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UMACE
UNIVERSITI MALAYA ACADEMIA-COMMUNITY ENGAGEMENT

Extended abstract of

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Welcoming Remarks

ASSOCIATE PROFESSOR DR. AMER SIDDIQ AMER NORDIN
CHAIRMAN OF UMACE
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I would like to express my sincere gratitude and thanks for the trust given to me as the Chairman of Malaya Academia-Community Engagement (UM ACE) 2019. The position is an enormous trust and I hope that I fulfilled the expectations for the event to be successful and memorable. Universiti Malaya Academia- Community Engagement (UM ACE) 2019 is an annual conference organized by the UM Sustainability and Community Center (UMCares). This conference acts as a platform that gathers UM researchers to present the community projects that they had implemented throughout the year since 2017. This year we take the challenge to lift this conference to another level, which is the international level as an initiative to involve our contacts and networks globally. Thus, it is such an honored for me to be the Chairman of this conference.

UMACE 2019 was a platform for the researchers to gain more knowledge as they can discuss, exchange opinions and share any effective practices in organizing community projects. The central theme of this conference is 'Impacting Communities through Research Partnerships'. We believe that research partnerships offer an exciting opportunity to improve learning and practice, leading to innovation and deepened understanding of the world and generate broader research impact and sustainable program. This conference consisted of 2 plenary session, 3 forum and 13 symposia. The symposiums consisted of different themes fall in 10 categories. We sincerely hope that the conference will become a much-used source of reference for researchers, industry players, academia, community as well as students either postgraduates or undergraduates. Additionally, Principal Investigators and their research team were able to share their research and contribution towards the success of their project through oral and poster presentations.

In the early stage of preparation of this conference, I have started a discussion session with management and implementing groups and chaired several meetings to understand the wishes and expectations of all parties towards the conference.

We hope this conference has offered participants to exchange ideas, discover novel opportunities, reacquaint with colleagues, meet new friends and broaden their knowledge. I also hope this event can be done successfully with highly valued for all stakeholders including industry, community, researchers and university students. On behalf of the UM ACE 2019 committee, I would like to thank the speakers, presenters and participants for their participation. Also, I would like to express our heartily gratitude to everyone who helped us to make the conference a success.

Thank you.

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SYMPOSIUM 1: SHARING SESSION

Ecotherapy: Nature-Based Learning and Play for Children with Special Educational Needs

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Keywords: Nature-Based Learning; Ecotherapy; Special Educational Needs

Abstract

Ecotherapy relates to the relationship one has with nature. Clinebell (2013), in his publication, has extensively researched on how having a healthy interaction with nature provides a pathway for healing to take place, particularly nature's effects on one's body. Ecotherapy looks at applying nature-based activities for "physical and psychological healing" (Clinebell, 2013, p.18) as a form of behavioural health intervention. Ecotherapy looks into strengthening one's relationship with nature and using nature-based activities to induce a change in behaviour, mobility, and well-being.

Children with special needs barely experience nature-based activities, especially after school or on weekends due to parents' lack of knowledge on how to help their children in a simple and cost-effective way. Therapies for children with special needs are often expensive and parents have no expertise to conduct these therapies themselves. Therefore, parents often leave their children at home. Thus, this project introduces Ecotherapy: Nature-Based Learning and Play for Children with Special Educational Needs. A first of its kind in Malaysia, the ecotherapy activities can be done continuously, cost-effectively, and in any nature setting.

The project imparts knowledge to parents on techniques and activities of Ecotherapy so that it can be practiced at any recreational parks and botanical gardens; provides opportunity to parents to perform the Ecotherapy activities via 'hands on' practice with their special child while being monitored and guided by the researcher; create an awareness on how parents will be able to help their children in the aspect of emotions, behaviour, confidence, psychomotor and social skills; and published a book titled 'Raising your Child with Special Needs: Guidance and Practices' which can be used as reference in the future for parents.

Total of 73 parents and their children with special educational needs, including 25 special educational needs teachers from 4 schools; SK Sultan Alam Shah (2), SJK (C) Chung Hwa Damansara, SK Taman Medan, and SK Damansara Jaya (1) participated in a 'hands-on' workshop series focusing on effective techniques and activities of Ecotherapy using Gross and Fine Motor skills as part of the University of Malaya's Kelab Sahabat program. Ecotherapy techniques and activities were carried out in four modules: 1) balancing beam; 2) guide the ball; 3) Nature Collage; 4) Nature I-Spy.

The balancing beam exercise was executed using two bean bags placed on both palms with the child's arms stretched outward. This position can help the child to balance himself/herself better. The child was then given verbal instruction and guided by a parent to walk along a specific path, for example, a red-coloured pathway. The narrow red-coloured

pathway acts as a 'balancing beam' for this exercise. These kinds of pathways are available at most recreational parks and botanical gardens. Parents may use these pathways and creatively modify its usage from mild to advanced stages according to their child's abilities. For example, for the advanced stage, the child can be given verbal instructions to squat and pick up the bean bags which are already placed along the red-coloured pathway, one bean bag at a time, and continue walking along the red-coloured pathway till the end.

Figure 1: Balancing Beam Exercise

Next, guide the ball module was executed (see Figure 2). This is a slightly advanced exercise using four cones, a hula-hoop and a ball. The child was given verbal instruction to pick up the ball which has been placed inside the hula hoop from one end and carry it between the arranged cones in a zig zag pattern to the other end while being guided by a parent. This exercise can help with the child's listening skills, response to instruction, hand-eye coordination, vestibular stimulation, and visual and sound processing.

Figure 2: Guide the Ball

Nature Collage activity involves strengthening the artistic and creative ability of children by using nature's products, such as shells, dried leaves, stones, branches etc. The activities were carried out by creating an artwork or craft in nature. Figure 3 shows parents guiding their child in using nature's products such as green leaves, grass, dried leaves, and branches to create a nature collage.

Figure 3: Nature Collage activity

Nature I-Spy is a form of physical activity to help create parent-child bonding, and even sibling bonding, through cooperation and teamwork. This form of activity is highly successful in building trust and confidence in a child. Figure 4 shows a checklist for a treasure hunt which contains a list of 9 items to find. The child should start at number 1 and move along the list to number 9. The 9 items in the checklist vary in color, texture, shape, and size. The idea behind this activity is to stimulate the brain so that children can appropriately integrate and respond to sensory input. Figure 5 illustrates how the 'Nature I-Spy' activity was done with parent and child

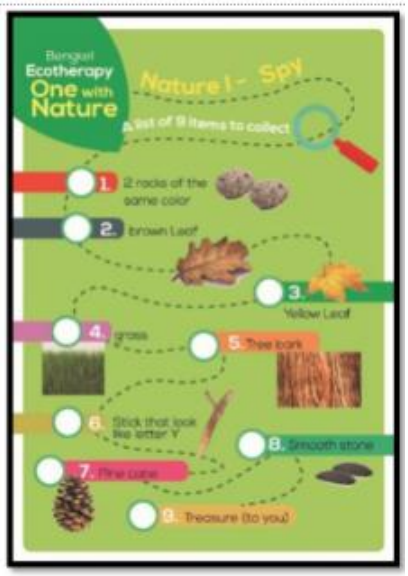

Figure 4: Nature I-Spy Checklist

Figure 5: Nature I-Spy Activity in Action

Feedback on the project impact and effectiveness was gathered using a survey instrument from 73 parents and 18 parents were further interviewed to gather qualitative feedback. Findings showed the workshop was highly effective in enhancing parents' knowledge, understanding and awareness in developing their children's gross and fine motor skills with a Mean of 4.35 compared to a Mean of 3.42 before the workshop. Parents were also more confident to bring their children to public places such as recreational parks and botanical gardens with a Mean of 4.35 compared to a Mean of 3.89 before the workshop. Finally, parents reported they have gained new knowledge with a Mean of 4.35 and are now able to conduct Ecotherapy techniques and activities with a Mean of 4.23 compared to a Mean of 3.17 and 3.74 before the workshop. See Figure 6.

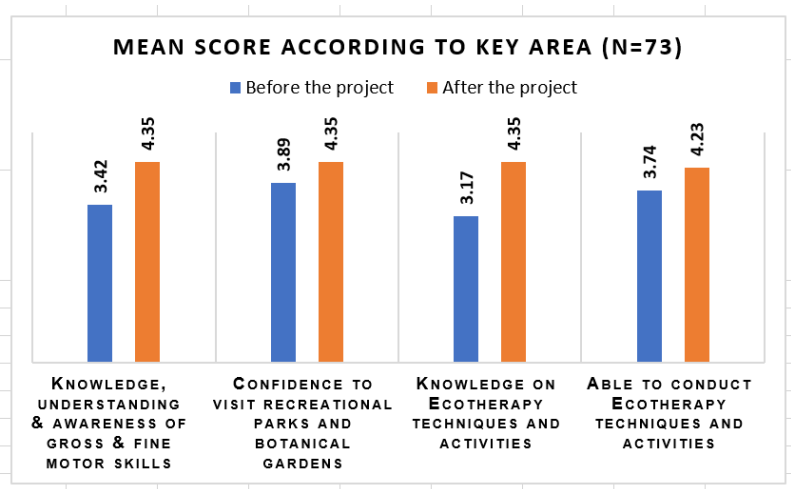

Figure 6: **Findings on project impact and effectiveness**

Interviews with parents revealed kids enjoyed the ecotherapy activities and it has benefited them physically and mentally. Parents also shared how the activities have taught them to control, teach their kids to receive instruction, pay attention and guide their kids to explore the outdoors. The activities have also helped build parent-child bonding, parents gained a better understanding of their children's feelings and their children are visibly happier and more expressive during the workshop. Parents further added they could now utilize the existing infrastructure and ecosystem of the parks to do the activities with their kids using their five senses such as treasure hunt.

Ecotherapy uses nature as a form of healing, and many published works have shown the effect this therapy has on children diagnosed with ADHD, Autism, and Learning Disabilities (Summers & Vivian, 2018). By just being in an environment influenced by nature, the tantrums these children used to show have significantly decreased (Berger & McLeod, 2006). This project will have a sustainable impact on the parents as the disclosure of knowledge and ecotherapy activities during this programme can be done continuously, cost effectively in any nature setting and parents are now better equipped to bring their children outdoors. Other forms of Ecotherapy activities were published in a book titled 'Raising your Child with Special Needs: Guidance and which can be used as a reference by parents in the future.

Acknowledgement: The researchers would like to thank University of Malaya and UMCares - The Community and Sustainability Center for a research grant funding (RU013-2017AB) on the project 'Ecotherapy: Nature-based Learning and Play for Children with Special Educational Needs.'

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Storytelling for Indigenous Youth Empowerment

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Keywords: digital stories, indigenous youth, storytelling, Orang Asli

In this article, we focus on storytelling as a methodology for indigenous youth empowerment. Drawing from the indigenous practice of storytelling but presenting them in different forms, our project seeks to use the power of storytelling to empower Orang Asli youth by creating spaces for their voices to be heard through storytelling. The project also seeks to understand the Orang Asli youth's aspirations and challenges in their education journey. The project also aims to create awareness and inform the public, relevant stakeholders and policy makers. Through a series of participatory workshops and community consultations, we explored collaboratively with the Orang Asli youth different forms of storytelling including digital stories, artistic performances and short stories.

We worked closely with community leaders as advisors and mentors in this process. In 2016-2018, funded by the UMCARES Community Engagement Grant, we worked with eleven Temuan youth from Kg Tekir, Negeri Sembilan and 13 Semai youth from Kg. Pawong, Perak. We collaborated with students and NGOs in the process. We conducted several workshops, including a digital stories camp in 2016 and 2017. The youth were taught how to write a script based on their own life stories, create a story board and record their stories. We assisted in scanning and editing their illustrations into digital stories. The youth were involved in the different parts of the process. We now have 25 digital stories written, narrated and illustrated by the Orang Asli youth. The digital stories can be access via our website: SuaraSayaCeritaSaya.org.

Following the digital stories project, in 2018, our team collaborated with Freedom Film Network in a project focused on amplifying young women's voices, eighteen young Orang Asli women from different communities including Temuan, Semai, Temiar, Jakun and Semelai were brought together for a week-long workshop exploring different forms of storytelling such as shadow play, acting, singing and dancing. In addition to the young women, Orang Asli leaders and mentors also participated in the process. Through these different forms of storytelling, the Orang Asli youth shared their personal stories which they presented in a multi-media showcase at the Freedom Film Festival and documented in a book published in 2019, entitled *Kami Pun Ada Hak Bersekolah*

Different forms of storytelling outputs were produced showcasing the youth's stories as crafted by them based on their personal experiences and in their own words. Bullying, ethnic discrimination, and poverty were cited as the main challenges in attending school. Some students also shared their achievements such as excelling in academics and sports. Others expressed cosmopolitan aspirations such as traveling and learning new languages. The stories challenge prevalent stereotypes of Orang Asli as having little interest in schooling and as underachievers.

Our team have conducted film screenings and discussions in many forums including at the Freedom Film Festival and the Indigenous Film Festival. The digital stories have also been screen in Taiwan and Japan. The collaboration with Freedom Film Network also produced a multimedia showcase at the Freedom Film Fest as well as a book "Kami Pun Ada Hak Bersekolah". The Deputy Minister at the Ministry of Education helped launch the book and has approved for the book to be distributed to all schools in Malaysia. We are currently working on a discussion guide and lesson plans based on the digital stories for educators. We plan to collaborate with Education Departments and Teacher Training Institutes (IPG). We conducted a workshop with IPG Tengku Afzan to produce several lesson plans based on the digital stories. Other spinoff of the project includes a collaboration with a theatre group Spec-Actor, funded by UNICEF, where the theatre group created a forum theatre using the digital stories produced by the youth and later presented them in the village. The use of forum theatre was useful discussing difficult issues such as bullying.

The impact of the project includes the observed increased in self-confidence among Orang Asli youth participants. They also gained new knowledge for example in how to write a script and to use a storyboard. The stories also

increased public awareness and opened space for discussions on Orang Asli education rights. A high percentage of those surveyed after watching the digital stories indicated very positive response. Participants reported learning new and eye-opening information. Many also admitted the stories challenged their stereotypes of Orang Asli. The stories are also informing educators and policymakers on the lived realities of Orang Asli youth, challenging prevalent stereotypes, we hope this will have a positive impact in terms of policy and support for Orang Asli youth. In this final phase, we are encouraging educators to use the stories as a teaching tool, further expanding their impact and usage. The project has the potential to continue beyond the project time frame with the uptake in schools and youth leaders. We conclude that storytelling can be a powerful methodology for youth empowerment.

Acknowledgement: The digital stories project is supported by the UMCARES Community Engagement Grant. The collaborators for the digital stories project include Brenda Danker and Angela Kugathas and the community members from Kampung Tekir, Negeri Sembilan and Kampung Pawong, Perak. The book project, which we collaborated on, is led by the Freedom Film Network and funded by Konrad-Adenauer-Stiftung and the Canada Fund for Local Initiatives.

Tuninipot Literacy-Creative Module for Sabah Native Children

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Keywords: Early Literacy, Indigenous Education, Creativity, Early Childhood Education

Abstract

Introduction: As a continuation of Sabahan Native Folklore based on Literacy Learning Module, the TUNINIPOT (Literacy-Creative) Module for Sabah Native aims to develop children'sdevelop children's creativity and aesthetic appreciation of creative writing, such as Sabahan Folk Tradition Song in literacy learning. Other than that, this module is also beneficial to preserve important cultural values, traditions and beliefs of the indigenous people of Sabah as well as preparing them for the changes in IR 4.0. This module was developed based the following principles:

a) Apply the theory of Experimental Learning (Kolb, 1984), which highlights i) learning through experience, ii) providing critical feedback, iii) generalizing what is learned, and iv) applying what is learned to new learning
b) Emphasis on the "Creative Song Basics - Native Tradition" where children are actively involved in teaching and learning to recognize sounds and letters (Mohd Nazri Abdul Rahman, 2014)
c) Emphasis on creative writing which is creating a simple sentence for children to conduct a children's creative story: 'Creative Stories from Kids to Kids'
d) Apply phonics and whole-language approaches with some modifications by emphasizing various techniques using folk stories such as custom, environment, way of life, language and other resources in Indigenous communities (Isahak Haron, 2011)

Methodology: The development of this module applied the Design and Developmental Research approach (Richey & Klein, 2014) which involves 3 phases. The Module for this study is developed based on the findings from previous UMCares Project entitled "The Implementation of Basic Literacy Learning Module Based on Folktales of Sabahan Natives (RU004N-2016). For this study, the module has been developed in two phases:

Phase 1: Needs Analysis. The data collection for the need's analysis phase involved 120 preschool teachers, lecturers, lecturers and parents, and the Malysian ministry officials. Data collection was conducted through interviews, focus-group discussions and questionnaires.

Phase 2: Module Design and Development. The findings from the first phase serve as inputs to the design and development of Tuninipot module. Next, the Nominal Group Technique (NGT) approach, and Interpretive Structure Model (ISM) were applied in designing the module. This phase involved 12 experts from the fields of early childhood education, languages and indigenous peoples. The Tuninipot Module prototype was then evaluated by five experts (Expert review) using the Custom Delphi approach. Next, it was tested for its usability by 15 preschool and kindergarten teachers selected through the Fuzzy Delphi Method approach.
The subsequent stage involves the third phase which is the implementation and assessment of the module

Phase 3: Module Implementation and Assessment. The modules that was designed and developed in phase 2 was implemented and evaluated for its effectiveness. The implementation of these modules involves five kindergartens in

Ranau and Kundasang districts, a preschool teacher education institute in Tuaran district and two alternative learning centres in Kota Kinabalu Sabah. Data collection was conducted through quasi-experiments on 210 children and user retrospective study on the use of literacy-creative modules by teachers and parents at Kundasang-Ranau Unity Kindergarten, Preschool and Alternative Learning Center in Sabah. The implementation of these modules was conducted with teachers and the local community through a series of four modules workshops and three parent-guidance classes to ensure that teachers and communities can practice these modules in schools and homes. In addition, the implementation of these modules were also coordinated with the Independence Month Celebration (Free Letters Drawing Competition, Glorious Coloring Competition and i-Creative Competition); World Children's Day Celebration (Treasure Hunt - Creative Children's Story Reading and Parenting Seminar), Tuninipot-Creative Kids Seminar (Traditional Art i-Creative Coloring Competition; i-Creative Literacy Drawing Competition; Contest Tuninipot - Creative Stories From Kids to Kids) and Children's Creativity Festival (Children's Song Competition, Traditional Dance and Sabah Native Crafts) featuring all the children involved in the implementation of this module.

The Tuninipot Module has its own uniqueness since it introduces the early literacy learning through the traditional art of Sabah Native. This is different from the current early literacy module available in the market. Tuninipot module has adapted the designs, patterns, and traditional motives of native people of Sabah that are developed as resources for children's early literacy learning.

Findings: Based on the interview, observation and document analysis, the findings indicated positive impacts on Sabahan Native Children after the implementation of Tuninipot modules. There is also evidence that achievement in early literacy also improved.

Figure 1: Pupil's Work: Children's Stories

Interviews with 12 teachers indicate that 96 percent of the respondents indicated that using the Tuninipot Module made it easier for children to recognize letters and then read and write simple sentences. Document analysis on student work has found that 100 percent of the students can write correct sentences using capital and lower-case letters. In addition, based on observation during teaching and learning sessions using the Tuninipot module, it is possible for children to be actively involved and be able to answer correctly for each question posed by the teacher.

Teachers and parents were satisfied with the module as it helps in improving creative story writing skills, cultural values and environmental resources as literacy teaching materials, as well as enhancing creativity and engaging children's interest in people's stories and songs. The implementation of this module has a positive impact on: a) improving literacy (Reading Skills), children's writing skills and creativity; b) increasing the attendance of Indigenous children in schools; c) encouraging integrations of community traditional arts activities into the curriculum; d) maximizing their interest to learn about their local arts and culture; ed) preserving the stories and songs of the indigenous people of Sabah; e) highlighting creative literacy pedagogy application based on the Responsive approach to pedagogy (Yunkaporta, 2009); f) nourishing the country's harmony by capitalizing Sabahan indigenous culture and art, and g) encouraging entrepreneurial activity (Social Enterprise) based on local context.

Recommendations: For improvement, it is suggested that enrichment and rehabilitation activities should be conducted to maximize students' involvement and opportunities to express themselves in an open environment. Also, this module helped to maximize children's motivation to learn as the content was close to their cultural background.

Acknowledgement: The authors thank the Ministry of Education for the RU-UMCares Grant (RU013-2017X) of Community Engagement Project 2018-2019.

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SYMPOSIUM 2: BUILT ENVIRONMENT AND WASTE

Community Based Ecotourism (CBE) Development and Local B40 Youth Community Empowerment

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Keywords: Ecotourism, B40, TEV, entrepreneurship, community empowerment, community economic development

Abstract

As reported in many reputable articles and news, the Gini indicator in Malaysia is widening and will continue to do so in the coming years. In other words, the income inequalities between the rich and the poor among the Malaysian is widening. The trend is obvious especially between the rural and city communities. This shows that government expenditure and private investment have failed to create a spillover effect and less market penetration especially in the east coast of peninsular region such as Kelantan and Terengganu (both state is considered as rural due to geographical location), where, both state are among the poorest state in Malaysia. Several studies pointed out that the cause of this situation is due to the low level of readiness of the rural communities to participate in the economy which finally excluded them and leaving the city community to take advantage of their own resources. Many studies have pointed out that one of the factors that contribute to low level of readiness is lack of formal education.

This led to the first 'Nature Appreciation' program by the Institutes of Tropical Biodiversity and Sustainable Development (IBTPL), Universiti Malaysia Terengganu (UMT) in 2016. The initial aim of the program is to raise awareness and educate the rural communities surrounding the Kenyir Lake on biodiversity richness in the area which can be turn into green economy and may raise their livelihood wellbeing. The decision to involve the Kenyir Lake community are made based on earlier study which pointed out to alarming major youth migration out of the area seeking working opportunity. The effect of migration leaving the fertile agricultural land abandoned and led to diminished unique cultural and heritage inheritance among the youth (Mohammad et al., 2019)[1].

During the programme, a set of questionnaires was distributed to measure the level of local knowledge on the surrounding area cultural and heritage, flora and fauna, and its use. Surprisingly, majority of them didn't realise the abundance of natural resources surrounding and its value. Migration to the city also is seen as their last option for a living. Therefore, the outcome of the program has left the local communities eager to learn more on how to turn the resources into useful economic activities and income generation through green economy and continue living in the area. However, majority of the youth are not interested to involve in the agricultural sector which is parallel with Samsudin et al., (2016) and hence an ecotourism project is identified as the medium of green economy for the youth. For the purpose, IBTPL had proposed a Community Based Ecotourism (CBE) Development and Local B40 Youth Community Empowerment project and was awarded a Translational grant funded by the MOHE and UMT. During the proposal period, new findings from other research project conducted by the institute also indicated that other district such as Setiu and Besut were experiencing the same situation as in Hulu Terengganu (Kenyir Lake area). Therefore, the project also included both states together with Hulu Terengganu into the project. The Translational

grant is merely a two-tier project which aims at producing high impact publications and increasing the income of local communities.

In other words, this study aims to develop the Below 40 (B40) percent of Malaysia's income earners communities in three districts of Terengganu namely Hulu Terengganu, Setiu and Besut with the appropriate education level. With given natural resources abundance (endowment factor) in surrounding area, the B40 among the youth is trained to become a nature guide and a community scientist which aim to increase their wellbeing through income generation and promote green economy. The words community based indicate that the role of the nature guide does not limit to themselves only but bringing the spillover towards the wider community to benefit. The nature guide will serve as an agent to bring tourists to their area and open up the window of business opportunities towards the wider community in the area. This may also open up more job opportunity and creation in the area hence reducing the motivation of migration by the youth. Having said that, ecotourism has been identified as the central theme and the medium of these objectives.

On the other hand, current study conducted by IBTPL and WWF[2] shows that the rural communities may turn to degrade the natural resources if their income stream is disrupted and by making this intervention, the degradation of natural resources can be reduced. In other words, the project tends to promote rural community's income generation and conservation at the same time through ecotourism project.

Under this project, the rural communities of these three districts is studied, including their willingness to participate in the economy, the value of nature and heritage, the mind-set of the entrepreneur, community-government join management, the supply chain management and potential ecotourism products. These studies are conducted by several researchers and postgraduate students through observations and structured data collection. Expected output of this study will be a well-trained nature guide equipped with strong management knowledge, postgraduate students, journal publications, books, IP's and module.

Acknowledgement: The authors thank the Ministry of Higher Education (MOHE) and the University Malaysia Terengganu (UMT) for the Translational grant.

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Earth Rescue Program: Systematic Food Waste Management

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Keywords: Systematic Food Waste Management; Methane gas; Composting; Integrated Solid Waste Management; Community; Environmental protection

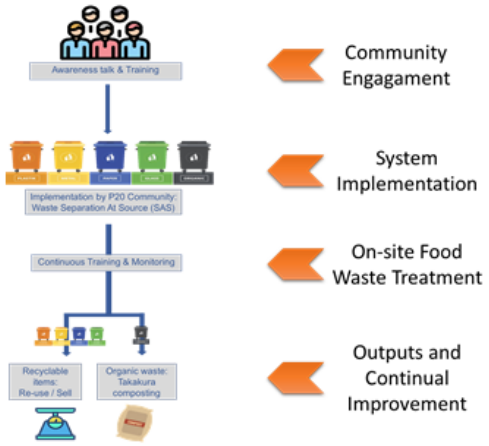
Abstract

Malaysia produces 38,000 tons of waste everyday (SWCorp, 2019). According to Dr Mohd Pauze, the director of SWCorp, 44.5% of the waste collected was food waste, followed by plastic waste (13.2%) and diapers (12.1%). Malaysia is widely known as 'Food Heaven' due to 1001 variety of foods are produced everyday. Ironically, 2/3 of food produced that mends to be eaten is wasted. Therefore, the highest composition in waste composition is food waste. This has been a major concern because the disposal of food waste was found to be polluting the environment with the high production of landfill gas and leachate as the local climate of high precipitation. The release of methane gas from landfills and the hauling distance make waste management sector one of the largest carbon emitter in the country. Furthermore, the leachate produced in landfill contaminated the ground water affecting human health as ground water is a human living resource. Based on a research study conducted at Gazipur landfill by S. Mor *et. al.* (2006), leachate has significant impacts on groundwater quality near the landfill deteriorating its quality for drinking and other domestic purpose.

As population increases, the generated amount of waste also increases. Integrated Solid Waste Management (ISWM) requires a systematic action for managing waste from its origin to its final disposal. This project aimed to transfer the knowledge on ISWM to the selected case study for the project which is at People's Housing Project (PPR) Block P20 community in Pantai Dalam as this community is neighbouring Universiti Malaya and is a typical example of high density concentrated high rise urban community dwelling without effective waste recyling and management. It is located south-west of Kuala Lumpur, densely developed comprising of high-rise urban housing including many commercial areas including restaurants and shop-lots. In Block P20, there are 1,200 people excluding the restaurants owners. Improper waste management not only causes the community to have more constricted area, but also unhygienic environment.

Introduction: The Earth Rescue Program: Systematic Food Waste Management with P20 community is a community project aim to empower the community and create awareness regarding sustainable and systematic solid waste management especially managing food waste efficiently and carrying out food waste on-site treatment to convert waste into useful resource and create income generation. This would assist and reduce the problem faced by the community related to improper waste management by introducing integrated food waste management system it would reduce the environmental burden faced by the community. This project focuses more on food waste since food waste generation is almost 50% of total waste generated in Malaysia. To also encourage recycling culture and habits amongst the community, 3 recycling bins for dry waste separation (plastic, metal, paper) and 9 plastic containers for food waste composting was placed at site to facilitate recycling activities and community composting initiative.

Methodology: This community project is executed based on this module:



Results: Since October 2018 until September 2019, P20 community has recycled about 3,120kg of recyclables and has composted 2,076kg of food waste. The data collection of recyling activity by P20 community in 12 months as follows.

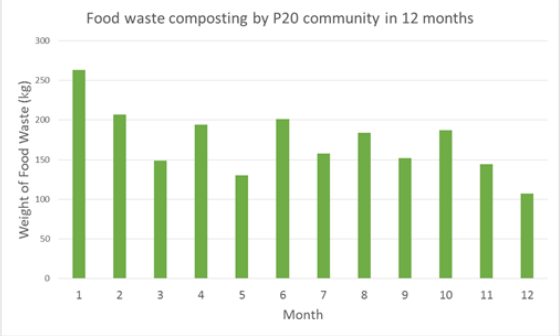


Figure 1: Food waste composting by P20 community in 12 months

Figure 2: Recycling of dry waste by P20 community in 12 months

Conclusion: By implementing the community project, the output and impacts to the community in terms of environmental, economic and social improvement have been achieved. Increase awareness amongst residents and the social interactions and cohesion amongst residents was prevelent as the community cooperated in carrying out the food waste separation and community composting. The sustainability of the project would encourage, improve the community waste management and create potential income from the composted food waste thus, promoting circular economy, environmental conservation and sustainable development.

