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COMMUNITY ENGAGEMENT EXPERIENCE IN EDUCATION CONTEXT

Transferring Knowledge Into Best Practices

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COMMUNITY ENGAGEMENT EXPERIENCE IN EDUCATION-BASED CONTEXT

Transferring Knowledge into

Best Practices in Malaysia

Zalfa Laili Hamzah, Nor Azlin Mat Radi and Muhammad Asyraf Mansor

Acknowledgement

PREFACE

Universiti Malaya Community Engagement Centre which is known as UMCARES is to initiate a compilation of a book namely *"Community-Engagement Experience in Education-based Context: Knowledge Transfer into Best Practices in Malaysia"*. This book presents several community engagement best practices by Universiti Malaya researchers who experienced and engaged with particular target communities.

The body of research and practice surrounding university-community engagement across disciplines continues to grow and yet no definitive book exists that defines and provides best practices for community engagement in the context-specific such as education-based projects. As such, the purpose of this book is to provide the current "state of the field" in terms of the research and practice of community engagement in its many forms (e.g., university-community partnerships, disciplinary/interdisciplinary outreach, and so forth). The book is structured around different ways researchers experience. Specifically, contributors to this book who have expertise in community engagement addressed best practices for impacting communities through partnerships and collaboration. This book will serve as a definitive reference for individuals or groups who are to understand, study, and take serious steps to transfer knowledge and practice in community engagement. Scholars active in this field can use this book as an integration of the current knowledge concerning community engagement and as an inspiration for future research agendas.

This book presents and shares success stories of community engagement efforts and outlines best practices that will be of value to all who are engaged in such efforts. Each chapter of the book includes a community project, methodology, execution, findings, and impact, where applicable. Furthermore, this book serves as a guide to the proliferation of community engagement in an area of education context in Malaysia. Also, the findings and studies will generate some ideas and inspiration for you to participate in any community projects in the future.

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Introduction

By Zalfa Laili Hamzah

Community engagement has emerged as an important key focus among higher institutions learning in Malaysia due to an increase in public pressure to address critical issues related to economic, social and environmental at the community level. Community engagement involves a group of people who have similar interest that give positive impacts on societal and economic issues and builds a network to achieve specific goals through activities and participation with the community. The impact of community engagement activities includes changes in behaviour, attitude, economy, health and lifestyle.

Despite the emphasis on the significance of university-community engagement, there is a scarcity of a compilation of best practices information and references to community engagement education-based projects through the sharing of experiences and findings by Universiti Malaya researchers. Most past literature on community engagement have widely discussed in public health promotion and medical/clinical. Limited sources of references or documentation of past projects make it difficult for communities or researchers to review, learn and prepare themselves for undertaking any community projects. The documentation is important for those individuals or groups of stakeholders who will refer to them as practical guidance for future work plans and learn how best to engage communities effectively and successfully. Essentially, ideas and decisions in initiating community engagement projects should begin by considering problems, needs and aspirations defined by the community and benefits or impact on the life of a community.

The term community engagement is not newly introduced, however, the topic becomes an emerging trend in Malaysia and the main agenda in the Strategic Plan of Higher Education since 2007. With this strategic plan, community engagement can be organised in a more systematic way that considers a high positive impact on the beneficiary. In an engaging community, the university through researchers has played its role in building and implementing engagement activities with communities either voluntarily, through research grants, or co-curriculum. Therefore, this book is to provide a valuable and insightful reference resource for academic researchers, community society, educators and students from all disciplines who are interested in understanding community engagement or service

learning and its impact on society, economy, and environment. The book not only provides insights, success stories and reflections for future directions of university-community engagement research. With this understanding, it is hoped that future researchers are able to full fill the gap and take precautions to avoid potential risks related to a certain area of projects. This book would not only help an individual or researcher to plan for particular projects but would also be a valuable contribution to teaching and training programs. This is to ensure that they are better equipped to deliberately and thoughtfully engage with communities.

Having community engagement means that relevant groups or individuals involved aimed to improve the community, looking at a situation from multiple sides to find the best solution to address existing problems, uniting people with different backgrounds by providing a common ground for people to work towards common goals, creating local networks and an atmosphere where on-going discussions can be held and empower trust between community organisations and the local government.

The book *Community Engagement Experience in Education-based Context: Transferring Knowledge into Practice in Malaysia* provides guidance and sharing experience of community engagement activities in a specific education-based context by researchers from Universiti Malaya. Universiti Malaya divides community engagement activities into five categories namely teaching and learning; integration of research, exchange and use of knowledge including industry co-operation; community participation; access and services; and institutional and resource development. In this compilation, researchers are sharing different engagement projects with different engagement processes, ranging from planning, execution, and participatory impact assessments to ensure they could benefit and impact society.

The book begins with an introduction to the concept of community engagement, its guidance and the practices in the community. It emphasizes academic rigor, managerial implications, and impact. It helps researchers in planning its methodology, implementing, and monitoring community engagement activities effectively. With this book, researchers can learn strategically and pragmatically about deciding how best to engage community stakeholders to improve the quality, meaningfulness, and application of their results to improve the community. This book is divided into three parts namely part 1, part II and Part III.

Part 1 consists of three chapters. It begins with **Chapter 1**, contributed by *Zalfa Laili Hamzah*, which introduces the concept of community engagement, its importance, principles of effective community engagement and several tips to avoid perceived risks. The second part highlights a guideline to conduct activities of community engagement. The Part II discusses the process of engaging community engagement.

Our opening chapter in **Part II** is **Chapter 2,** contributed by *Adelina Asmawi*, which focuses on Education for Sustainable Development that implies instructional and learning transformations in line with sustainable development goals. The chapter discusses the implementation of the Pedagogy for English language Acquisition of urban poor Learners (PEARL) project that addresses the learning needs of urban poor children, customized accordingly to ensure quality and holistic development of English language competency, and other soft skills needed in the 21st century. It also explains teacher-volunteerism and systematically develop volunteers' pedagogical skills, and nurtures collaboration between academia, researchers, volunteers, sponsors, and selected community committees. The chapter concludes the project has improved students' self-confidence, enhanced English language communicative skills, instill students' interest and motivation in learning, and volunteer teachers improved professional development particularly in reflective practice, leadership skills, holistic pedagogical skills, and community of practice.

Chapter 3, contributed by *Zahra Naimie, Norasmatul Akma Ahmad, Selva Malar A/P Munusamy,* explains an educational project among Orang Asli children in Kuala Lapis, Pahang. The chapter aims to introduce an educational programme that enables Orang Asli (OA) children to sustain good oral hygiene practices within the community. The educational programme comprised pre-training, training, and post-training, involving researchers, school administrators, parents, and students. The training involved knowledge transfer, a customised dental kit (consisting of a tri-lingual oral health booklet using Semai language, toothbrushes and fluoridated toothpaste for adults and children, tooth-brushing chart as well as stickers), hands-on toothbrushing technique, and toothbrushing drill was well received by the OA school children. Post-training showed commendable support from school administrators, a tooth brushing chart filled up by most school children, and good oral health knowledge and awareness based on the feedback, question and answer sessions, and quiz responses. Geographical factors affected accessibility to facilities and low socioeconomic caused a lack of ownership of toothbrushes and toothpaste among the OA school children.

Betel nut chewing habit played an important cultural role within the OA community. The educational programme that incorporates a customised oral health kit with a tri-lingual oral health booklet was seen to cultivate a sense of ownership and bridge cultural disparities among OA school children to sustain good oral hygiene practices.

Chapter 5, contributed by *Zul Ilham, A'syara Kamal, Adi Ainurzaman Jamaludin and Wan Abd Al Qadr Imad Wan-Mohtar,* present on research area on sustainable development goals (SDGs). This study was conducted to assess the awareness level of Sustainable Development Goals among youth consisting of high school students in Klang Valley. The evaluation of knowledge, attitude, and practice was measured through a set of questionnaires with 60 questions, given to 421 respondents. 5 schools were selected and grouped into 3 types: high-performance schools, cluster schools, and daily schools. This chapter reveals that there was a negligible relationship between knowledge with attitude and knowledge with practice. The chapter concludes high-performance schools have the highest score for all knowledge, attitude, and practice parts on average. Some external factors like the type of school, academic streaming, and student maturity could be contributing to their level of awareness of SDGs.

Chapter 6 contributed by *Amir Feisal Merican Bin Aljunid Merican.* The chapter presents on Mobile experiential learning approach where learners gain new knowledge through discovery and exploration outside of the classroom. This chapter aims to explain how students could enhance understanding and stimulate interest in many topics taught in schools as well as develop thinking, experimenting, and learning skills. The learning approach applied at meZOO™ provides an information system about animals and plants in Zoo Negara Malaysia (National Zoo Malaysia) using smartphone technology and QR code application. This screen-based information system consists of a user interface and an online inventory of animals and plants in Zoo Negara. The information board (signage) in the Zoo Negara has only limited information about the animals such as amazing facts, habitat, and food. To provide more information to the visitor, each animal in the Zoo Negara was designated a specific QR code which is placed on the information board. Experiential learning encourages children to be exploratory, expressive, and communicative. With the growth of VR, AR, and AI, the future of experiential learning is looking bright and will really be something to behold.

Finally, in **Chapter 4 and 7**, *Mohd Nazri Abdul Rahman and Nurrul Huwaina Ridzuan Lotfi* provide an understanding of Tuninipot Creative-Literacy Module for preschool children in Sabah. The module is designed for Sabah native children and combines the creativity and aesthetics of the national Preschool Standard Curriculum with the traditional arts and cultures of the Sabah natives. This chapter aims to present an implementation of a Tuninipot creative-literacy module to improve the reading ability of Sabah Natives children. The data collection process is conducted through interviews, observations, and analysis of documents on teachers and children from five TADIKA at Kundasang and Ranau districts, Sabah. Feedback on the use of the Tuninipot creative-literacy module among teachers and children is collected and analysed. The findings show an increased level of alphabet and syllable mastery as well as the ability to read simple sentences among children. The interview found that teachers are satisfied with Tuninipot's creative-literacy module in improving children's creative story-writing skills, optimizing cultural values and environmental resources as the basic teaching materials for literacy. This chapter proposes some improvements for enrichment and rehabilitation activities through a variety of teaching and learning materials for children to express themselves in an open environment.

