine (09) provinces in Sri Lanka and the questionnaire consists of multiple-choice, Likert scale and open-ended questions related to the prevailing trends in online learning in Sri Lanka.

The data collected from questionnaire were analyzed and evaluated with the descriptive statistical analysis covering frequencies, mean, range, and percentages by Statistical Package for Social Sciences (SPSS-25) and Microsoft Excel. In addition, tables, charts and graphs were used to demonstrate the observation for the purpose of interpretation.

Data Presentation and Data Analysis

The observations were mainly presented as tables, figures and exhibits enabling reader to covert textual materials into tabular or pictorial form. Attempts were made to design and integrate graphic aids into research report to enhance readers' comprehension and figure out trends in online learning at present.

Demographic characteristics of the respondents

There are four age categories for the respondents who are between the ages of 20-29, 30-39, 40-49 and 50 above. Participants for this research study were taken from higher educational institutes in Sri Lanka. Majority of them are undergraduates representing 83.9% out of total respondents. The second highest percentage of 5.6% of respondents are students of Master Degrees Programs.

	Frequency	Percentage %		Frequency	Percentage %
Age			Marital Status		
20-29	350	81.6	Single	326	76.0
30-39	65	15.2	Married	68	15.8
40-49	11	2.6	Married & having kids	35	8.2
>50	3	0.7	Total	429	100%
Gender			Enrolled Online Programs		
Female	302	70.4	Certificate	09	2.1
Male	127	29.6	Diploma	09	2.1
Total	429	100%	Higher Diploma	20	4.7
Ethnicity			Degree	360	83.9
Sinhalese	325	75.8	Postgraduate	06	1.4
Tamil	73	17.0	Masters	24	5.6
Muslim	31	7.2	PhD	01	0.2
Other	0	0			
Total	429	100%	Total	429	100%

Table 1: Profile of Demographic Factors

Source: Empirical Data

As depicted in the above table 1, 81.6% of the sample was in the age range between 20 and 29, out of 429 respondents. The second highest percentage 15.2% of respondents was in the age range between 30 and 39. The total responses received from the individuals above 40 years were 14, marking a percentage of 3.2%. In the sample, gender distribution among female and male was 70.4% and 29.6% respectively. This indicated that more than two third of the respondents were females. Seventy six percentage of (76%) unmarried individuals was observed with regard to the marital status, 15.8% of the sample was married and 8.2% had children. Out of 429 respondents 75.8% were Sinhalese, Tamil and Muslim representation was 17% and 7.2% respectively. A significant gap was depicted between degree programs and the other educational programs regarding the sample's online engagement. A frequency of 360 individuals who followed undergraduate degree programs was observed, with an indication of 83.9%. A total of 38 respondents (8.9%) were enrolled in certificate, diploma and higher diploma programs. 31 (7.0%) respondents were following postgraduate study programs such as Post Graduate Diploma, Masters and PhD.

Assessment of adoption of technology

	Frequency	Percentage %		Frequency	Percentage %
Device Ownership			**Devices Used in Online Sessions**		
One device	241	56.2	Desktop	38	8.9
Two devices	170	39.6	Laptop	227	52.9
Three devices	11	2.6	Mobile	306	71.3
More than three devices	7	1.6	Tablet	8	1.9
Frequently Used O.S.			**Frequently Used Browser**		
Windows 10	217	50.6	Google Chrome	401	93.5
Windows 8	36	8.4	Safari	32	7.5
Windows 7	32	7.5	Internet Explorer	30	7
Android	209	48.7	Firefox	25	5.8
iOS	54	12.6	Opera	18	4.2
Other	5	1.2	Other	23	5.4

Table 2: Assessment of adoption of technology

Source: Empirical Data

Based on the gathered data, majority containing 56.2% of the sample stated the ownership of a single device. Respondents who mentioned the ownership of two devices were denoted 39.6%. Three or more devices were owned by percentages of 2.6% and 1.6% respectively. Amongst the participants, a greater part 71.3% marked the possession of mobile phones while only 8.9% possess desktops. 52.9% of the aforementioned sample stated the utilization of laptops used in online sessions. Tablets were considered as the least preferred appliance as the usage of tablets was 1.9%.

In the midst of the Windows users, the most prominent operating system was Windows 10 (50.6%) and Windows 7 and 8 were utilized by only 7.5% and 8.4% sequentially. Android as an operating system was utilized by 48.7% of the sample and iOS was used by only 12.6% of the respondents. The least of 1.2% mentioned several other operating systems used during their online sessions. The most renowned web browser was Google Chrome with more than 400 responses (93.5%) while all other browsers were preferred by less than 10% respondents. For instance, Safari, Internet Explorer, Firefox, Opera and other browsers were marked by 7.5%, 7%, 5.8%, 4.2% and 5.4% sequentially.

Online Trends Amidst in Covid 19 Pandemic
Nature of Online Engagement of learners

The nature of online engagement of learners has been changed after COVID-19 pandemic. This may be simply because of the concept of social distance applied by the country where higher educational institutes initiated online academic programs. See figure 1 below.
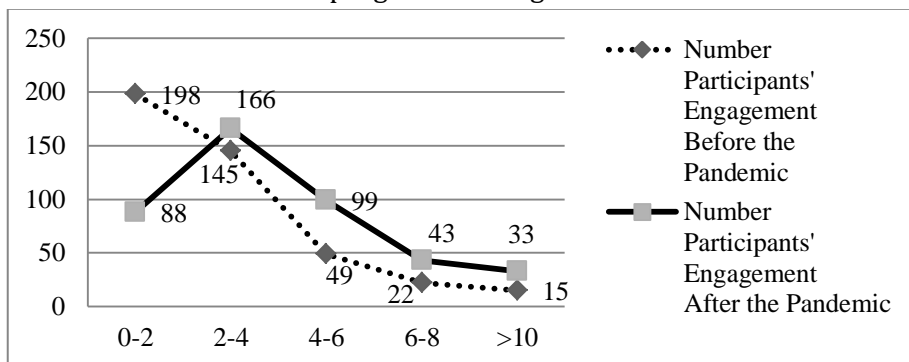