Acknowledgement: Special thanks to UMCares for the Action Research grant RU013-2017A and the residents of Block P20 People's Housing Project (PPR) Pantai Dalam.

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Rejuvenatıng Publıc Space tThrough Reımagıng Recyclable Plastıc & Constructıon Waste: A Case oOf Kebun-Kebun Sentosa

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Keywords: Kebun Kebun Sentosa; public space; construction waste; reimaging waste; sustainable city.

Abstract

Introduction: With rapidly growth of population and economic in Malaysia, public spaces are essential elements of urban fabrics. Public space is defined as the character of a city, not its private space (UN Habitat, 2012). Building inclusive, healthy, functional, and productive cities is perhaps the greatest challenge facing humanity today. A key part of the puzzle, though, lies right at the heart of the world's urban areas: its public spaces. Livable public space is one of the antidotes for the growing separation and segregation in socioeconomic mixing: where people of diverse backgrounds and a range of different income groups can all interact.

While high-income population enjoy the pleasures of big homes, backyards, private clubs and country houses, under-privileged communities have only their local street to hang out in—and if they are lucky, a park, library or playground nearby. In Kuala Lumpur, low-income neighborhoods are normally found as walk-up flats with high density of residents built on constraint land. Living in a confined room without adequate space and sunlight increases the likelihood of health problems, restricts interaction and other productive activities. Hence public spaces have become one of the fundamental components of the people's well-being especially for low-income communities. Unfortunately, majority of public spaces in this city are underutilized due to lack of activities and attractions (DBKL, reported by Khoo, 2018; Maulan, 2015).

There are many reasons underlying this issue. Among all, a study has found that most of the open space in Malaysia is hot and exposed directly to sunlight (Ujang, 2018). In another research, most public spaces in Kuala Lumpur were found not pedestrian friendly and do not reflect the tropical climate, being devoid of trees and vegetation (Askari, 2014), resulting to lacking in vibrancy and activities. Therefore, enforcing climate responsive initiatives is also critical at the local and neighborhood levels.

This project aims to provide an initiative of rejuvenating a public space in Kuala Lumpur through a community-empowerment model, which covers a creation of income generation activities that promote healthy lifestyle and social interaction among community. As direct solar radiation has the largest impact on the comfort in open spaces, this project offers sun shading for public as a fundamental way to improve a public space bio-climatic shade.

Uniquely, this project proposes the use of recyclable waste to be upscaled into construction materials of the public space, with easy-constructible design for the communities to build and maintain themselves in ensuring the sustainability of the public space. The global crisis in plastic waste motivates this project to contribute towards mitigating plastic waste, especially when Malaysians is one of the major contributors to it - Malaysia was ranked the 8th worst country worldwide for plastic waste (Balasegaram, 2018). Even more sadly, recent news reported that Malaysia has no recycling system for its own trash, especially plastic thus the country has pledged to eliminate single-use plastics by 2030 (Pennington, 2019). On top of this, construction waste has become another major concern as tonnes of concrete, steel and timber materials are not being utilised; it is estimated that up to 15% of raw materials are being wasted in every construction project (Then, 2018). In Kuala Lumpur, construction waste contributes to 250 illegal landfills (DBKL, 2014).

Therefore, the objectives are delineated as follows; (1) to provide easy-constructible and easy-maintenance public space, including the sun shading, using recyclable waste in a selected area in Kuala Lumpur through a community empowerment model, as a proof-of-concept; (2) to create activities income generation activities that promote healthy lifestyle and social interaction among community, focusing at sustainable urban garden, playground, and outdoor gym; and (3) to conduct knowledge transfer activities in sharing knowledge and educate communities on easy-constructible and easy-maintenance public space using recyclable waste to ensure the liveability of the public space. In a long run, this project is hoped to contribute to four Sustainable Development Goals, namely:

- SDG 11: Sustainable Cities and Communities - by 2050, it is expected that 6.5 billion or 2/3 of the world's population will live on it, therefore this project aims turn open areas to public spaces for people to socialize while making urbanization to be more inclusive.
- SDG 12: Responsible Production and Consumption – this project promotes a principle in sustainable construction, where resources are not wasted.
- SDG 7: Affordable and Clean Energy – this project proposes the use of renewable energy, becoming cheaper to run.
- SDG13: Climate Action – this project aims for fewer emissions, helping to combat climate change.

The 'Kebun Kebun' Initiative: Kebun Kebun Sentosa

With the collaboration with local authorities and Parliament Member of Lembah Pantai, University of Malaya researchers has taken up Kebun Kebun Sentosa (KKS) as a case to meet the project aim. In Malay, a 'kebun' is a small vegetable garden, generally a small plot kept by a homeowner to grow food. KKS is one of the landmarks community-based project in Lembah Pantai. It is the third community garden; the first successful project was Kebun-Kebun Bangsar (KKB) which was spearheaded since 2017 by a well-known Malaysian landscape architect Ng Sek San and his team of volunteers. KKB is now thriving. In early 2019, the same team has gone on to help setting up Kebun-Kebun Kerinchi (KKK).

The Kebun Kebun initiative is based upon the concepts of community participation, whereby the garden takes shape with the help of the volunteers, who not only put in the hard work to transform the site but even contributed seeds of plants. Whenever they have excess produce, the volunteers could sell them, and the proceeds go back to managing the garden or as a source of income for the community.

Each Kebun Kebun, however, has different characteristics. KKB is aimed to repurpose urban wasteland, which is located at Lorong Bukit Pantai, Bangsar on Tenaga Nasional Berhad (TNB)'s land. KKB grows organic food and provide residents with a bio-diverse environment to break up the area's urban development. The 3.2-hectare community garden is entirely fenced and a closed-circuit television (CCTV) and camera system have been installed at the front gate. Unlike KKB, KKK has no specified boundary and it intends to uplift the lives of the residents living in Kampung Kerinchi. It basically constitutes the land along the Klang River reserve that leads all the way to Klang, Selangor.

KKS is located along Jalan Seri Sentosa 8, nearby Taman Seri Sentosa communities. KKS is inspired by an endeavour to promote sustainable living by turning waste into economic value. KKS's site that is owned by Kuala Lumpur Municipal Council (DBKL) was identified by the Parliament Member of Lembah Pantai, who were also playing an important role in bridging the links between the University of Malaya researchers, the authorities and the

communities. Overall, KKS is built up based on two main pillars, (1) to build an educational urban garden and recreational area using recycled materials, and (2) to provide a facility for collecting kitchen waste that is then turned into compost, which can be used for urban gardening.

Background of the University of Malaya's Research Team and the Collaborators: The inspiration behind KKS is originated fro a project called Upcycling Revolution: From Waste to Health which is funded by the Knowledge Transfer Programme – Malaysia Research University Network (MRUN) Grant. It is a program led by University of Malaya that consists of three sub-projects; namely (1) Urban Garden for Sustainable Livelihood, led by Dr Rosazlin Abdullah from Institute of Biological Sciences, (2) Re-imaging Plastic and Construction Waste, led by Dr Nurshuhada Zainon, from Faculty of Built Environment, and (3) Zero Waste Movement in Urban Poor, led by Professor Dr Sumiani Yusoff, Faculty of Science. The main collaborators include partnering universities from International Islamic University Malaysia, University Malaysia of Terengganu and University Malaysia of Kelantan, DBKL and Local Agenda 21 (LA21).

The project reported here falls under the second sub-project, therefore, the research element for this project focuses in measuring impacts from the first pillar. It is expected that, KKS will increase social interaction, reduce temperature and embodied carbon, as well as, reduced construction cost within the boundary of KKS site.

Methodology and Project Progress: This duration of this sub-project is 24 months starting from 1st of February 2019. The project was started with a site planning. A group of 16 volunteers from the Department of Architecture, University of Malaya were identified in designing the landscape. They were divided into 6 groups, with each of them has come out with unique designs of urban garden and recreational facilities for KKS. The design has received inputs from experts from agricultural perspective, composting and landscape designers. The initial designs were then presented to the Taman Sri Sentosa communities to ensure the proposed layout meets the communities' expectations and needs. The presentation session was also a part of knowledge transfer activities that cover awareness of construction technology using recycled materials.

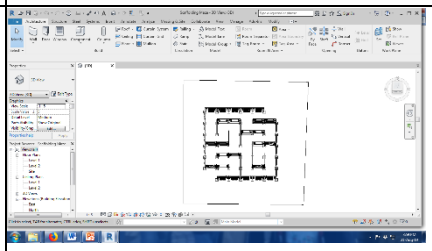
Besides the site planning, engaging with the authorities and communities is the most crucial part in this project. Through the Parliament of Lembah Pantai office, University of Malaya's researchers has developed a network with DBKL and LA21. DBKL is the body to provide the construction site access permit, while LA21 is the party that connects the stakeholders (in this case, University of Malaya), the authorities (in this case is DBKL) and communities. Getting a project approval from the authorities is a challenge, but LA21 has been following up with the permission status from DBKL and making the plan runs smoothly. On the other hand, Parliament of Lembah Pantai office is the focal person to gather communities in all of the activities involving their participation.

In the next progress, a campaign for the communities to collect used materials for the construction of KKS will be conducted. In the implementation phase, another group of volunteers from the Faculty of Built Environment, University of Malaya will be identified. Through a knowledge transfer approach, these volunteers will assist the communities in constructing the urban garden and recreational facilities on-site. A construction management plan was prepared prior to the event.

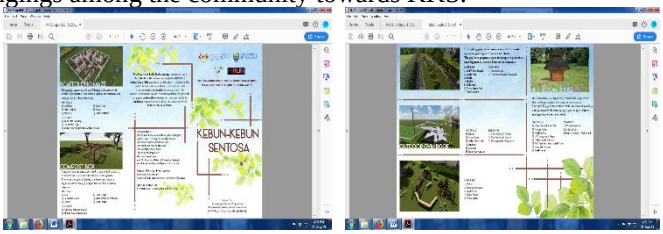
On a research part, scientific methodology was conducted to understand the impact of the project, hence established findings. This involved survey, observation and temperature readings before and after the construction of KKS, and comparative analysis of construction cost.

Project's Current Progress: Table 1 below shows the status of outputs/findings up to date (1 October 2019)

Table 1: Outputs Progress

No	Deliverables	Output/Findings
1	Site Visits	    Dates:15 April 2019,16 April 2019,26 June 2019 and 2 July 2019
	Layout Design	
	Proposed Structure Design and Recyclable Material List	
2	Structure Detailed Drawings	 *Sample*
	KKS Proposed Design: Community Feedback Report	 *Report front page*
3	Impact Measurement	Data collection during the pre-establishmenet of KKS. • Measurement for temperature reading of the KKS site (July 2019). • Pre-observation of number of visitors to the KKS site (July 2019).

4	Knowledge Transfer/Community Engagement	      Items: • Mesyuarat Parlimen Lembah Pantai, 21 February 2019 – KKS idea pitching to the Member of Parliament Lembah Pantai and his team. • Mesyuarat Parlimen Lembah Pantai, 15 May 2019 – Meeting between University of Malaya researchers, Parliament of Lembah Pantai officers (including the Member of Parliament), authorities and stakeholder. • Mesyuarat LA21, Menara DBKL, 7 April 2019 – Idea pitching and meeting between University of Malaya researchers, DBKL and Kuala Lumpur's urban gardens representatives, chaired by LA21. • Bengkel MRUN 2019, IPPP, University of Malaya, 19 June 2019 – Workshop between University of Malaya researchers and university partners. • Kebun Kebun Sentosa: Bengkel Jalinan Komuniti, Pejabat Parlimen Lembah Pantai, Taman Seri Sentosa, 7 August 2019 – Knowledge transfer activities to Taman Seri Sentosa community and getting consensus from the community on the KKS development and design. • Seminar STEM, Pusat Asasi Sains, University of Malaya, 14-15 August 2019 – Knowledge transfer and sharing information with the public on KKS. • Pembersihan KKS, 2 November 2019 - Site clearance with the Taman Seri Sentosa community. • Jom Turun Padang 1.0: Projek Menceriakan Kebun Kebun Sentosa, 17 November 2019 -. The day to construct the play area using used construction materials with the community of Taman Seri Sentosa, together with University of Malaya volunteers. Knowledge transfer activities was embedded during the Gotong Royong with community. • Jom Turun Padang 2.0: Projek Menceriakan Kebun Kebun Sentosa, 11 April 2020 – The day that supposed to construct the shades, water harvesting system and furnishing KKS with the community of Taman Seri Sentosa, together with University of Malaya volunteers. Preparation was made; however, this activity was cancelled due to COVID-19 pandemic situation.
5	Videos	• Video for Knowledge Transfer Activity 1: https://www.youtube.com/watch?v=0vPQWQH_i4Q&feature=youtu.be • Video for Knowledge Transfer Activity Testimonies: https://www.youtube.com/watch?v=hRUXYbiqDUI&feature=youtu.be • Animation Video for KKS Perspective
6	Publication (1 no.)	Zainon, N, Lun, G.W, Mohamed-Zaid, N.S, Myeda, N.E, & Aziz, N.M (2019), Developing a Framework for Life Cycle Assessment of Construction Materials through Building Information Modelling (BIM), International Journal of Innovation, Creativity and Change, Vol. 10(7), 253-276.
7	Copyrights (2 no.)	• Mushroom House (not achieved yetapplied) • KKS Installation Manual (upcoming)

8	Conference (1 no.)	Developing a Framework for Life Cycle Assessment of Construction Materials through Building Information Modelling (BIM), International Conference on Global Optimization and Its Application (ICoGOIA2019), 2019-11-23 to 2019-11-24, UTHM and Indonesian Operations Researchers Association, (International).
9	Others: Brochure	A brochure introducing play area design installed in KKS, including the list of used materials involved in constructing the play area; aims to share information and create the sense of belongings among the community towards KKS. 

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KIEPRO: Entrepreneurial Development Programs for Female Entrepreneurs in Terengganu

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Keywords: Female entrepreneurs, Entrepreneurial trainings, Business performance, Terengganu

Abstract

The Malaysian Government has been playing a very active role in promoting entrepreneurship spirit among its citizens, targeting both males and females. Since more than a decade the government has embarked on developing capacity building initiatives through various ministries and agencies to promote and nurture more women entrepreneurs in various kinds of businesses. Starting 2008, campaigns were conducted aggressively in some states to increase awareness among low-income rural women especially in Kelantan and Terengganu; the two states in Peninsular Malaysia with the highest poverty rates and lowest human development. In Terengganu, Yayasan Pembangunan Usahawan (Entrepreneurs Development Foundation) and Yayasan Pembangunan Keluarga Terengganu have been actively promoting and conducting training for females specially to set up a new venture or sustain their businesses. Setting up businesses and sustaining its operation is not an easy task. KIEPRO is a series of entrepreneurial development programs aimed to improve the business performance among female entrepreneurs in Terengganu. This KIEPRO project is the joint project between Universiti Malaysia Terengganu (UMT) and Yayasan Pembangunan Keluarga Terengganu (YPKT). Under KIEPRO project, there are series of scheduled development programs and each of the program has different emphasis and focus. To ensure that the programs benefit the targeted community, at the end of every program, participants were given a set of questionnaires for them to answer. For every program, different data set would be collected. Since KIEPRO program also provides them with different types of training, the effectiveness of the training and what are the other training that they need in future were also asked at the end of every KIEPRO program. To conclude, training is essential for them to maintain and improve their business and many of them expect that their business would further grow with the help of some government and private agency.

Introduction: Many countries around the world are very concerned about the development of entrepreneurship as one way to stimulate the country's economic development. In Malaysia, the government has implemented a lot of entrepreneurial policies and programs for those who are keen to venture into this field. Various entrepreneurial development programs, training, and advisory services have been provided by government agencies to help the entrepreneurs in Malaysia to grow (Statistic Department, 2009). In Terengganu, government agencies especially Yayasan Pembangunan Usahawan (YPU) and Yayasan Pembangunan Keluarga Terengganu (YPKT) are actively involved in providing entrepreneurial trainings to those who need such trainings. YPKT in collaboration with Kenyir Institute, Universiti Malaysia Terengganu (UMT) has planned several series of entrepreneurial trainings and Kenyir Institute Entrepreneurial Programs (KIEPRO) is one of them.

Methodology: KIEPRO training programs are the programs designed by Universiti Malaysia Terengganu (UMT) and Yayasan Pembanguna Keluarga Terengganu (YPKT) after a few discussions by both parties in the effort to improve the business performance among female entrepreneurs who have registered under YPKT. KIEPRO trainings were properly scheduled and for the year of 2019, there were three programs planned for these female entrepreneurs.
Each of the training programs has its own objectives. Thus, to determine whether each program achieved its objectives, a set of questionnaires was delivered to every participant who later would return the answered questionnaire to the program committee at the end of each program. The questionnaire consists of four sections: Section A asks questions on business performance, Section B ask questions on personality, Section C asks questions on effectiveness of the program and Section D requires the participants to give information about the demographic profile. The response from the

participants is very important since the responses can be the guide for the training providers as well as the relevant agencies to measure the effectiveness of the program, to plan for further training programs that are needed by these entrepreneurs as well as to make improvement to the current training programs.

Findings: Table 1 reveals the scheduled trainings for female entrepreneurs who were already registered under YPKT. These registered female entrepreneurs were monitored from time to time by YPKT especially in the aspect of their business performance. These three KIEPRO programs were the training programs that were conducted in collaboration between Universiti Malaysia Terengganu (UMT) and Yayasan Pembangunan Keluarga Terengganu (YPKT). The training contents were based on suggestion or request by the majority of the participants. Besides KIEPRO training programs, these female entrepreneurs have also other trainings that were conducted by different training providers.
Table 2 shows that majority of participants valued KIEPRO training programs and it can be said that all the three programs planned and implemented have achieved their objectives.

Table 1: KIEPRO programs

Program	Date/Day	Venue	Course	No. of Participants
Kiepro 1.0	17 April 2017 (8.00am-5.00pm)	Dewan Syarahan, PISM, UMT	Usahawan Desa	59
Kiepro 2.0	25 September 2017	Dewan Seminar INOS	Pengurusan Kewangan	37
Kiepro 3.0	28 Nov 2017	Audi INOS, UMT	Pengurusan Kewangan	70

Table 2: Respondents' Feedback on Objectives of the programs

Program	Objectives	Perception of participants on the course	Remarks
Kiepro 1.0	i.to increase particpants' knowledge on entrepreneurship ii.to share on strategies to increase sales and revenues iii.to share knowledge on other alternative mediums of marketing	87% - very good 12% - good 1% - no response	Participants suggested for next level of such kind of course
Kiepro 2.0	i.to share with the entrepreneurs the right financial management and strategies ii. 'hands on' on bookkeeping and systematic documents/records	100% of participants agreed that this course is very useful to them	Many of them did not have proper record keeping/ledger
Kipero 3.0	i.to share with entrepreneurs the knowledge on e-marketing ii. 'hands on' on e-marketing (facebook, insta, whatsapp, etc)	100% of participants practised e-marketing starting that day	Participants suggested for level of such kind of course

Conclusion: Entrepreneurship plays a critical role in boosting economic growth and development; thus government agencies are trying their best to provide entrepreneurship trainings that aim to equip the entrepreneurs with relevant knowledge and skills. KIEPRO has also provided different types of entrepreneurial trainings to the entrepreneurs in Terengganu. Based on the survey delivered to participants, it was found that KIEPRO programs have achieved their objectives. In fact, many of the participants found that the trainings provided were useful and essential for them to maintain and improve their business and many of them expect that their business would grow further with continuous help and support from government as well as private agencies.

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Production of Activated Carbon from Biochar Technology to Improve Farmers Community Crops

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ABSTRACT

Application of biochars emerging as an attractive approach not only to improve soil quality, crop production yield by sequestering carbon (C) in soil and increasing water holding capacity, but also to mitigate the climate change problem by reducing greenhouse gas emissions. Besides that, it can also act as a potential removal tool by discarding chemical contaminants. Biochar, a C-rich product of carbonaceous material, is produced by relatively simple technique known as thermal decomposition under limited oxygen (O_2) supply at a low temperature. Utilization of biochar as a precursor for preparation of activated carbon is reported and proven. The biochar produced which contains aromatic structures is mostly preferred precursor as it provides porous C matrix which assist in enhancing the surface area and sorption capability for production of activated carbon. The survey was conducted to get the information on the level awareness of Pertubuhan Peladang Kawasan Seri Kelana in Lenggeng, Negeri Sembilan towards to the activated carbon knowledge and practices. Based on the questionnaires, 100 % of the respondents gave negative responses on their knowledge, attitude and practices of the biochar and activated carbon since they are never being exposed to the biochar and activated carbon application. Hence, the programme "Awareness and Practices of activated carbons from Biochar Technology to Improve Farmers Community Crops" has been carried which includes conducting the workshop to produce activated carbon from biochar technology and conducted field trial. A field experiment on active carbon application were conducted by applying activated carbon from different agricultural waste with recommended fertilizer and control in a randomized complete block design on selected vegetable which is green mustard. An activated carbon application had resulted in the increase of height increment, diameter growth, and total plant biomass of green mustard and soil fertility compare to the control and inorganic fertilizer. After programme, the same questionnaires have been redistributed to get the feedback of the same respondents. The finding from the questionnaires showed the percentage of community that gain knowledge, attitude and practices of activated carbon were increased to 58%, 44% and 19 %, respectively. Meanwhile, level of environmental issues awareness was increased to 17%. The result suggests that application of activated carbon from biochar technology is an alternative way to increase awareness of sustainable environment within community and recycle wastes into value-added products, provide a new solution to enhance crop productivity.

SYMPOSIUM 3: EDUCATION

Bringing the Astronomy Community to Educate People

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Keywords: Astronomy, Community, Education

Abstract

The Astronomy Club plays a very important role in introducing astronomical sciences to local people through the outreach activities conducted. However, this role cannot be played by this club due to the factors such as the lack in expertise and the lack of exposure of theoretical and practical training in a complete and orderly fashion that can be translated in the form of activities that can be carried out with local communities. Thus, this project aims to improve the role of the astronomy club through theoretical and practical training. This project is conducted for the astronomy club to convey knowledge with local communities. The project is well-received by the teachers as well as the students who participated. The feedback clearly shows that almost every student finds the astronomy club to be a positive influence in increasing their knowledge in astronomy.

Introduction: SMKA Sheikh Haji Mohd Said, through its astronomy club is the first religious school in Seremban to have an astronomy observatory and equipment established since 2009. This observatory was named as the SMKA SHAMS Al-Biruni Observatory, located inside the school compound. The Astronomy Club plays a big role to arouse local community interest and curiosity in astronomy education with proper knowledge from the experts. However, the lack of knowledge from teachers and students in handling and maintaining the theoretical aspects and practical equipment had resulted in the Astronomy Club not being able to play an effective role in carrying out activities in astronomy knowledge education.

This project aimed to achieve objectives which were as follows: Firstly, to provide consultancy and assistance in the process of developing astronomy and repair clubs and to maintain the community observatory and equipment. Secondly, transferring astronomy and practical knowledge to the community through the upgrade of the astronomy module used. Thirdly, to propose and guide hands-on astronomy projects to be implemented by the community for the teachers and students of astronomy clubs and local communities.

Methodology: Three methods had been carried out for this project:

Consultancy services were provided for the astronomy club observatory. The observatory was found to be poorly maintained and damages as well as defects were detected. Improvements were made by repairing the observatory and equipment. Figures 1 and 2 show the condition of the observatory.

Figure 1. Condition of the observatory before repairs

Figure2.Conditionof the observatory after repairs

Next, workshops on theoretical and practical training were conducted for the astronomy community using the astronomy module provided, covering topics such as the introduction of the solar system, *rubu' mujayyab*, moon phases and eclipses of which the focus was on theory. While for the practical aspect, focus was on the practice of using Mitaka software and introduction on how to handle and maintain/look after the telescope. The astronomy community was also assisted, and a "hands-on" astronomy project module was also prepared for the local communities. These three components were important in order for the astronomy community to be recognized as a source of reference by the local communities.

Results & Discussion: In this section, the outcomes of this project, including consultancy, course and training services were discussed.

First, the community was encouraged to use the observatory facilities after maintenance work had been completed. Next, consultation was provided during the planning of club activities such as the visit to the Telok Kemang Observatory, Port Dickson and the night sky observation at the community club observatory in school. A briefing on the *hilal* criteria and the process to observe *hilal* that marks the beginning of the *hijri* month was given during the visit to the Teluk Kemang Observatory. Students enjoyed these activities immensely during the visit to the Telok Kemang Observatory

Figure 3. School observatory that had been reconstructed

Figure 4. Observation of *hilal*

Other than that, the community also observed the sky using the community club telescope for the night sky observation at the Astronomy Club Observatory. In addition, explanations about the way to observe the night sky were also given. Figure 5 shows the community participants for the night sky observation. The community wrote their remarks in a feedback form about the night sky based on their observation.

Figure 5. Using the community club telescope for night sky observation

Second, workshops were organized to encourage the community to develop a deeper understanding and appreciation for astronomy. The workshop was a live role playing – likened to an activity with a strong hands-on strategy and some formal learning: the students were divided into cooperative groups. Each workshop reinforced the links between astronomy and Islamic perspectives. The Astronomy Club workshops included:

i. "An Introduction to the solar system": The community was introduced to the specifications of each planet in the solar system. Group activities were conducted in order to evaluate their understanding of and add to their knowledge about the solar system and to differentiate each of the planet specifications. Figure 6 shows a group activity about the Solar System.

Figure 6. Solar System activities

ii. "Introduction of rubu*' mujayyab*": The community was introduced to *rubu' mujayyab* as a classical instrument and learnt how to calculate prayer times using rubu' mujayyab. Figure 6 shows the training for basics of *rubu' mujayyab*. This workshop was interesting and beneficial for the community as it was meaningful for them to know the calculation of *solah* times in the traditional way.

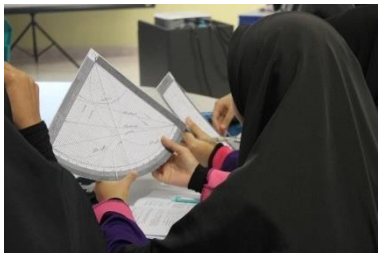

Figure 7. Community used *rubu' mujayyab* to calculate times for solah

iii. "Introduction of the moon phases": The community could understand the reason why the shape of the moon periodically changes with a different phase using the Moon Phases Model. The community was divided into 5 groups and each group gave a presentation about moon phases using the Moon Phases Model. This activity showed the depth of their understanding of the moon phases. Figure 8 shows one

group of community during their presentation of the moon phases. The beginning of *Hijri* month is very important to the Muslim community because months of the Islamic calendar coincide with the lunar cycles and due to that, the months begin with the first visibility of the lunar crescent after conjunction. The months that are related to religious festivals are the fasting month of Ramadhan, the months of Eid, Hajj, Zakat and others.

Figure 8. Moon phases presentation by the community

iv. "Introduction to the eclipse phenomenon": An explanation about the eclipse phenomenon from the scientific and Islamic perspectives was offered to the community. In addition, an explanation on the differences between the lunar eclipse and solar eclipse was also given to the community. To evaluate their understanding, the community had to answer the questions prepared by the speaker based on the explanations given. Figure 9 shows the community answering the questions given. This workshop provided new knowledge about the eclipse phenomenon based on scientific and Islamic perspectives. About this phenomenon, Muslims are advised to perform the eclipse prayers. It is one of the highly encouraged Sunnah prayers which can be performed alone or in congregation to express gratefulness for God's favors besides seeing this phenomenon as a reminder from God.

Figure 9. Community were focused on the quiz

v. "Telescope workshop": The community also learnt how to handle and take care of the telescope for the purpose of handling and maintaining the instrument by themselves. They practiced the handling and maintenance measures of the telescope after the explanation from the speaker to make sure the community can handle its maintenance by themselves. Figure 10 shows the community handling maintenance by themselves. The community members learnt how to handle and look after the telescope by themselves. They were taught how to handle the telescope and learn about its maintenance after listening to the explanation from a speaker. This was to make sure that the community could handle and upkeep maintenance by themselves. Figure 10 shows the community learning how to handle and upkeep maintenance by themselves.