Chapter 8, provided by *Nor Azlin Mat Radi, Muhammad Asyraf Mansor and Mohd. Nazri Abdul Rahaman*, provides an understanding of how community engagement is conducted in the impacts of the Universiti Malaya community engagement grant for the education cluster: a community retrospective. Finally, Chapter 9, provided by *Muhammad Asyraf Mansor* on the infographic of community engagement cluster education.

PART I

COMMUNITY ENGAGEMENT EXPERIENCE

CHAPTER 1

Understanding Community Engagement Practices

By

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1. Introduction

Community engagement refers to interaction and involvement between two parties in the local or abroad community. In many countries, community engagement is essential to well-being initiatives and efforts to reduce health disparities, particularly in programmes that aim to improve the health of underprivileged groups (Attree, 2011). While, from a systematic literature review, Koekkoek, Maarten Van Ham, and Reinout Kleinhans (2021) refer to community engagement as cooperation and reciprocal exchange of resources and information between institutions of higher education and their wider communities (local, regional/state, national, and international). The researchers also state that community engagement involves university contributions in terms of developmental, entrepreneurial, technological innovation and economic development. Different tools and strategies can be used to run engagement activities in ensuring their effectiveness and successfully addressing social needs.

Despite the fact that community engagement is essential for individual community's benefits and drive for social change, there is no universally accepted definition of community engagement. There are many ways to conceptualize community engagement and some of them are overlapping.   In general, community engagement is defined as *a working process collaboratively through groups of people affiliated by geographic proximity, special interest, or similar situations to address issues affecting the well-being of those people. It is a powerful vehicle for bringing about environmental and behavioural*

changes that will improve the health or education of the community. It often involves partnerships and coalitions that help mobilize resources and influence systems, change relationships among partners, and serve as catalysts for changing policies, programs, and practices (Centres for Disease Control and Prevention [CDC], 1997, p 9). Community engagement is aimed to engage the community for sustainable outcomes, equitable decision-making processes, and deepening relationships, building trust and improving the lives and wellbeing of the community members.

Globally, community engagement at higher education institutions plays a vital role in responding to societal needs, and can further enhance their societal impact at local, national and international levels. Universities all over the world have embraced university-community engagement in the context of the competing tendencies of internationalisation and marketization in higher education (Koekkoek, Van Ham, & Kleinhans, 2021). Universities are therefore expected to undertake ground-breaking, creative work on a global scale while still maintaining strong relationships to their local communities and being place-bound. In recent years, a rising number of universities throughout the world have implemented university-community engagement activities. Activities such as service-based learning and participatory research are gaining popularity among a wide range of stakeholders, including politicians, academics, and authorities (Grau et al., 2017). Remarkably, these shifts are occurring at a time when universities are expected to have a global impact through their research (Koekkoek, Van Ham, & Kleinhans, 2021). Despite widespread community engagement activities run by universities, there have been limited attempts to compile findings of community engagement projects in a book. Thus, this book is to address the gap.

Throughout most cases, engaged universities will have programmes in place that include community engagement as part of their research, the exchange of knowledge, the teaching and services they offer, and their commitment to social responsibility. While, in Malaysia, community engagement becomes a critical agenda for higher learning institutions to transfer knowledge into practice to particular communities. It is designed by the Ministry of Higher Education Malaysia (MoHE) and is known as a new Critical Agenda Project (CAP) called the 'Knowledge Transfer Programme' (KTP). KTP acknowledges a broad range of initiatives that promote mutually beneficial relationships between universities, companies, and communities (government agencies/Non-Governmental Organisations (NGOs)/public sector). It serves as a platform for the interchange of physical and intangible intellectual property, expertise, learning, and skills between academics, industry, and the public (KTP

Policy, 2011). Historically, the engagement between institutions or organizational bodies and communities is not a new phenomenon, it has been practiced for a long time. In the past, all community work was much more synonymous with the term social responsibility, and activities were done on a short-term basis. Furthermore, there is a lack of an overarching strategy and direction for community participation. Most community service programmes or events were carried out on an individual basis by students or lecturers or staff rather than as a collective effort on behalf of the university.

While community engagement emphasized in Malaysian higher learning institutions is to be more specific, structured, and focused on building a sustainable relationship to achieve specific goals that benefit the community in different areas of context. Community engagement promises to better engage, and impact the community by taking into account sustainable development goals. The areas of community engagement are including, education, health & wellbeing, information, communication and technology, economics, finance, and social welfare. Execution of community engagement activities or projects necessitates power sharing, equality preservation, and adaptability in pursuing objectives, techniques, and time frames that match the priorities, needs, and capacities of communities within their cultural context (CDC, 1997). Community engagement can be operationalized in the form of partnerships, collaboratives, and coalitions that help mobilise resources and influence systems, alter the relationships between partners, and serve as catalysts for the transformation of policies, programmes, and practices (CDC, 1997).

In Universiti Malaya, community engagement refers to active and meaningful engagement within and outside the university across local, national and international levels to transfer, exchange, and apply knowledge for the benefit of society. The engagement involves an interaction between university employees, students, and management with external communities in mutually beneficial ways.

2. Why do we need to engage the community?

Community engagement is a process that necessitates power sharing and adaptability in pursuing project objectives that address the priorities, needs, and capacities of communities within their cultural context (CDC, 1997). Community engagement activities may result in positive outcomes and benefits for both organisations and the larger community as a whole. First, community engagement helps to create and maintain harmonious communities. Second, engaging the community offers a greater understanding of the needs and aspirations

of the community and also fosters connections that are deeper, stronger, and more trustworthy. It has the potential to instil a can-do mindset that can bring about meaningful change, particularly in the lives of those people of a community who are more vulnerable. Therefore, engagement in one's local community may be a useful instrument for bringing about social change. Third, involving communities by considering their aspirations, concerns and values is important for better outcomes in solving community issues.

3.   How to conduct effective community engagement programs?

Community engagement involves connecting, communicating and collaborating between two parties either between groups or individuals in a particular community. We can create a connection in many ways including through physical relationships, the internet or social media platforms. Engagement is a powerful action that could impact economic, social, and environmental, that result in community well-being improvement.   Therefore to have meaningful and effective community engagement programs, organiser or a group of people should take into consideration the principles of undertaking the programs.

CDC (1997) highlights nine principles for effective community engagement.   First, *set a clear and specific goal* for the engagement initiative and target communities you want to engage. The processes for engagement must be suitable for meeting the overall goals and objectives of the engagement.   Be careful during the planning, preparation and execution of the community engagement plan.   Be clear on the goal and specific objectives of each phase including course of action, timeline and the process.   Several important questions need to be considered in the first place including:

a. Who will be involved, and who resides inside a given geographical area.
b. What are racial/ethnic groups, income-specific demographic, or age categories?
c. How distinct sets of organisations and groups, such as religious communities, schools, or the legal system? Or perhaps a mixture?
d. Is it a "virtual" community whose members share a common interest?
e.   How may further collaborations or partnerships within the community of interest strengthen engagement efforts?

In conclusion, setting community engagement objectives allow you to effectively monitor progress towards goals.   Importantly, be SMART in setting your objectives that stands for

Specific, Measurable, Attainable or Achievable, Relevant, and Time-bound. SMART objectives are statements of the important results you are working towards. Clearly defined objectives will keep you and your team on track. Clear objectives also allow you to set targets for accountability. Consistent with this SMART, we suggest to those who are undertaking community engagement activities, particularly researchers, need to consider of the societal impact on the community by relating to any sustainable development goals. The way in which research or project findings are put into action can be enhanced by effective community engagement.

Second, ***become knowledgeable*** to get to understand the community's history, demographic trends, culture, economy, social networks, political and power structures, customs, and values. Researchers need to get information about the community's experiences with outside groups trying to involve it in various projects. Identifying and understanding the information will enable them to pinpoint the strengths of potential projects and the obstacles they need to overcome in meeting project goals, particularly in contributing to an impactful project. There are a variety of community-engagement strategies that may be utilised to:

a. find out how the community thinks and feels about the credibility of individuals initiating the project; and
b. concurrently establish the foundation for significant and meaningful relationships between the community and the university researchers.

Third, ***reach out to the community***, generate connections, develop trust, collaborate with official and informal leaders, and ask for a commitment from local organisations and leaders to develop procedures for community engagement. Engagement is not always driven by theory, however, there are policies, frameworks, approaches, or guidelines provided by particular universities, institutions, or organisations to run a clear procedure, to take precautions in avoiding risks and protect the right of the communities, researchers, groups or individuals involved. Therefore, adhering to the highest ethical standards is crucial for researchers or individuals working with a community. Community involvement might really be regarded as an ethical requirement in some situations. Priority must be given to protecting the rights, interests, and welfare of communities and individuals. By referring to the policies or guidelines prior to conducting any engagement activities, researchers should be able to identify, avoid potential risks and find possible solutions based on the

designed projects. There are many failure cases in community engagement projects reported such as actual was not well implemented, and minor accidents among communities or groups of researchers and group partners. As such, always remember to refer to the Community Engagement Policy before running any projects.

Fourth, remember and understand that ***collective self-determination is everyone's obligation*** and right in a community. No external body should believe it has the authority to grant a community the ability to act in its own self-interest. According to CDC (1997) the community should outline the issues or challenges that they are facing before any community projects are undertaken by any individuals or groups. This implies that communities must define the problem, establish action areas, plan and implement methods, and assess outcomes. Moreover, people in a community are more inclined to participate if they identify with the issues being addressed, think them important, and believe they have power and can make a difference.