Fig.1: Online learning hours prior and after COVID-19 Pandemic

Source: Empirical Evidence

This figure evidence the fact that, number of online learning hours have been clearly increased after the pandemic. There is a clear increase from 0-2 hours of engagement per day before COVID-19 pandemic and it has lifted into higher range of hours used for different online activities. Majority of the learners have used 2-4 hours per day for their studies and other online activities. 10% of the learners have used 8-10 hours where 7.69% had engaged more than 10 hours for online activities.

According to the Telecommunications regulatory commission of Sri Lanka (TRCSL) Sri Lanka has a very vibrant telecommunication sector with around 32.5 million mobile subscribers, 2.5 million fixed subscriber and 7.2 million broadband subscribers by 2018 end (TRCSL, 2018). There are five main broadband service providers in Sri Lanka. They are Sri Lanka Telecom PLC, Mobitel (Pvt) Ltd, which is a fully wholly owned subsidiary of Sri Lanka Telecom, Dialog Axiata PLC, CK Hutchison Holding Limited, and Bharti Airtel Limited. These telecommunication companies play a crucial role in providing their services. The respondents of this study had demonstrated their preferences of each of above service providers as shown in **Figure.2**. Majority of the learners have used Dialog service packages and as a whole it is 44%. The second highest service provider is Mobitel and it occupies 27%. The third highest is the Sri Lanka Telecom (SLT), and it records 21%. It is recorded that many users get services from multiple service providers.
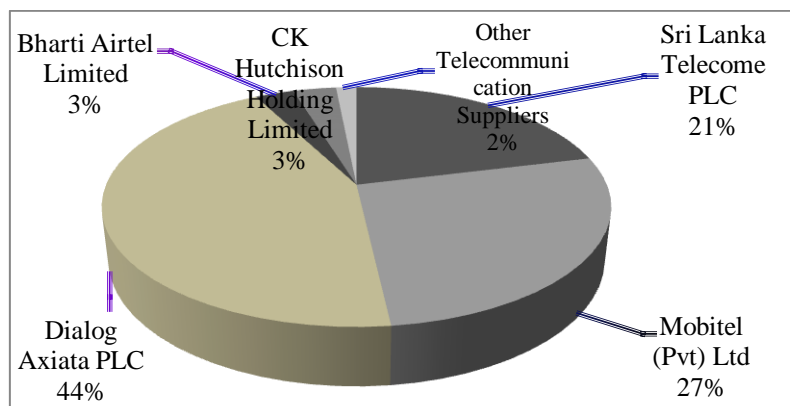

Fig.2: Broadband usage

Source: Empirical Evidence

Majority of 73.3% respondents use one method of followings, for getting access to online through the Prepaid Mobile Data, Post Paid Mobile

Data, Public Wi-Fi, Office Network, Wi-Fi access through broad brand Connections. However, out of them, rate of using prepaid mobile data account for 43.8%, Wi-Fi access through broad brand Connection account for 23.1%, and use of post-paid account for 7.2%. Other medium access was insignificant.

	Frequency	Percent	Cumulative Percent
At home	358	83.4	83.4
At home, At work place	54	12.6	96
At home, At work place, Free Wi-Fi Zone	1	0.2	96.2
At home Free Wi-Fi Zone	2	0.5	96.7
At work place	12	2.8	99.5
At work place, In the main campus or higher educational institutes you attached	1	0.2	99.8
Boarding place	1	0.2	100
Total	429	100	

Table 3. Accessibility to Online Activities

Source: Empirical Data

The summary of the respondents' statistics as per **Table 3** of the study explained the 83.4% of the highest respondents were accessing only from home and prove that home is the most secured zone to access for online learning. The significantly higher rate of 96.7% accessed their academic activities from home and where other places which flexible to them at work places or free Wi-Fi Zone. Total preference of access for online activities at workplace was shown by 15.8% of the sample. However, it should be noted that 13.3% of respondents access their online activities by preferring to the two locations of both at home and at the workplace. Furthermore, It also validated that out of the other access preference (at work places, free Wi-Fi Zone, boarding place, main campus) the undergraduates had responded 86.5%, diploma students of 84.6%, Advanced level respondents 80.2% have highly preferred access at home for their online studies.

The purposes of using online services

The analysis of online usage of the respondents revealed multiple preferences. Those are reflected in the following **Figure 3** below;
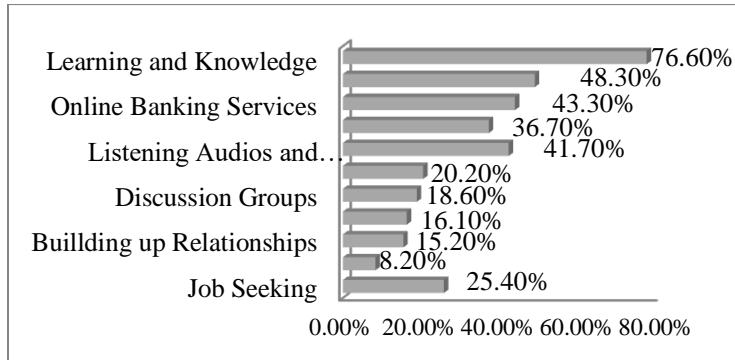
Fig.3: Purpose of using online services

Sources: Empirical Data

In order to maintain the social distance during the COVID–19 pandemic people were encouraged to do more online activities and services. The COVID–19 pandemic has created opportunities for work from home, online studies, online shopping, banking etc. This study has examined how the pandemic has changed the way of individuals' use of e-commerce and digital solutions.