In addition, the community were introduced to the Mitaka astronomy software. Mitaka is the software used to visualize the known Universe with up-to-date observational data and theoretical models. The community was briefed about and learnt how to use the Mitaka software. Figure 11 shows a demonstration on how to use the Mitaka software. The community understood the use of the Mitaka software and practiced using it in an astronomical community club environment.

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Figure 10. Community handling and maintenance measures of the telescope

Figure 11. Detailed explanation on how to use the Mitaka Software

The outcomes of the workshops showed that the activities developed by the community had been successful in arousing the interest in astronomy and Islamic astronomy apart from reinforcing astronomical knowledge and skills in public observing.

Challenges: Club advisors who were teachers at the school did not have basic background knowledge in astronomy, resulting in a less active club.[2] However, with determination , passion, support and interest the club advisors were assisted and encouraged to carry out this project so that the knowledge of astronomy could be spread to the local communities . As it turned out, this project became the starter for the astronomy club to make more progress with local communities.

In addition, several students in the community astronomy club were new members who lacked basic theoretical and practical knowledge bout astronomy. With the objective to increase their knowledge in theoretical and practical astronomy, various activities were conducted as part of the project. As the community had their own schedule. it was rather difficult to find a specific date to conduct this workshop but after some discussions and a date was fixed, the one-day workshop was held.

The Impact of Community Project is: SMKA SHAMS Al-Biruni Observatory, an astronomy club observatory, had been used for the community to conduct astronomy activities. From the transfer of knowledge through courses and training workshops, the community optimizes the use of the observatory and equipment. Moreover, through observation and practical workshops, the community members practiced and were able to use the community club telescope that had never been used before.

The success of these workshops showed that a community approach would be very useful at school. These activities had resulted in increased astronomy awareness for students and teachers in the astronomy club. The knowledge acquired by the community had been put into practice through periodic public outreach activities, where they played an active role in organizing events, interacting and communicating with the public and sharing scientific knowledge to those outside their community. Many activities that were related to astronomy were organized. As a result, there had been an increase in the number of members and teacher advisors of the SMKA SHAMS Astronomy Club. The module provided is beneficial to sustain the Astronomy Club of SMKA SHAMS for future activities. It is hoped this would be a good start for the establishment of astronomy communities in schools.

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Developing Coaching Skills of a Community of Teachers for Instructional Improvement

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Keywords: coaching, instructional support, supervision, professional development, improving classroom practices

Abstract

Coaching is an important element in building teacher capacity which will help teachers in improving instructional practices. Elements such as coaching knowledge, trust, direct assistance are essential in building teacher capacity. In addition, being able to reflect on one's own practices would help teachers to focus on areas of their teaching that requires improvement. Therefore, good support and feedback are also vital in coaching. This could be enhanced with the presence of support from colleagues and administrator. In this case, having the right skills and knowledge, trust and support are among fundamental elements in creating instructional improvement. A study done by Higher Education Leadership Academy or Akademi Kepimpinan Pengajian Tinggi (AKEPT) in 2011 found that only fifty percent of the teaching and learning was effective which goes to show that the some of the students were left behind and teaching and learning was centered on teacher-talk (MOE, 2013). This is more reason why teachers need professional development in order to improve their practices. When teachers are fed with appropriate skills and knowledge which are focused on developing teacher instructional practices, they would be able to apply the newly learnt skills and knowledge to improve students' learning outcomes (Poskitt, 2014; Knight, 2007). In this situation, coaching would help to support teachers to apply the theories learnt into practice because with the presence of a coach in the classroom, it would act as a "mirror" for teachers to reflect on their own teaching (Knight, 2007).

Coaching would lead to more skillful shared decision making among teachers apart from gaining new knowledge and skills which are needed for self-perpetuating change in their professionalism (Joyce & Showers;1996 Joyce & Showers, 1980; Knight, 2007; McCombs & Marsh, 2009; Bright, 2011). Through coaching, teachers can reflect on their own instructional practices, thus making improvement needed to create changes in learning outcomes. This is made possible with the help received from other colleagues who shared their experience of similar instructional situation. Other empirical evidence also suggests that many supervisions create negative impression to some teachers (Malm, 2009, Toll, 2009). In addition, some of the professional learning given to teachers were a one shot or one-size-fits-all and were not aligned or integrated with the objective of achieving individual or organizational goals. Therefore, the objectives of this project are delineated as follows:

1. To identify teachers' perceptions on the role of coaching in instructional improvement (based on DTP program)
2. To create awareness on the importance of coaching in instructional improvement
3. To provide support to teachers (at school level) to improve their instructional practices
4. To provide the right coaching and reflective skills- guide colleagues to improve classroom practices
5. To improve collaboration among teachers for the purpose of improving instructional practices and learning outcomes
6. To improve instructional practices and learning outcomes

Background of the Coaching Project: The Malaysian Education Blueprint 2013-2025 has clearly stated that teachers would receive support in order to help exploit their full potential. For that reason, the District Transformation Program has been outlined as one of the means to ensure that school-based job-embedded professional learning takes place in order to help the teachers. Various trainings are provided based in individual needs. It also includes support and involvement of others such as peer teachers, administrators and other educational institutions.

This coaching intervention initiative is based upon the concepts of community participation, whereby universities could play an important role in helping school community to improve their practices so they could give back to other members of the community i.e. the students. In this study, UM played the role by providing appropriate trainings to teachers and supervisors to help them improve their supervision practices. Based on preliminary interviews with the supervisors from MARA colleges, it was found that they were not given appropriate training to implement classroom supervision, therefore, the supervision done were rather evaluative. Thus, the coaching trainings provided by UM were deemed as useful in improving their supervision practices.

Various studies have been carried out on coaching in various contexts and areas (Reed, 2015; Dugan, 2011; Parman, 2015) but this study specifically provides an insight on the importance of coaching and how the implementation has impacted teacher classroom practices in Malaysian context. This Coaching Project was led by University of Malaya under Associate Professor Dr. Zuraidah Abdullah with several collaborators from MARA led by Dr Mohd Radzi Taib, PPD Hulu Langat led by Pn Ainonor binti Dato' Seri Mohammed Razali and Institut Aminudin Baki led by Dr Abd. Razak Manaf.

Methodology: The coaching project was carried out for 18 months starting from May 2018. It was an action research study which looked at both quantitative and qualitative data. The data for a preliminary quantitative study was gathered through a set of questionnaires which was administered to 200 teachers and supervisors in secondary school in Selangor. Analysis of findings were based on descriptive analysis using SPSS as well as inferential analysis using Smart PLS. The findings of the study provided and insight on the role of coaching attributes in helping teachers and coaches to create changes and improvements in classroom practices which leads to increased learning outcomes. It also illustrates the significant relationship between dimensions of supervision and the impact on instructional improvement in the implementation of coaching in secondary schools. The analysis of qualitative data analysis are as follows:

1. The Level of Supervision Practice Level
    a. The level of supervision practice was measured based on five dimensions:
        i. Supervisory Competency,
        ii. trust, iii) Direct assistance,
        iii. Teacher capacity, and
        iv. Support, Feedback and reflect.

An analysis of the supervision practice level is shown in Table 1.

The analysis in Table 1 suggests that although teacher capacity ranked 1st, however, other dimensions shows that there are room for improvement. Trust received the last rank suggesting that if trust could be improved, teacher capacity could develop even better. Similarly, direst assistance given by the supervisor ranked second last suggesting that it should be improved in order to ensure effective development of teacher capacity.

Table 1: Dimensions of Supervision

Dimension	Mean	SD	Level	Rank
Supervisory Competency (SC)	3.96	.507	3	**3**
Trust	3.84	.607	3	**5**
Direct Assitance (DA)	3.93	.515	3	**4**
Teacher Capacity (TC)	4.02	.462	3	**1**
Support, feedback and reflect (SFR)	4.00	.543	3	**2**
Overall	**3.95**	**.527**		

2. The Relationship between Supervision Dimensions
    a. Inferential analysis using SMART PLS as shown in Table 2 reveals that the relationship between Direct Assistance -> Teacher Capacity as well as Supervisory Competency -> Support, Feedback and Reflect were not significant. This is suggesting that there Is a need to improve direct assistance given to teachers as well as supervisory competency.

Table 2: Relationship between Different Dimensions of Supervision

Regression	Beta Value	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	R2	F2	Result
H1 DA -> Capacity	0.113	0.083	1.363	0.174	0.717	0.019	Not Accepted
H2 DA -> SFR	0.287	0.067	4.303	0.000	0.702	0.129	Accepted
H3 SC-> Capacity	0.402	0.126	3.183	0.002		0.253	Accepted
H4 SC -> SFR	0.082	0.110	0.745	0.456		0.010	Not Accepted
H5 Trust -> Capacity	-0.208	0.098	2.124	0.034		0.051	Accepted
H6 Trust -> SFR	0.564	0.102	5.534	0.000		0.558	Accepted
H7 SFR -> Capacity	0.606	0.112	5.409	0.000			Accepted

DA= Direct Assistance, SC= Supervisory Competency, SFR= Support, feedback, Reflect

Consequently, an intervention was carried out on 30 teachers and supervisors from MARA colleges (purposive sampling) followed by focus group interviews for the purpose of qualitative data collection. The intervention consisted of a series of whole group knowledge transfer workshop on coaching and supervision. A follow-up session was carried out based on one-to-one coaching session by applying the skills and knowledge gained from the workshop. At the end of the three cycles, a final report was established. The study involved preliminary quantitative data collection stage, whole group coaching intervention followed by 3 cycles of one-to-one coaching as well as interviews with teachers and supervisors. The progress and output of the study are illustrated in Table 3.

Table 3: Progress and Output of the Coaching Project

Stages	**Output/Progress**	**Dates**
Preliminary	Identifying problems 200 teachers	April 2018
Knowledge Transfer/ community Engagement		

	   Meeting 1 with Representatives from school School Visit 1 (Meeting 2) School Visit 2 (Meeting 3) Meeting 4 Training: Workshop on Coaching /Reflective Skills (Whole group Intervention)	April 2018 May 2018 May 2018 June 2018 June 2018
CYCLE 1	Plan/ Revised	July 2018
	Act	July 2018
	Observe	July2018
	Reflect-Evaluation on the application of theory into classroom Practice (focusing on improvement in teacher instructional practices). Discussion on the impact of coaching on instructional improvement and practices	August2018
CYCLE 2	Plan/ Revised	January 2019
	Act	February 2019
	Observe	February2019
	Reflect-Evaluation on the application of theory into classroom Practice (focusing on improvement in teacher instructional practices). Discussion on the impact of coaching on instructional improvement and practices	March2019
CYCLE 3	PLAN/ACT/OBSERVE/REFLECT	June-August 2019
	Final Report/Evaluation of the Project	September-December 2019
Videos	In progress	
Publication	Shafee, Salwati; Ghavifekr, Simin; Abdullah, Zuraidah. Leadership Role of Coaches in Improving Teachers' Instructional Practices. *Mojem: malaysian online journal of educational management*, [S.l.], v. 7, n. 1, p. 92-112, jan. 2019. ISSN 2289-4489. Available at: <https://mojem.um.edu.my/index.php/MOJEM/article/view/15763>. (SCOPUS) 1. Makin, M., Abdullah, Z., & Shafee, S. (2018). The Art of Supervision: Role of Supervisory Skills in Developing Teacher Capacity. *MOJEM: Malaysian Online Journal of Educational Management, 6*(4), 37-55. doi: 10.22452/mojem.vol6no4.3 (SCOPUS) 2. Ismail, S., Abdullah, Z., Othman, A., & Shafee, S. (2018). Amalan Komuniti Pembelajaran Profesional Dalam Kalangan Guru Bahasa Melayu di Selangor. *JuPiDi: Jurnal Kepimpinan Pendidikan, 5*(4), 1-19. Retrieved from http://jupidi.um.edu.my/index.php/JUPIDI/article/view/13996	

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Chapter in a book	In progress	

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Empowering Youths with Physical Disability for Career Development

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Keywords: Multicultural Counselling; Persons with Disability; Career Development; Self-Esteem; Mental Health

Abstract

Introduction: Helping people with disabilities (PWDs), especially those with physical disabilities can be a challenging task. PWDs have unique needs, life experiences and developmental challenges. A growing body of research have revealed that PWDs often suffer from high anxiety, stress, and depression (Jones et al., 2014; Mushtaq & Akhouri, 2016). This contributes to their lack of self-esteem which can prevent them from reaching their full potential. In addition, a plethora of research had indicated that self-esteem has a significant role in youths' career development (Atac, Dirik, & Tetik, 2018; Migunde, Othuon, & Mbagaya, 2016). Past studies have also revealed that group counseling is effective in empowering PWDs' psychological wellbeing so that they can achieve a holistic development in life (Ellis, Simpson, Rose, & Plotner, 2014; Livneh, Wilson, & Pullo, 2004). However, there are no local studies that looks into this unique area of research. Additionally, past studies focused mostly on social skills, educational support and general coping skills. Hence, this study aimed at empowering the self-esteem and mental health among youths with physical disabilities at a Center for Industrial Training and Rehabilitation Bangi, Selangor (PLPP) so that they are prepared and confident for career development. The objectives of the study were to a) identify the levels of depression, anxiety, stress, and self-esteem of youths with physical disabilities; b) develop two module-prototypes as a guide to conduct rehabilitative group counselling sessions; and c) determine the validity of the modules.

Methodology: Overall, the study adopted an exploratory mixed methods design. The procedure involved, first, the administration of the Depression, Anxiety and Stress Scale (DASS-21) and Rosenberg Self-Esteem Scale (RSES) scale using survey approach to a total of 93 participants (males = 62, females = 31; mean age = 22.52) from PLPP. Second, after getting results from surveys, two prototypes of group counselling modules (anxiety and self-esteem therapy, respectively) were developed as guidebooks to be used in the intervention phase. The module development procedure was based on Sidek's (2001) model. Whereas, the development of the modules' content was adapted from Clark and Beck's (2010) cognitive model of anxiety and Fennell's (1998, 2016) cognitive model of low self-esteem, respectively. Third, two focused group discussions (FGD) were conducted and each group comprised six expert respondents (have a PhD qualification and more than five years professional experience in counselling). The contents of the FGD were based on a 7-item questionnaire form which was designed based upon Jamaludin's (2002) research, that is an adaptation of Russell (1974) guide to module development, to get feedback on the validity of the module prototypes. The questionnaire's response format was a 10-point Likert scale (1 = strongly disagree to 10 = strongly agree). A comment box was also provided in the questionnaire for the experts to provide further suggestions or feedback regarding the module.

Results: Survey results revealed that the participants' depression scores were moderate level (M=1.023, SD=0.926), their anxiety scores were severe (M=1.055, SD=0.951) and their stress level was mild (M=1.194, SD=0.898). Results also showed that their self-esteem scores were moderate (M=3.32, SD=0.92), indicating within the normal range. Findings from module development procedures, the second phase, resulted in two prototypes of group counselling modules: (a) overcoming anxiety, and (b) enhancing self-esteem. The first module (overcoming anxiety) comprised 10 activities, whereas the second module consisted of 8 activities. The implementation of these modules was carried out using a 6-session rehabilitation group counselling programme. In order to establish the validity of the contents of

the module, the raw data from the 7-item queationnaires were computed by dividing the total scores of the individual experts' ratings with the overall score of the rating. Results from this analysis revealed the overall anxiety and self-esteem module's content validity values were 80.95% and 85.71%, respectively, indicating high validity because these values exceed the endorsed threshold value of 70% (Sidek & Jamaludin, 2005).

Conclusion: The present study has provided empirical evidence regarding the need to overcome anxiety and enhance self-esteem among youths with physical disabilities as preparations for their career development. The newly developed anxiety and self-esteem counselling modules have been validated and they are considered to have high content validity. This finding implies that the modules are feasible to be applied as a treatment in empowering youths with physical disabilities. Future studies should apply these modules in group counselling sessions to examine its reliabilitty and positive effects on youths with physical disabilities.

Acknowledgement: The authors thank UMCares for the MTUN-MCUN-**MRUN** 2019 (project number: MRUN2019-1D) for research related expenses and PLPP students for their participation in the collaborative project.

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Malaysian Non-Muslim Youth Understanding of Prophet Muhammad's Interfaith Dialogue

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Keywords: National integration; Dialogue; Interfaith dialogue; Malaysian youth; Prophet Muhammad; Malaysian Muslim-non-Muslim relation.

Abstract

This study is a qualitative study based on focus group interviews conducted at four higher learning institutions in Selangor, Kuala Lumpur and Negeri Sembilan. It aims to investigate the experience of Malaysian non-Muslim youth and their fellow Muslim citizens. It also identifies whether their experiences had any impact on their understanding of the concept of Prophetic Interfaith Dialogue as shown by the Prophet Muhammad (peace be upon him).

Methodology: Several 8-12 participants have been involved in each focus group interview. They were students of the higher institutions who were mostly student leaders or expressive, to enable effective sharing of ideas, experiences and views. These criteria are stated in the letter to relevant authorities of the institutions, whose permission was sought in prior to the interview. The participants were selected by the institution's authority based on the criteria mentioned. Over the period of 3 to 12 months, about ten institutions were approached for this study but only five replied favorably. The pilot study was done at the first institution that replied.

Findings: The findings indicate that the participants had both; pleasant and unpleasant experiences in their interaction with Malaysian Muslims. These experiences are of two scopes: neighbourhood and friendship. Those who shared the pleasant experiences described their relationship with their neighbour as mutual trust and respect. They have a strong neighbourhood bond, greet and celebrate each other's' festivals, wish appropriate wishes in different life occasions, take care of each other's well-being and acknowledge boundaries. While the positive experiences with their friends occurred when they share similar interest or hobbies which allow them to forget their differences such as '*lepak, cendol dan merayau*'. Unpleasant experiences do exist especially during primary and secondary school years among friends. Most of the experiences are in form of perplexity due to different understanding of each other's' or more often, the Muslims' religious practices such as fasting and preserving halal food. Few participants mentioned that they are confused about which behaviors that are considered proper and which are not. In some occasions, participants shared that they were ridiculed on the streets such as being called '*keling*' by the Malay Muslims. A female participant also reported that she experienced being teased only by Malay boys, not by other races. Throughout the interview, the difference between what constitutes Malay and what is meant by Muslim is discussed. Most participants tend to equate Malays to Muslims.

The participants' knowledge of the Prophet Muhammad was mostly based on their formal education. Those who studied in the government schools and recall the historical facts learned through the subject *Sejarah* in form four and form five are aware that a person called Muhammad was a Prophet of Islam. Some participants might have mistaken the role of Muhammad for Muslims -for instance, assuming him as God. Despite this mistake, Muhammad is still regarded as a very important figure of Islam. When asked whether the social setting of the Prophet Muhammad was

multiracial and multi-religious, or otherwise, the participants recalled words such as 'the black box…got many people around', 'Quraysh' and 'Jews'. Participants have guessed that the Prophet Muhammad had interacted respectfully to non-Muslims in the past. Those who were convinced of this mentioned that he surely had been so kind since he was a Prophet. Some of them even could recall 'Piagam Madinah' or the Constitutions of Medina. Not much knowledge is portrayed about this constitution, though, in relation to the significant role that it played as a foundation of interfaith dialogue between different inhabitants of Medina.

In general, the participants view that the noble conduct showed by the Prophet Muhammad and the instructions of Islam on relations with non-Muslims are not much practised by Malay Muslims. Recently after the riot at the Seafield Temple, racism is more evident on social media and the stress is on the rise. Some of them attributed the racial tension to politics and even assumed that if it was only about religion, it would be fine. Some participants expressed that they felt as if they were treated as second class citizens. Despite this statement, some others conceded that as fact because based on *Sejarah Malaysia*, they are just 'comers' to *Tanah Melayu*. As for other participants, when being asked about their hope, the participants said that they look forward for a mutually respectful relationship between all races and religious believers in Malaysia. Having said all these, there are participants who could not care less about Muslim-non-Muslim relation in Malaysia because of the seclusion that they experienced since young age, i.e. having lived in a non-Muslim neighbourhood and educated in a non-governmental school with relatively no Malay. These participants also seem not to bother of what is going on on the social media.

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The Implementation of Financial Literacy Module for B40 Youth

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Keywords: Financial literacy, Socio-economic, Undergraduate, Malaysia

Abstract

Introduction: Financial literacy is an important but often ignored skill that is vital for the young (Jayaraman & Jambunathan, 2018). Lack of knowledge and understanding of financial literacy will directly affect the well-being of the individual. Research indicates that due to low financial literacy, individuals experience a variety of problems that are related to personal finances such as savings, investments, or old plans, credit and so on (Mokhtar, Sabri, Catherine, Thinagaran & Dass, 2018). In addition, a lack of financial literacy has been found to be correlated with higher debt burdens, incurring greater fees, loan defaults and loan delinquency. Previous research indicates that socio-economic factors are important determinants of financial literacy (Lusardi, Mitchell & Curto, 2009; Ramasamy, Kenayathulla & Ghani, 2018). Most youths from lower income groups are less likely to be exposed in terms of financial literacy. Thus, there is an urgent need to provide exposure and basic knowledge of financial literacy to the youth of B40 to avoid the persistence of this problem. If this problem is not curbed, it can cause serious consequences such as having to declare bankruptcy at a young age; stress, depression and mental problems (Dewanty & Isbanah, 2018). The objective of this study is to assess the financial literacy prior and after the implementation of the module, to assess whether students' financial management skills improved after the implementation of the module and to ensure optimal usage of financial resources through financial budgeting and planning.

Methodology: The financial literacy module, which was designed previously for Fundamental Research Grant Scheme (FRGS), were modified and adjusted to fit the B40 youth. This study involves twenty-one undergraduate students from a public university in Malaysia. These students are from the B40 income group and are recipients of alms from Lembaga Zakat Selangor. Lembaga Zakat Selangor provided names of sixty alm recipients in a public university that can be contacted to be part of this project. However, when contacted, only twenty-one respondents were willing to participate in this project. This project involves a series of workshops conducted to provide exposure to students on financial literacy. The workshop series covers several modules: identifying and differentiating wants and needs, budgeting, insurance, savings, credit card and financial games. Each module covers its own objectives. To address the first research question, data was collected prior and after the workshop, because the study aimed to identify differences among the participants prior and after the implementation of financial literacy modules. The research instrument was adopted from a previous research (Ramasamy, Kenayathulla, & Ghani, 2018). The instrument used in this survey is a set of questionnaires which consists of Likert-scale questions. This questionnaire comprises of 69 questions which are subdivided into four sections. Section A consist of 9 questions related to socioeconomic factors. Section B consist of 20 questions pertaining financial knowledge. Followed by section C which consist of 20 questions pertaining financial behaviour. Lastly, section D comprise of 20 questions pertaining financial attitude. The validity of the survey questionnaire, the items in the questionnaire were validated by two experts in the field. The survey was created using an online survey tool. T-test was used to analyse the financial literacy after the pretest was conducted to see whether there are significant differences prior and after in terms of financial literacy. For the second research

question, the respondents had to prepare their budget and then video record their explanation on how they had allocated their weekly budget based on the financial concepts that they had learnt from the seminar series.

Findings: Overall findings show that these financial modules have a positive impact on the financial planning and decision making of students. The Paired sample T-test results show that there are significant differences in the mean score prior to and after the implementation of the financial literacy modules (t = 15.239, df = 21, P <0.000). When the analysis is done separately for each dimension, the findings show consistent patterns that there are significant differences in the financial knowledge, attitude and behavior prior and after the implementation of the financial literacy module. In addition, for the second research, all the respondents were able to prepare a surplus weekly budget by setting aside an emergency fund. The financial knowledge provided in terms of budget preparation helped these students to prepare a weekly and monthly budget. Coming from a lower socio-economic background, these students contended that they were not able to attend financial seminars which are usually costly. These findings provide insights to policymakers and relevant agencies on the appropriate interventions that need to be made to ensure the financial well-being of our future generations. Financial literacy seminars should be introduced to B40 youth since they are less likely to be exposed to such skills at the younger age. Financial literacy skills are an important skill that is needed by everyone especially when we are facing pandemic such as Covid-19 where we need to prioritize our wants and emergency funds. Financial planning and decision-making skills are key to financial wellbeing.

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SYMPOSIUM 6: TRANSLATIONAL RESEARCH

WeAlsoHaveDreams: We Deserve the Rights to Learn in Facing Industrial Revolution 4.0

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Keywords: Literacy, internet of things; motivation; reading; performance; language learning, IR4.0

Abstract

Introduction: In the driven towards Industrial Revolution 4.0 (IR 4.0), the importance of basic literacy skills among the learners could not be denied. The mastery of basic literacy skills provides the pathways to understand and integrate technology for learning. However, the issues of failing to master basic literacy skills is a global issue (Dennis, Lynch, & Stockall, 2012) despite of formal schooling system has delivered these skills for everyone in the school. Furthermore, reading, writing, and arithmetic (3M) skills are still lacking among the students (Government Transformation Programme Toward Plan, 2010; Ministry of Education [MOE], 2017). #WeAlsoHaveDreams is a project that covering seven sub-projects involved academia and society. One of the sub-project named, 'New Leaf', it's idea is developed based on the initiative to transfer the necessary knowledge and skills (integrating important skills from basic language literacy, numeracy and technology literacy) to those needed at all levels of education and groups of people (students, teachers, academics and community from diverse background). By using the community-based learning approach and looking at the practice of reflection in-, on-, and about action, the aim is to promote developmental process in learning whereby positive development of learning occurs through a consistent evaluation process for improvements. Indeed, a prior case study with 'New Leaf' project model has been done at Taman Medan and Kerinchi to solve the issue of lacking basic literacy mastery and numeracy among the students of these two locations (Zuraidah, A., Siti Nafsiah, I., Norhayati, R. (2016). This project worked as a support system to provide the opportunities to learn basic literacy skills among the children and encourage them to build positive characters and minds. Further, community-based learning approach is a participatory learning process to facilitate the broader participation in creating the attitudes toward community development, by offering skills and knowledge for all learners (Déri, 2001). Thus, mastery of literacy skills is essential for students succeed in education (Baroody & Diamond, 2012).

Objectives of the study: Via the community-based learning approach, the objectives of this project are listed as below:

- Bridging all related institutions, educators and stakeholders to identify the local community issues
- To develop appropriate educational module which would increase basic literacy skills (reading, writing, arithmetic, and technology - 3M1T)
- To train and strengthen student's basic literacy skills (3M1T) and knowledge in addressing their own needs
- To evaluate the changes of the students towards positive improvements of basic literacy skills (3M1T) and knowledge

Methodology: The literacy development programme of this 'New Leaf' project targets the young learners of the B40 community (low income group). As a beginning, this project is based at Sekolah Kebangsaan (SK) *Pulau Gaya*, Kota Kinabalu, Sabah. The selection was made based on the socio-economic status, the drop-out rate and student retention. A total of 22 teachers and 95 primary school students (75 females and 20 males), with age group 9-12-year-old, standard three to six (equal to 3rd to 6th grade) are involved in this project.

The Project Module is implemented through five phases: (i) discussions with all stakeholders, (ii) training of trainers (ToT) to all teachers named *'Guru Muda'*, (iii) interactive sessions with SK *Pulau Gaya* students, (iv) meeting sessions with the parents and (v) overall evaluation of the programme. The first phase involves discussions on the provision of site facilities, and the management of the participation of Pulau Gaya children. In the second phase, ToT training is given to the lecturers on using of the #WeAlsoHaveDreams modules. The modules are a combination of techniques used in the 'New Leaf' Project Model. This #WeAlsoHaveDreams module was first designed by our team in a project to assist children with learning disabilities and B40 group of community at Taman Medan and Kerinchi. This module focuses on the *'Guru Muda'* of Malay Language (BM), English Language (BI), Mathematics (Mt), Arabic Language and Technology literacy.

During the ToT training, *'Guru Muda'* are reminded about the ***adabs*** they need to practice. The first one is "laugh with your students, never laugh at them" which means can playing jokes with the students, however, do not make it as a laughter or ridicule in front of students' friends if students make mistakes. This will degrade students' confidence level. Secondly, "you cannot fight fire with fire", which means that if the student is angry, especially when fighting with another student, *'Guru Muda'* should try to resolve it with a soft and low tone of voices. Advices should be presented in a firm but calm tone. Thirdly, *'Guru Muda'* should take care of their students. *'Guru Muda'* are advised not to expose the story of a pupil's family who humiliated his friends. For example, the father of a student who was imprisoned, the mother of a pupil who was a drug addict and others. If another student reveals this story, *'Guru Muda'* should quickly advise the disciple and close the story so that it will not be their story. Forthly, *'Guru Muda'* should not compare students' achievements with other students. Each student has the same ability. These achievements are the students' own initiatives, regardless the small or large quantities in size, as well as the capabilities of every students. Next, when teaching in 'one-to-one' method, *'Guru Muda'* should avoid being watched or heard by other students. It is important to avoid any discomfort or shame and inferiority. Finally, *'Guru Muda'* and advisors are advised to use their "common sense" in the teaching and supervision process of the students.