Fifth, to ensure success, initiate ***collaboration*** with the community is required to effect change in terms of social, financial, or environmental. Identify opportunities from the collaboration that benefit all parties involved. In order for a collaboration to be successful, the individuals and organizations involved must see possibilities for mutual learning, different skill set, resources, and expertise that they can make a significant contribution to the programs.

Sixth, ***acknowledge and value the diversity*** of the community. Be aware of cultural differences and sensitivity, in particular, community context. When planning, devising, and executing initiatives to engage a community, cultural diversity and other diversity-affecting elements must be of the utmost importance. Diversity in a community may refer to distinctions in culture, language, colour, ethnicity, age, gender, mobility, literacy, or personal interests as well as economic and educational level. These diversity-related factors may have an impact on how communities and individuals participate in any community engagement programs. Members of the community and institutions should be recognised as resources to effect change.

Seventh, ***recognising and mobilising community assets and strengths*** (i.e interests, skills, and experiences), as well as increase the community's skills and resources (i.e., facilities, materials, skills, and economic power) to make decisions and take action. Involving the community in decision-making about specific issues may entail providing

expertise and resources to assist communities in developing the appropriate capabilities and infrastructure to assess certain situations, make decisions, and take action.

Eighth, ***be prepared to release control of actions or interventions*** to the community and be flexible enough to meet its changing needs. Community engagement is ultimately about enabling community-driven action. Community action should integrate the many elements of a community that is necessary for the action's sustainability, while yet establishing a manageable procedure. Community engagement is about how we can empower individuals in a particular community to take action and make a decision to ensure a change in addressing certain problems.

Ninth, community ***collaboration necessitates a long-term commitment*** from the participating organisation and its partners. This means both parties should nurture a relationship. Always communicate messages clearly and be transparent to build trust. Sustainable community engagement typically requires long-term support. For instance, long-term collaborations have the greatest potential to impact community lives. To succeed, both parties must trust each other to facilitate any decision-making process in any process of completing programs to meet objectives. On top of these principles is ***managing funds effectively and ethically***. Finally, **comply policy of community engagement** provided by the university, community and any parties involved.

4. What are common mistakes doing by researchers?

Understanding common mistakes in performing community engagement are essential prior to undertaking any community engagement projects. This is to ensure all community projects will give a positive impact on the target community that may change their better life and avoids any risks that can cause trouble to them. Some common mistakes that community-engaged researchers make identified by Pine et al. (2020) are: First, conflating any community participation at any stage of the research as sufficient. Second, not letting a group self-define as a "community". Third, not fully understanding the problem or its context. Fourth, not grasping the existing community power dynamics. Fifth, not planning mindful strategies for entrance into and exit out of communities. Sixth, reinforcing existing biases and power imbalances. Seventh, not being aware of the historical relationship between a community and academic institutions. Eights, placing essential stakeholders in roles of nonparticipation or tokenism.

In the following part, you will be learning how researchers' experiences in undertaking community projects. The researchers share their experiences with regard to methodology, challenges, findings, contributions, and impacts on the target community.

REFERECES:

Attree, P., French, B., Milton, B., Povall, S., Whitehead, M., & Popay, J. (2011). *The experience of community engagement for individuals: a rapid review of evidence. Health & social care in the community*, 19(3), 250-260.

Centers for Disease Control and Prevention (CDC). Principles of community engagement. CDC/ATS COCE Committee on Community Engagement; 1997. Available from: http://www.cdc.gov/ phppo/pce/ [Access 20 August 2022).

Grau, F. X., Goddard, J., Hall, B. L., Hazelkorn, E., & Tandon, R. (2017). Higher education in the world 6. Towards a socially responsible university: Balancing the global with the local. Girona: Global University Network for Innovation.

Koekkoek, A., Van Ham, M., & Kleinhans, R. (2021). Unraveling university-community engagement: a literature review. *Journal of Higher Education Outreach and Engagement*, 25(1), 3-20.

Pine, K. H., Hinrichs, M. M., Wang, J., Lewis, D., & Johnston, E. (2020). For impactful community engagement: check your role. *Communications of the ACM*, *63*(7), 26-28.

Staley K. (2009). Exploring impact: public involvement in NHS, public health and social care research. Eastleigh, UK: INVOLVE.

PART II

COMMUNITY ENGAGEMENT EXPERIENCE – IN PRACTICE

CHAPTER 2

Envision2030: Sustaining Urban Poor Communities through Language and Soft Skills Education for the New Malaysia

By

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Abstract

Higher education institutions are envisaged as principal agents for addressing current sustainability challenges that society is facing. Education for Sustainable Development (ESD) entails a rethinking of the instructional and learning environments in line with sustainable development which implies instructional and learning transformations. PEARL project facilitates the putting in practice of ESD processes as it aims to address learning needs of urban poor children, customized accordingly to ensure quality and holistic development of English language competency, and other soft skills needed in the 21st century; highlight teacher-volunteerism and systematically develop volunteers' pedagogical skills; and nurture collaboration between the academia, researchers, volunteers, sponsors and selected community committees. Under the facilitation of the researcher, five selected **volunteer** teachers carried out a two-hour lesson every Saturday at approved venues, applying approaches and techniques that are most suited to 20-30 primary school students from selected urban poor communities. Lessons were recorded, students, parents and volunteer-teachers were interviewed, and lesson plans were compiled as rich data for the study. Other archives collected include, students' recorded stage performance, award certificates, progress report, debriefing discussions, and newsletters. Findings were two-fold: students' improved self-confidence, English language communicative skills, interest and motivation in learning, and volunteer teachers' improved professional development particularly in reflective practice, leadership skills,

holistic pedagogical skills and community of practice. Further empirical research is needed to explore expansions of PEARL project and framework for English language acquisition and development of 21st Century skills among urban poor learners as well as the professional development of volunteer teachers in enabling ESD processes and practices post pandemic.

Keyword (s): Pedagogy, English education, Community, Urban poor, SDG

1. Introduction

He who would search for pearls must dive below ~ John Dryden
Pedagogy for English language Acquisition of uRban poor Learners (PEARL) Project

The project began in 2018 with one urban poor community in Selangor and has since expanded to two other disadvantaged communities. It is a project that nurtures collaboration between academia, researchers, volunteers, sponsors and selected community committees to address two major needs.

First is to create a sustainable framework for the professional development of volunteer teachers of urban poor communities. This initiative is necessary as there are no clear guidelines and model for volunteer teachers of urban poor communities in Malaysia. This is crucial as community engagement is key in many aspects of higher education as well as NGOs at large and volunteerism is gaining momentum among Malaysian youth. In his study on volunteerism intentions, Boru(2017) reports that 50% of participants are willing to volunteer as teachers although without extensive training on the subject that they intend to teach. Most volunteers jump into engaging with communities without proper education background nor necessary skills to teach particularly urban poor students who, by and large, are disadvantaged, performing at a lower capacity than their peers as well as lacking in confidence and motivation.

Second, PEARL aims to create a framework addressing these urban poor students' learning needs. Sharma (2020) in her work on underprivileged children, stressed on how teaching of English will benefit them and focused on the instructional practice of English language for these children. Instruction for PEARL thus is customized accordingly to ensure quality and holistic development of English language competency, and other soft skills needed for the 21st century. It experiments with instruction through play (Cheep-

Aranai, Reinders and Wasanasomsithi, 2015), engagement (Akbari, Naderi, Simons and Pilot, 2016), application of ICT (Al-Kamel, 2018), and real, authentic materials (Akbari and Razavi, 2015) to improve their self-confidence, motivation, and interest in learning English language within a safe environment.

1.1 Objectives

In addressing the above needs, PEARL project outlines three major objectives: Firstly, it aims to address learning needs of the urban poor children, customized accordingly to ensure quality and holistic development of English language competency, and other soft skills needed in the 21st century. How? It develops English language acquisition among urban poor learners through play, engagement, and application of ICT, real, authentic materials, and improves their self-confidence, motivation, and interest in learning English language within a safe space.

Secondly, it aims to highlight teacher-volunteerism and systematically develop volunteers' pedagogical skills. How? It focuses on volunteers' community of practice, reflective practice and their holistic development of pedagogy, spirituality, community engagement and leadership skills. These volunteers recreate learning outside of the classroom while incorporating aspects of IR 4.0 within that safe haven created for the children.

Thirdly, it aims to nurture collaboration between the academia, researchers, volunteers, sponsors, and selected community committees. How? Consistent discussions, planning, visits and refinement of the project are carried out. PEARL module is disseminated for use by communities at large to sustain the project when academia empowers community leaders to independently continue the project.

1.2 The Story of PEARL

This chapter tells a story of how a project touched an urban poor community, expanded to similar disadvantaged communities, and later, transitioned and accelerated into a new norm to ensure that quality English language education is sustained for the underprivileged children of the communities.

2. Literature Review

PEARL project and its roots are aligned with the sociocultural theory (Vygotsky, 1978). It is when human cognition and language skill are developed through engagement in social and cultural activities with other people, objects, and events (Vygotsky, 1978; Wang, Bruce, & Hughes, 2011). In the context of Malaysian underprivileged children, second language acquisition (SLA) arises from the process of meaning-making in collaborative, fun activities with members of a given culture (Vygotsky, 1978). Lantolf and Poehner (2014) argued that sociocultural theory acknowledges the important role of social relationships and culturally constructed artifacts that organise human forms of thinking in a unique way.