According to this study, 76.6% of individuals had used the online services to their learning and knowledge development. The second largest of 48.3% had used online services for gaining knowledge around the world. The third largest preferences of 43.3% respondents had used online banking services.

The Daily Logins

The statistics in **Figure 04** show the internet users in Sri Lanka who access selected social networks during the COVID-19 pandemic. Facebook, Twitter and YouTube Videos allow users to post and share their images online and directly engage with their followers on the social network.
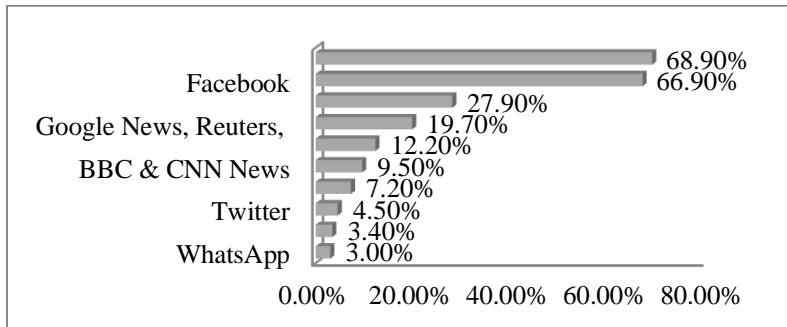

Fig.4: Daily logins

Source: Empirical Data

The highest usage of the respondents 68.9% had used YouTube videos and 66.9% of the respondents had utilized Facebook as their daily logins. Instagram is a photo sharing social networking services that facilitates the users to share and edit photos and videos. Further, Social websites such as Instagram has been preferred by 27.9% respondents, where LinkedIn has been used by 12.2% of respondents. WhatsApp is an instant messaging services and unique app for the users. Following these, Twitter has been used by 4.5% and WhatsApp has been used by approximately 3.0% of the respondents. Other than the above, a few daily logins such as BBC & CNN News were occupied by 9.5% respondents. Other News web sites as Reuters, Google News, News Link and Radio Station World have been view by 19.7%. The TED Talks has been viewed by 3.4%.

The Trends in Video Conferencing

Web conferencing software is allowed to the participants to attend audio and video meetings. It enables the participants to share files, screen sharing, instant messaging and video conferencing.
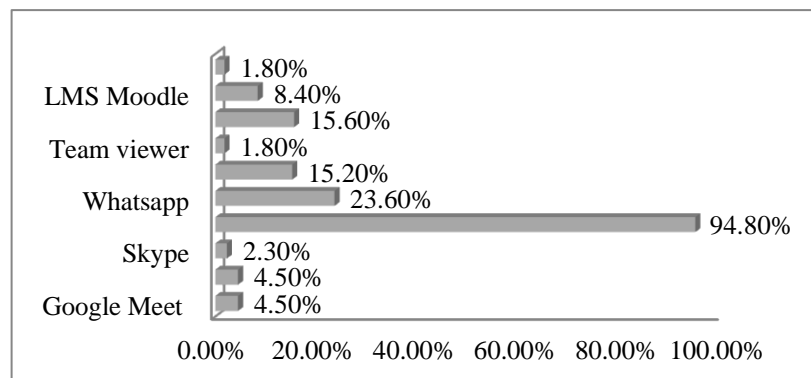

Fig.5: The Trends in Video Conferencing

Source: Empirical Data

Figure 5 demonstrates the percentages of the most popular video conferencing tools that used in online education during COVID -19 outbreaks. It is clear from the charts that many scholars tend to use different types of video conferencing tools to engage in online education. The highest percentage 94.70% was recorded as usage of Zoom Meetings. There is a considerable increase 23.80% in WhatsApp and 15.30% in YouTube respectively. Moreover, trends of using some other web conferencing software were as follows. Team Viewer and Google Hangout 1.8%, Skype 2.3%, Google Meet and Google Classroom 4.6%, LMS/Moodle

8.5%, Microsoft Teams 15.8%. It is evident that, the usage of above were significantly lower than usage of Zoom Meetings.

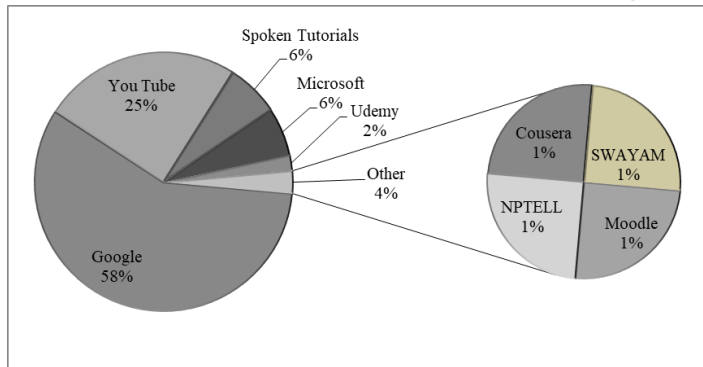## The Utilization of Online Resources and Portals in E-Learning

Fig.6: The utilization of online resources and portals in E-Learning

Source: Empirical Data

Online resources and E– portals offer profound platform for online learning. Learning resource portals are gateways to so many online resources available across the world. It offers materials and links for the resources in terms of training and learning.