In the third phase, student enrollment is carried out. The students who have been selected by the teachers for the program need to fill up the registration form. Subsequently, pre-test reading and writing BM, BI, Maths and Arabic were carried out. This allows selections could be performed to choose students who are truly eligible for this program. The program is planned to be conducted every Friday night (starting from 8pm to 10pm) and Saturday morning (starting from 8am to 10am). The task is assigned to help students complete their assignments and also check their assignments. In addition, *'Guru Muda'* are always reminded not to mark the assignment by using red pen too. If there is an error made by the student, the *'Guru Muda'* is not encouraged to strike a strike. Instead, *'Guru Muda'* are just needed to round up the question number and then ask the students to make the correction.

Next, in the fourth phase, a parent-to-child meeting is set up at school. Meetings are carried out for one session within three months to discuss the developments and problems faced by students. Then, followed by the presentation of the benefits or outcomes to students and parents. Finally, the fifth phase is the overall evaluation of the program. The program is assessed on the sixth month of the program. Overall, qualitative data of the study are collected based on interviews with parents, young teachers and students as well as observations made through out the programme.

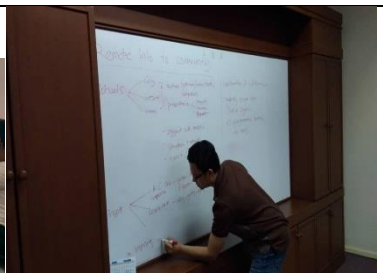
Results and discussions: This project are still working in progress to help and provide opportunities to the learners to improve their literacy skills and for collaborators to take up the same idea and concept to be applied in another context. This is one of the ways that academia could return and contribute to the society. Apart from helping in the literacy development, the project also aims at extending the initiative to other agencies that could continue the project to other schools of similar context, in Sabah. Using the concept of collaborative partnership, this project is extended to Universiti Malaysia Sabah (UMS) academia in which the knowledge transfer begins at colleagial level and learning from the experts, apart from that, training was given to academics, teachers and university student volunteers to attribute the project. Following the concept of scaffolding, mediation, and regulation in Vygotsky's social cultural learning theory, collaborative learning offers learners with more effective learning opportunities where they would learn from community of learners through social interaction, activity engagement, as well as reflective thinking (Wang, 2007). Based on #WeAlsoHaveDreams program that conducted, our team found that it brought about positive outcomes not only for UMS lecturers but also for budding *'Guru Muda'* and teachers' readiness in terms of knowledge, passion and commitment towards this program. The study also reveals that this project acts as a platform for NGOs and the University to help local community to breathe new perspectives in the diversity of learning.

The following are some anecdotes of the project flow according to the stages and objectives that outlined for the project:

Anecdote 1: **Understanding the context** - for Objective 1 Date: 20-22 May 2019	 a. 20^{th} – 22^{nd} May 2019 events

a. Meeting the UMS, SK Pulau Gaya Administrators, Village Heads and parents. (20th – 22nd May 2019) b. Meeting with our Collaborators (19 June 2019) c. Meeting for Strategizing Our Team A and Team B for Phase 2 (6th August 2019)	 b. 19th June 2019 events c. 6th August 2019 events Outcomes: The local community issue has been identified via the interviews, meeting with all stakeholders. One of the main issues is high drop-out rates and low retention rate among SK *Pulau Gaya* students.
Anecdote 2: **ToT training session (**the lecturers, teachers, NGO and Guru Muda) – for Objective 2 Date: 18-22 October 2019 1. Meeting with UMS lecturers 19/8/2019 Team A (8.30 am) 2. Travelled to SK Pulau Gaya 19/8/2019 Team A (3.00 pm) 3. Meeting Year 6 pupils 19/8/19 Team A (8.30 pm) 4. Meeting & Training the teachers (by Dr Wong Seng Yue) 20/8/19 5. Meeting the parents 20/8/19 (10.00 am) Team A 6. Motivational Programme with Year 6 pupils on 20/8/19 (8.30 pm) Team A 7. With HODs and BM,BI, Mathematic teachers for breafing on module (8.30 pagi) Team A 8. Meeting with UMS lecturers 24/8/19 (8.30 am) dan T.O.T. for Team B 9. T.O.T for Quran teachers and students 25/8/19 by team B (9.00 am)	   

<table>
<tr>
<td>Team A Members:
1. AP Dr Zuraidah Abdullah
2. AP Dr. Muhammad Saiful Haq Bin Hussin
3. Dr Zuwati Hasim
4. Dr Wong Seng Yue
5. Dr Mohd Nazri Abd Rahman

Team B Members:
1. AP Dr. Nahrizul Adib Bin Kadri
2. Dr Mohd Nashrul Bin Mohd Zubir
3. Dr Unaizah Hanum Binti Obaidellah
4. Dr Ram Gopal Raj</td>
<td>  
 
 
   
  
Outcomes: A modified of previous ‘New Leaf’ project learning modules for 3M1T is developed and ToT training is given to all teachers and ‘Guru Muda’.</td>
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<td>Anecdote 3:
Diagnosing Stage – literacy assessment – for Objective 3

Date: 20-21 & 25 October 2019

1. Students take BM, BI, and Math diagnostic tests on</td>
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20/8/19 (10.00 am) 20/8/19 Team A 2. Students are trained using Quranic module software on 25/8/19 by team B	 Outcomes: Students are given training, practices and assessment by *'Guru Muda'* and related lecturer teams. The student's interaction among lecturers and *'Guru Muda'* are observed and assessed via interview sessions after the training classes. The majority of the students have shown an increasing positive preference to 3M1T skills and learning.
Anecdote 4: Motivation Building – for Objective 4	From these two sessions of motivation building with the students in *Pulau Gaya*, it indicates the impact of learning among them. Motivation increases the speed of work and personal performance in learning and accomplishment of tasks in order to achieve learning goals. In addition, it also provides maximal energy and positive thinking to the learners to obtain the achievements since they have the directions in learning.
Achievements for each sub-project:	1. ISI Journal Submitted under review IEEE Access: Automatic Learner Comprehension Recognition using Histogram of Oriented Gradients with Artificial Neural Networks (Dr Ram) 2. In progress of data analysis and journal writing in progress of the video editing (Dr Wong) 3. In progress book & copyright modules (AP Dr Saiful Haq) 4. Applying for copyright (Dr Unaizah) 5. Journal writing in progress: Decentralization of Laboratory Exercise Via Remote Application, 1 paper completed and to be submitted to journal 2, 1 paper to be submitted for conference 3 and patent application will proceed once 1 and 2 completed (Dr Nashrul) 6. YouTube and Selamat Pagi Malaysia: SPM 2018 – Cerita Malaysia: Kami Juga Berhak Untuk Belajar https://youtu.be/7XkQBWu1vOY (AP Dr Zuraidah Abdullah)

Suggestions and conclusions: It are recommended that the #WeAlsoHaveDreams program has a conducive class for this island to enable the children to learn calmer and more orderly. The classes that have been implemented should be improved to fit their learning styles and social structures so that every student obtain the opportunities to attend the class. The number of facilitators for the programme shoud be increased to sustain this program. The involvement of facilitators from various fields of study will enable diversified method of knowledge and skills delivery. This is because every volunteer has different knowledge and skills. In addition, it can help these children to idolized *'Guru Muda'* as a role model based on the children's interest.

The #WeAlsoHaveDreams program is an important effort in addressing the problem of Malay literacy, English literacy, numeracy and technology literacy among B40 community children, especially in *Pulau Gaya*, Sabah. Basically, these kids will inherit Kota Kinabalu, Sabah one day because they were born and grew up in Kota Kinabalu, Sabah. The city is their homes and villages. Hence, they need to show their great commitment in developing a better future for Kota Kinabalu as well as Malaysia. The #WeAlsoHaveDreams program has successfully brought the transformation and development of 3M1T of the children of *Pulau Gaya* based on their learning level to ensure they are not left behind in the educational filed in the attempt to enhance themselves and the living standard of their family.

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Automated Methadone Dispensing Machine for Methadone Maintenance Treatment Program

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Keywords: Automated methadone dispensing machine; Methadone maintenance treatment program; Overcoming drug addiction; Treatment opioid dependence

Abstract

Drug abuse and drug addiction are becoming a growing issue in most countries worldwide and are considered a major public health crisis. Various initiatives including therapeutic approaches such as methadone maintenance treatment (MMT) program have been proposed and practiced controlling drug addiction. In 2006, the Malaysian government had introduced this program across the country and aimed to reduce addiction problems among individuals or persons who inject drugs (PWID) with opioid dependency. This program had involved in long-term authorized prescription of controlled methadone medicine by pharmacists and had already endorsed in few rehabilitation clinics like Cure & Care Service Centre (CCSC) and required the patients to be present to receive the treatment. Finding shows MMT improves quality of life such as reduced in criminal activity and mortality and MMT is a more costeffective form of treatment. But few issues raised such that increasing number of drugs addicts has led to more treatment needs and exceeded the existing workload system practiced by the pharmacists. In fact, the current manual dispensing technique that had been practiced do prone to human and medication errors. Thus, this action research project is mainly focussing for improvement through variety in therapeutic interventions. One of a significant approach, by introducing pharmacy automation as an innovative approach to improve efficiency, maximize pharmacist workflow productivity, reduce the occupational hazard of carpal tunnel syndrome and minimize dispensing errors by implementing a locally made methadone dispenser in the MMT program. The focus is hoped to achieve the objectives of this project; to develop a prototype of automated methadone dispensing machine and to evaluate the prototype of automated methadone dispensing machine through a series of performance testing. In achieving these objectives, this project has identified two methods to be executed. They are first, by identifying suitable mechanical components to build the prototype machine. The prototype machine is designed and fabricated with aimed to reduce the time required for dispensing the methadone medicine via systematic mechanism, accompanied with control system interface for monitoring. Mainly, the machine is equipped with peristaltic pumps for transferring the methadone liquid and load cells as a weight sensor for measurement and detection of prescribed amount of methadone liquid. Second, by conducting few testings onto the prototype to evaluate the performance based on the percentage of error, accuracy and time efficiency by comparing with current manual dispensing technique by syringe. Outcome of this method is pleasant, (Refer to Figure 1). The total number of 100 runs of dispensing 16 ml methadone are tested. The dispensing technique by the prototype machine had successfully reduced the percentage error by 3.42%, improved in the dispensing accuracy by 31.52%, and reduced dispensing time by efficient by 96%. These impacts were obtained through varies of ways including conduct testing in the laboratory, interviews and face to face discussions with head committee and pharmacists in CCSC San Peng, Kuala Lumpur, benchmarking session with researchers from University Sultan Zainal Abidin (UniSZA) Malaysia, video recorded, oral feedback, and survey feedbacks from NGO SINAR KASIH involved. Besides having positive feedbacks on the usage of the machine from the technical test carried out, this project is expected to benefit to the ex-addicts' communities receiving quality treatment and improving their quality of life in a long run if the program is continuously projected for periods of time. To end the project, the researcher will conclude the outcomes by highlighting a highly feasible, reliable and excellent prototype machine is successfully build by exhibiting high performance value of 96% suitable for alternate methadone therapy treatment in Malaysia. A suggestion to place the methadone machine inside a modified van, feasible for a mobile clinic is proposed in order to reach more patients who in need.

70.36%. The performance of the dispensing machine is reported to be approximately

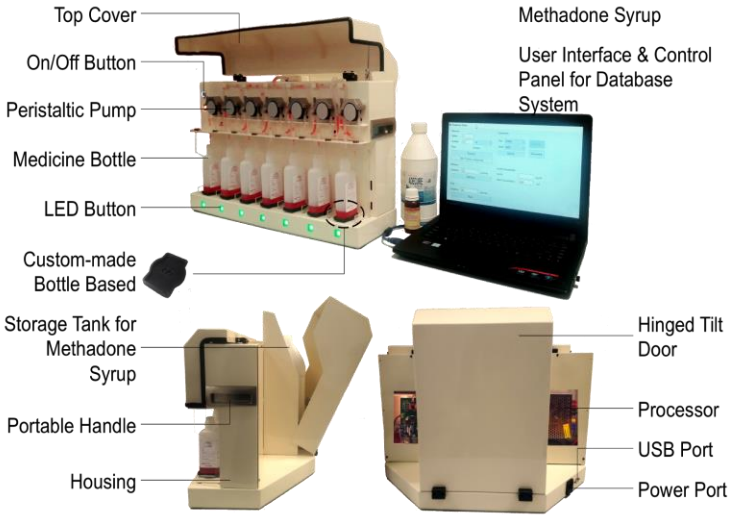

Figure 1: The methadone dispensing machine at front, side and rear view with user interface for database system.

The methadone dispensing machine had successfully designed to reduce the percentage of dispensing error by 3.42%, increased accuracy by 31.52% and proved to be highly efficient by 96% as compared to the current manual methadone dispensing practices.

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Empowerment of the Disadvantaged Youth: IMPROVEMENT of Heart Rate for Disabled Youth

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Keywords: Heart Rate; Physical Activity; Disability; youth

Abstract

As human beings, we need at least 60 minutes[1] of physical activity per day to stay fit and healthy. However, due to some barriers such as accessibility, transportation[2], and social acceptance[2], youth with physical disabilities especially, are having problems to achieve that. This causes them to be less active and more obese compare to their non-disabled peers[1]. Meanwhile, by getting regular exercise, it can improve cardiovascular health[3, 4], prevent obesity[3, 5], and even helps us sleep[6]. Therefore, this project is meant to help disabled youth overcome the difficulties to get regular exercise and monitor the increase in their heart rate for them to fully benefit from the exercise.

In the previous projects, we have approached the targeted disabled youth group from the Industrial and Rehabilitation Training Centre (PLPP) in Bangi, as a step to get to know this community and sort out their real needs and concerns which eventually lead to the current project. As for the current project, 7 male disabled participants are involved, to determine the increase in heart rate while performing the Move Boxing game from PlayStation 3, along with its Move Controller. Each participant must undergo 75-150 minutes gaming session every week as recommended by the standard exercise guidelines[7]. In addition, 7 male non-disabled participants were also recruited to perform the same game in both sitting and standing positions to outline the difference in heart rate and perceived exertional response between the positions while playing the games. As a result, we can conclude from the study whether playing the active games can possibly help disabled youth to achieve an equipotent physiological response and standard exercise intensity as their peers who are non-disabled.

By referring to Table 1 and Table 2, all the participants experience an increase in heart rate while performing a virtual Boxing game. As mentioned, by raising heart rate during an aerobic workout, participants can experience a variety of short- and long-term health and fitness benefit. Firstly, it can improve the muscle ability to draw oxygen from the circulating blood. Therefore, it reduces the need of the heart, to work harder to pump more blood to the muscle. Besides, being active also works like beta-blocker medication to slow the heart rate and lower blood pressure[8], whereby, high blood pressure is a major risk factor for heart disease. Aerobic exercise, on the other hand, also improves human immune system[9], which can resist infections such as colds and viruses[10].

The average heart rate achieved by the non-disabled participants while playing the game in standing position is higher compared to when in sitting position. This shows that, playing the game while standing can excite the participants more to achieve higher heart rate. However, the average heart rate obtained from the disabled participants is higher compared to non-disabled even in standing position. This indicates that disabled participants were possible to achieve the same health and fitness benefit from the virtual game as their non-disabled peers.

Table 1: Non-disabled Participants' physical characteristics and physiological measures while virtual boxing

	#1	#2	#3	#4	#5	#6	Mean±SD
Gender (M/F)	M	M	M	M	M	M	
Age (y)	23	23	24	25	25	23	24±1.0
Body mass (kg)	63	64	67	65	51	55	61±6.0
BMI (kg/m²)	20.11	23.51	25.22	26.04	18.50	20.20	22±3.0
Heart rate at rest (b/min)	61	81	103	94	91	75	84±15
Heart rate while sitting (b/min)	94±8.0	90±4.0	141±9.0	134±8	114±8.0	106±6.0	113±19
Heart rate while standing (b/min)	101±22	108±6.0	161±14	152±10	133±9.0	106±3.0	126±26

Table 2: Disabled participants' physical characteristic and physiological measure while virtual boxing

	#1	#2	#3	#4	#5	#6	Mean±SD
Gender (M/F)	M	M	M	M	M	M	
Age (y)	21	21	25	21	23	21	22±2
Body mass (kg)	28.8	54.5	99.6	55	60	50	58±23
Type of Wheelchair	Manual	Manual	Manual	Manual	Manual	Manual	
Heart rate at rest (b/min)	83	97	101	109	87	93	95±9
Heart rate while sitting (b/min)	124±28	114±7	162±11	143±13	143±9	117±10	134±21

In addition, a person doesn't need to have full mobility to experience the health benefits of exercise. For disabled people, even their injury and disability could limit mobility, they can still benefit from the exercise to look after their mental health such as boosting their mood, reduce stress[11], anxiety, and depression[12], and improves overall sense of well-being. With the lack of accessible transport, attractions and pubs and clubs, disabled people will find it hard to meet and engage with others and might even be anxious at the thought. Apart from that, disabled people also likely to withdraw socially and risk a lack of engagement in any meaningful activity. While this project, in some ways, provides an opportunity for the disabled group to be engaged in group activities and the surrounding environment which can, in turn, reduce the risk of isolation[13].

A potential challenge to the project was the lack of positive self-image and belief among the disabled participants, that the virtual boxing game may help fasten their recovery process by increasing heart rate consistently. Other studies also have mentioned that lack of motivation can affect the efficacy of a rehabilitation program[14, 15]. To overcome this issue, the involvement of friends and families in the project was encouraged to provide social support for improving the participation of the disabled participants[16]. Another challenge was the small (n=7) sample size, and the results of this study should not be generalized among the disabled population. However, as the project was intended to make a new research hypothesis, we have decided to use smaller sample sizes to avoid spending too many resources at the beginning, and the data from this study instead, will be used to design larger confirmatory studies in the future.

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Hear Me, Empowering Disadvantaged Youth

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Abstract

Hear Me, Empowering Disadvantaged Youth is a project undertaken as a collaboration between the University of Malaya and Pusat Latihan Pemulihan dan Perindustrian (PLPP) in Bangi and supported by the Translational Malaysia Research University Network (MRUN) Research Grant. The project aims to empower disadvantaged youth through healing, empowering and enhancing communication development which is necessary for their daily communication and be potentially ready for future employment. Our first interaction with the staff at PLPP showed that the centre believed in making the participants independent and confident to carry out their daily activities. The youth ranged from 18 – 30 years old, representing various types of disabilities, such as speech impaired, physical and learning disabilities and cerebral palsy. These youth come from all states in Malaysia and are registered with the PLPP centre for a duration of one and a half-year, in which they would learn different skills according to their abilities.

Taking the art class as the main research site, interactive sessions were held, which were aimed at enhancing confidence and learning to communicate for specific purposes. Initially students were shy and did not open up to the researchers despite several attempts. Eventually, the participants became more comfortable but still only talked to those they were familiar with. Using art to communicate is ideal as it allows the youth to verbalize their thoughts and ideas and to build their confidence to speak their minds. Art is therapeutic and it allows the youth to do self-reflection and express their emotions and thoughts through their artwork. The youth shared their drawing techniques and colouring choices during class time. Interactive sessions included activities that required them to introducing their friends, speaking about themselves, their home and family and finally their interests. All past drawing pieces were also used to start a conversation and besides individual interviews and pair work, the youth were also asked to do group work and present their strengths and weaknesses. Using examples of persons who were differently abled across the world, classes were built to motivate and get the youth to speak about the success stories of these laypersons with special needs. The project aims to create a pool of youth ambassadors to motivate similar others.

We believe we have made small changes in the youth in wanting to utilise their art skills to a higher level. The youth were encouraged to speak about their art, what would make a selling point of their work, the strengths of their work, ambition, etc. The project is in line with the UN Disabilities Sustainable Development Goals and UNICEF's aims:

1. By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status,
2. To enhance the communication skills of disadvantaged youth,
3. To enable youths to practise various ways to express themselves,
4. To introduce soft skills that nurture, heal and improve their confidence levels.

University of Malaya would continue to be the consultant and supporter of the activities and would aid those who may need to use the module to emulate in other states and for other disadvantaged youth. The project is sustainable and can be implemented by the PLPP and Myskills community administrators after the project is complete.

USIM POST DISASTER RELIEF MISSION IN BANTEN
University Networks in Post Disaster Rehabilitation

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Keywords: Post Tsunami relief mission; community engagement; clean water; post trauma healing.

Abstract

This is a humanitarian project in respond to the tsunami disaster following the earthquake that hit the Sunda Strait on 22nd December 2018 with a magnitude of 5 Richter Scale. Universiti Sains Islam Malaysia (USIM) had organized and dispatched a team for Banten tsunami relief mission with the objective to build clean water supplies in six villages for the use of the communities as well as conducted trauma healing program for the school children in the affected area.

The 3-day delegation, from the 27th to 29th March 2019, was led by Prof Dato Dr Musa Ahmad, the Vice-Chancellor along with 14 other members comprising university management officers, medical specialist from the Faculty of Medicine and Health Sciences, expert lecturers in faith and belief (aqidah) from the Faculty of Quran and Sunnah Studies and USIM specialised volunteer teams from non-academic staff members, The Smart Team,. This was the first multidisciplinary international humanitarian community engagement led by Centre for Community Engagement and Industrial Networking (PLiMJI) It was a collaborative effort by USIM with Mathla'ul Anwar University (UNMA) and Mathla'ul Anwar Care. USIM has a long-standing networking with UNMA in various academic and teaching programmes, thus it felt the need to assist UNMA and other universities affected by natural disasters to speed the rehabilitation process.

The initial steps involved were 1) preliminary survey and planning with community representative, UNMA and UNMA Care, 2) Identification of delegation team members, and 3) fund raising program.
The preliminary survey was done to identify the villages and areas that badly affected. USIM had sent representatives from February 25th until 27th before the actual team was dispatched, to observe the current situation and the much-needed aid of the communities. The area that suitable and strategic to place the wells and clean water supply were decided. The areas that were given priorities such as schools, mosque, community hall and dense population. The trauma healing program area was selected at the high population of children and easy to gather. The team members were form from multiple discipline, academician and non-academician. The national broadcasting station known as

RTM, also sent members to document the relief efforts. The fund-raising program was initiated approximately 3 months before the mission. USIM had launched the Banten Tsunami Relief Fund during the USIM Staff Annual Assembly, while USIM Cultural Center held a Dakwah Street program with UNMA to assist in raising funds for this purpose, mainly to buy equipment for water tank and pump system.

The community engagement was focused on the supply of clean water and trauma healing program. The assistance provided by USIM included to mobilize clean water sources where tanks were provided to the villages. Water was pumped from underground well, and USIM's team had also conducted pH testing as well as basic chemistry analysis to ensure that the water was safe for consumption. The tanks were placed at the community centres like surau, schools or community hall. There were 6 villages received the clean water supplies which were Tanjung Lame, Tanjung Lesung, Kampung Cigorondong, Kampung Ketapang, Kampung Pulau Labuan and Kampung Mataram.

Children are the group most vulnerable to post traumatic disorder. Thus, the medical lecturers designed and provided trauma healing activities for the children. This included having colouring activities, by using popular cartoons from Malaysia," Upin and Ipin". More than 150 students participated in the colouring activities. They were also taught on dental hygiene. Materials for colouring activity, toothbrushes and toothpastes were donated by charitable associations from Malaysia as well as from the staff of USIM.

Lectures on faith and belief conducted by lecturer from the religious department of USIM catered for the psychological therapy for adults as the tsunami victims were given hope and motivation to rebuild their lives.

The university student from UNMA were selected to become facilitators of the trauma healing program. They learned on how to coordinate a program and obtained some form of leadership skill from the program. They learned the importance of community empowerment and the value of partnership among universities. The challenges include long journey from Jakarta Airport to Banten, which took almost 10 hours and through the damaged road in Banten itself. The hospitality from Banten community and UNMA was more than great.

As a strategic partner with UNMA, this humanitarian mission was a close partnership between the two countries. As a start, USIM assisted in terms of providing clean water for the villagers involved, and thereafter will create more synergized cooperation in education. This opportunity given to USIM is expected to benefit the community not only in Malaysia but also globally. The Banten tsunami disaster relief mission has become a cornerstone towards the formation of the International Community Engagement Networking consisting of administrative staff, lecturers and students with expertise, highly skilled, comprehensive and capable of integrating the knowledge of "naqli and aqli" with excellence. Community engagement should not strictly mean engagement involving the community surrounding a university. Within the atmosphere of academia, at times, our engagement may be extended to our fellow neighbouring universities, in times of disaster, where they too need help to get back on their feet.

Acknowledgement: We would like to thank the Director of PLiMJI, USIM for the magnificent role to make the project possible and our collaborative partners, UNMA and UNMA Care.

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Wastewater and Surface Water Issues in Rural Areas of Bario, Sarawak, Malaysia: Is there any solution to it?

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Keywords: Ammonia; E. Coli; Bario Sarawak; Rural Wastewater Issues

Abstract

The study is initiated with the aim of providing solutions for an effective wastewater management in Bario, Sarawak. Bario is a remote area located in the middle of thick forest, close to Sarawak-Kalimantan border, with the only access is either by 55-minutes flying with 16-seat twin otter plane or 14-hour drive with 4WD vehicles using logging trail. Due to its remoteness, the limited infrastructure facilities that are provided are often inadequate, hence resulting in a poor and often deteriorating environment. Electricity generated through solar panels was just implemented in less than 5 years while drinking water treatment facilities are still under construction, expected to be in operation in 2020. As for sanitation system, no plan seems to be in place as it is now.

Currently, the sewage was discharged into the steel drum barrel with 200 L capacity that after years of usage, became corroded, and leaked out into the ditch. While the sullage (i.e. wastewater coming from kitchen) was directly discharged into the ditch, making the ditch functioning as an open sewer system, before being released untreated into Merarui River. Additionally, they were at least two sites along the ditch and Dapor River that were known for the place where the buffalos wallowed. At one time, as many as 10 domesticated buffalos were found wallowing at a site along the ditch and as many as 100 wild buffalos were found wallowing at a site along the Dapor River. These buffalos were the primary inception of the animal feces that goes into the ditch and Dapor River. In Bario, they were two main indigenous tribes inhabited the area. The main tribe Kelabit inhabited the town and small villages scattered around the town. While the Penan tribe inhabited the jungle along the perimeter of Bario. Penan is a nomadic indigenous people that tend to build their settlement deep in the jungle. But now, as they have been exposed to the outside world, they tend to build their houses at the edge of the jungle close to the village, so that they could send their kids to the school while the parents work at the paddy field owned by Bario residents. It is also safe to assume that Penan was inclined to build their houses close to the river because the river will serve as their primary water resources. However, at the same time, they will also build outhouse toilet in the same river, in this case, Arur Dalan River, hence, contaminating the river with human excretion. Arur Dalan River currently hold the main makeshift water reservoir for drinking water in Bario and later in 2020, the same river, that feed into Dapor River, will become the primary water resources for the proposed drinking water treatment facilities. In Bario, the main economic activities rely heavily on rice cultivation with paddy field concentrated in the middle of Bario town. All four streams (Remapoh, Arur Laab, Arur Dalan and Merarui rivers) as well as the ditch flowed through the paddy field, hence, making them prone to the non-point source of fertilizers used during the paddy planting. Therefore, as all three small streams (Remapoh, Arur Laab, Arur Dalan) and the open ditch will merge into Merario Rivers, before converged into Dapor River at the point upstream of the intake point of the drinking water treatment facilities, it becomes imperative to investigate the quality of the surface water used as a main source of the water supply for Bario.