2.1 Education for Sustainable Development

From a theoretical foundation, PEARL also has its basis structured in alignment with Education for Sustainable Development (ESD) that supports efforts to equip learners with the knowledge, skills, values and attitudes needed to contribute to a more inclusive, just, peaceful and sustainable world. Building on the Global Action Programme on ESD (2015 – 2019) which followed the United Nation (UN) Decade on ESD (2005-2014), United Nations Educational, Scientific and Cultural Organization (UNESCO) has developed a new framework (2020-2030) to enhance global efforts on ESD: 'Education for Sustainable Development: Towards achieving the SDGs' (ESD for 2030). UNESCO has also developed a roadmap which provides guidance for Member States and other stakeholders for the implementation of ESD for 2030. The framework and roadmap recognise Goal 4: Quality Education as a key element of the 17 goals to transform the world. These goals with 169 targets are those that all UN Member States have agreed to work towards achieving by 2030. #Envision2030 thus, is adopted by the global community to realize ESD for 2030.

2.2 Teaching and Learning for a Sustainable Future

Teaching and Learning for a Sustainable Future (TLSF) notes that the starting point of ESD is inextricably linked to sustainable development. It is useful to understand the ESD concept and how the idea and practice of ESD continue to develop over time ensuring an integration of the three dimensions of society, economy, and environment. PEARL project picked up on the above idea on integration and transformed this idea into practice,

beginning with targeted growth and development for disadvantaged communities - a critical element for sustaining society, economy, and environment in the long run.

TLSF argues that one of the most important outcomes of ESD is the realization that education, environment, and development issues are connected, and therefore are not separate challenges. Issues concerning the three cannot be treated separately by fragmented institutions and policies because they are linked in a complex system of cause and effect.

As stated earlier, PEARL project addresses micro dimensions that support disadvantaged communities which will at a macro level, feed into supporting the society, economy, and environment. In alignment with the ESD, the World Economic Forum (WEF) in its biennial 'Future of Jobs Report' lists ten critical skills for the Future of Work for year 2020 and beyond. These critical skillsets are complex problem solving, critical thinking, creativity, people management, coordinating with others, emotional intelligence, judgment, and decision making, service orientation, negotiation, and cognitive flexibility.

PEARL project practices ESD to transform education and become an enabler for sustainable development while promoting the development of the skillsets mentioned above. These aims are not without challenges particularly with the selected communities for this project. In 2019, Selangor, the most populous state of Malaysia recorded 30% of communities bound by poverty. In considering poverty by ethnic groups, the Bumiputera has consistently recorded a higher incidence of poverty in comparison to the Chinese and the Indians. Bumiputera children from selected urban poor areas in the state are therefore disadvantaged and affected, particularly when the pandemic struck in 2020.

2.3   *Transformation of Learning to a Safe Space*

PEARL project attempts to address the above by transforming learning and training environments, developing capacities of educators and trainers, and mobilizing youth.

2.3.1   *Beyond the Classroom*

First and foremost, PEARL project and its expansions - PEARL 2.0 and PEARL4PJ have moved learning beyond the classroom. All lessons are carried out at what is termed as a safe space for the disadvantaged children. This is in line with UNICEF's #Foreverychild report that promotes a safe space for children who are disadvantaged by poverty and economic gap, and without a conducive and safe space to learn. Mutiara Damansara

mosque's main prayer hall, Lembah Subang Primary School yard and stage, and a learning space at Jumhuriah mosque were identified by both community leaders and PEARL project founder as safe spaces for the projects. While the first and second communities enjoyed face-to-face lessons, the third was not as lucky as the pandemic struck in 2020. Plans had to be recreated and lessons moved online with different online skill sets developed for instructional purposes. Volunteer teachers had to be flexible, quick, adaptable, and gritty to accommodate changes and student needs using the online platform. This means experimenting with various tools and gadgets, and choosing the most suitable ones for each group of students.

2.3.2   *Custom Pearl Lessons for Each Community*

Secondly, PEARL pedagogical approaches are not as practiced in schools but focused on custom ones for each site highlighting play, real, authentic, meaningful materials for example, students' self-written poems, community and university engagement with students and use of ICT tools. Students get to use iPads and laptops, and watch animations on projector screen.

Students watching video recordings on screens

They also play English language games or confidence building games as well as take turns with storytelling. In teams, they also carry out choral speaking performances and roleplays.

Peer storytelling session

Quiet sessions where they speak about themselves, and their struggles were also encouraged to instil their awareness on their rights and responsibilities to themselves.

Free and easy session

Students also experienced a field trip to the university and enjoyed their first look at the best university in Malaysia. It is important to ensure a safe and fun backdrop to PEARL lessons so as to capture the students' curiosity, engagement, love for learning and confidence. This is particularly important in ensuring their consistent attendance and increasing yearning for lifelong learning.

PEARL students on a field trip to University Malaya

2.3.3   *Building a PEARL Framework for Community Volunteers*

Thirdly, as more youth volunteer and engage with communities in need, PEARL project develops a framework and module for them to be equipped with pedagogical and leadership skills to teach the disadvantaged students. The focus is on a volunteer teacher community of practice with a joint enterprise, a mutual engagement and shared repertoires (Lave and Wenger, 1991; Wenger, 1998). They carry out scholarly and critical discussions before and after each lesson on affordances and limitations raised from each lesson. They reflect on each lesson and this process is cyclical as they develop their educator identity. They are also groomed into developing strong empathy for disadvantaged children as they discover social and learning issues faced by these children. Experiential learning paves way for a better understanding of pedagogical needs and develops leadership skills particularly as they deal with students, community committees, leaders, academics, and parents. These in turn develop their capacity to better understand their roles, engage better with communities, and carry out instructional approaches accordingly for the stakeholders.

A discussion session with the researcher at field work

Having simultaneously prepared community leaders, volunteer-teachers and students for PEARL project, the researcher then focused on empirical evidence from the project.

3. Methodology

While PEARL project was incepted to address the three objectives for one urban poor community, it bloomed to embody a platform which housed project expansions that reached more communities. These expansions are chronologically described below:

3.1 Methods and Procedures: Phase 1

3.1.1 Background

From 2018, PEARL project began with discussions with community leaders and committee members of a local community mosque. The community leaders had earlier started a Library programme for disadvantaged children to develop their English language competency. With their own insufficiently trained volunteers, the programme saw personal tutoring conducted using English Activity books available in store. The students were underperforming, and many were not consistently attending classes.

Discussion with community leaders

3.1.2 Inception

As the researcher was approached to ameliorate the situation, PEARL project was incepted. PEARL project began with five volunteer-teachers who are trained in the area of Teaching of English as a Second Language (TESL). One was appointed leader and was tasked with lesson preparation and debriefing. Facilitated by the researcher who is expert in the field, these teachers carried out a two-hour lesson every Saturday at the mosque, applying approaches and techniques that are most suited to 30 primary school students from the urban poor community. Lessons were recorded, students, parents and volunteer-teachers were interviewed, and lesson plans were compiled as rich data for the study. Other archives collected include, students' recorded stage performance, award certificates, progress report, debriefing discussions and newsletters.

Choral speaking rehearsal at a community venue

Rehearsal before stage performance day

Award Ceremony

PEARL Newsletter

3.2 Method and Procedures: Phase 2

With the module, frameworks and news coverage, PEARL founder was approached by a non-governmental organization (NGO), to expand the project to PEARL 2.0 at another urban poor community in 2019. The expansion replicated the first project with another five volunteer teachers and 30 students albeit at a different venue. An agreement was signed between the NGO and the Faculty of Education. The same data collection methods were carried out and similar archives were thematically analyzed.

3.3 Methods and Procedures: Phase 3

In 2020, another extension to PEARL Project started under Municipal City Council, Selangor. PEARL4PJ also replicates PEARL project for a poor community in Petaling Jaya district. PEARL4PJ has five volunteer teachers and 25 poor students listed by the mosque committee and school.

By 2022, STARFISH was born as an expansion of PEARL4PJ. This project evolved to include digital literacy in the students' pathway to acquiring English language communication skills. It also received support from Starfish foundation in the form of 20 laptops and funding to purchase projectors and screen, much to the students' weekly excitement.

3.3.1 Online PEARL

It is important to note here that both PEARL projects are still ongoing and with the pandemic Covid-19, have transitioned into online PEARL. With a sudden change in delivery and lessons, new findings emerged. PEARL students had issues with gadgets, connectivity and having a conducive space to learn. Volunteer teachers therefore accommodated to these students' needs. They attended to those who shared a mobile phone with siblings to join PEARL lessons and understood that not all own laptops. There were also temporal challenges as some students' gadget availability was subjected to their parents' not having any use for the gadgets at that particular point of time. As such, there were many one-to-one lessons instead of group lessons at the beginning of the pandemic. It is also worth noting here that books were also bought online and delivered to these students so that they have access to good reading materials while being locked down at home. Selected online lessons were recorded, lesson plans and materials used were archived, and interviews were carried out on volunteer teachers and students on online PEARL lessons.