In accordance wit the statistics shown in **Figure 6**, the online resources and portals including twelve major categories which are suit for learners' requirement of E- learning. The Google 82.4% is the largest segment and Zoom, Moodle, Books, Pluralsight; Emerald, Insight, Microsoft Teams, Neptal and Cousera 1.6% are the smallest segments that were using as online resources and portals for Online Learning.

Nevertheless, YouTube Channel accounted for 25% of online resources and portals matching for learners' requirement of Online Learning and experienced more than 1/3 of the entire contribution. The Spoken Tutorial, Microsoft and Udemy indicated 6.0%, 6.0%, and 2.0% respectively.

The Interest of Online Learning as compared to Classroom Learning

The graph shown in **Figure 7** demonstrates the percentages of how learners feel online learning as compared to classroom learning during the COVID-19 outbreak period. Overall, the learners are interest towards online education comparatively classroom based teaching.
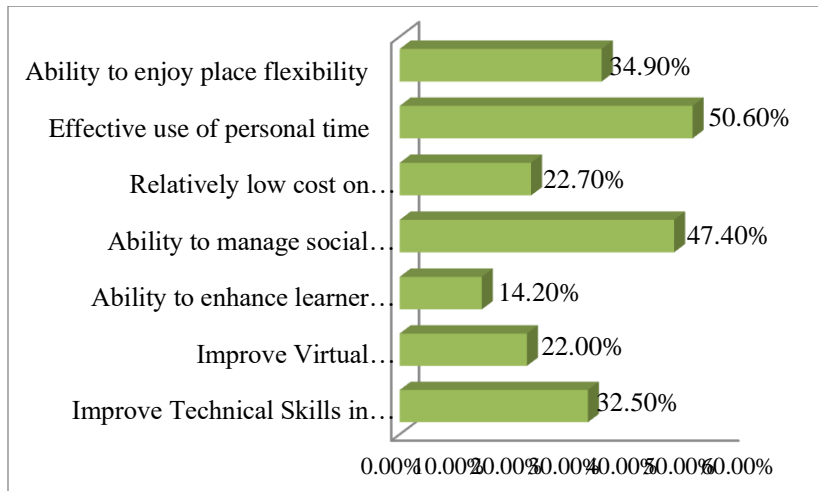
Fig.7: The Interest of Online Learning as compared to Classroom Learning
Source: Empirical Data

However, the importance of online learning can be seen some significant differences.

The highest proportion of learners prefer for Effective use of personal time of 50.60% and the smallest proportion of learners prefer for ability to enhance learner engagement of 14.20% respectively. The learners are capable to manage social distance as of 47.40%, Ability to enjoy place flexibility as of 34.9%, relatively low cost on specific expenditure as of 22.70%, and improve virtual communication and collaboration as of 22% correspondingly.

In general, the statistics demonstrates that during the period of COVID-19 period the learners have a preference of using online learning comparative to the classroom based teaching.

Advantages of Online Learning

The most significant advantage highlighted by the respondents was flexible time management in online learning it is recorded 65.1% preferences. The second preferred advantage was comfortable at home while learning online, which account for 54.4%. The third advantage is recognized as low cost of online learning which stated as 29.3%. Ability to access learning management systems (LMS) has been preferred by 24.9% of the respondents while easy access to related information was stated as 24.5%. Further, the other advantages highlighted by respondents were quick self-assessment, group learning and personal guidance accounted for 18.1%, 17.0% and 11.6% respectively.
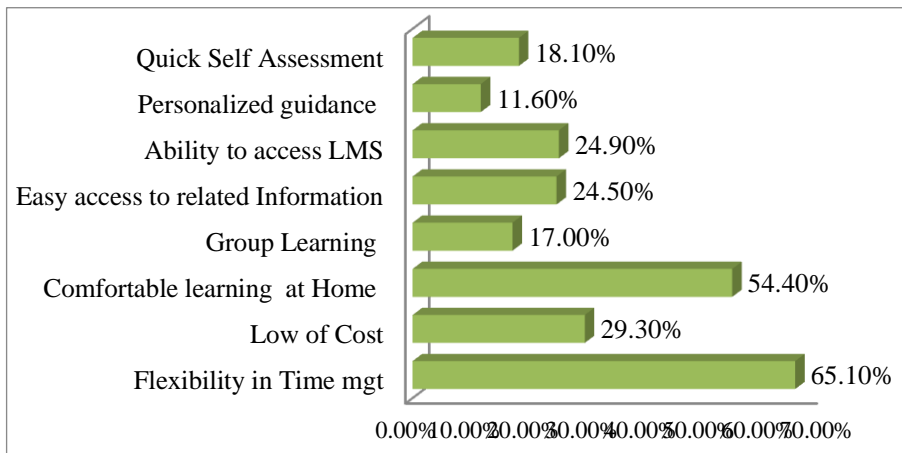
Fig. 8: Advantages of Online Learning

Source: Empirical Data

	Frequency	Percent
Domestic barriers	100	23.3
Domestic barriers, Financial constraints for Internet connection	11	2.6
Domestic barriers, Institutional Problems	11	2.6
Domestic barriers, Lack of self-motivation	14	3.3
Financial constraints for Internet connection	53	12.4
Institutional Problems	19	4.4
Lack of self-motivation	37	8.6
Lack of technical skills	35	8.2
Lack of technical skills, Financial constraints for Internet connection	12	2.8
Problems related to the content of the course	42	9.8
Other barriers	95	22
		100