Surface water samples were collected at 8 sampling sites in Bario and analyzed for pH, Dissolved Oxygen (DO), Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Suspended Solids (TSS), Ammonia (NH_3-N) and *E. Coli*. In accordance to Malaysia's Department of Environment (DOE) Water Quality Index (WQI), all parameters were within class I, II and III except for BOD, COD and NH_3-N in the samples from the ditch (Table 1). High COD content, with concentrations ranged from 79.8 to 243.3 mg/L, indicated that the water was highly polluted with both oxidizable organic and inorganic pollutants. Additionally, it can also be seen that the highest COD were observed in water samples from the ditch, indicating the dominant impact of chemical sources. This assumption was held true as the ditch flows through the town of Bario, the main source of chemical constituents in the water [Peters *et al*., 2019]. As for BOD, high concentration of 6.50 to 8.02 mg/L implied that organic matter that needs oxygen while decaying or breaking down were coming from biological sources such as sewage, plant and animal matter (Table 1). High NH_3-N concentrations, ranged from 0.90 – 0.96 mg/L, were also observed in water samples from the ditch (Table 1). As the ditch flow through the town, it was believed that BOD and NH_3-N were originated from human excretion due to the leaking septic tank [Wang *et al*., 2019]. However, as the ditch was also flow through the paddy field, fertilizer runoff might also become a possible source for NH_3-N [Peters *et al*., 2019]. But, considering the high *E. Coli* content of all samples (Table 1), it was affirmed that human and animals' excretion were the dominant sources that contaminate the water and not the fertilizer runoff [Silva Lanna *et al*., 2019]. In overall, according to DOE WQI, all water samples exhibited water quality within class III (moderate), with the following order in term of its quality from best to worse, Arur Dalan River > Merarui River > Dapor River > Ditch (Table 1). Arur Dalan River flowed mostly through the jungle and only small stretch of them flowed through the town of Bario, hence, explaining its better quality. Unlike Arur Dalan River, the ditch, Merarui River and Dapor River were all flowed through the Bario town. Among these, the ditch posed the lowest water quality as it was the point where all the untreated and leaking sewage started to get into the surface water. On the other hand, Sg. Dapor held a slightly better quality than its tributary of Sg Merarui, primarily because it is relatively bigger and deeper than Sg. Merarui, hence having greater diluting capacity. In general, the water may still be used for water supply, but extensive treatment is crucially required.

In general, the results have highlighted a crucial issue, that is, ditch and rivers posed high organic content (i.e. COD and BOD) and highly contaminated with ammonia (i.e. NH_3-N) and pathogen (i. e *E. Coli*). The primary source of these contaminants was believed to be originating from human excretion due to the leaking septic tank. High content of ammonia, other than causing eutrophication to the surrounding surface water, will pose huge technical implications to the planned water treatment plant downstream. High ammonia content will make the chlorine disinfection process becomes ineffective. Firstly, the disinfection system will need more chlorine as the chlorine will first need to react with all the available ammonia before it can starts disinfecting the pathogen [Zhang *et al*., 2019]. Secondly, the reaction of ammonia and chlorine will form disinfectant by-products that are more dangerous than the original form of ammonia and chlorine itself [Zhang *et al*., 2019]. Therefore, the identification of a suitable wastewater treatment system to treat these contaminantss, especially ammonia, has become a crucial issue.

About that, we proposed solutions that will be targeting all three levels of wastewater management system of Bario. First, the 200L drum barrel that are being used as septic tank need to be replaced with a proper septic tank. Second, in order to make the ditch becoming self-treating, it needs to be sparsely planted with vegetation (i.e. water lily) that can absorb the nutrient from the wastewater as well as increasing the aesthetic of the ditch. Third, we proposed a constructed wetland as a treatment for the wastewater before being released into the river. Apparently, ecological engineering solutions like vegetated ditch and wetland are the most suitable treatment system for rural areas because of various reasons. Firstly, these two engineering solutions are excellent in removing nutrients especially NH_3-N, as the vegetation will absorb the nutrient from the wastewater. They are also good in removing pathogen like *E. Coli* as the root system of the vegetation will serve as a filter and a harbor for the pathogen to attach themselves to. Secondly, residents of Bario are all paddy planters. They are experts in planting paddy, managing an irrigated paddy field and handling piping and channelling. Hence, they have all the skills needed to maintain a wetland by themselves. Thirdly, these two engineering solutions require low and easy maintenance routine. Once the vegetation has growing steadily, the only maintenance needed is pruning the vegetation every couple of months. It is very critical not to allow the vegetation decay in the ditch and wetland as the decaying vegetation will release the nutrients from the plant back into the water [Wang *et al*., 2019]. Other than that, the solutions have a very high aesthetic value and will enrich the biodiversity of the surrounding area. Fourthly, these engineering solutions are the perfect example of a self reliance solution for wastewater management in rural areas like Bario. Apparently, for any technical systems to work successfully in rural areas, it must be self-reliance.

In conclusion, as the sewage now is treated in septic tanks, and the sullage is now treated using vegetated ditch and wetland, Bario has huge potential to facilitate more sustainable, economical and effective wastewater management system.

Table 1: Water quality of surface water and open ditch in Bario according to WQI proposed by Department of Environment (DOE), Malaysia.

	pH	TSS mg/L	DO mg/L	BOD mg/L	COD mg/L	NH_3-N mg/L	E.Coli CFU/ 100 mL	WQI Class
BR1 – Ditch (at Kg. Bario Asal)	5.84	62.06	4.67	**6.50**[4]	**203.8**[5]	**0.90**[4]	**500**[4]	56 III
BR2 – Ditch (at local shop)	5.72	60.02	4.93	**6.94**[4]	**243.3**[5]	**0.96**[4]	**700**[4]	56 III
BR3 – Ditch (at Frazier's house)	5.80	64.77	4.92	**6.62**[4]	**223.3**[5]	**0.93**[4]	**800**[4]	56 III
BR4 - Arur Dalan River (upstream)	7.08	1.71	6.94	**7.91**[4]	**79.8**[4]	0.28	**430**[4]	75 III
BR5 - Arur Dalan River (downstream)	6.51	3.52	6.47	**7.93**[4]	**80.3**[4]	0.56	**620**[4]	72 III
BR6 - Merarui River (upstream)	6.76	4.37	5.54	**8.02**[4]	**126.7**[5]	0.37	**540**[4]	67 III
BR 7 - Merarui River (downstream)	6.32	17.29	5.03	**7.83**[4]	**174.6**[5]	0.56	**750**[4]	61 III
Br 8 - Dapor River (water intake)	6.47	47.67	5.60	**7.49**[4]	**176.8**[5]	0.65	**805**[4]	61 III

WQI is calculated based on 6 parameters, which are, pH, TSS, DO, BOD, COD and NH_3-N.
[4]The parameters were classified as class IV. [5]The parameters were classified as class V.

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Application of Augmented Reality via Mobile Application in Community Service Activity to Increase Students' Enjoyment, Skills and Performance

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Keywords: Augmented Reality; enjoyment; mobile application; performance; STEM learning

Abstract

Education is one of the impact field from Industry Revolution 4.0 waves, where we need to educate more students in Science, Technology, Engineering and Mathematics (STEM), install interdisciplinary learning and make learning more flexible. The new teaching learning tools like Augmented Reality (AR) with mobile application in near future has modernized the learning process, bring it closer to the real practices, engage learners, and allow training in realistic learning envoronment [Rutten, van Joolingen, and van der Veen, 2011]. The prior studies also shown that learners have positive attitudes toward AR and indicated improvement in learning outcomes [Johnson, Smith, Willis, Levine, and Haywood, 2011; Squire and Klopfer, 20017]. This translational project is aimed to embed AR concept in conducting school learning activities and contribute the knowledge transfer between university and community. At the first stage, university lecturer acts as mentor, carry out the training of trainer workshop to train the school teachers (as mentees) the AR concepts with the mobile application, and the related multimedia techniques, such as text, grahic, audio and video elements for the teaching and learning in the schools. Next, the schoolteachers become the mentors and teach their students AR technology which they learned from the workshop, by using the AR module. By embedding AR-based learning activity, teachers enable to engage their students in their teaching and learning process, particularly for STEM learning, change the students' attitude towards STEM learning, increase students' practices, and increase their skills. One of the rural primary schools has been selected for this community research project, named *Sekolah Kebangsaan Pulau Gaya*, Kota Kinabalu, Sabah. This school is selected as its drop-out rate is high and low student retention. Students are unprepared for becoming more autonomous learners with better responsibility for organizing and structuring their learning time. There are 22 teachers and 95 primary students (75 females and 20 males), with age group 9-12-year-old, standard three to six (equal to 3rd to 6th grade) involved in this project. Students' changes in attitude, practices and skills has been evaluated before and after AR intervention class. The student's interaction with AR tools are observed and evaluated by teachers. At the same time, students' responses during AR intervention class are recorded too. This paper presents the comparison results of primary school students' preferences, enjoyment of AR learning, implications of AR on their STEM performance, skills and participation STEM club. Majority of them have shown an increasing positive preference, and enjoyment on AR learning, increase their STEM skills and performance, as well as agreement to participate STEM club (refer to Figure 1). Wilcoxon Signed-Rank test is used to analyze students' preferences and enjoyment of AR learning, STEM performance and skills, enjoyment and interest in STEM learning, as well as their willingness to attend STEM class before and after the AR learning intervention. The analysis findings show that employing AR approach in primary students learning have shown significant differences in students' preference on AR learning ($z = -4.086$, $p = .000$), enjoyment in AR learning ($z = -4.110$, $p = .000$), performance in STEM learning ($z = -3.500$, $p = .000$), enjoyment in science learning ($z = -2.987$, $p = .003$), willingness to attend STEM class ($z = -2.585$, $p = .010$) and STEM skills ($z = -1.968$, $p = .049$) after explore to the AR intervention in their learning (refer to Table 1). However, the analysis findings do not show

any significant results on increasing students' interest in STEM learning via AR intervention. Since this is an exploration study for the rural primary school students, this research project should be conducted for certain longer period or longitudinal study to investigate further impacts of AR intervention on primary school students learning, particularly in STEM learning. To be a well-developed country, the exploration to AR technology should be integrated in schools learning to increase students' awareness on the components of IR 4.0 and encourage students to equipt themselves with 21st century skills, which is aligned with the initiatives in the Malaysia Education Blueprint [Ministry of Education (MOE), 2017]. This social engagement project is also endeavored to improve student's engagement, increase their practices, and increase their retention and success in middle and higher education. The efficient and effective AR module is attempted to nurture students via knowledge transfer programme, increase student's engagement, peer interactions and collaboration, and improve their confidence to be successful learners.

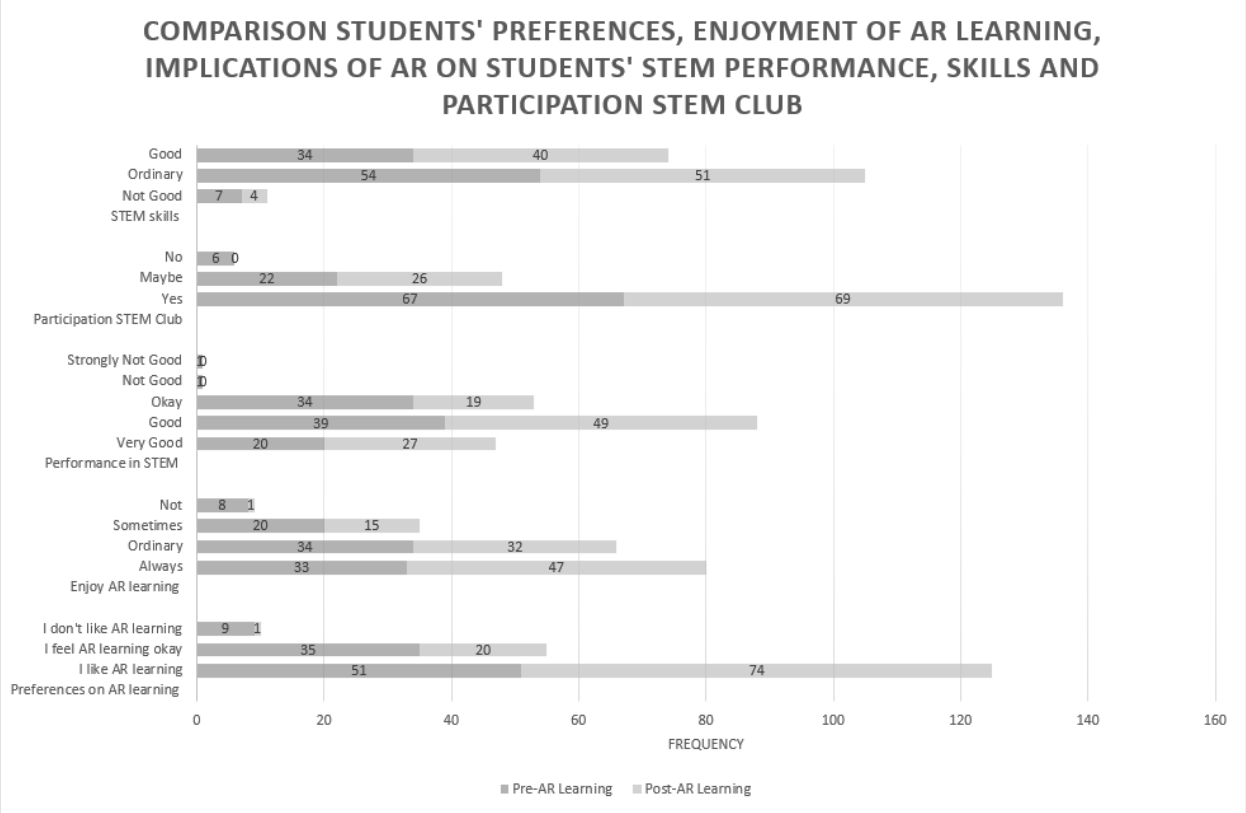

Figure 1: Comparison students' preferences, enjoyment of AR learning, implications of AR intervention on their STEM performance, skills and participation STEM club

Table 1: Wilcoxon T test results for students' preferences and enjoyment in AR learning, enjoyment and interest in STEM learning, STEM performance and skills before and after AR learning intervention (N = 95)

Post-Test Pre-Test		N	Mean Rank	Sum of Ranks	Z	P-Value
Preference on AR learning Post- Pre-	Positive Ranks Negative Ranks Ties Total	30[a] 6[b] 59[c] 95	19.20 15.00	576.00 90.00	-4.086	**.000****
Enjoyment in AR learning Post- Pre-	Positive Ranks	26[a] 4[b]	16.35 10.00	425.00 40.00	-4.110	**.000****

	Negative Ranks Ties Total	65[c] 95				
Performance in STEM learning Post- Pre-	Negative Ranks Positive Ranks Ties Total	28[a] 8[b] 59[c] 95	19.21 16.00	538.00 128.00	-3.500	**.000****
Participation in STEM Club Post- Pre	Negative Ranks Positive Ranks Ties Total	17[a] 10[b] 68[c] 95	14.29 13.50	243.00 135.00	-1.461	.144
Enjoyment to learn Mathematics Post- Pre-	Negative Ranks Positive Ranks Ties Total	14[a] 21[b] 60[c] 95	18.75 17.50	262.50 367.50	-.926	.355
Enjoyment to learn science Post- Pre-	Negative Ranks Positive Ranks Ties Total	11[a] 30[b] 54[c] 95	19.82 21.43	218.00 643.00	-2.987	**.003****
Interest in Mathematics learning Post- Pre-	Negative Ranks Positive Ranks Ties Total	23[a] 20[b] 52[c] 95	19.83 24.50	456.00 490.00	-.220	.826
Interest in Science learning Post- Pre-	Negative Ranks Positive Ranks Ties Total	21[a] 21[b] 53[c] 95	20.93 22.07	439.50 463.50	-.162	.871
Interest in Technology learning Post- Pre-	Negative Ranks Positive Ranks Ties Total	16[a] 24[b] 55[c] 95	18.25 22.00	292.00 528.00	-1.638	.101
Willing to attend STEM class Post- Pre-	Negative Ranks Positive Ranks Ties Total	13[a] 29[b] 53[c] 95	19.50 22.40	253.50 649.50	-2.585	**.010****
STEM skills Post- Pre-	Negative Ranks Positive Ranks Ties Total	4[a] 11[b] 80[c] 95	7.00 8.36	28.00 92.00	-1.968	**.049****

Note: a. Post-test < Pre-test, b. Post-test > Pre-test, c. Post-test = Pre-test, **p < 0.05 (2 tailed)

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Exergaming Feasibility for an Individual with Tetraplegia: A Mixed Method Single Case Study

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Keywords: Video Games; Exercise; Wheelchair; Spinal Cord Injury; Intensity; E-Sports

Abstract

Introduction: Individuals suffering from traumatic spinal cord injury (SCI) with upper limb involvement (tetraplegia) face limited options for participation in exercise training programs that are feasible and health beneficial. Approaches to increase participation in moderate-vigorous sports, for these special populations with tetraplegia (injury at C8 and above) can be challenging as exercises are often "unsuitable" or "inaccessible" (Williams et al, 2014). Increasing levels of physical inactivity has reduced their ability to maintain an active lifestyle for higher quality of life. Current available literature has focused on delivering exercise training contents to these individuals via home-based or telehealth communications (Lai et al 2016). The use of technology has increasingly gauged interest in efforts to reach out to individuals with restricted physical limitations. One of these interventions is "exergaming", a video game that requires active bodily movements for in-game control and gameplay. The current case study collectively looks into the feasibility of introducing a novel exergaming training console for an individual with tetraplegia using. This mixed method approach uses quantitative, qualitative and technical analysis methods integrated as a case study reporting. It attempts to provide a novel strategy to improve physical activity for an individual with tetraplegia that is home-based and virtually connected via tele-exercise. A comprehensive outlook on the feasibility of exergaming for an individual with tetraplegia using this original approach, aims to map the advantages and disadvantages into a thematic framework that is suitable for online exercise.

Methodology: A male participant was recruited, where his health was screened, and the ethics protocol of this study approved by University of Malaya's Medical Ethics Committee. The male participant suffered a C6- C7, ASIA A SCI who has been wheelchair bound for 21 years. His body mass index was 20.8, with an estimated physical activity level of 28.28 METhrswk-1 prior to the training, using a Malaysian adapted physical activity scale (Mat Rosly et al, 2019). The Playstation 3® console, along with its Move® controllers, eye camera and Move activated video games (Move Tennis, Move Boxing, Move Gladiator Duel and Move Kayaking). Quantitative rating of perceived exertion (RPE) was collected at the end of each session using the Borg scale (Borg 1982). At the beginning of the programme, where he intends to train for an exergaming competition, he participated in all five of the exergames available, however, after a week of practicing, decided to only train for Move Tennis and Move Boxing in order to represent the respective e-sports.

Maximum performance test via oxygen consumption and heart rate elevations were collected at rest, week 0 and following the conclusion of the 6-week training programme (week 6). The Borg scale of perceived exertions were collected to determine intensity based on qualitative RPE and ascertain that maximum performance capacity has been reached (Borg 1982). The exercise regime consisted of 75-150 minutes per week of moderate-vigorous intensity aerobic training for 6 weeks in duration (American College of Sports Medicine, 1998). Endurance training was also included at least 2-3 times, but this was mostly done by the participant himself at home, using arm weights or stretch bands. A post-exergaming semi-structured survey, open-ended interview and focus group discussion was collected, designed and conducted by the author. The qualitative data from the interviews were transcribed verbatim, translated, read for initial ideas and analysed into codes to generate potential themes.

Results: The themes extracted from the interviews were summarized in Table 1. Figure 1 presents cardio-respiratory parameters of the participant at rest, week 0 and after 6 weeks of training.

Table 1: Technical Analysis Recommendations

Qualitative themes	Technical Analysis and Observations
Positioning and calibration	The controllers must be calibrated to fit the need of the participant within the range of a sitting individual. The tracking eye camera should be placed parallel to the participant's head-shoulder level. The Move motion controllers should ideally be calibrated after each round to ensure the body's position is readable for the motion tracking eye camera.
Upper body stabilization	The participant reported upper body and trunk instability during the exergaming training. To prevent this, a custom designed chest-waist belt was strapped from the nipple to the pelvic area to prevent imbalance or fall, which should ideally cover motor control from T1-T12 but not limit upper limb axial movement. Certain movements, such as trunk twisting, and straight punches were difficult to perform and deemed unsuitable.
Controller hand grips and button control	The participant had upper limb involvement that prevented full hand gripping ability and could not utilise the Move controllers well. To assist in this, the controllers were fastened using hand gripping gloves (Active Hands®) as they were found to be well suited for this participant. Button pressing from the user, and was unsuitable for the participant, due to the limited fine motor control and has substantially reduced the momentum.
User input-output dynamics	Elements of gameplay, adjusting difficulty levels and interactive environment should be tailored to fit the level of the player. Initial training and an introduction briefing were only required for 10-30 minutes, by which the participant can fully adapt to the training with ease. The subsequent training regimens were increased progressively (bronze to gold level) as the participant's level of skill and playability improved. This represents a constant motivation to improve, heightened levels of enjoyment and consequently, adherence to the exercise.
Equipment and setting	Space dimensions and equipment: A 2.5 x 2.5meters area should be allocated for full range of body motion during gameplay. A 62" television was used for the training, but the recommendation in exergaming would be at least 40" inches for better engagement. Portable power supply should be available to ease change of game arrangement and portability.
Player interactivity and socio-dynamics	Exergaming allowed the participant to exercise and play against the artificial intelligence of the video game as his opponent, this ensures user interactivity throughout the gameplay, as opposed to exercise alone using conventional tools. The exergaming system was also able to be played in various weather conditions (i.e rainy days, haze, hot mid-afternoons) as it is played indoors and air-conditioned. This was an important factor for the participant that promoted his motivatin to continue training.
Transportation and accessibility	Participant indicated interest in continuing the exergaming training at home following the conclusion of the programme, since he had to drop out of the training due to transportation issues getting to the gym facility where the study was conducted. It was also time and financially inefficient for him to travel from home to the gym. An online feature or home-based training was suggested.

Discussion and Conclusion: This study provides a very comprehensive outlook on exergaming for an individual with tetraplegia. Very limited studies have focused on this small population, who face physical-related barriers to continued moderate-vigorous exercises. The average heart rate elevations before and after the 6-weeks exergaming training programme indicated no change, which may be due to blunting of cardiac acceleration as a result of high-level spinal injuries (Biering-Sørensen et al 2018). However, while heart rate elevations were the same, the total volume of oxygen consumed was 15% higher after 6 weeks. This indicated that there was an increase in the total maximum performance capacity (lung or cardiac) following completion of the 6-week exergaming training programme. Our previous studies have only allowed familiarization, training and skill acquisition within a short period of time (~10-15 mins), mostly to determine the intensity of exergaming as an exercise (Mat Rosly et al, 2017). However, this case study was the first to

demonstrate the performance outcomes over a period of 6 weeks exergaming training as familiarization, higher skill and longer play duration improved the participant's cardiorespiratory parameters, albeit only moderately.

This case study provided insights on the feasibility and effectiveness of exergaming training as a potential exercise tool for cardiorespiratory improvements. There are limitations to this case study and the protocols should be further refined to improve scientific robustness of the findings. The first would be that future work should observe larger sample sizes for a longer duration (i.e 3-12 months). It is also best if both aerobic exercises, as well as resistance training be observed to ensure that the recommended guidelines for cardiorespiratory improvements are followed. The participant should also perform only exergaming as the source of intensity adequate aerobic exercise, and this should include resistance training as well.

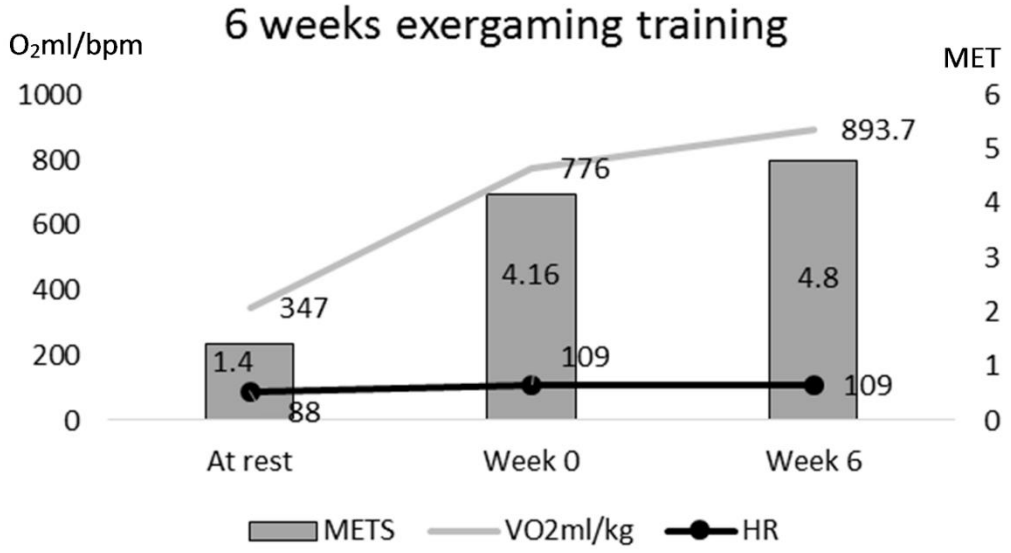

Figure 1: Performance analysis of a 6-week exergaming training programme
*MET Metabolic equivalent of a task

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SYMPOSIUM 7: DEVELOPING MINORITY COMMUNITIES &SOCIAL WELFARE

Closing the Gap in Mushroom Poisoning Management: A Trilateral Effort between the Public Health Authority, Mycologist, and Medical Officer

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Keywords: Mushroom Poisoning; Public Health; Mycologist; Medical Officer

Abstract

There are currently over 5,000 known species of mushrooms but only 20-25% of mushrooms have been named, and 3% of these are poisonous (Kim et al., 2018). In Malaysia, incidence of mushroom poisoning has been sporadic. However, in recent years, more cases have been reported as mushroom foraging has gained popularity in our country. In 2017, there were 25 cases of mushroom poisoning in Malaysia. The number of cases increased to more than 3-fold (81 cases) in 2018 (Public Health Malaysia 2019, unpublished data). In this project, we seek to tackle the problems being faced in the current situation, i.e. (1) there is no proper mushroom poisoning surveillance system by the public health sector in Malaysia, including Sabah and Sarawak and (2) there is lack of knowledge transfer from mycologist to public health sector.

Aim and objectives: The aim of this project is to device strategies to disseminate and implement a legitimate mushroom poisoning practices into public health settings. The objectives were to (1) draft the first edition of Malaysian Guideline on Mushroom Poisoning and (2) conduct train-the-trainer training to transfer knowledge and skills to the public health officers.

Methods: Training workshops were carried out in Kuala Lumpur, Sabah, and Sarawak. A mycology-oriented module was employed in the spirit of introducing the public health officers the knowledge of mushroom identification, collection, and recording. Besides, a Mushroom Poisoning Network was formalized under Public Health Malaysia to facilitate the process of drafting the guideline and conducting the training. The network is a tri-lateral collaborative effort, comprising of (1) mycologists and scientists from various local universities, (2) emergency doctors and clinical toxicology specialists, and (3) public health and environmental health officers from the Ministry of Health, Malaysia.

Results and Impact: The first Malaysian Guideline on Mushroom Poisoning is still under progress. A total of 102 public health officers from all over Malaysia attended Mushroom Poisoning Workshops held in UM, UNIMAS, and UMS (Table 1). Public health officers who attended the training workshop in Kuala Lumpur were from Perlis, Pahang, Pulau Pinang, Wilayah Persekutuan Kuala Lumpur, Kedah, Terengganu, Perak, Selangor, Kelantan, Johor, Negeri Sembilan, and Putrajaya. Sarawak participants consisted of public health officers from Saratok, Betong, Bintulu, Sri Aman, Kapit, Miri, Bau, Kuching, Lundu, Samarahan, Simunjan, Mukah, Sibu, and Limbang. Sabah was also well represented by the Health Department of Sabah State, Papar, Beluran, and Semporna. All participants underwent

training on mushroom collection, identification and recording (Figure 1). When asked in a post-workshop survey, 64%, 51%, and 72%of participants (n=97) strongly agreed that they can carry out basic mushroom identification, they can carry out mushroom collection and sampling independently, and their knowledge on mushroom sampling has increased; respectively (Figure 2).

Table 1: Number of Participants Attending the Mushroom Poisoning Workshop

Public Health Division	No of participant
Peninsular Malaysia[a]	32
Sarawak[b]	39
Sabah[c]	31
TOTAL	102

Venue: [a]Rimba Ilmu, University of Malaya (UM); [b]Faculty of Resource Science and Technology, Universiti Malaysia Sarawak (UNIMAS); [c] Institute of Tropical Biology and Conservation, Universiti Malaysia Sabah (UMS)

Figure 1: Collection of mushrooms in arboretum in UNIMAS (LEFT). Participants from Sabah practised taking photo and performed proper recording of mushrooms (MIDDLE). At the end of the module, participants presented their mushroom description and observation (RIGHT).