PEARL siblings on mobile phone
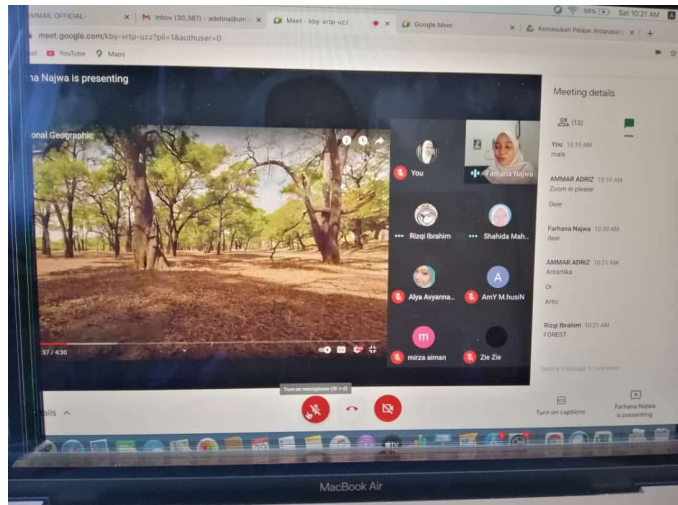
PEARL with NatGeo360 Lesson on Savannah
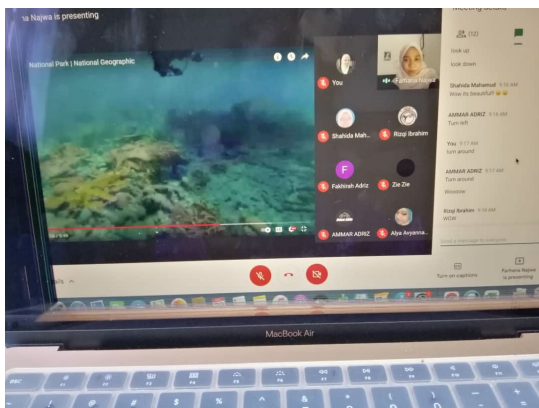
PEARL with NatGeo360 Lesson on Marine Life
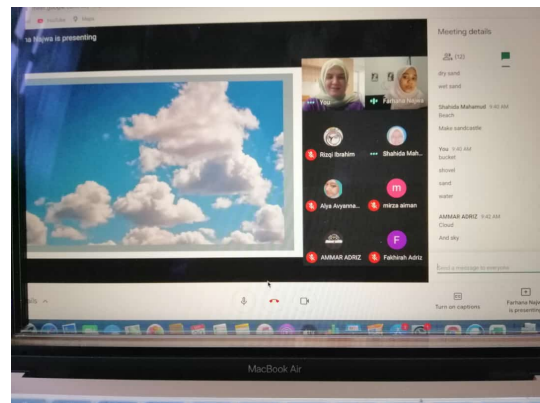
Online discussion on Chatbox

4. Findings

4.1 Phase 1: PEARL project

Findings reveal positive feedback from students, parents, volunteer-teachers and community leaders. Improvement in self-confidence and English language communicative competence was also recorded.

Three poignant findings from the study point to 1. PEARL module for volunteer teachers, 2. REACH framework - an award winning framework for volunteer teachers to develop pedagogical skills to teach urban poor students, and 3. PEARL framework - another award winning framework which promotes English language acquisition among

urban poor learners through play, engagement, application of ICT, and use of real, authentic materials with a summative output in the form of stage performances.

4.1 PEARL Module
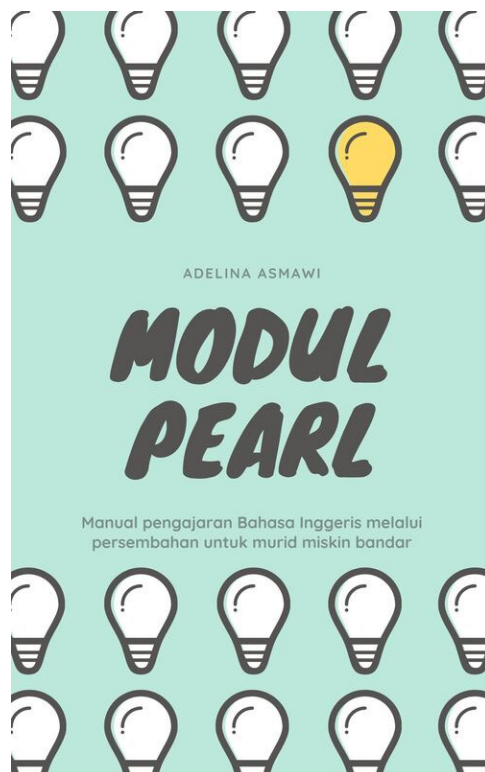
Front cover of PEARL module

This module is a compilation of lessons or manuals that have been refined for use by volunteer-teachers. It includes pictures, step by step guides, and explanations on each manual. It is written in Malay language for easy access to urban poor community leaders and teacher volunteers who require training in Teaching of English as a Second Language.

4.1.1 REACH framework

This framework highlights professional development that centres around **R**eflective practice, **E**xternal teacher professional development that focuses on development outside the classroom, **A**dvancement following the needs of Industry 4.0, **C**ommunity of practice, and **H**olistic development that looks at pedagogical and spiritual development, community engagement and leadership skills. These volunteer-teachers recreate learning outside of the classroom while incorporating aspects of Industry 4.0 within the safe haven created for the children.

Typical debriefing sessions after PEARL lessons

4.1.2 *PEARL Framework*

This framework focuses on addressing learning needs of urban poor children customized accordingly to ensure quality and holistic development of English language competency, and other soft skills needed in the 21st Century. It develops the competencies through **P**lay, **E**ngagement, **A**pplication of ICT, **R**eal, authentic materials from real life context and promotes **L**ifelong learning that improves their self-confidence, motivation and interest in learning English language within a safe space.

An extraordinary approach to learning

Pearl project was also in the news making headlines leading to more organizations approaching the researcher to expand the project to different communities.

Pearl project on the cover of a newspaper

4.2 Phase 2: PEARL 2.0

Data revealed similar positive outcomes as the first project but with an additional finding. Unlike the first community which was largely of Malay race, this project had students of multiple races. Findings revealed that PEARL lessons are able to instil racial integration among these students. This finding allowed the module to be refined further for multiracial communities. It adds value to PEARL project as racial harmony is part of a national agenda in Malaysia.

A multiracial PEARL lesson in action

Activities for students during a PEARL 2.0 lesson

4.3 Phase 3: PEARL4PJ

In 2020 PEARL4PJ was held at a mosque in Petaling Jaya in collaboration with the head of the mosque and a school teacher. This project expanded in 2022 to include the development of students' digital literacy when Starfish Foundation responded to the researcher's plight on the need for tools to assist students with their digital literacy skills. As such, additional data were recorded to include students' use of digital tools and applications for this project. They learned to use Power Point, Canva, emails, created slides and posters as well as played with images and animation. Findings also recorded students' improved confidence and English language acquisition in the form of short sketches on stage, dialogue writing, impromptu plays and poetry recitation. The challenge for this project was to balance the two skills – digital and English skills within the short duration of a lesson.
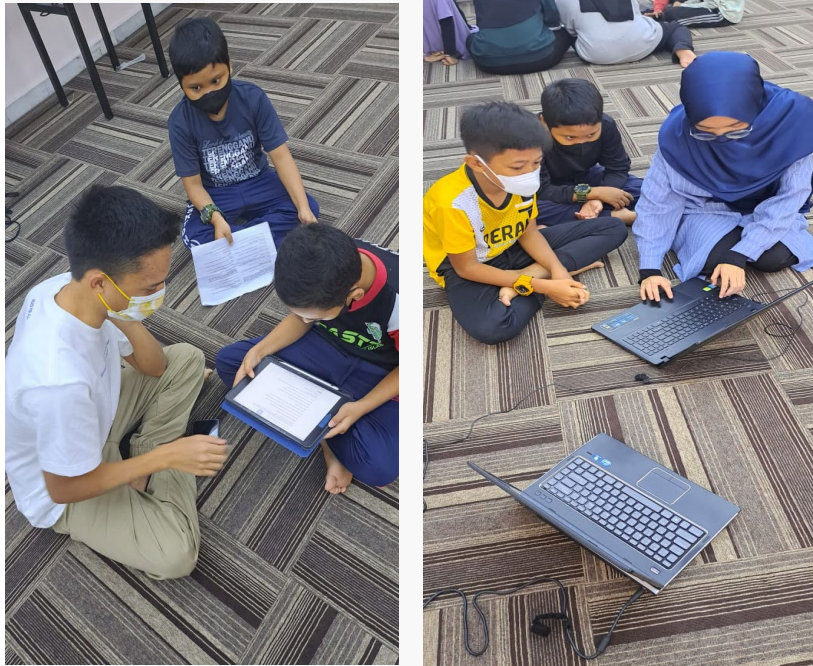
Students explored the iPad and laptops

The researcher provides step by step guidance

4.4. Online PEARL

The current projects present a new ball game for online English language instruction for disadvantaged children. As pandemic strikes and stays, online lessons are held with emerging challenges: student participation, access to IT tools, connectivity and unconducive learning space. This means exploration of PEARL Slides, Online Interaction, Chatbot, Whatsap, 360, Hangmanwords and others. One crucial driver to online PEARL was actually found to be communication with parents which was deemed absolutely necessary so that weekly lessons can be conducted smoothly. This was not necessary in the then face to face lessons as students attended classes as scheduled at a selected venue specified by community leaders. On the other hand, pandemic-driven PEARL lessons recorded weekly parent-researcher

communication to ensure a smooth, conducive space to learn, availability of gadgets and students' focus on the lessons. More data are expected to throw light on online PEARL project for the urban poor children. Implications point to exploring online PEARL to fit the new norm of instruction during the pandemic.

5. Impact towards the Community-Socioeconomic

Firstly, PEARL project focuses on addressing learning needs of urban poor children, customized accordingly to ensure quality and holistic development of English language competency, and other soft skills needed for the 21st century. It develops English language acquisition among urban poor learners through play, engagement, application of ICT, real, authentic materials, and lifelong learning that improves their self-confidence, motivation, and interest in learning English language within a safe space.

Secondly, it highlights teacher-volunteerism and systematically develops volunteers' pedagogical skills. It focuses on volunteers' community of practice, reflective practice and their holistic development of pedagogy, spirituality, community engagement and leadership skills. These volunteers recreate learning outside of the classroom while incorporating aspects of IR 4.0 within that safe haven created for the children.

Thirdly, it nurtures collaboration between the academia, researchers, volunteers, sponsors and selected community committees as consistent discussions, planning, visits, and refinement to the project are carried out. Two frameworks and a PEARL module are created as outcomes of the earlier projects and are to be disseminated for use by communities at large to sustain the project when academia empowers community leaders to independently continue the project. The more the extensions, the better the reaps from PEARL.