Table 4 : Online difficulties faced by online participants

The main difficulties that respondents encountered in online learning were domestic barriers which represent 23.3%. The second highest barriers account for 12.4% is the financial constraints for Internet connection. The third significant issue referred as 9.8% of the respondents is problems related to the content of the course. Further, lack of self-motivation and lack of technical skills account for 8.6% and 8.2% respectively. However, there were other barriers taken together account for 22%.
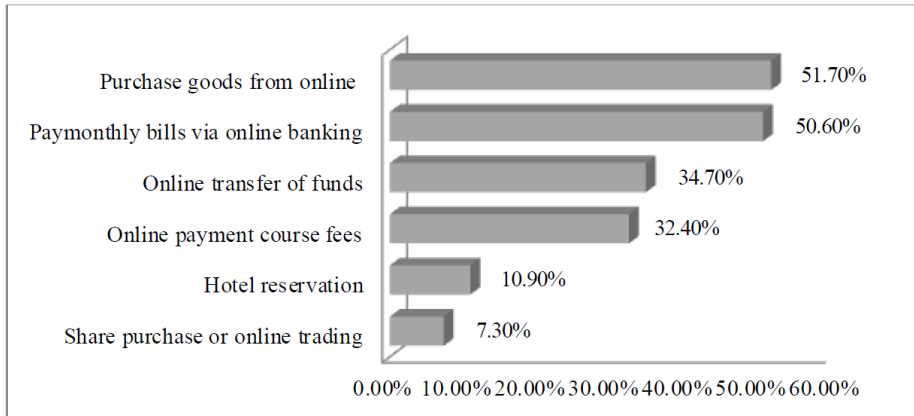
Purpose of making online payments

Fig.9: Purpose of making online payments

Source: Empirical data

The learners' behaviour of online payments demonstrates many insights. In order to observe the patterns of this an important question was raised related to purpose of online payments. As shown in **Figure 9,** the highest preference of 51.7% has been marked for purchase goods from online. The second highest of 50.6% was account for pay monthly bills via online banking. The third purpose of online payments related to transfer of funds which stated 34.7%. The subsequent main purposes were online payment course fees, hotel reservation and share purchase or online trading those account for 32.4%, 10.9% and 7.3% respectively.

The most preferred Online Bank

The Bank of Ceylon (BOC) is the most preferred online bank occupying 28.8%. It is the one of a well-established public bank in Sri Lanka. The second preferred online bank was commercial bank which stated 21.5% of preferences. The third placed occupied by peoples bank it stated 18.6% of preferences. The other three banks which offer online banking facilities are Sampath bank, Hatton National Bank (HNB) and National Saving Bank (NSB) account for 17.0%, 9.8% and 5.9%.
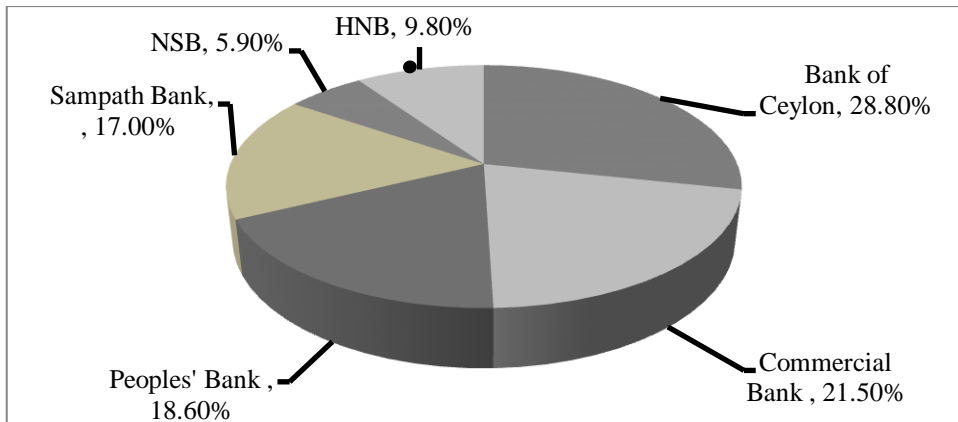
Fig.10: The most preferred Online Bank

Source: Empirical data

Discussion, Conclusion and Recommendation

Educational institutes in Sri Lanka have taken measures to implement online lecturing replacing traditional class room based pedagogical approaches. Therefore, learners of the respective higher educational institutes are now using online learning to certain extend. However, the expected levels of quality of engagement as well as absorption of expected learning outcomes are still doubtful because majority of learners did not have previous experience of online learning pedagogy. Four hundred twenty nine (429) learners participated in this study and 83.9 % of them are undergraduates. Majority of 71.3% learners are using mobile phone to online login. This reflects that, even though mobile phone is not the standard login device, learners have no option other than the mobile devices due to the fact that all of them do not possess a laptop or desktop computer. Further, mobile phone is not the appropriate equipment to online learning simply because its' display is relatively small and hence learners may encounter issues. Apart from that interactivity of through the mobile login is very low.

The most interesting fact is that number of online learning login hours have tremendously increased after COVID-19 pandemic. This is evident the fact that leaners have accustomed to online learning. Out of total respondents approximately 39% (166) learners' login 2-4 hours per day and approximately 8% learners (33) spent more than 10 hours per day. However, more login hours does not itself reflect quality of learning. Sometimes learners may spent time inefficiently in the internet as they are unable to go out of the home during the COVID-19 pandemic. According to the **Figure 2,** broadband usage, the highest preferences of 44% has given to

Dialog Axiata PLC by the respondents. It may be the reason that, Dialog Axiata PLC has different and flexible broadband packages. The second highest of 27% is preference is to Mobitel (Pvt) Ltd. and the third is 21% of preference to Sri Lanka Telecom PLC. The SLT is the parent company and Mobitel (Pvt) Ltd. is fully owned subsidiary of SLT, both together, has shown the 48% highest preferences from the respondents by taking broadband services. These two companies together have offered diversified packages in order to cater the online requirements of the customers.