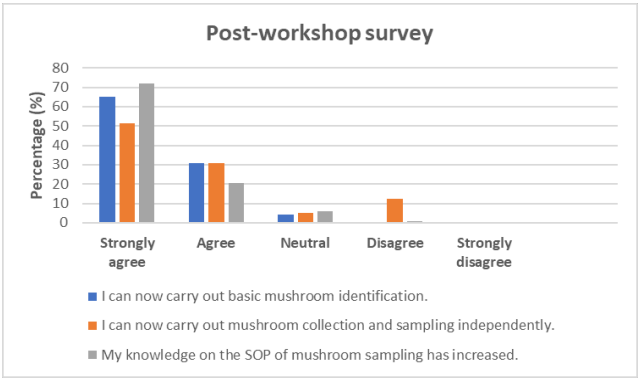

Figure 2: Post-workshop survey. Number of respondent (n = 97).

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Development of Organizational Information Module for Braille Collection at the Malaysian Association for the Blind (MAB)

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Keywords: Information Management Module; Braille Collection; Special library

Abstract

Introduction: Information management is a process of developing a controlled bibliographic system in the library. This involves cataloging and indexing which helps library users retrieve information resources efficiently. This is an important issue for the Malaysian Association for the Blind (MAB), a non-governmental voluntary organization providing various services and opportunities to the Malaysian blind community. This research project focuses on MAB Library also known as H.T. Ong Library, which is a special library dedicated to visually impaired persons. Braille collection is one of the core library resources provided to its users. It consists of approximately 5900 fiction and non-fiction braille books mostly in English and Malay languages.
MAB Library had received funding from a local Malaysian Bank (CIMB Berhad) in 2014 to purchase a library system called ILMU. This is a rudimentary library system that emphasizes the cataloging, indexing, and collection retrieval modules. However, since 2014, none of the library items' bibliographic details were stored in the system. The main reason is the lack of library skills and knowledge of the system among the library staff. This failed to use and manage the ILMU system. Library users were unable to access the braille collection effectively.
In tandem with these issues, the idea of information management was adopted. The novelty of this research highlights the information management module that was developed to cover the aspects of cataloging, indexing, metadata development, organization of the collection, subject assignation, and retrieval for the braille collection in the MAB Library.

Methodology: References were made to various library modules and guidelines by running a benchmarking study. The benchmarking study was conducted based on eight collection development policies at the international level to develop the Braille collection development policy. These documents were mainly coming from various public and special libraries in the United States of America (USA). The eight documents are freely available in full-text format from the Internet, which are as follow: i) American Fork Library's Collection Development and Materials Selection Policy; ii) Colorado Talking Book Library's Collection Development Policy; iii) Florida Bureau of Braille and Talking Book Library's Collection Development Policy; iv) Montana Talking Book Library's Collection Development Policy; v) NLS Collection Building Policy; vi) South Dakota State Library's Collection Development Policy; vii) Utah State Library's Collection Development Policy; and viii) The Washington Talking Book & Braille Library (WTBBL) Collection Development Policy. Additionally, two documents of the International Federation of Library Associations and Institutions (IFLA) were also being referred in developing MAB Library collection development policy for the Braille collection, which are as follow: i) IFLA Guidelines for a Collection Development Policy using the Conspectus Model (2001); ii) IFLA Libraries for the Blind in the Information Age Guidelines for Development. Furthermore, an interview was conducted with the MAB librarian to gather more information on the current process and workflow of collection development at the Library. The interview session was focused on gathering information on the selection and acquisition process that MAB Library has practiced for the past years.
The MAB Library's Information Management Module for the braille collection is divided into two parts: Information Management Module itself, and the Collection Development Policy. Information Management Module consists of the selection module that covers the responsibility of selection, categorization of braille books, braille grades, braille collection types, and the selection criteria for braille production in the MAB Library; acquisition module which covers

gifts and donations, a workflow of gifts and donations of braille collection, MAB Library braille internal production, MAB Braille Publishing Unit's publication, and purchase; cataloging module that outlines the braille books to be and not to be cataloged, types of cataloging, cataloging reference tools, MARC21 compulsory tags, cutter numbers, main entry and processing activities; and lastly the collection maintenance module that covers deselection of braille books, maintenance activities, retention, and disposal of braille books.

For the Collection Development Policy, a complimentary guideline was prepared for planning, selection, acquisition, appraisal, disposal, and complaint handling of the braille collection. It was prepared by adopting similar policies gathered from a benchmark study of global practices. Contents of this policy include the legal responsibility, responsibility for the selection, scope of the collection, collection dynamics, grades, selection criteria for braille production, and general policies. According to Reitz (2014), collection development policy is a formal written statement of the principles guiding a library's selection of materials, including the criteria used in making selection and deselection decisions (such as fields covered, degrees of specialization, levels of difficulty, languages, formats, balance) and policies concerning gifts and exchanges.

Results and Impacts: A simple book listing was prepared for the MAB Library upon realizing the absence of this vital document. There was a total of 4902 book titles, 5885 volumes, and 4344 items recorded in the braille book listing. Cataloging and a Book Listing was done as part of additional services to the library. The cataloging process was done by the research team using copy cataloging techniques, retrieved from reliable and reputable websites such as Worldcat.org, *Perpustakaan Negara Malaysia* Online Catalogue, Book Depository, and British Library Main Catalogue. The descriptive cataloging process used the latest Resource Description and Access (RDA) Cataloguing Standard. About 991 braille books were cataloged into the new KOHA system.

Table 1: Braille book record

Book titles	4902
Volumes	5885
Items (Book per unit)	4344

Table 2: Number of recorded and cataloged Braille books

Total number of recorded Braille books	4902
Total number of cataloged Braille books	991

This research project made an impact in the following areas: (i) MAB library and its users, (ii) blind community in Malaysia, and (iii) the University which initiated this research project.

There was a positive impact in the MAB Library work practice evidenced by statistical measures obtained through survey responses from the MAB librarian. Significance changes in activities in the MAB library workflow were identified. For instance, new braille books will be tagged and cataloged into the ILMU system, instead of placing them directly on the open collection bookshelves. This will assist in book acquisition and storing.

Next, the book listing has been created and ready to be used by the MAB Librarian to retrieve the braille books. Previously, the library did not have any book listing of braille collection owned. The librarian now can refer to the book listing to locate and retrieve any books needed. The librarian finds the book listing especially useful and can now add new braille books to the listing. It also acts as a backup file in case the library system failed again. The booklist contains important bibliographic information such as book title, author name, genre, the original location of the book, the volume of books, copies of books available, braille typist, the donator, assigned call numbers, and other additional data deemed important.

The flowchart for data entry into the ILMU system will offer guidance for the library volunteers to do data entry for the braille books more efficiently and enhance the system usage. These regulations and control are designed to support the improvement of MAB future information and collection development activities and library management.

The collection development policy will act as a benchmark and as a general reference for other libraries in Malaysia that have braille collection and providing services to the visually impaired and blind users. It can be referred by other similar libraries to plan and manage their braille collection more effectively and efficiently. In comparison with other studies, there is a small number of literatures on the collection development policies of alternative-format materials for persons

with disabilities (Yoon & Kim, 2016). Thus, this Braille collection development policy can be a significant reference for libraries with the Braille collection, especially the local libraries.

The University of Malaya will benefit from this asset-based community development project. Academic members from the University's Department of Library and Information Science in the Faculty of Computer Science and Information Technology can promote their skills and share their knowledge in library science and information management field for the targeted community In the nutshell, this research project has given meaningful impact directly and indirectly to the MAB Library, the society, and the University. The long-term impacts of this research project can only be observed by further monitoring of the library.

Challenges and Issues: The following matters are some of the difficulties encountered by the researchers during the research project: Braille books were disorganized on the bookshelves thus impeding the process of book listing; library staff was no help as they have been doing repetitive clerical work in the past and not library-related activities such as shelving according to call number and classification which was never done before.
The breakdown of the ILMU system was the highlight of this research project. The library system could not be accessed after the last maintenance activity. The ongoing cataloging data input into the system could not be retrieved either. The MAB council board insisted on using the ILMU system although the system could no longer be used because they could not understand much about how the system and the importance of the library system in the first place. It became obvious that the management was facing financial issues to pay for the maintenance fee to the library system contractor. The MAB librarian took her initiative to seek help from the National Library of Malaysia to help the MAB Library in the KOHA system installation. This action was initially disapproved by the MAB council, but the librarian was able to convince them. Unfortunately, one IT person from MAB sent for the free KOHA training at the National Library quit after receiving the training. However, that particular staff had shared his knowledge with an IT trainee (a practical student undergoing practical training) which enabled the trainee to carry out the installation for the MAB Library but he could not do any maintenance or solves any issues as he did not attend the full training. Nevertheless, the KOHA system is now successfully installed and is ready for use. Although the recorded data in the ILMU system could not be transferred and mapped into the KOHA system, the research team was able to re-catalog at a faster pace in the new system. This was made possible by the information recorded in the Braille book listing before this project.

Conclusion: The collection development policy for the Braille collection is vital in developing and organizing the Braille collection in more efficient manners. This research project made an important contribution to MAB library information management. The adoption of the information management module will meaningfully serve as an important reference for librarians in managing the Braille collection in the library. This study however limited to cover policy on Braille collection and not suitable for general library resources including audiobook collection. For further study, this collection development policy could be translated into the Malay language for local use. It can also be used as a guideline and a useful key reference in preparing other collection development policies for different types of materials such as audiobook collection particularly for the library that serves the visually impaired community.

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Inclusive Sport and Recreation Programme for University Student with Disabilities: Wheelchair Tennis

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Keywords: Inclusive Sport and Recretion; Student with Disabilities; Adapted Sport; University Students.

Abstract

As the number of students with disabilities (SWD) in higher education institution (HEI) increase, HEIs must be prepared to accommodate students with disabilities and remove barriers for their full access and participation in HEIs. In recent years, within the field of higher education, an inclusive education model has been the model to follow. The inclusive education model advocates that universities become institutions to which students can belong and in which they can participate and learn (Hardy & Woodcock 2015; Messiou 2012; Moliner, Sales, Ferrandez, & Traver, 2011). Nevertheless, these policies and practices of university systems, which, in many cases have been futile due to inaccessible curricula, negative attitudes and physical barriers. Furthermore, it has been suggested that instead of the medical disability model, university environments should, when it comes to disability, position themselves within the social model (Oliver 1990). This would mean changing the campus environment by eliminating the barriers created by society, making it as inclusive as possible (Moriña & Morgado, 2016).

Participation of students with disabilities in higher education is an issue both of equal opportunities and of empowerment for the students concerned. Booth and Ainscow (2002) described that in an educational context, inclusion has been defined as including a number of key perspectives, policies and practices such as, reducing barriers to learning and participation for all students and, learning from attempts to overcome barriers to the access and participation of students. Vaccaro, Daly-Cano, and Newman (2015) reported that among factors that fostered a sense of belonging in HEI are through campus involvement, psychological feelings of fitting in, acceptance, and support from a group or community

An area which often overlooked by HEI, is sports and recreational participation among students with disabilities. Persons in the emerging adulthood phase of life are typically between the ages of 18–25, which are also the ages of typical college students. This life phase is characterized by experiences such as gaining independence from parents, seeking career development, developing lifelong social relationships, and experiencing postsecondary education such as college. Although there can be variation in behaviours, college years are often a time when young adults experiment with new behaviours and can lay the foundation for lifelong behaviours. Laying a foundation for lifelong behaviours such as active living is important to maintaining a healthy lifestyle across the lifespan (Devine, 2016)

The World Health Organization (WHO) encourages all to engage in regular physical activity to maintain lifelong health and quality of life, however, approximately 12% of adults aged 18–64 years have a disability, and nearly one half are inactive, creating a disparity in the participation rates in leisure-time physical activity for persons with disabilities (Carroll et al., 2014). This is problematic because it contributes to lower quality of life, limits functional independence, and increases the likelihood of secondary conditions of disability (Devine, 2016; Rimmer, Riley, Wang, Rauworth, & Jurkowski, 2004)

Yoh, Mohr, and Gordon (2008) stated that the lack of accessibility and adaptive equipment affect the amount of physical activity that individuals with disabilities participate in. In support of this, Devine and King (2006) found that the inadequate availability of adaptive equipment was identified as a significant barrier to physical activity for individuals with disabilities. In addition, Rimmer, Riley, Wang, and Rauworth (2005) found indications that the

significantly low physical activity level among individuals with disabilities might be the result of environmental barriers (i.e., architecture, design, and accessibility). Furthermore, the importance of indoor recreation facilities as an outlet for physical activity for individuals with disabilities has been amplified because of the lack of accessibility in outdoor environments.

Valis and Gonzalez (2016) suggested that intramurals, free fitness facilities, and bike rentals are examples of ways that HEI could encourage physical activity participation and eliminate some of the barriers for students with disabilities. Rimmer et al. (2005), however. Noted that a high level of inaccessibility in outdoor environments such as narrow and damaged sidewalks, steep slopes, poor signage, and a lack of available restroom facilities has affected the ability of individuals with disabilities to enjoy the benefits of physical activity, in general and for students with disabilities in HEI.

The current project involves university of Malaya students with disabilities. The Inclusive Sports and Recreational Programme creates the opportunity for SWD to actively participate in campus sports and recreational activities, in line with the Disability Act (2008) and University of Malaya Inclusive University Policy (2014). This project introduced wheelchair tennis as an adapted inclusive sport as a pilot study. Wheelchair tennis will be included as one of the annual inter-collegiate competition. Figure 1 shows the stakeholders involved in this inclusive sports project.

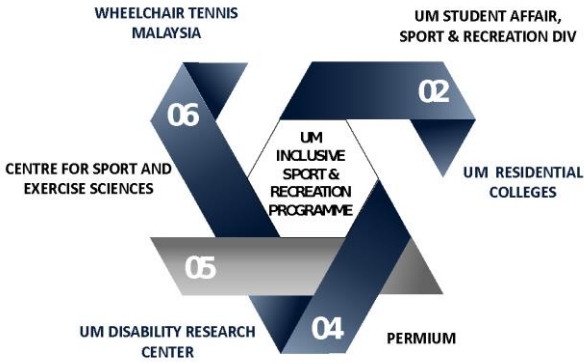

Figure 1: Involvement of stakeholders in inclusive sport and recreational programme.

The objectives of this project are to:
i. Provide opportunity for UM SWD to participate in sport and recreational activities
ii. Trained potential wheelchair tennis coaches through coaching clinic conducted by WTM
iii. Encourage inclusive campus experiences
iv. Identify potential wheelchair tennis athletes in UM for competition organised by WTM.

Sport and recreational activities can also contribute to positive experience in campus. Devine (2016) drew attention to the importance of accessible features for physical activity not only meeting legal mandates but being usable by individuals with disabilities. Universities should commit to training staff on inclusion practices including adaptive methods and techniques and attitudinal and social aspects of inclusion. Ultimately, changing the culture of and practices that promote physical activity for people with disabilities is an important component of promoting lifelong healthy active living in which all should be active players in this cultural shift (Devine, 2016).

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Home Program Guide for Parents with Children with Cerebral Palsy: A Participatory Action Research

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Keywords: cerebral palsy; home-based program; parents; empowerment

ABSTRACT

Cerebral palsy (CP) is a neurological disorder associated with movement and postural disabilities and attributed to nonprogressive disturbances in a developing foetal or infant brain ("A report: the definition and classification of cerebral palsy April 2006," 2007). Although the pathophysiology of CP is nonprogressive, the progression of musculoskeletal deformities during the growth of a child with CP may deteriorate his/her physical function and quality of life (QoL) over time (Graham & Selber, 2003). Rehabilitation approaches through physical activities and exercises maximise physical functioning, prevent secondary musculoskeletal impairments and foster the cognitive, social and emotional development of a child (Damiano, 2006).

In the rehabilitation of children with CP, clinicians must prescribe interventions based on targeted goals from family and child (Novak et al., 2020). However, children with CP and their family and caregivers face numerous obstacles to participate in various rehabilitation programmes, especially when most of these programmes are rendered in a hospital or centre. These obstacles include personal, social and environmental barriers and financial or time constraints. Moreover, logistical issues and the availability of therapists hinder children with CP from committing to a prescribed exercise programme (Majnemer et al., 2012 and Verschuren et al., 2012). This situation may lead to inadequate physical activity sessions and muscular deconditioning and precipitate preexisting progressive musculoskeletal conditions, such as contractures, spasticity and degenerative arthritis, henceforth affecting a child's physical abilities and QoL (Graham & Selber, 2003).

Home-based interventions may have some distinct advantages to overcome these barriers for children with CP to undertake a rehabilitation program. Evidence of the effectiveness of home programmes for children with CP is currently growing (Sakzewski et al., 2014). A recent structured home-based exercise intervention programme shows potential as a structured and rapid exercise home programme that achieves a short-term functional goal when added to standard care (Fauzi et al., 2019). Parents implementing home programmes perceive these tools as a time efficient approach that can maximise their child's progress (Novak, 2010). Implementing physical activity at home complements standard face-to-face therapy with therapists to ensure the continuity of therapy (Tinderholt Myrhaug et al., 2014). A goal-focused home therapy with children with CP is a pragmatic solution to increase the intensity of therapy and, hence, promote neuroplasticity for functional improvement (Novak & Berry, 2014).

Home programmes for children with CP are performed in partnership with both parents and clinicians and provide parents with guidance and motivation, thus promoting the feasibility of home-based training (Novak, 2010). This approach requires support and training by a multidisciplinary team to coach parents so that they can teach their children learn specific therapies to achieve a desired goal (Schnackers et al., 2018). Support for parents with CP offers important possibilities for improving children's outcomes (Novak et al., 2020). An approach to expand the coverage of parents of children with CP is the delivery of home-based therapy training through community programmes, where these parents are grouped together. This activity can be performed and achieved through a participatory action research approach directly involving stakeholders in the process (Macaulay et al., 1999).

Zuurmond, et al. conducted a community-based training programme for caregivers of children with CP in Ghana; this programme is a participatory action research with an educational tool adapted using the Hambisela educational programme (Zuurmond et al., 2018 and CP Association; SA, 2008). Similar to the current study, this research involved home-based community trainings aimed to increase caregivers' knowledge, attitude and practice in managing children with CP, hence empowering them, especially in low- and middle-income countries where access to rehabilitation remains scarce (Zuurmond et al., 2018). The involvement and participation of parents in home program trainings are crucial and may affect their behaviour and mood. The Hambisela educational program for parents does not show reduction in caregiver stress level (van Aswegen et al., 2019). Nevertheless, Zuurmond et al. found that their community-based training programme improves caregivers' QoL and knowledge (Zuurmond et al., 2018). Several parent-delivered home-based therapy interventions performed for children with a range of neurodevelopmental disabilities have been evaluated qualitatively. Parental empowerment, motivation and reciprocal relationships between parents and therapists are important determinants to achieve effective parent-delivered interventions (Lord et al., 2018). In a research performed together with consumers to investigate research priorities among CP populations through participatory action research (PAR), the participants report great appreciation for engagements between consumers and clinicians (Gross et al., 2018). Currently, no studies focusing on parent-delivered therapy intervention have been conducted locally. The PAR approach serves as an opportunity to directly involve with the parents of children with CP and provide parental empowerment and ongoing support to the parents; these aims are important determinants for the sustainability of interventions (Novak et al., 2014 and Lord et al, 2018)

PRACTIVE (*Prac*tical and Act*ive*) is the name agreed for the home programme guide by the clinicians and community partners of this study. It reflects a practical home programme which can be actively delivered by parents of children with CP. It does not replace individualised therapy sessions; rather, it serves as a guide for parents to continue to perform basic home programmes and empower them to teach other parents with children with CP. A study with the PAR approach in the development of the PRACTIVE guide must be conducted to achieve direct participation and the contribution of ideas from the community and facilitate community empowerment, thereby obtaining a feasible home program with a tangible outcome (Dudgeon et al., 2017). Our community partner, Alliance of Children with CP (GAPS), is a non-governmental organisation and parent support group; it focuses to empower parents with children with CP in managing their child through programmes with healthcare professionals.

Objective: The PartiCPate in PRACTIVE study mainly aims to provide a basic home activity guide for children with CP in the form of videos and guidebooks. The study aims to empower parents and advocates of children with CP and deliver basic home programmes by assessing their knowledge, understanding and practice on home programmes.

Methodology: The research design followed the PAR stages. Firstly, the issue of concern from GAPS was identified. A home activity guide in the form of a guidebook and a video (PRACTIVE) was materialised together with GAPS. PRACTIVE was structured in three different sections, namely, 1) handling and positioning, 2) stretching exercises for both ambulant and non-ambulant children with CP and 3) aerobic exercises. The first phase (3 months) consists of several workshops with clinicians from the Paediatric Rehabilitation Unit of the Deparment of Rehabilitation Medicine, University Malaya Medical Center (UMMC) and GAPS to develop PRACTIVE. The second phase (8 months) involved the implementation of PRACTIVE to ensure the sustainability of this program to a large community with six series of training of trainer (ToT) workshops. Participants which were amongst parents and advocates of children with CP were recruited through GAPS. Trainers amongst parents and advocates were identified by GAPS to deliver the ToT workshop with clinicians' support in the three final workshops. The influence of the study was evaluated quantitatively with the knowledge, attitude and practice (KAP) questionnaire scores and qualitatively with five series of focus group discussions (FGDs) after each workshop. Three domains of questions were explored in depth through the FGD and included questions involving participants' understanding on home programmes for children with CP, attitudes and practices on home-based activities and feedback on their experience after the workshop.

Setting: PRACTIVE was developed in the UMMC as the meeting place. Six series of workshops were performed at several locations in the community around Peninsular Malaysia as identified by GAPS. A total number of 81 participants had attended six workshops, which were amongst parents, volunteers and teachers for children with special needs.

Results: In-depth exploration on participants' knowledge, attitude and practice was performed during the FGDs after workshops. Five FGDs were conducted. Four themes were identified when their understanding, attitude and practice towards home programmes were explored. Two interrelated themes were identified from FGDs, namely, the ability to practice with confidence and the ability to boost participants' knowledge and understanding on basic home activities for children with CP. The two other themes elaborated on challenges for parents to continue performing the home programme and on the participation and support from people other than caregivers. Subthemes reflecting positive feedback and practice included the following: PRACTIVE was easy to understand, PRACTIVE enhanced parents' understanding of home activities for CP, the participants appreciated every section of the home activity in PRACTIVE, and the program promoted networking and participation from family members and other advocates of CP. The participants' background is described in Figure 1. No significant difference was found in terms of KAP scores pre- and post-workshop. Most participants scored 85% and above in all domains even before the ToT workshop (Table 1).

Conclusion: PRACTIVE is a home-based activity guide for children with CP and is practical, structured and easily learned by parents and advocates to deliver at home with children with CP. Parents and advocates of children with CP were empowered to deliver PRACTIVE at home. Through a series of ToT delivered in partnership between clinicians and a community partner (GAPS), the participants improved their understanding of basic home activities and enhanced their ability to deliver them with confidence. Supportive networking by GAPS also facilitated the empowerment of parents and advocates to deliver basic home programmes. Thus, a follow-up with the workshop participants will be highly beneficial to further evaluate the sustainability of this effort.

Acknowledgement: The authors would like to thank The Community and Sustainability Centre for funding this community engagement research (RU013-2017I) through the support from the Ministry of Education of Malaysia

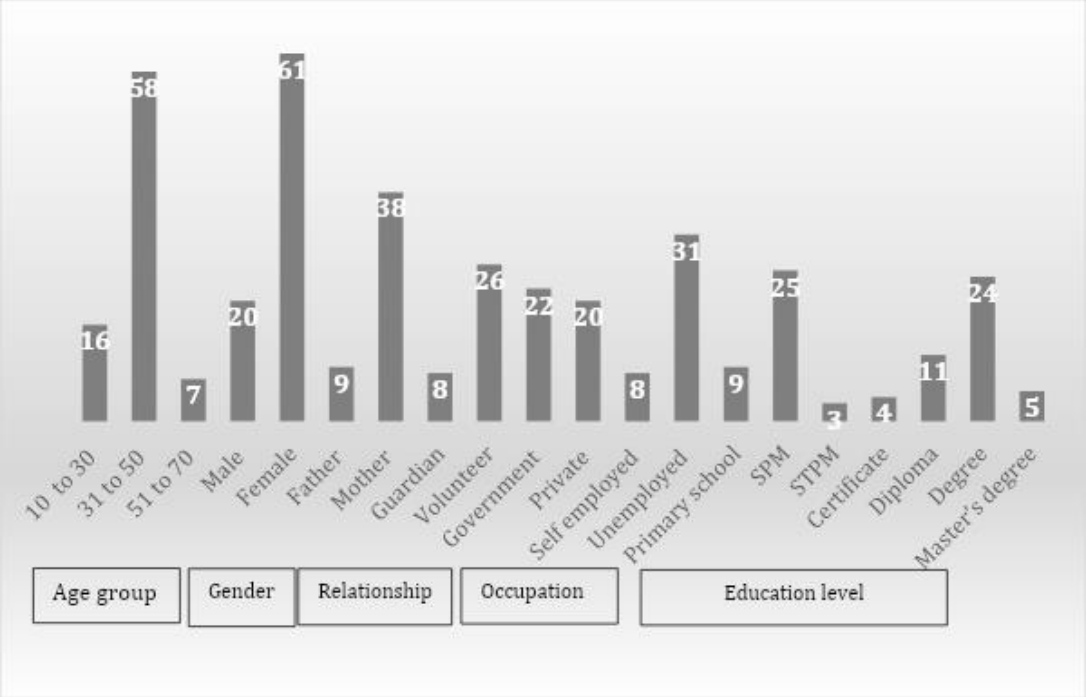

Figure 1: Description of participants' background in the PRACTIVE training of trainers (ToT) workshop

Table 1: Knowledge, attitude and practice (KAP) score (pre-test and post-test)

PRE-TEST			
Values	**Knowledge (score = 9)**	**Attitude (score= 40)**	**Practice (score=9)**
Mean	8.41	33.66	8.05
Percentage	93.4%	84.0%	89.4%

POST-TEST			
Values	**Knowledge (score = 9)**	**Attitude (score= 40)**	**Practice (score=9)**
Mean	8.66	38.43	8.55
Percentage	96.2%	96.0%	95.0%

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Publicizing Public Service (PPS) through the value of openness & consultation with ASNAF Community (OCAC). A Study at the Federal Territory of Islamic Religious Council (MAIWP), Kuala Lumpur.

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Keywords: Asnaf community; zakah; human development; value-based community; Federal Authority; musyawarah

Abstract

Publicizing Public Service (PPS) has become an effective way to gain customer feedback (CF) dan reach customer satisfaction (CS). Customer satisfaction is one of the main indicators of quality public service (QPS). To obtain customer satisfaction efforts to localize services is a necessity. Among others, are through the inculcation of the value of openness and implementation of people's consultative program as mentioned in Guidelines for Publicizing Public Service, the Public Service Circular No. 1 the year 2015. Government agencies are no exception when it comes to QPS and CS issues. The Federal Territory of Islamic Religious Council (Maiwp) is one of them that always gained public attention especially by *asnaf* community (AC) on the issue of zakah application and distribution. Various issues raised such as complaints on delay and difficulty in getting zakah allocation. While issues on the part of AC involving their perception about rights to get zakah, lifestyle and attitude, financial and life problems, lack of knowledge and information on zakah, and about zakah communication channels. These are among the issues identified concerning zakah allocation, distribution, and *asnaf* community. Thus, this community-based research in PPR Seri Pantai, Lembah Pantai, Kuala Lumpur focuses on four aspects; Communication channels provided by Maiwp for zakah application and distribution; AC understanding about zakah and zakah distribution; AC knowledge and information on zakah and AC lifestyle and attitude on how to lead a better life without too much depending on zakah. The focus is hoped to achieve the objective of this project which are to understand life problems and financial stress amongst *asnaf*; to inspect AC information about zakah application and distribution communication channels (ZADCC) provide by Maiwp and to provide understanding and awareness on how to manage financial and life stress to avoid `zakah dependent attitude'; In achieving these objectives, three methods were used. First, by conducting series of Islamic talk (IT) for *asnaf* self-development (ASD); Second, through *musyawarah* or face-to-face discussion (F2FD) with *asnaf* and stakeholders and last through the method of an interview with the stakeholders (Dewan Bandaraya Kuala Lumpur and Maiwp) and PPR Resident Association committee. These three methods aimed at providing direct and open communication or *musyawarah* on zakah issues between AC and/or stakeholder (Maiwp). The IT sessions aimed at giving clear understanding, awareness, and motivation on how to manage life and finances according to the Islamic values. Under the theme of`Sayangi Diri, Syukuri Ilahi, six IT sessions, and four F2FD and interviews were conducted. (Refer to Table 1 below) The total number of AC involved in the IT series was estimated between 100-300 people. The implication and outcome of this program include; first, asnaf community (AC) understanding and awareness about zakah information e.g., on how to apply for zakah and what are the ZADCC provided by Maiwp; Second, AC understanding on how to manage their financial and life stress according to Islam; Third, building a good collaboration between researcher, stakeholder, NGO involved and AC. Finally, the talk series also giving inspiration to the NGO involved i.e PERWIDA on the importance of having F2FD and conducting IT series for AC. These impacts were

obtained through AC and NGOs' inputs and from the F2FD and interviews with the PPR Resident Association committee and stakeholders. The inputs were delivered through various ways including oral feedbacks, voice recorded, video feedback, and comments in social media. The increasing number of AC attendees to the IT series is also a good sign of the implication. With its empirical community approach and accessible engagement, this research has created its originality when compared to several other latest research on AC such as Hairunnizam et.al (2017); Izatul Akmar et.al (2017); Nor Syazqani Rosman & Mohd Shukri Hanapi (2017) Ram Al Jaffri Saad & Roszaini Haniffa (2014) and Fuadah Johari et.al (2014). Thus, bridging the gap with theoretical and literature-based research related to *Asnaf*.