These developments meet the needs of the present and extend the ability of future generations to meet their societal, economic and environmental needs later. Simply phrased, disadvantaged students who have acquired English language competence and skill sets for 21st Century, are then able to move up the education and economic ladders, and better sustain their community. They, then, would be able to have a broader view of life and what it entails. With the lower and mid-levels of Maslow hierarchy needs met, these students would potentially be able to achieve self-actualization and then, as adults, work on addressing environmental needs as well.

6. Challenges and Suggestions for Future Community Engagement Improvement

With the frameworks and module from PEARL project, volunteer teachers who are equipped with pedagogical skills to educate disadvantaged children could continue contributing towards developing these children's English language competence and life skills. The snowballing effect could potentially lead to growth and expansion throughout the nation, and a balanced integration of objectives for a sustained development of society, economy, and environment, eventually, realizing ESD 2030 goals. PEARL project is hoped to expand to neighbouring states and eventually, neighbouring countries. As context is different there is a need to attend to the specific needs of these states, beginning with the region most affected by urban poverty, and then, Southeast Asian communities.

7. Conclusion

PEARL project focuses on 1) upskilling volunteers, and 2) developing disadvantaged students' language acquisition and skill sets needed for the 21st century. It was carried out on three urban poor communities from the Midwestern region of Malaysia. Five volunteers conducted two-hour lessons with 20-30 children every Saturday at three different sites. Data include lesson manuals; recorded lessons, rehearsals, and performance; student, parent and volunteer interviews, awards, progress report and newsletters. Findings reveal positive feedback from all stakeholders and improvement in volunteer pedagogical skills and instruction, and student self-confidence and English language communication, among others. Outputs are PEARL module for volunteers, REACH framework to develop volunteers' pedagogical skills and PEARL framework to promote English language acquisition through play, engagement, use of IT tools, authentic materials, and lifelong learning.

Implications include further extension of PEARL. This extension aims to consider needs and specifics of volunteers and students from different regions. With city council assistance and NGOs, target communities can be approached and facilitated. As volunteers are skilled through the frameworks and PEARL module, the community can potentially self-sustain PEARL lessons accordingly without assistance from the university. PEARL managed to move online during the pandemic, thus expansion acceleration across states is expected from 2022 onwards. Growth is also expected to happen across borders to SEA countries within a time frame of five years.

It has been a worthwhile project to focus on the past years and I look forward to witnessing more expansions for the sake of the disadvantaged communities in the nation and beyond. In the same breath that I conclude, I would like to share that PEARL project has been given the below recognition:

1. Melbourne Graduate School of Education Alumni Award 2020 with PEARL project highlighted at https://education.unimelb.edu.au/community/alumni/mgse-alumni-award.
2. Platinum Medal, REACH framework for Teacher Professional Development, International Summit of Innovation & Design Exposition 2020
3. Platinum Medal, PEARL framework for English Acquisition of Urban Poor Learners, International Summit of Innovation & Design Exposition 2019
4. 1st Runner Up, Universiti Malaya Community Academia Conference 2018

For more information, please visit the website, watch PEARL videos and read up PEARL press coverage from here:

Website

https://mypearlproject.weebly.com

Video

https://mypearlproject.weebly.com/videos.html

Press coverage

https://mypearlproject.weebly.com/news.html

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you. May the Almighty also bless others who were involved directly or indirectly in all PEARL projects.

References

Akbari, E., Naderi, A, & Simons, R.J. (2016). Student engagement and foreign language learning through online social networks. *Asian-Pacific Journal of Second and Foreign Language Education. 1*(1), 1-22.

Akbari, O. & Razavi, A. (2015). Using authentic materials in the foreign language classrooms: Teachers' perspectives in EFL classes. *International Journal of Research Studies in Education. 4*(5).

Al-Kamel, M. (2018). The positive effect of ICT on the English Language learning and teaching. *Dialoguing Borders: Vital Issues in Humanities, Commerce, IT and Management.* Aurangabad City, Mahrashtra, India.

Boru, N. (2017). The effects of service learning and volunteerism activities on university students in Turkey. *Journal of Education and Training Studies. 5*(6). 146-166.

Cheep-Aranai, R., Reinders, H., & Wasanasomsithi, P. (2015). Implementing play-based language learning with children: From potential to practice, in *Innovation in Language Learning and Teaching. 1.* 141-159.

Lantolf, J.P. & Poehner, M.E. (2014). *Sociocultural theory and the pedagogical imperative in L2 education. Vygotskian praxis and the theory/practice divide.* New York: Routledge.

Lave, J., & Wenger, E. (1991) *Situated learning legitimate peripheral participation.* Cambridge: Cambridge University Press.

Wenger, E. (1998). *Communities of practice: learning, meaning, and identity.* New York: Cambridge University Press.

Sharma, N. (2020). Torn safety nets: How COVID-19 has exposed huge inequalities in global education. *World Economic Forum.* https://www.weforum.org/agenda/2020/06/torn-safety-nets-shocks-to-schooling-in-developing-countries-during-coronavirus-crisis/

UNESCO (2020). *Education for sustainable development.* https://en.unesco.org/themes/education-sustainable-development

UNICEF (2020). *Education for all.* https://www.unicef.org/education

Vygotsky, L. S. **(**1978). *Mind in society: The development of higher psychological processes.* Massachusetts: Harvard University Press.

Wang, L., Bruce, C., & Hughes, H. (2011). Sociocultural theories and their application in information literacy research and education. *Australian Academic & Research Libraries*, *42*(4), 296-308.

CHAPTER 3

The Application Of Interpretive Structural Modelling Approach For The
Development Of Culturally Responsive Pedagogy Model Using Folktales
For Indigenous Children's Early Literacy Skills

By

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Abstract

Folktale is a form of conveying a teaching message about an idea or concept to support children's understanding. The elements in folktale are suitably developed as a form of culturally responsive pedagogy. The application of teaching and learning approaches using cultural reference sources, is the best alternative to children's learning needs. This study aims to develop the Culturally Responsive Pedagogy Model Using Folktales as an approachable form of teaching and learning process for Indigenous children's early literacy skills. This study implements the Interpretive Structural Modelling (ISM) approach to develop a model and discuss the relationships between the elements involved. This study also explores options from complex system into several sub-systems based on the practical experience and knowledge of a panel expert that involved in the field of education in Malaysia. The expert group with 15 panels consist of Indigenous parents; Lecturer of the Institute of Teacher Education, Lecturer of the National Indigenous Pedagogy Centre of Excellence (PKPPK), Lecturer in the field of Curriculum at the Local University, Tok Batin, Officer of the Educational Planning and Policy Research Division (EPRD); Early Childhood Education Teachers, Indigenous Teachers and Professors in the field of early childhood education participated in the development of the ISM Hierarchical Model. Based on the consensus of experts, they agreed that eight elements in culturally responsive

pedagogy using folktales of children's early literacy skills, are (1) Creativity of Storytelling; (2) Use of Puppets; (3) Mastery of Voice Intonation; (4) Creative Movement; (5) Creative Drama Acting; (6) Sharing Stories; (7) Environmental correlation; (8) Experience and (9) Images and Symbols The findings suggest that culturally responsive pedagogy model using folktales is suitable to be implemented by teachers with the skills to use puppets, concrete materials or creative movement with children to improve children's early literacy skills. The implications of the study indicate that culturally responsive pedagogy adds benefit to the formation of children's values, identities and personalities.

1. Introduction

Over the past decade, storytelling is one of the approaches that is frequently heard and practiced regularly among people. Narrative presentation is often implemented to explain or convey about an idea, concept or history using techniques that are interesting and easy to understand by the listener. Exciting storytelling activities are able to attract the listener to listen further without leaving each storytelling plot until the end of the story. Through the storytelling approach, children tend to listen to every word uttered by the narrator. The storytelling approach not only expresses words, but additionally requires the narrator to use various storytelling techniques to enliven the storytelling activity. The example are facial and body language expressions, voice intonation, storytelling tools and music as well as songs to attract children to listen to the story. The combination of various sensory elements can create joy, and a fun environment, also enhance children's imagination as well as form early literacy understanding and skills for children. The storytelling approach is an effective and efficient method to increase children's understanding to comprehend a teaching optimally.

The approach to teaching through cultural responsiveness is seen in parallel to preserving the use of folktales in improving the early literacy skills of kindergarten children. Culturally responsive pedagogy can be defined as an approach to teaching and learning based on cultural knowledge, the pre-existing experience possessed by children (NUCEL, 2014). Culturally responsive based teaching and learning began to centre around the 1960s to 1970s through educational needs that revolved around equality between students and quality education.

In Malaysia, the diversity of the population is a uniqueness and challenge to educators in ensuring early literacy skills among children can be achieved according to their level of development. Thus, teachers need to consider the differences in lifestyle, culture and beliefs in each ethnicity as an element of teaching and learning in schools. Emphasis on culturally responsive pedagogy ``can nurture early literacy skills while providing a positive impact in understanding the beliefs, traditions and culture practiced by a society (Gay, 2002; Ford & Klea, 2009).

The story and storytelling approaches have been applied for generations and passed down from one generation to another. Storytelling is used as a medium of teaching either formally or informally by all people in Malaysia. In the culture of the Malays in particular, many stories convey a message of advice, culture and tradition narrated by a storyteller. Storytelling strategies are very effective in conveying the content of a lesson or science knowledge in the classroom. Through story listening activities, children directly explore the power of imagination, activation of past knowledge, skills, and vision. According to M. C Green (2004), stories consider several roles in the classroom, including attract student interest, making the teaching and learning activity more attractive and meaningful, overcoming barriers and student anxiety, and building good relationships between teachers and students.