According to the **Table 3**, accessibility of online activities 96.7% is from home. This demonstrated that learners have been restricted their movement into their homes during the pandemic period. Further, this may help learners to join their academic activities online with free mind set. **Figure 3** shows further evidence regarding this as 76.6% of learners have stated that they use online services for learning and knowledge gaining and 48.3% log in with the purpose gaining knowledge around the world. This may be the reason that internet provides ample opportunities for information retrieval all around the world. Interestingly 25.4% of learners attempted to find jobs through online sources. Apart from that, online shopping trend has been increased by 36.7%. This is a clear evidence of social distancing maintained by respondents while looking for opportunities.

Figure 4 demonstrates the daily logins, where 68.9% of YouTube viewers were the highest preference online login. This may be the reason as video based learning is the latest trend of self-learning. Many institutes as well as individual academics have uploaded video based lessons into YouTube and those are freely available for any viewers. This trend has won the heart of many YouTube viewers. Facebook is the second largest occupying 66.9% of preferences by the respondents. Facebook is freely available for any person irrespective of their differences of professions or personal backgrounds. Many of them excel their pictorial reflections to their family relations, peers, communities and business stakeholders. Instagram occupied 27.9% of the preferences by the learners. Instagram is one of a latest trend among professional communities to share information. **Figure 5** shows the trends in video conferencing.

The Zoom is the winner among all the video conferencing tools at present taking 94.8% highest preferences. WhatsApp is the second highest gaining 23.6% of the preferences and Microsoft Team is the third highest gaining 15.6% preferences. WhatsApp has been ranked as good video conferencing tool among learners at present because of it is simply

operations and ability to communicate images, audios and videos easily. Microsoft Team has been using among many institutions to conduct webinars and online lectures at present. **Figure 6** demonstrates utilization of online resources and portals in E-Learning. Google is the highest preferred online portal where 58% have logged. The second largest logging is the YouTube occupying 25% preferences. Moreover other online resources preferred by the learners are Spoken Tutorials, Udemy, Microsoft, Moodle and SWAYAM.

Interest of online learning compared to classroom based learning was assessed from the learners. Majority of learners, 50.60% had stated that online learning help to use personal time effectively. The second highest preference had given to ability to manage social distance. The third highest preference was given to ability to enjoy place flexibility. Learners had been limited to home during the pandemic, so only available option for many of them to get education through the online. Learners' perceived barriers were assessed in the study. The responses revealed that domestic barriers, financial constraints, problems related to content of the online courses have been rank as most important.

Conclusion and recommendations

The analysis clearly demonstrates the fact that number of participants' engagement in online platforms has been increased. However, the move with the digital illiteracy may lead to technical difficulties. For example, online learning from smart phone may be distracted from incoming calls, limited space for visualization and difficult for interactivity with the lecturer and difficult for immediate responses. However, learners can enjoy location flexibility, place flexibility with smart phone. As 63.6% of learners had used prepaid mobile data for online access, it evident learners are concern of cost of online learning. Further, very limited access via public Wi-Fi was observed. Hence concessionary data packages and strengths of Public Wi-Fi should be increased by authorities.

The major challenge of online learning is coming as domestic barriers. 43.3% of learners had mentioned that they would undergo domestic barriers. These covers limited space at home, sudden intrusion of people and pets, back ground sound and interruptions, login problems, issues with installation of software, problems with audio and video are the common barriers which learners encounter at home. However, possible arrangement of a separate room or convenience place at home with minimum back ground interruption may help effective online learning.

The second main barrier faced by learners is cost on online learning. This mainly covers the online variable cost on service bills. However, if learners had to spend fixed cost on acquisition of computers, mobile phones etc. the cost of finance will be further escalated. To ease the barriers, the five main internet service providers in Sri Lanka can intervene to offer concessionary online packages and affordable data charges. Even education service providers like universities and higher educational institutes should offer favorable financial assistance and IT infrastructure to their learners. Majority of (76.60%) online learners' purpose is learning and knowledge enhancement. However, they seems to be unknown of free web sources, this may lead to wasting of time and unnecessary hanging on less effective web sources. Educational technological educational institute around the world has uploaded many free educational sources which are readily available in the internet. E.g. Byjus.com/ Aptuslearn.in/ udemy.com/coursera.org/swayam.gov.in/Zoom class room/Google classroom/guruq.in /khanacademy.org etc. Further, online educational applications are available for mobile phones also, which can be used to release the stress and improve individual skills like, language, mathematics and ICT. Apart from that, online scheduling, time management etc. can easily be done on the sources like Google, but it appeared to be that the learners may not use them effectively. When it comes to online lecturers like zoom meetings, as it is the main online communication forum at present students' lack of technical 'know-how' may be appeared. Therefore, instructions of online attendance are very useful.

In addition to that creating a collaborative and interactive learning environment by the lecturers are essential ingredient to motivate the learners. Online payment ability is one of a main important element observed by this study. The learners have demonstrated their skills on the online payments especially during the COVID 19 pandemic. Majority of learners, 51.70% had used online banking facility to purchase consumable items and 50.6% of them had paid their monthly utility bills. However, only 32.40% of learners had made online payment of their course fees. This trend is very significant as social distance is very important during the pandemic situation and human interaction can be largely limited via online banking system. But certain challenges should be address as online payment cannot be reversed easily. Therefore, demonstration videos and simple guidelines may play key role in educating the users.