Table 1: Important Dates for UMcares Researchers & PPR Sr Pantai Activities 2018/19

Date	Activity
29.3.2018	Interview & Discussion with stakeholder-DBKL
15.4.2018	Interview & Discussion with stakeholder-MAIWP
10.5.2018	Interview & Discussion with stakeholder-MAIWP
11.12.2018	3 IslamicTalk Sessions with AC & MAIWP
17.12.2018	Discussion & Interview feedback with stakeholder-PPR Sri Pantai Resident Association
22.1.2019	IslamicTalk Session 4 with AC & Civil Society Collaborator: Pengusaha Ali Maju Sdn Bhd.
21.3.2019	IslamicTalk Session 5 with AC and feedback from NGO (Persatuan Wanita Islam Damansara Height-PERWIDA)
28.9.2019	IslamicTalk Session 6 with AC and DBKL & PPR Sri Pantai Resident Association

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Teaching al-Qur'an Using A-ba-ha-ta al-Jabari Method to Mualaf and Orang Asli

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Keywords: ABAHATA; Mualaf; Orang Asli; Teaching Qur'an; Ainul Quran

Abstract

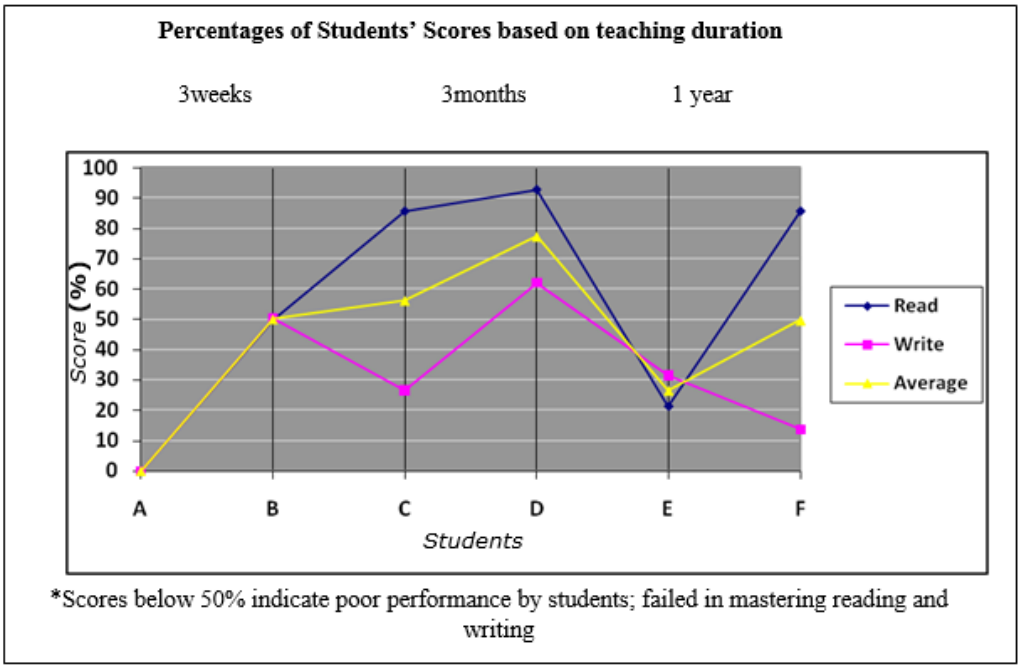
There are two main problems identified in teaching and learning the Qur'an. First, is the fact that many Muslims are not able to comprehend the Qur'anic verse that they read probably because the Qur'an is in Arabic language and many Muslims especially in Malaysia are non-Arabic speakers, Secondly, the duration of completion to study on how to read and write Qur'an are often lengthy and undetermined. Thus, the researchers trying to solve the problem by researching the best method to teach Qur'an. From the study, researchers find that *A-ba-ha-ta* is a fast method to teach reading the Qur'an that uses a compilation of books (5 volumes) structured aiming to instil the Quranic reading knowledge in 30 hours. In addition, *A-ba-ha-ta* includes a special Arabic letter phoneme rhythm crafted based on the *salawat* (a traditional Muslim anthem) *Badr* paired with gestural actions, which helps to speed up the memorization of the phonemes of the Arabic letters. There are two targeted community in this project, which are mualaf in Tenom, Sabah and the 'orang asli' in Carey Island, Klang. This project is the continuation from previous *A-ba-ha-ta* project in homeless, Rohingya refugees and orang asli community around Klang Valley. The teachers within targeted community had gone through the Training of Trainers (ToT) and had already conduct their classes after the ToT. This approach was used so that after this project finished, they can continue their classes among themselves and not affected by the completion of the project. Among the challenges faced in this project is that the access to the places is quite difficult in terms of travel duration and the cost especially in Tenom, Sabah. While in Carey Island the access is quite difficult in terms of the communication probably because they don't really welcome the outsiders, so anything needs to go through their *nazir* (the head of mosque) and this process takes time. Besides, initially the researchers did not get good cooperation with the *nazir* but eventually he give support to the project. On top of that, the implication of teaching the Ainul Quran software is also limited because of the community's background. They do not have a good skill in using computers thus only part of them have the opportunity to use and learn about the software. Ainul Quran is a software that convert Arabic words in Qur'an to its root word and the meaning. The community learn on how to use the Ainul Quran after the *A-ba-ha-ta* part (part one) in the project finished. Other than that, this project is also supported by other institutions such as Institut Pengajian al-Quran in terms of expertise and training of *A-ba-ha-ta*, Sime Darby Plantation in terms of logistics and International Muslim Women's Union Malaysia (IMWU) in terms of financial support. To study the impact of *A-ba-ha-ta*, six students from different backgrounds took part in this case study. Their reading achievement were examined based on the teaching for 30 hours within the duration of three weeks, three months and 1 year. Based on the findings, students who were taught with the *A-ba-ha-ta* method for three months' period performed better in the assessment compared to those taught within three weeks and 1 year. Additionally, students who were taught within 1 year performed better in the assessment compared to those within three weeks.

Results

Table 1. Demographic overview of the students

Name	Age/Sex	Lesson Duration
Student A	12 yrs/M	3 Weeks
Student B	7 yrs/F	3 Weeks

Student C	7 yrs/M	3 Months
Student D	8 yrs/M	3 Months
Student E	8 yrs/M	1 Year
Student F	8 yrs/M	1 Year



Graph 1 shows the comparison of reading and writing test scores. Students B, C, D, and F scored above 50% for reading, which indicated good performance in the reading test. Other than that, students A and E failed to read satisfactorily as they scored below 50%. While for the writing test, four students (A, C, E, and F) failed to write the verses of the Qur'an satisfactorily; where they achieved below 50%, which indicated poor performance. Overall, students B, C, D, and F achieved good scores for the average percentage of reading and writing tests. However, students A and E did not achieve good scores consistently in all reading and writing tests. However, only students B and D scored well in the writing tests.

Conclusion: There are many methods in teaching to read Qur'anic Arabic in the South Eastern region; such as *Iqra'*, *al-Baghdādī*, *Qirāatī,* and *al-Matīen*. This study found that the *A-ba-ha-ta* technique is very much emphasized in phonological awareness, which includes the memory mapping rhythm that is constantly repeated at the start, the middle, and the end of the lesson. It helps to speed up the memorization of Arabic letter phonemes associated with the main diacritical symbols. The main findings were on the fact that it is possible to teach students to read and write the Qur'anic Arabic within a 30-hour lesson using *A-ba-ha-ta* even they start from zero. Based on the findings, students who were taught with the *A-ba-ha-ta method* within three months performed better compared to those taught within three weeks and 1 year.

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SYMPOSIUM 10: HEALTH & WELLBEING

#ItuBukanCinta: Instilling healthy relationships among university students to prevent negative consequences of unhealthy relationships

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Keywords: University Students; Relationship; Dating Violence; Partner Violence

Abstract

Youth are vulnerable to unhealthy relationships thus preventing them from living to their fullest potential. It is common for young people to engage in close relationships during their time in the tertiary education. Seeking for someone special to become life partner is part of human development and beginnings of this process can be as early as in their teen (Center for Adolescent Health, 2009).

Those who have not achieve emotional maturity for a physical relationship or an emotional break-up are vulnerable for exploitation and abuse. Feelings of stress, anxiety and depression that arise from engaging in unhealthy close relationships may negatively affect their life at that moment. For some, the negative consequences persist until older age. What may be apparent to the outside world is someone with poor performance in their studies, but the actual cause of the problem could be more complicated and hidden. Unhealthy relationship increases the risk of dating violence, intimate partner violence, mental health disorder and sexually transmitted diseases including HIV/AIDS (Campbell, 2002). A recent survey among students in a tertiary institution revealed that regardless of gender, both male and female students have been exposed to sexual abuse (Mithra, 2015).

There are increasing discussions regarding sex education in Malaysia but any discussion regarding establishing healthy relationship in life is practically non-existent; particularly within any formal curriculum. Additionally, this topic may not be commonly discussed in open within the family circle. Understanding the importance of life development among university students; some established universities have taken effort to provide guidance and support in matters related to close relationship and student safety.

According to Bronfenbrenner Ecological Theory (1979), human development can be viewed as mutual accommodation between human beings and the immediate environment where they are living, nested in four systems

(Micro, Meso, Exo, Macro). The sense of identity, meaning and a sense of belonging arises from the interaction of individuals in the surrounding communities. People do not have to always rely on their own resources since living in a healthy community provides them with adequate support for any recovery of its members (Bronfenbrenner, 1979).

The project #itubukancinta is a one-year intervention project on close relationship among university students. It was headed by experts in the field of family medicine, public health, counsellors, media studies and humanities. This project aims at educating university students to achieve positive experiences from a healthy relationship and prevent negative implications of an unhealthy relationship whenever they engage in one. The concept of this project was adopted from the One Love movement (OLM) which was founded in 2010 in the United States by the One Love Foundation (OLF) (One Love Movement, 2019). It is worth mentioning that Malaysia, was the first country to collaborate with OLM within the South East Asian region, and the second within Asian region. University Malaya is the first tertiary institution in Malaysia to adopt the OLM intervention concept but with adaptation to suit the local values and sensitivities. The long-term aim of this project is to equip students in University Malaya (the total number of students in University Malaya is above 20,000 students in 2019) with knowledge and skills to be in a healthy relationship regardless whether it is a close relationship, a romantic or an intimate relationship. As a debut, this project acted as a pilot project targeting to a group of new year-one student intake in September 2019.

The approach taken in this project was by conducting interactive workshops for the university students by the university students. The facilitators received training via online webinar from OLM trainers, equiped with a specific manual and underwent reflective sessions with the experts. Upon completion of this training they were given the title ‘Campus Ambassador’ The intervention workshops facilitated by the Campus Ambassador provided meaningful discussions regarding the topic of close relationship while in the university and life after that. A short video depicting behaviours in close relationship was put at the in the beginning of the workshop. This video aimed to prompt reflections on attitudes and behaviour within the context of close relationship. This was followed by interactive discussions that were conducted in small groups, guided by trained facilitators. The key points for the participants to bring home included 1) the components of healthy relationship; 2) problematic behaviours suggestive of harmful relationship; 3) controversies (moral, criminal, religious) related to close relationship; 4) skills required to offer support for friends who are involved in troubled relationships and 5) various ways in which social media can influence individual behaviour in a romantic relationship.

This project was divided into three phases. **Phase 1** aimed at understanding the local context in-depth on issues of close relationship among university students and the needs assessment. The activities include - i) policy analysis: examining relevant local policies that support university students to achieve healthy and safe relationships using the CDC policy analysis framework (Centers for Disease Control and Prevention); ii) focus group discussions (FGDs) with university students to explore the current issues with close relationship and acceptable approach to conduct this project; and iii) setting up the educational tools (adapting One Love manual towards local context and assessing the evaluation tools). **Phase 2** was the execution of the project educational intervention using short videos depicting behaviours in close relationship followed by guided small group discussions. Each educational intervention session took around 90 minutes. **Phase 3** involved in assessing the effectiveness of the intervention. The attitude of the participants towards different types of dating violence (psychological, physical and sexual) was assessed using a self-administered questionnaire.

At the time of this presentation, this project was about to start Phase 2 of the project. In terms of any policy that protects university students in matters related to safe relationships; the Code of Practice on the Prevention and Handling of Sexual Harassment Cases in the University of Malaya 2012 is available online for public viewing. Originally published in 2007 and currently as the third printed version, this policy provides the definition of sexual harassment and the intervention steps. There were no other related policies found that provide safeguarding the university students with regards to close relationship.

The FGDs with 15 university students (9 females and 6 males) found subtle differences between individuals, gender and types of university studies regarding the definition of close relationship. In addition; students expressed various reasons for starting a close relationship while studying in the university and their aim of establishing any close relationship while in the university. Friends were the first person to turn to when facing any issues with a close

relationship. None of the participants have any negative connotation regarding the title of this project but found the title '#itubukancinta' interesting and catchy.

Within a year, this project has successfully collaborated with two residential colleges and Student Health Clinic; trained 41 campus ambassadors, engaged with 80 participants for the interactive workshop and 365 UM campus students for the validation process of assessment tools. More than half of the students was found to have personally experienced relationship abuse or have observed it among their friends. After completing the workshop; 90% of students were aware of relevant resources for help in relation to negative impacts of abusive relationship. In addition, 88% of student expressed that they knew appropriate actions to assist their friend who is affected by unhealthy close relationships.

In conclusion, IBC project has been able to reach many new university students within a year of its implementation. The findings highlighted the extend of university students affected from abusive relationship and the gaps in current policy to safeguard university students in relation to abusive intimate relationship. Nevertheless, this project was able to provide an evidence based educational intervention which is sensitive to the local needs in achieving healthy relationship behaviours among university students. This project is feasible to be replicated in a wider group of students and in other tertiary level institutions.

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Community Surveillance and Control of *Aedes* Mosquitoes In Petaling Jaya, Selangor

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Keywords: *Aedes aegypti*, *Aedes albopictus*, modified sticky ovitrap, DENV, dengue knowledge, dengue practice

Abstract

Dengue is a vector-borne viral disease, which is transmitted through female *Aedes* mosquitoes, mainly from the *Ae* (*Ae*.) *aegypti* species and to a lesser extent, Ae. *albopictus*. Dengue virus consists of four distinct but closely related serotypes, namely DENV-1, DENV-2, DENV-3 and DENV-4. *Aedes* mosquitoes are typically found in urban residential areas due to several factors, including a lack of knowledge and awareness on appropriate prevention practices against the vectors. There are three main objectives in this study; (1) to determine the distribution pattern of *Ae. aegypti* and *Ae. albopictus*, (2) to detect the presence of dengue virus in the field-captured *Ae. aegypti* and *Ae. albopcitus*, and (3) to investigate the current level of knowledge and practices of dengue prevention, associated with socio-demographic status among an urban community. To address our objectives, Modified Sticky Ovitrap (MSO) was designed and developed by our research group. The MSO was used as a mosquito trapping device in the surveillance and monitoring program in two residential areas in Petaling Jaya, Selangor, with a total of 273 and 174 units of MSO installed in eleven low-rise residential (LRR) sites and six blocks of high-rise residential (HRR) buildings, respectively. The *Aedes* adult mosquitoes were sampled for 52 weeks (March 2018 to February 2019) at the LRR sites, and for 26 weeks (September 2018 to February 2019) at the HRR sites. Weekly sampling was carried out by trained fieldwork assistants with the help of residents in both areas. Upon completion of the fieldwork, all traps were transported to the laboratory for species identification. Subsequently, the adults were pooled and screened with a rapid Dengue NS1 Antigen kit for virus detection. In addition to that, using a pre-tested questionnaire, a total of 441 participants were interviewed regarding their socio-demographic status, dengue knowledge and preventive measures practiced by them. All data were gathered and analyzed using Microsoft Excel and Statistical Package for the Social Sciences (SPSS for Windows version 20.0). A non-parametric Kruskal-Wallis test was used to determine the differences between the distribution pattern of field-captured *Ae. aegypti* and *Ae. albopictus*. A univariate analysis of Chi-square test was performed to investigate the significant association between the independent variable (socio-demographic status) and the dependent variables (dengue knowledge scores and dengue prevention practices scores). All variables with a statistically significant association (two-tailed p-value < 0.05) in the univariate analyses were incorporated into the multivariate logistic regression analysis. The results from the surveillance and monitoring program highlighted that *Ae. aegypti* was the predominant species in HRR (95.5%, n = 232), while the predominant mosquito species found in LRR was *Ae. albopictus* (99.9%, n = 4761). The Kruskal-Wallis test revealed that there was a significant difference between the numbers of field-captured *Ae. aegypti* and the mosquitoes from the HRR blocks. Similarly, there was also a significant difference between the numbers of field-captured *Ae. albopictus* and the eleven sites at LRR. The results of the Dengue NS1 Antigen kit screening showed that out of the 57 pooled samples from HRR, only 6 of them (10.5%) tested positive for DENV, while none of the pooled samples from LRR were positive. The results of the questionnaire showed that most of the participants were extremely knowledgeable on dengue vectors, transmission, signs and symptoms, and preventive measures of dengue. Participants above 40 years old were more likely (OR = 4.210, 95% CI = 1.652 - 10.733, P = 0.003) to have better dengue knowledge. Additionally, participants who had an average monthly household income of more than RM 3000 were more likely (OR = 1.607, 95% CI = 1.059 - 2.438, P = 0.026) to have better practices of dengue prevention. Interestingly, no significant association was observed between knowledge and prevention practices of dengue among the participants. The MSO used in this study proved to be effective at capturing positive *Aedes* mosquitoes in the HRR, with *Ae. aegypti* being the most dominant species in these buildings. Although the height of the housing did not seem to influence the presence of *Ae. aegypti* in higher floors (Liew and Curtis, 2004), the management and residents should be vigilant in checking for breeding sites in their houses. In fact, an investigation of common mosquito breeding grounds in our field visit,

such as stagnant water, uncovered water storages and pots turned out negative for the presence of mosquite larvae, postulating that the vectors may reside indoors. This agrees with another study which also demonstrated that MSO captured a higher number of adult mosquitoes in housing-domesticated environments, with the most common species being *Ae. albopictus*. Although *Ae. albopictus* prefers to breed naturally in small or restricted breeding grounds surrounded by vegetation, their ecological flexibility allows the vector to colonize various artificial containers as their breeding habitats. Furthermore, the presence of decaying leaves from neighbouring trees or plants produce chemical conditions like their natural breeding habitats (i.e., tree holes), which serves as an optimum growth condition for *Ae. albopictus* larvae to develop into adults. In agreement with previous studies conducted in Malaysia (Hairi *et al*., 2003), Thailand (Koenraadt *et al*., 2006) and the Philippines (Yboa and Labrague, 2013), this study also revealed that there was no significant association between knowledge and prevention practices of dengue, suggesting that knowledge is not necessarily a predictor for good practices. In conclusion, there are several positive implications obtained from this study. First, the integration between the collection of adult mosquitoes and the utilization of a rapid test kit (Dengue NS1 kit) can be practiced by public health authorities for the improvement of entomological investigation of *Aedes* mosquitoes. This combination could potentially provide a more accurate estimation of the adults and the presence of an infected mosquito, thus preventative actions can be taken before an epidemic occurs. Secondly, the monitoring and the surveillance programs conducted at housing areas could empower the community to implement their own version of surveillance programs, such as search and destroy *Aedes* activity, to continuously combat and minimize the population of this vector in their housing area. Thirdly, the insignificant association between knowledge and prevention practices of dengue suggests that both the government and community efforts are essential in providing continuous education about dengue to reduce the frequency of dengue outbreaks, and hotspot areas nationwide.

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Weaponizing community in fight against dengue vector

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Keywords: Mosquito control; mosquito surveillance; community empowerment; knowledge & technology transfer

Abstract

Dengue is a viral infection transmitted by the bite of an infected female *Aedes* mosquito. Dengue causes sudden high fever, rash, headache, and bleeding in severe cases [WHO, 2019]. It is estimated that at least 3.6 billion people are at risk of contracting the infection [Gubler, 2012]. In Malaysia, the number of dengue cases has escalated exponentially in the last two decades [Mudin, 2015]. To date, dengue continues to be a major public health concern as there is still no specific treatment against dengue. Licensed anti-viral drugs or effective vaccines against dengue are also still unavailable [Dighe, 2019; Guy, 2017].

The Ministry of Health has used a variety of interventions to prevent and control dengue in the past but with only limited success. In 2001, a community-based approach, known as Communication-for Behavioural-Impact (COMBI), was piloted in Johor Bahru with assistance from the World Health Organization (WHO), with the aim to educate the community about the measures for extermination of mosquito breeding sites [MOH, 2005]. The early success of the pilot project in Johor Bahru led to the expansion of the program as a community-based intervention for dengue vector control throughout the country.

Fifteen years on, assuring the long-term success from this program has been difficult. It has been a challenge to engage communities to sustain control actions especially considering reduced vector control staffing and budget shortfalls [Suraiya, 2016]. While still many of the communities where the COMBI approach has been applied continue to remain active despite these limitations, some other communities have their level of activities waned.

Tropical Infectious Diseases Research & Education Center (TIDREC) at the Universiti Malaya is one of the Ministry of Education's Higher Institution Centre of Excellences (HICoE), niched in Vectors & Vector-borne Infectious Diseases research. The researchers at TIDREC believe that the government cannot be expected to shoulder the responsibility to prevent dengue alone. They believe that the community-based program, if better equipped with innovative tools and appropriate new knowledge and skills, has the potential to be a deadly weapon in the fight against dengue vectors and promote the sustainability of the program itself.

In 2017, TIDREC embarked on a long-term partnership with the COMBI team at Jalan Ciku, Taman Kota Masai, Pasir Gudang, Johor to pilot this initiative. Funded under an action research grant awarded by the Ministry of Energy, Science, Technology, Environment, and Climate Change (MESTECC), TIDREC introduced one of its famous innovation product, an attracticidical mosquito coil for outdoor use, or the Spokojan, to be used by the community in a 18-month field trial. The community project was a success, exhibiting both the concerted effort between the researchers and more than 6,500 members of the Jalan Ciku community and the reduction of the mosquito population in the locality.

Figure 1: The signing of long-term partnership between TIDREC Universiti Malaya, the COMBI team of Jalan Ciku, Majlis Perbandaran Pasir Gudang and Pejabat Kesihatan Daerah Johor Bahru on 24th May 2017. The ceremony was witnessed and officiated by the then Member of Parliament for Tebrau, YB Khoo Soo Seang.

Most recently in 2019, TIDREC continue to strenghten the partnership with the COMBI team by organizing a knowledge and technology transfer workshop, funded under a community grant awarded by the Universiti Malaya's Community & Sustainability Centre (UMCares). The workshop was initially planned to be organized in Pasir Gudang, Johor. However, the on-going issues of chemical pollution in the area since the beginning of the year, affecting 111 schools in the district in the process, forced the workshop to be relocated to Universiti Malaya's main campus in Kuala Lumpur. At least 15 participants from the COMBI teams were invited to come and at the same time were given the opportunity to visit TIDREC's research facilities at HIR bulding, Universiti Malaya.

During the workshop, the participants were trained to perform mosquito species identification, learnt about different kind of mosquito-borne diseases, and different types of mosquito traps for both mosquito surveillance and control purposes. The participants were also demonstrated on how to build a simple DIY mosquito trap to be used and practiced in their COMBI activities. Moreover, TIDREC were also very privileged to receive the participation from the Chairman of the national COMBI committee, Tuan Isa Paksun, who was there to serve as the workshop observer. The workshop received further support and sponsorship from Matrix Optics (M) Sdn Bhd – the sole agent of Olympus microscope, as well as Fumakilla (Malaysia) Bhd.

Figure 2: The mosquito identification and DIY ovitrap workshop recently organized by TIDREC on 20th September 2019. The workshop was officiated by Dr. Zalfa Laili Hamzah, Deputy Director of Universiti Malaya's Community & Sustainability Centre (UMCares).

The COMBI team at Jalan Ciku, Taman Kota Masai have a great reputation as one of the most active COMBI teams in Malaysia and often serves as an example and benchmark for other COMBI teams in other communities. The continuous transfer of knowledge and technology throughout the long term partnership will not only expose and equip them to the latest innovative tools and appropriate knowledge and skills in the fight against dengue and its vector, but we also expect this knowledge and technology to be disseminated and shared to other COMBI teams in other

communities in the whole country through the internal network of COMBI program itself (i.e. annual COMBI conventions, meetings, joint-activities, etc).

The knowledge and technology transferred is easy to understand and will not require a lot of resources for the community to put into practice in their COMBI activities. Having strong supports from local stakeholders; namely the Majlis Perbandaran Pasir Gudang and Pejabat Kesihatan Daerah Johor Bahru, as well as the direct involvement from the Chairman of the national COMBI committee, who have been active with the program and the team since its first introduction in Malaysia in 2001 in Johor Bahru, the long term sustainability is assured.

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Nutrition Investigation and Infographic Nutrition Information tool for Breast Cancer Survivors in UMMC

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Abstract

According to the Global Cancer Observatory (Globacon), breast cancer is the most common cancers among Malaysian women with the highest incident and mortality. A cancer diagnosis may give an alert to the patients for undertaking some health behaviour change, but the attitudes of cancer survivors towards positive dietary habits varies. Healthy eating is one of the important modifiable factors in contributing towards long-term health among cancer survivors. However, the supportive resources such as dietitians and counsellors are not usually available in clinics, causing only small percentage of the patient received dietary advice. Hence, nutrition diagnosis and providing nutrition intervention via using infographic nutrition tool are important to enhance cancer care. A cyclical process of planning, acting, observing and reflecting is a useful model in this research. In this project, an infographic nutritional education tool for the breast cancer survivors was created. The breast cancer survivors were also been monitored for nutritional assessment. As part of the result, two different phase of nutrition infographic information was created; (i) nutrition during treatment and (ii) nutrition after cancer treatment. The nutrition infographic information is available in three languages namely English, Malay and Mandarin. These resources are available online and at the breast cancer survivors centre University of Malaya Medical Centre (UMMC). In addition, a follow up study was carried among the patients via the Malaysian Breast Cancer Survivorship Cohort (MyBCC study) from the UMMC by focusing on their actual dietary intake at 1-year (T1) and 3-years (T2) after diagnosis. From the analysis of the 3-days food records collected from 146 participants, participants' dietary intake of fat, fibre and calcium were suboptimal. There was a significant decrease of their fibre intake (T1: median = 9.6 g/day, interquartile range = 7.4 g/day; T2: median = 7.7 g/day, interquartile range = 6.9 g/day) and calcium intake (T1: median = 484.5 mg/day, interquartile range = 285.7 mg/day; T2: median = 405.7 mg/day, interquartile range = 270.2 mg/day). There was also a significant different in dietary fat changes ($p < 0.05$) between the radiotherapy treatment group vs no radiotherapy treatment group.

Throughout the project period, nutrition education was also given through seven events conducted among UMMC communities, breast cancer survivors and the public (6 booths, 3 talks, and 1 activity) from 2018 until 2019. This event will assist in increasing their awareness and nutritional knowledge in breast cancer survivors or breast cancer prevention knowledge among the public. Based on current work, more strategies are needed to improve current practice and having personalising dietary advice to the breast cancer survivors may have greater potential.