2. Literature Review

Teaching delivery strategies are very important to ensure that children able to understand and master the language at the best level. The engaging process of delivery by the teacher can provide the attractive environment for the child discover more. Therefore, the communication is a very important skill to deliver teaching activities in the classroom. Differences in language, culture and background create a communication gap between teachers and children. The problem occurs when teachers lack understanding of the spoken language of children that from different cultural backgrounds. The main challenges of practicing culturally responsive pedagogy in the classroom include i) teachers' understanding of culturally responsive pedagogy approaches. Teachers do not understand the definition or strategy of culturally responsive approach, ii) Competence of teachers in Culturally Responsive Pedagogy. Teachers do not have the skills and know the appropriate techniques and strategies in culturally responsive approach, iii) no motivation or encouragement from school administrators in studying culturally responsive pedagogical approaches and iv) teachers have less awareness of the importance of culturally responsive elements in the teaching and learning process. Thus, problems arise out of ensuring that children, especially indigenous

children's early literacy skills more effectively. The delivery of teaching and learning process cannot be implemented as a whole. There are problems encountered when a child is unexposed to a language other than his or her mother tongue at home. No exposure to a second language from the beginning makes it difficult for children to recognize and explore new languages. Teacher delivery techniques give an impact on children's learning acceptance, especially children that different backgrounds. The use of limited and inconsistent techniques according to the child's developmental stage has an influence in developing a child's understanding, finally will affect their feedback on learning.

Early childhood literacy development is a very important medium that should be cultivated from home. A key element in the early literacy development of a child is that enhancing a child's language development by involving the interaction between mother and child through verbal responses. The mastery of early childhood literacy development can enhance children's cognitive development before attending school. According to Dickenson and Tabors (2002) the support and influence at home and in kindergarten are fundamental to encourage developing children's language and literacy. The literacy processing theory introduced by Clay (2001) is a very important element in ensuring every child achieves better literacy skills.

The diversity of Malaysia's population highlights the variety of languages, cultures, traditions, and customs. The diversity of society and culture are included differences in language, skin colour of people, and culture that can affect the behaviour of children at school. Thus, a culturally responsive curriculum is one of the most capable platforms in bridging the gap between these children's differences. Karanbenick, S. & Clemens Noda. P (2004) stated that cultural diversity is the process of accepting and appreciating the culture differences between society. Zeicher and Payne (2013) stated that the role of the community also important to influence the strengthening of values in the school environment. Teachers need to understand the values of diversity in the community so that the process and experience of learning activities for children can be delivered effectively. According to Ministry of Education Malaysia through the Malaysian Education Blueprint (PPPM 2013-2025) emphasizes the use of responsive pedagogy through teaching and learning activities to ensure the Malaysian identity and national spirit in every child.

Therefore, this study aims to develop a Culturally Responsive Pedagogy Model Using Folktales for Indigenous children's early literacy skills in Malaysia. To achieve the purpose of this study, the objective is to identify the relationship between the elements involved in the

model on culturally responsive pedagogy using folktales in Malaysia. The research questions are as follows:

1. What are the appropriate elements in the Culturally Responsive Pedagogy Model Using Folktales for Indigenous children's early literacy skills in Malaysia?
2. What is the design of the Culturally Responsive Pedagogy Model Using Folktales for Indigenous children's early literacy skills in Malaysia?

2.1   Target community / Early engagement with the community

In the implementation of this module, several learning communities are directly involved in learning activities, namely Preschool, Teacher Education Institute, Kent campus, Tuaran Sabah. The project is targeted at children at IPG Preschool Campus Kent, Tuaran, Sabah. The IPG Kent Campus is very helpful in terms of facilities and providing the lecture halls, multi - purpose halls to conduct workshops, seminars and meetings involved this project. In addition, some teachers have been involved in this project as early exposure for them to engage with the children of indigenous peoples of Sabah. Kent Campus IPG Preschool has 25 students. Therefore, the implementation activities of this module involve all children at IPG Kent Preschool together with a total of 20 teacher trainers and 25 teachers during holidays.

3.   Methods/ Procedures/Preparation before field work

This study uses the Interpretive Structural Modelling (ISM) approach to develop a Culturally Responsive Pedagogy Model Using Folktales for Indigenous children's early literacy skills in Malaysia based on expert consensus.

3.1   Methodology Interpretive Structural Modelling (ISM)

The ISM approach was introduced by J. Warfield in 1973 to analyse complex socioeconomic systems. The ISM approach is a computer-guided learning process to enable individuals or groups to develop a model or map of the relationship between the elements involved in a complex issue based on practical experience and expert knowledge. ISM methodology is also utilized to identify and analyse relationships between specific variables to define a complex problem or issue in a Hierarchical Structure Model (Warfield, 1974; Sage, 1977; Janes, 1988; Warfield.

Data collection for this study involved interview methods and Interpretive Structural Modelling (ISM) approach. The interview data collection was obtained with an interview session with a group of experts that involved 15 experts, are parents; Lecturer of the Institute

of Teacher Education, Lecturer in the field of Curriculum at the Local University, Officer of the Educational Planning and Policy Research Division (EPRD); Early Childhood Education Teacher and Professor in the field of early childhood education. Interviews were conducted face -to -face. All study participants interviewed related to the appropriate elements in the Culturally Responsive Pedagogy Model Using Folktales for Indigenous children's early literacy skills.

A total of 15 experts on early childhood education in this study consist of 3 experts involved in the interview method and 12 experts on ISM approach. This purposive sampling represents the identified population groups and all individuals in the group are counted as a sample (Noraini Idris, 2010). The 15 experts in this study have experience in the field of early childhood education. This study involves a Culturally Responsive Pedagogy Model Using Folktales for Indigenous children's early literacy skills which is divided into two parts, the first part uses a semi-structured interview instrument in an expert panel group while the second part of this study is a model design using Interpretive Structural Modelling (ISM).

A semi-structured interview method was used in the process of this study to identify the appropriate elements developed in the Cultural Responsive Pedagogy Model Using Folktales for children's early literacy skills. The interview instrument involved several semi-structured questions and all the answers from the experts were recorded. Interviews are considered the best way to obtain information and academic issues as well as a consistent method of data collection from respondents especially through language or anything spoken.

The data collection of the ISM approaches begins by identifying variables related to the problem and issue. Then proceed with determining the contextually relevant element relationships and subsequently the expert panel to make the decision related to the context, next the Structural Self-Interaction Matrix (SSIM) is developed based on the comparison in terms of pairs between each element in the model. The following step is to convert SSIM into a matrix of reachability and transitivity between elements that reviewed again by a panel of experts. So with the verification of transitivity between elements, then the matrix model is obtained and next through the process of division according to clusters completely form a structural model called ISM.

The analysis of interview data conducted based on the research question 1 was analysed by thematically. While, for the research question 2, the data analysis method uses the Interpretive Structural Modelling (ISM) approach.

4.   Findings/ Results

The findings of the study are discussed based on research question 1, What are the appropriate elements in the Culturally Responsive Pedagogy Model Using Folktales for Indigenous children's early literacy skills in Malaysia? Based on the interview questions that have been conducted, it is discovered that the experts have provided various answers regarding the appropriate elements in the Culturally Responsive Pedagogy Model Using Folktales for Indigenous children's early literacy skills. The feedback of the expert panel was analysed in more depth to answer the research questions.

4.1   *Elements of the Culturally Responsive Pedagogy Model Using Folktales for Indigenous Children's Early Literacy Skill*

Experts have provided various opinions on the appropriate elements in the Culturally Responsive Pedagogy Model Using Folktales for Indigenous children's early literacy skills. Most experts agreed that folktales can contribute towards the mastery of early childhood literacy skills. The results of the interviews showed that the culturally responsive pedagogical element suitable for early childhood literacy was the teacher's ability in the process of storytelling using existing materials, storytelling using books (variety of sizes and shapes books); Grab Bag Story Telling; Round Robin Story Telling; Pictorial Story Telling and storytelling without tools or materials. As R3 (expert 3) said, "I usually tell folktales by using various existing materials or picture books. Telling a story using these materials, especially puppets, it can attract children's attention and further strengthen their memory of the story. " (R3: TI 10-14). R3's opinion was similar to R2's (expert 2) who stated that children were able to narrate stories they heard better and confidently when using different types of puppets. In contrast to the opinion of R1 (expert 1) who stated that the creativity of teachers in presenting a story is a key element in applying culturally responsive pedagogy using folktales.

"By telling stories, we can attract children's interest through our creative delivery methods such as wearing costumes, making facial expressions, wearing face masks, or chanting voices with various intonations. Teachers' creativity will liven up the learning environment of storytelling with children and in turn increase children's motivation to learn early literacy skills." (R1:T1 9-15)

Apart from through the creativity of storytelling, mastery of voice intonation is also considered important to enliven culturally responsive pedagogy using folktales. "Children need to listen to the teacher's story face-to-face so that children can remember what the teacher taught, but with the storytelling in action or acting by the teacher, children quickly understand the story told" said R2 (expert 2). Added by R1 (expert 1) said, "Acting or drama or movement with the teacher is appropriate so that children can deepen the character of acting by way of observation." Similarly with, R3 (expert 3) thinks that acting should be related to the child's environment to support teachers explore the emotions, appreciation, and feelings of children during storytelling.

The three expert panels, R1, R2 and R3 have the same opinion that children's experience of a story told can speed up the process of teaching children's early literacy skills. The experiential element not only makes it fun of teachers to introduce new words of stories, but it also involved children's active learning during storytelling sessions. Teachers only need to show certain actions, images or symbols, children will actively pronounce the word and then tell the story in their own way.

In addition, the findings of the interview study also found that the element of culturally responsive pedagogy using folktales should give emphasis to the concept of story sharing among children. This can improve early literacy skills, especially reading, writing, and listening skills for children, and also communication and socialization skills among children. In the interview session, the respondents explained that the culturally responsive pedagogical element of story sharing is appropriate in improving children's listening and communication abilities.