The learners have clearly stated why they preferred for online learning amidst COVID-19 pandemic. These preferences evident and pave

the way for recommendations. The Government can create strategies and provide guide lines on which service providers and educators can implements action plans. Learners who engage in online learning have given first priority for effective use of personal time management. The second mandatory requirement is maintaining of social distancing capability. Then third priority is place flexibility. By taking above matters into consideration, educators should design their academic programme and internet service providers should offer online services at affordable rates. There is a mandatory requirement for educators and a learner to shift online learning pedagogical approaches during the pandemic as in person teaching is still uncertain. Online courses should be dynamic, interesting and interactive, relevant, student centered and group based. Personal attention should be provided to students so that they can easily adapt to online learning environment. Positive arguments related to online learning pedagogy are accessibility, affordability, flexibility, life-long learning, and independent learning. Therefore, online education should be promoted in such a way that learners get maximum benefits. Even assessments should be done in online. Educators must get students feedback for overall evaluation of online learning and global trends need to be carefully adopted.

References

Abbasy, M. B., & Quesada, E. V. (2017). Predictable influence of IoT (Internet of Things) in the higher education. *International Journal of Information and Education Technology*, *7*(12), 914-920.

Allen, I. E., & Seaman, J. (2010). *Learning on demand: Online education in the United States, 2009*. Sloan Consortium. PO Box 1238, Newburyport, MA 01950.

Ascough, R. S. (2007). Welcoming Design–Hosting a Hospitable Online Course. *Teaching Theology & Religion*, *10*(3), 131-136.

Bates, S. (2014). Personalised learning: Implications for curricula, staff and students. *Universitas*, *21*.

Benko, A., & Lányi, C. S. (2009). History of artificial intelligence. In *Encyclopedia of Information Science and Technology, Second Edition* (pp. 1759-1762). IGI Global.

Bonk, C. J., & Cunningham, D. J. (1998). Searching for learner-centered, constructivist, and sociocultural components of collaborative educational learning tools. *Electronic collaborators: Learner-centered technologies for literacy, apprenticeship, and discourse*, *25*, 25-50.

Bozkurt, A., & Sharma, R. C. (2020). Emergency remote teaching in a time of global crisis due to CoronaVirus pandemic. *Asian Journal of Distance Education*, *15*(1), i-vi.

Burgess, S., & Sievertsen, H. H. (2020). Schools, skills, and learning: The impact of COVID-19 on education. *VoxEu. org*, *1*.

Central Bank of Sri Lanka (2020). *Economic and Social Statistics in Sri Lanka , 2020* Colombo , Volume XLII ISSN, 1391 - 3611 ISBN 978 - 955 - 575 - 402 – 6.

Cheng, T. (2014). Application and research of using the virtual reality technology to realize the remote control. *International Journal of Control and Automation*, *7*(8), 427-434.

Childress, S., & Benson, S. (2014). Personalized learning for every student every day. *Phi Delta Kappan*, *95*(8), 33-38.

Conole, G. (2004). E-learning: The hype and the reality. *Journal of Interactive Media in Education*, *11.*

Demirbilek, M. (2014). The 'digital natives' debate: An investigation of the digital propensities of university students. *Eurasia Journal of Mathematics, Science and Technology Education*, *10*(2), 115-123.

Department of Census and Statistics Sri Lanka (2019). *Annual Bulleting Computer Literacy Statistics, 2019* Colombo, January – December 2019, ISSN, 2012-6565.

Douglas, D. E., & Van Der Vyver, G. (2004). Effectiveness of e-learning course materials for learning database management systems: An experimental investigation. *Journal of Computer Information Systems*, *44*(4), 41-48.

Earl, L. M. (2013). Assessment for learning; Assessment as learning: Changing practices means changing beliefs. *assessment*, *80*, 63-71.

Engstrom, M. E., Santo, S. A., & Yost, R. M. (2008). Knowledge building in an online cohort. *Quarterly Review of Distance Education*, *9*(2), 151.

Ferenstein, G. (2014). Study: Massive online courses enroll an average of 43,000 students, 10% completion. TechCrunch.

Fishbane, L., & Tomer, A. (2020). As classes move online during COVID-19, what are disconnected students to do. *Brookings Institute*.

Goodfellow, R. (2004). Key practices in eLearning across the university curriculum. In *Institute of Educational Technology, Open University.[viewed 3 Apr 2007, verified 23 Dec 2007] http://iet. open. ac. uk/pp/r. goodfellow/Rome2004/Seminar. htm*.

Graham, C. R., & Misanchuk, M. (2004). Computer-mediated learning groups: Benefits and challenges to using groupwork in online learning environments. In *Online collaborative learning: Theory and practice* (pp. 181-202). IGI Global.

Hageman, J. R. (2020). The coronavirus disease 2019 (COVID-19). *Pediatric annals*, *49*(3), e99-e100.

Huang, Y. C., Backman, S. J., Chang, L. L., Backman, K. F., & McGuire, F. A. (2013). Experiencing student learning and tourism training in a 3D virtual world: An exploratory study. *Journal of Hospitality, Leisure, Sport & Tourism Education*, *13*, 190-201.

Kirtman, L. (2009). Online versus in-class courses: An examination of differences in learning outcomes. *Issues in teacher education*, *18*(2), 103-116.

Lei, S. A., & Gupta, R. K. (2010). College Distance Education Courses: Evaluating Benefits And Costs From Institutional, Faculty And Students' Perspectives. *Education*, *130*(4).

LEWIS, N. (2020). Coronavirus lockdown could give online education a lasting boost in India. *Published: April*, *8*, 2020.

Li, C., & Lalani, F. (2020, April). The COVID-19 pandemic has changed education forever. This is how. In *World Economic Forum* (Vol. 29).

Liu, S., Kim, K. J., Bonk, C. J., & Magjuka, R. (2007). What do online MBA professors have to say about online teaching. *Online Journal of Distance Learning Administration*, *10*(2), n2.