Timetable of the activities done

Date	Event	Remarks
09/10/2018	Dare to Fight, Do it Right (UMMC Menara Selatan, level 13) Booth introducing our production and also increase the awareness of health care to UMMC staff	The nutrition care leaflet for during treatment and long-term survivorship care created and printed. The website with the nutrition information and the soft copy of leaflet created and introduced to staff.
From October 2018 - Current	Distributing the leaflet in the clinic in UMMC: Surgery Clinic and Breast Cancer Resources Centre	Refill the leaflet from time to time and the website/code also provided for them to share or assess the soft copy
18/10/2018	Jeans for Genes (Centre point, UM) Booth introducing our production and also increase the awareness of health care to UM student	Version of Malay and Mandarin created for the during treatment leaflet. We found out the cost issues in printing the colorful leaflet, thus, ink saving version also created for all the leaflets.

28/10/2018	BRCA Family Open Day: I have been touched (Department of Surgery / Clinical Auditorium, FOM UM) Booth introducing our production and also increase the awareness of health care to the participants (more to patient/family) 5th UMMC Breast Cancer Public Forum (Clinical Auditorium, UMMC) Booth introducing our production and also increase the awareness of health care to participants (more to patient/family and also public)	Distributing leaflets to the participants based on the session that they are attending (in either Malay or Mandarin) at the registration counter. (The Malay and Mandarin versions for long-term nutrition care are created and all the soft copies are available on website.) Diet Talk: Managing your diet, by Prof. Dr. Hazreen bin Abdul Majid Diet talk: Can diet cure my genes? by Prof. Dr. Hazreen bin Abdul Majid
29/10/2018	Breast Cancer Awareness Campaign By UMMC (Four seasons hotel, Jalan Ampang) Booth introducing our production and also increase the awareness of health care to the public	An event that includes the four seasons hotel's staff
October	Video created for the promotion of our project	https://bcnutrition2018.wixsite.com/bcnutrition/umcares
2018	Website created for promotion of our project so that more people can access. Updating some info from time to time	https://bcnutrition2018.wixsite.com/bcnutrition
March 2019	Application of ethics from University of Malaya Medical Centre Medical Research Ethics Committee for the research	Approved at the end of April MRECID no.: 2019329-7271
6 April 2019	Booth Neon Rn (Breast Cancer Charity Joy Run)	Participating in the booth for healthy eating promotion to the participants during the carnival
17-18 April 2019	Mountain climbing at Mount Kinabalu, Sabah	UM collaboration with a group of breast cancer survivors (Candy girls) event and Assoc. Prof. Hazreen joined as the nutrition lead expert panel.
18 August 2019	Public Forum: Living Well with Cancer	Talk given by Assoc. Prof. Hazreen: Eating well after cancer Booth for healthy eating and distributing the leaflet.

Program Cabaran Kurus dan Sihat Online

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Keywords: Obesity; Weight Loss; Online; Web-based; Intervention

Abstract

Introduction: Obesity is a major public health problem that adversely impacts morbidity, mortality and quality of life. Based on the Malaysian Clinical Practice Guidelines on Management of Obesity (2004) classification (BMI >27.5 kg/m^2), the national prevalence of obesity has increased from 27.2% (National Health and Morbidity Survey, 2011) to 30.6% (NHMS, 2015). Obesity and ageing have been associated with health problems and increased risk of chronic diseases such as cardiovascular disease, diabetes and cancer (Jura and Kozak, 2016). However, it has been shown that body weight loss of 5% of the initial body weight can improve the risk biomarkers (Franz et al., 2007). This can be achieved through weight loss intervention program which emphasizes a lifestyle modification consisting physical activity, dietary and behaviour changes. The weight loss program is typically delivered face to face to a group of individuals by a health or fitness educator. However, this approach requires time commitments and is expensive. A drastic increase in technology has become an alternative strategy to deliver a weight loss program. The internet-based or online weight loss intervention program is increasingly popular due to its accessibility and cost-effectiveness as compared to the traditional face to face interventions (Pappa *et al.*, 2017). Furthermore, the online program could provide a constant source of information, advice and support. It was proven that online support groups were effective for weight loss motivation and intervention (Leahey *et al*., 2011).

The online weight loss intervention program may be a convenient and accessible tool for the prevention and treatment of obesity. However, evidence on the efficacy of the program is limited, especially among the older population. The aim of this program was to provide knowledge and guidelines on effective method for weight loss based on Sports Science application to the community. We also would like to determine the efficacy of the online intervention program to reduce weight for health and fitness in obese women aged between 30-55 years old.

Methods: Twenty women aged between 30-55 years old from the Institute of Teacher Education (IPG) participated in this online weight loss program. The inclusion criteria were healthy, BMI > 25 and had never participated in any weight loss program. While the exclusion criteria were on medication and had any chronic diseases such as diabetes and heart disease. We also recruited twenty-one women from Klang based on the inclusion and exclusion criteria to participate in the face to face weight loss program. All participants were examined by a medical doctor prior to their participation. This study was approved by the University of Malaya Research Ethics Committee (UM.TNC2/UMREC-489) and the participants provided written consent.

Both online and face to face groups participated in a twelve-week weight loss intervention program. For online weight loss group, a website (https://myhealthyfit.um.edu.my/; Figure 1) was developed consisting of nutrition, exercise module, motivation and sports medicine components for participants to access and get information. The content of the

components was contributed by experts in Sports Science and Sports Medicine. Participants in online group performed a progressive exercise based on step by step written guidelines, pictures and videos as instructed in the website for 12 weeks. They also received nutritional advice and motivation support from the experts through WhatsApp application. Whilst for face to face weight loss group, the exercise sessions at regular basis were conducted by a fitness instructor at the fitness studio or recreational park in Klang. Participants in this group were provided with the same information and guidelines as in the website components during their face to face sessions with the experts.

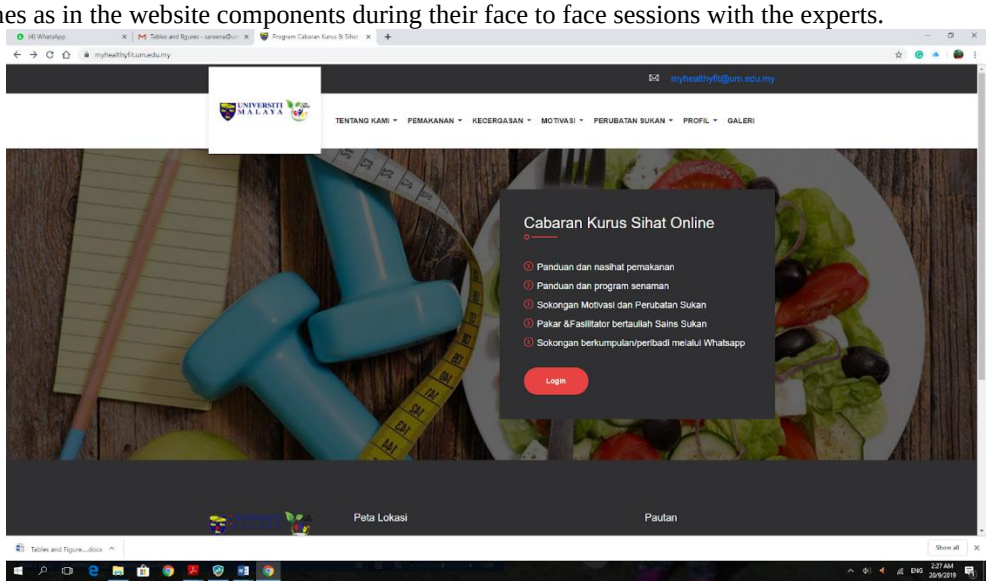

Figure 1: Website for Online Weight Loss Program

At week 0 (pre-intervention) and week 12 (post-intervention), anthropometry measurements (body weight, height and body composition- InBody 370) were conducted. Waist and hip circumference were measured using 3D body scanner ($[TC]^2$ NX-16, Cary, North Carolina, USA). Blood was drawn from all participants using finger prick method and analysed for glucose and cholesterol levels using Reflotron Plus (Roche, USA). Cardiovascular fitness test (1.6 km walk test) were conducted to estimate each participant's fitness level (VO_2max).

Results: The physical characteristics of the participants in the online and face to face weight loss groups are presented in Table 1. Values are mean ± standard deviation.

Group	Online	Face to Face
N	20	21
Age	46.5 ± 8.0	40.6 ± 5.3
Height (cm)	155.4 ± 0.1	157.4 ± 0.1
Weight (kg)	72.6 ± 11.6	74.4 ± 15.1
BMI	30.0 ± 4.1	30.0 ± 5.3
Fat (%)	43.3 ± 4.5	40.8 ± 5.2
FFM (kg)	40.8 ± 4.7	43.0 ± 7.7

Table 1: Physical Characteristics of Participants

The results of the weight loss intervention showed that body weight, body mass index, fat percentage, waist and hip circumference were significantly reduced ($p<0.05$) and cardiovascular fitness were significantly increased ($p<0.05$) in online group after 12 weeks of intervention. Similar results were observed in face to face group, except for waist circumference. There was no significant different for fat free mass, blood glucose and cholesterol in both groups after 12 weeks. The percentage of changes from week 0 to week 12 were significantly different in both groups (Figure 2). No significant difference between both groups in all parameters except for fitness level.

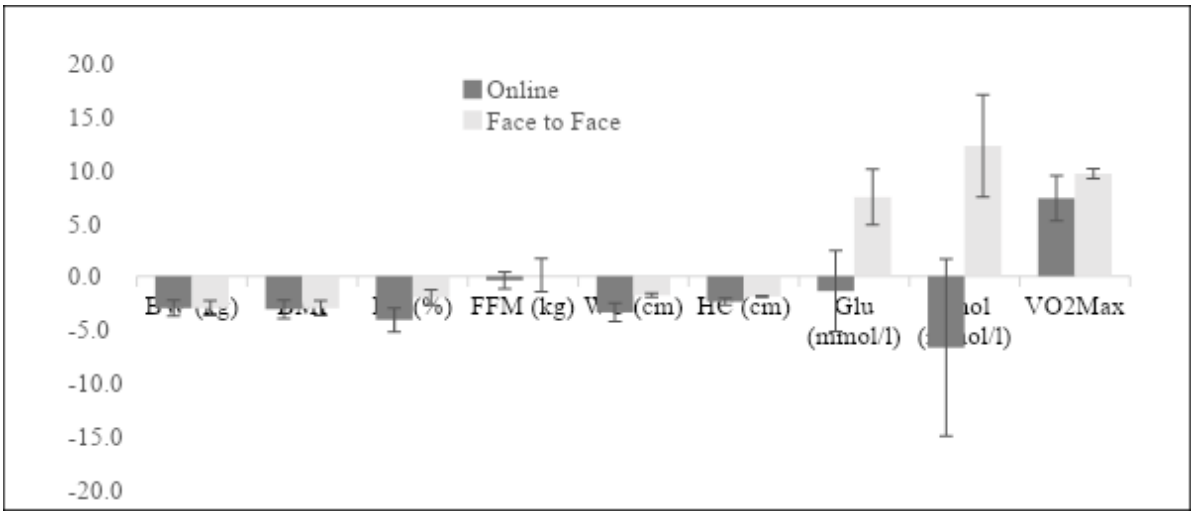

Figure 2. Percentage of changes from week 0 to week 12 in online group (n = 20) as compared to face to face group (n=21). Values are mean ± standard error of the mean. *significantly different from online group.

Conclusion: The online weight loss intervention program prescribed for obese women aged between 30-55 years old may provide favorable effects on health and fitness and could be as effective as face to face weight loss intervention program. Based on the program feedback, social support through online group was able to motivate and improve behaviors among the participants.

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Understanding Family Dynamics of Delinquent Female Adolescents

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Keywords: Delinquent; Family Dynamic; Religion; Phenomenology; Counseling

Abstract

The study aims to understand the family dynamics of adolescents who were sent to a rehabilitation center by the syariah court. The center is managed by the state government agency and is open for Muslims only. The study seeks to explore the family dynamics because family is the first place where individuals learn many things since they were born. According to family system therapist, Nichols (2016), individuals are the product of their own family. Wherever they go, the family will go with them. In other words, individuals are the products of their parents or caregivers, and their parents are the products of their own parents. These intergenerational relations play a role in understanding family. Thus, it is important to understand the dynamics or functioning of a family in order to understand these individuals.

Adolescence is a stage of transition from childhood to adulthood. According to developmental psychologist (Havighurst, 1972), adolescents are expected to perform certain tasks in order to progress well in the next stage. A **developmental task** is a task that arises at or about a certain period in life, unsuccessful achievement of which leads to inability to perform tasks associated with the next period or stage in life. For adolescents, they need to establish emotional independence, learn skills needed for production occupation, achive gender-based social role, and establish a matured relationship with peers. Lookig at these tasks, we can conclude that adolescents need to prepare themselves to be adults. However, the transition from childhood to adulthood is not easy because developmental tasks can only be performed successfully with adult's guidance, Failure to guide adolescents may lead to failure of adolescents in performing their tasks.

Family dynamics is an important factor in understanding delinquency among adolescents (Price & Kunz, 2003). Perhaps, two of the main factors that contribute to juvenile delinquency are the family structure (Apel & Kaukinen, 2008; Price & Kunz, 2003) and the relationships between adolescents and their parents (Leiber, Mack, & Featherstone, 2009; Petts, 2009). Adolescents of all ages also live in many various types of homes, such as with single and married parents or in blended families. The families that children grow up in and their social environment in which they live can have major effects on their well-being (Wallman, 2010). Children in different family structures also experience many forms of monitoring, supervision, involvement, and attachment they receive from their parents (Hoeve et al., 2009). These factors may also play a role in determining why adolescents turn to juvenile delinquency.

While research in western population is abundant, research on delinwuency and their family dynamics on Malaysian population is limited. Among previous studies conducted on adolesents delinquncy and family dynamics since the last five years are by Kuthoos et al., (2016), and Abdullah et al., (2015), and Shong (2019). Kuthoos studied juvenile and their parents, Abdullah et al studied aggresiveness among high risks-adolescents, while Shong studied the link between poverty and delinquency. Among them, only Kuthoos et al's study focused on family structure and delinquency. However, these studies only selected adolescents as their sample. None had included adolescents' family as research sample. According to Nichols (2016), a family is a unit which its member interacts with other. Thus, it is important to include family to understand an individual.

Participants of this study are four adolescents who were sent to a rehabilitation center in the state of Selangor. All of them have committed offences and are required to be undergo the rehabilitation process for a minimum period of six

months. Since the center is managed by a religious agency, the focus of the rehabilitation focuses more on religious teachings. Only Muslim adolescents are placed in the center.
Participants are identified by the agency counselor. The researchers are assisted by a research assistant who is a counselor trainee. All participants 4 sessions of group interview and a minimum of one-session of individual intereview. The interview aims to gather informaton of delnquent adolescents' experience in their family. All sessions completed in three months since group faciliatior can only meet twice a month. Adolescents' families were contacted by the agency and invited to participate in the study. Parents of their caregivers were explained the purpose of the study. Meeting with the families were conducted and adolescentes were invited to join the sessions.

Five themes emerged from the analysis (1) parenting style (2) need to be loved (3) sibling relationship (4) emotional repression, and (5) social media.

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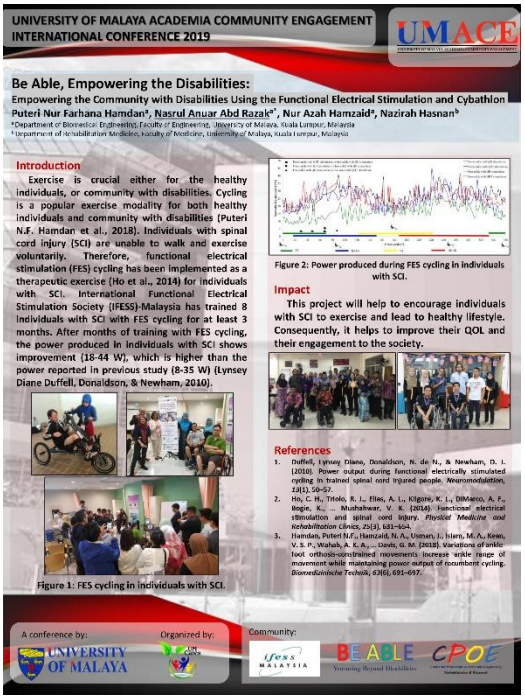
Tuninipot Literacy-Creative Module for Sabah Native Children



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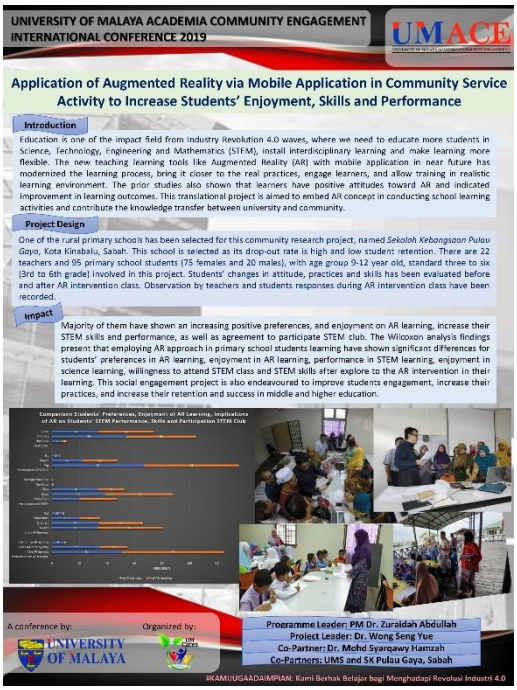

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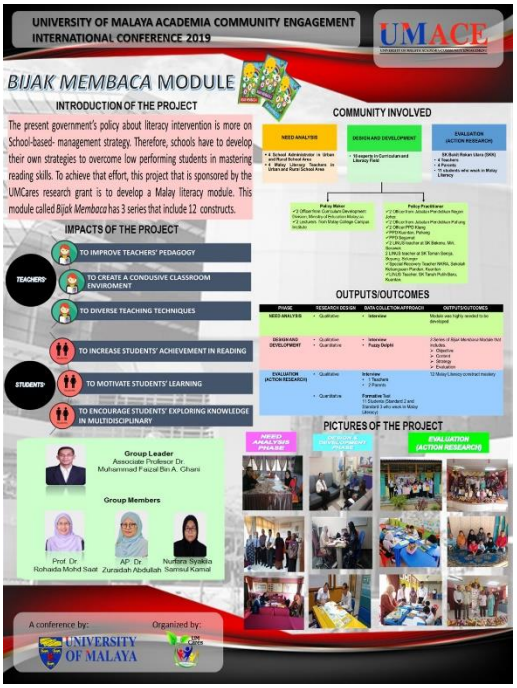

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"Pengurangan Buta Huruf Dalam Kalangan Kanak-Kanak Lembaga Kemajuan Tanah Persekutuan (Felda) Menggunakan Modul Kurikulum Amud".

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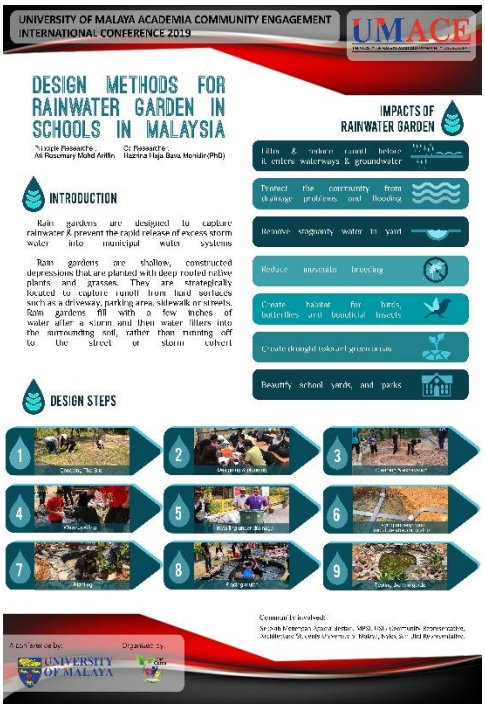
Hear Me! Emporwering Disadvantaged Youth



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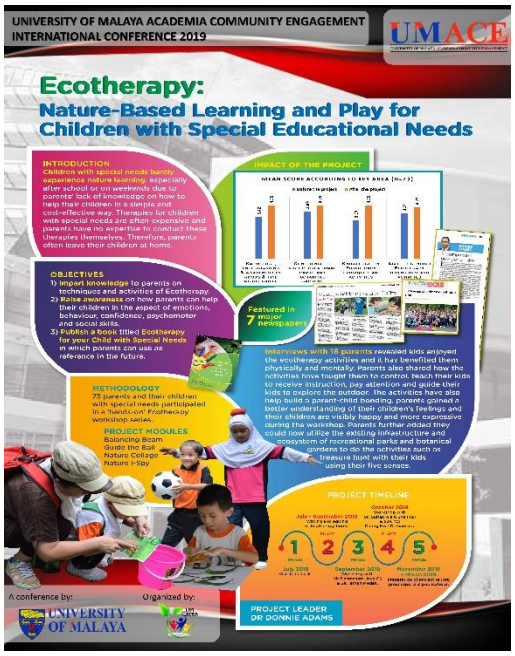

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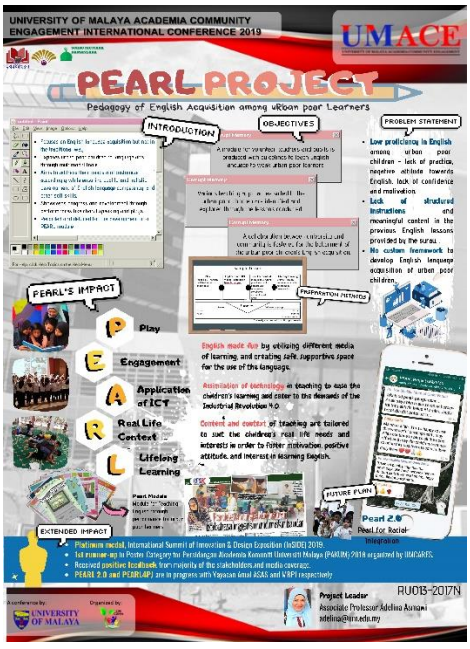

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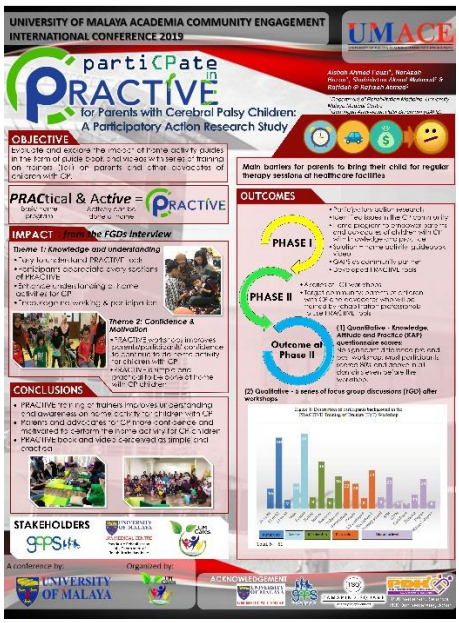

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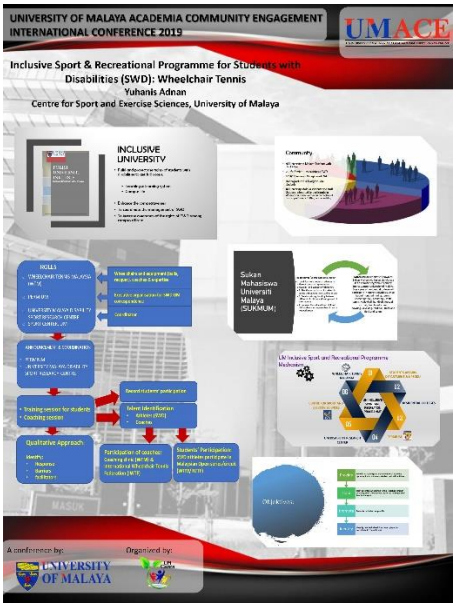

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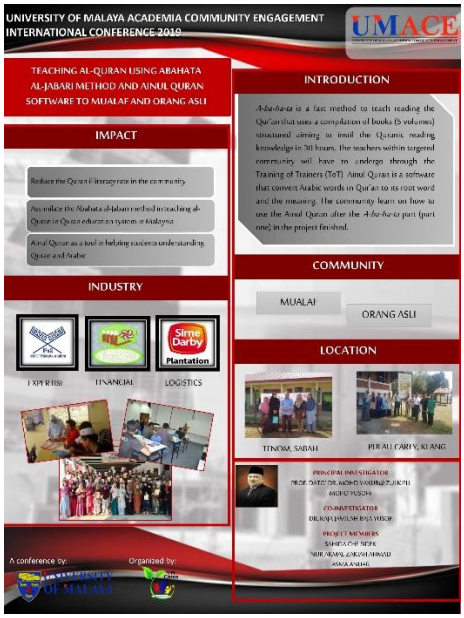

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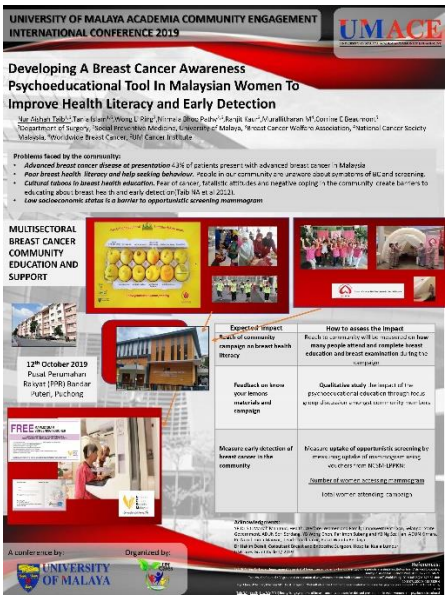
"#ItuBukanCinta: Program Tingkatkan Amalan Perhubungan Sihat Dan Tolak Perhubungan Tidak Sihat"



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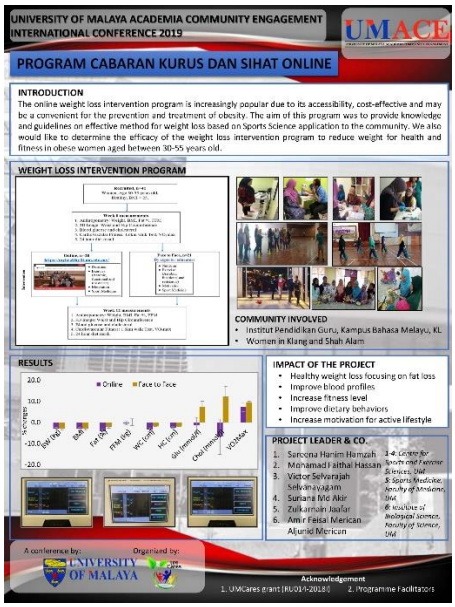
Developing A Breast Cancer Awareness Psychoeducational Tool in Malaysian Women to Improve Health Literacy and Early Detection



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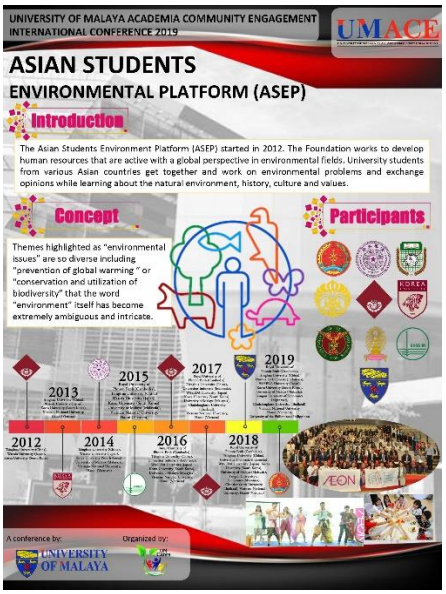

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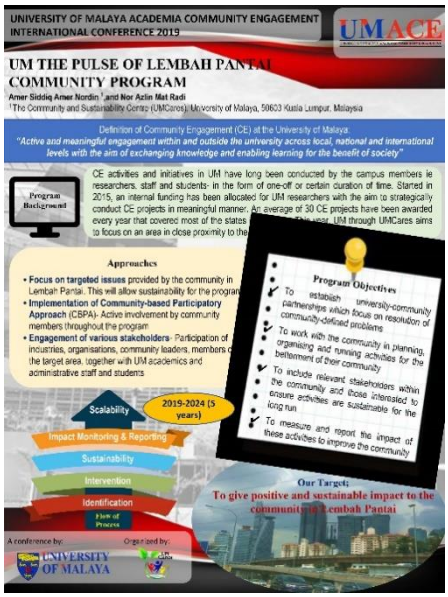

Puan Nor Azlin Mat Radi
UM The Pulse of Lembah Pantai Community Program

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UMCares Squad

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