Marks, S., White, D., & Singh, M. (2017, November). Getting up your nose: A virtual reality education tool for nasal cavity anatomy. In *SIGGRAPH Asia 2017 symposium on education* (pp. 1-7).

Mitew, T. "Do objects dream of an internet of things?." The Fibreculture Journal 2014 .23 (2014): 1-25.

Muilenburg, L. Y., & Berge, Z. L. (2005). Student barriers to online learning: A factor analytic study. *Distance education*, *26*(1), 29-48.

Orvis, K. L., Wisher, R. A., Bonk, C. J., & Olson, T. M. (2002). Communication patterns during synchronous Web-based military training in problem solving. *Computers in Human Behavior*, *18*(6), 783-795.

Remuzzi, A., & Remuzzi, G. (2020). COVID-19 and Italy: what next?. *The Lancet*.

Ribeiro, R. (2020, February). Digital Transformation: The Evolution of the Enterprise Value Chains. In *International Congress on Information and Communication Technology* (pp. 290-302). Springer, Singapore.

Richardson, J., & Swan, K. (2003). Examing social presence in online courses in relation to students' perceived learning and satisfaction.

Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students*. Pearson education.

Sethi, P., & Sarangi, S. R. (2017). Internet of things: architectures, protocols, and applications. *Journal of Electrical and Computer Engineering*, *2017*.

Shereen, M. A., Khan, S., Kazmi, A., Bashir, N., & Siddique, R. (2020). COVID-19 infection: Origin, transmission, and characteristics of human coronaviruses. *Journal of Advanced Research*.

Snyder, T. D., & Dillow, S. A. (2009). *Digest of education statistics, 2008*. Government Printing Office.

Syam, N., & Sharma, A. (2018). Waiting for a sales renaissance in the fourth industrial revolution: Machine learning and artificial intelligence in sales research and practice. *Industrial Marketing Management*, *69*, 135-146.

Turner, L. A., & Johnson, B. (2003). A model of mastery motivation for at-risk preschoolers. *Journal of educational psychology*, *95*(3), 495.

Turing, A. M. (2009). Computing machinery and intelligence.(R. Epstein, G. Roberts, G. Beber eds.) In Parsing the Turing Test, 23–65.

University Grants Commission Sri Lanka, Academic Year 2019/2020 (Based on the G.C.E.(A/L) Examination 2019), *Admission to Undergraduate Courses of the Universities in Sri Lanka* – ISBN, 978-955-583-149-9.

UNESCO. Division for Inclusion, Peace and Sustainable Development, Education Sector. (2017). Education for sustainable development goals: Learning objectives.

Wellings, J., & Levine, M. H. (2009). The digital promise: Transforming learning with innovative uses of technology. In *New York: Joan Ganz Cooney Center at Sesame Workshop*.

World Health Organization. (2021) World Health Data Platform, Retrieved from:

https://www.who.int/data#reports

World Health Organizations (2021). *Numbers at glance*. Retrieved from http:// www.who..int/emergencies/diseases/novel-coronavirus- 2019

Worrell, D., Brei, M., Cato, L., Dixon, S., Kellman, B., & Wahlrond, S. (2016). De-Risking in the Caribbean: The Unintended Consequences of International Financial Reform. *Central Bank of Barbados working paper. Bridgetown, Barbados: Central Bank of Barbados*.

You, J. W., & Kang, M. (2014). The role of academic emotions in the relationship between perceived academic control and self-regulated learning in online learning. *Computers & Education*, *77*, 125-133.

Submission Guidelines

Word Limit
- Article: Between 2,000 - 8,000 words (Maximum 30 pages including reference list, tables and figures).
- Keywords: Between 4 - 8 keywords.
- Title: Approximately in eight words.

Format
- Articles must be typed, double-spaced and single-sided and numbered using Cambria Font size 11.
- Title of the article should be in Cambria font size 14.
- Names, titles, affiliations and correspondence e-mail of all authors must be mentioned beneath the Title of the Article.
- Tables and figures should be numbered in the order in which they are referred to in the text, e.g. : (Table 1), (Figure 1).
- All acronyms used repeatedly should be cited in its entirety along with abbreviation in parentheses on first reference. e.g. : National Centre for Advanced Studies (NCAS).
- All subsequent citations should use onl by the abbreviation.

References
- The journal uses intext citations, therefore the authors are advised to follow the same.
- Place the footnote number at the end of the sentence in which it appears.
- Old documents cited in the text must be included in the reference list at the end of the paper.
- The authors are advised to refer Harvard Referencing Guide when citing (https://dkit.ie.libguides.com/harvard/citing-referencing)

Submission
- Manuscripts must be submitted electronically by e-mail to editor@ncas.ac.lk preferably in Microsoft Word (.doc or .docx) or Open Document Format (.odf).
- All submitted manuscripts are subject to double blind peer review process, and for recommended revisions. Those that are accepted will be edited according to the journal standards.

Submission Policy
- Papers submitted to the Journal should contain original work.
- Papers that have been published or accepted for publication elsewhere will not be considered.
- The editorial Board adopts strict rules to prevent plagiarism. Electronic software tools and other devices are used to cross check any plagiarism. i.e.https://www.grammarly.com/plagiarism-checker: https://www.turnitin.com/

Checklist
Ensure that the following are included with the article.
- Author details in full.
- A word count.
- An abstract.
- Keywords.
- References in Harvard style.
- Tables : numbered using Roman numerals and mentioned in the text.
- Figures : numbered using Arabic numerals and mentioned in the text.

NCAS

www.nacs.ac.lk/journal