"Culturally responsive pedagogy with storytelling can improve children's listening skills, communication skills and children's self-confidence to retell the stories that have been heard. Children are given the opportunity to tell their own stories to other friends."
(R2:T1 1-3)

In addition, the findings of the study through interviews also found that respondents had stated the elements of culturally responsive pedagogy using folktales should involve relationships with the environment that involves the life, traditions, and culture in the society in which the child lives and practices.

"Folktales presented through culturally responsive pedagogy needs to be related to the child's living environment. This can be used as an example to children as well as exposing children to customs, manners, and values to children. " (R2:T1 16-17).

4.2 Design of a Cultural Responsive Pedagogy Model Using Folktales according to the Interpretive Structural Modelling (ISM) Approach

The design of the Culturally Responsive Pedagogy Model Using Folktales in this study, was developed based on the relationship between the elements of culturally responsive pedagogy and folktales obtained from experts in the field of early childhood education. To answer the research question 2 "What is the design of the Cultural Responsive Pedagogy Model Using Folktales for Indigenous children's early literacy skills in Malaysia?" based on the consensus of experts for the purpose of designing this pedagogical model. Thus, the three main steps involved in developing an Interpretive Structural Model (ISM) (Hansen, Mckell, Heitger, 1979) are:

Step 1: A group of 15 experts, namely parents, Lecturer of the Institute of Teacher Education, Lecturer in the field of Curriculum at the Local University, Officer of the Educational Planning and Policy Research (EPRD); Early Childhood Education Teacher and Professor in the field of early childhood education were selected as the expert group. This group of experts has identified and shortlisted the elements of a culturally responsive pedagogy model using folktales that are suitable to be practiced by early childhood education teachers in Malaysia. The findings of this study were then screened and shortlisted by a selected group of experts through the technique of 'Group brainstorming' on the selected elements. As a result, the group of experts reached a consensus on only the nine important elements influencing culturally responsive pedagogy using folktales by early childhood education teachers in the context of education in Malaysia. The nine elements are:

a) Creativity of Storytelling.
b) Use of Puppets.
c) Voice Intonation.
d) Creative Movement.
e) Creative Drama Acting.
f) Sharing stories.

g) Environmental correlation.

h) Experience

i) Images and Symbols

Step 2: The design and development of a Cultural Responsive Pedagogy Model Using Folktales for Indigenous children's early literacy skills is using the application of Interpretive Structural Modelling (ISM). By the ISM application, a Culturally Responsive Pedagogy Model Using Folktales for Indigenous children's early literacy skills was formed with expert consensus as shown in Figure 3.1.
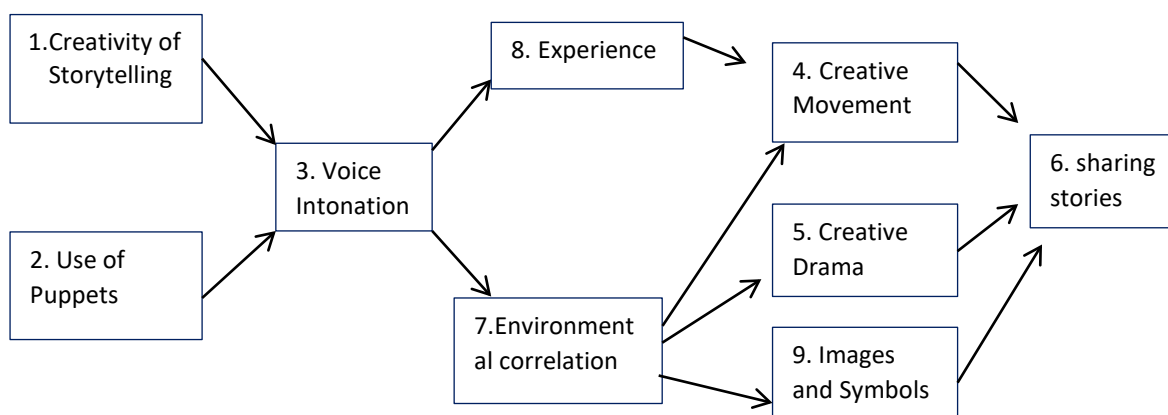
Figure 3.1: Interpretive Structural Model – Cultural Responsive Pedagogy Model Using Folktales for Indigenous Children's Early Literacy Skills.

The last step is the Culturally Responsive Pedagogy Model Using Folktales for Indigenous children; s early literacy skills (Figure 1) are revised with the expert group to get the feedback and also to check and review the concepts, elements and facts either appropriate or not to implement modifications to the model (if necessary), the expert group has reached a consensus to accept the presented model without any modifications after discussing and arguing regarding each relationship between the elements that been involved by the expert group.

5. Discussion

The findings of the study are shown in Figure 1: Culturally Responsive Pedagogy Model Using Folktales for Indigenous children's early literacy skills. The structure, variables and levels of each element have been displayed in visual form through the ISM Hierarchical Structure Model (Warfield, 1976). Knowledge of the level of each element is very

important to develop teaching and learning approaches based on culturally responsive pedagogy model using folktales.

(1) Creativity of Storytelling and (2) Use of Puppets are the elements that highest level in the ISM-Based Model hierarchy based on clusters of elements namely High Dependent Power and Low Driving Power. The findings of this study show that in applying culturally responsive pedagogy model using folktales, teachers need to emphasize on (1) Creativity in Storytelling and (2) Use of Puppets. This finding is in consonance with the study of Catherine Cynthia Felix and Mohd Nazri Abdul Rahman (2020) who stated that teachers need to be creative in the delivery of teaching especially involving music and movement activity.

With reference to Figure 3.1, the culturally responsive pedagogy model using folktales also emphasizes (3) Voice Intonation. Each new word is introduced, the teacher writes it down on a flash card and pastes it on a 'flannel' board or classroom wall then pronounces it with correct and clear intonation. Besides storytelling, teachers also need to emphasize the intonation of the voice during storytelling. As a result, imagination during storytelling can stimulate the good language use among children. In addition, the findings also found that elements (8) Experience and (7) Environmental correlation in the culturally responsive pedagogy model using folktales requires the competence of teachers to integrate it into each story presented to ensure the learning outcomes are achieved. This finding coincides with the findings of Stapa et.al. (2012) who stated that teachers who efficiently manage teaching and learning activities can produce students who are skilled, knowledgeable, virtuous, responsible and every teacher's behaviour affects student achievement.

The findings of the Culturally Responsive Model Using Folktales also show that the elements of (4) the Creative Movement; (5) Creative Drama Acting and (9) Images and Symbols are very important to focus by every teacher during the storytelling session. Through storytelling activities, teachers can identify the behaviours of each child they teach. Some children can sit and listen well, but some of them only sit still for a few minutes. There are also children who like to interrupt a friend during the session, and who like to participate in storytelling, and so on. Thus, indirectly, teachers can ensure that each child is able to actively participate in learning through a variety of storytelling techniques such as creative movements, acting, or images and symbols that give all children the opportunity to be equally involved in each the character being narrated. Jantan (2016) stated that dynamic and systematic teaching and learning management is able to develop

scientific cultivating, new knowledge, triggering creative and innovative ideas, development of more sustainable human potential as well as good dissemination of goals. Storytelling also allows children to express their opinions and feelings orally.

Mallan (1992) also stated that children who are experienced in participating in storytelling activities influence their development in emotional, intellectual, and social values. This is because, through storytelling activities can indirectly increase the focus on listening to the story, respond to questions asked, more creative in speaking, writing and reading activities in daily life. Indirectly, it can cultivate early literacy skills in multicultural children. Miller and Mehker (1990), stated that culturally responsive pedagogy using storytelling activities is an effective method of early childhood literacy development. The role of teachers as a medium in injecting children's early literacy skills should highlight creative and artistic activities that can attract children to learn the skills through activities that are interesting and appropriate according to their developmental level and learning context.

Findings from the ISM model produced also show that element (6) sharing stories by children and teachers are something that needs to be implemented by all teachers who practice this model. In ensuring that children share stories, the teacher must use a clear voice, and the language used must be appropriate to the child's level also the terms need to be introduced from the concrete to the abstract. Appropriate gestures and facial expressions can be used to impress the child. Meanwhile, the appropriate materials also can help the teacher's presentation and the children's understanding of the storyline. Next, the teacher needs to give the opportunity to each child to share the story, whether they want to continue or repeat or tell a new story in their own way. These findings are consistent with a study conducted by Wearmouth (2017), through a sociocultural perspective, culturally responsive pedagogy is important for students based on these three skills, are speaking, listening, and writing through their own cultural context (Bishop, Berryman & Wearmouth, 2016; Wearmouth, Berryman & Whittle, 2011).

This Culturally Responsive Pedagogy model approach shows that teachers directly act as facilitators that play an important role in improving children's literacy skills, especially through interaction with children through various activities to cultivate their interpersonal skills. Culturally responsive pedagogy model using folktales also provides an opportunity for children to retell stories with their parents and family members after school time. Thus,

it can encourage the children to master literacy skills. Rogoff's (2003) study shows that families also play a role in developing literacy skills when they have the opportunity to share stories at home.

Moreover, the story-sharing element in this model clearly indicates that learning in a local context can improve children's vocabulary mastery. This finding coincides with Smagorinsky's (2011) study which showed that literacy skills through social practice were developed when students are directly involved in a multicultural local community that gives them opportunities to engage and understand the differences in cultural practices. Thus, teachers need to be sensitive to the reactions shown by the children. This is because, through culturally responsive pedagogy, teachers can use specific costumes according to the theme of the story to add fun for the children and be in the context of the local community. Teachers' creativity can provide a positive impact on learning activities among children.

5.1   *Impact towards the Community-Socioeconomic*

The development of a Culturally Responsive Pedagogy using Indigenous People's Folktales has been converted into the implementation of a community project. In general, each community project will definitely have an impact either directly or indirectly on the community involved. Similarly with the development of Culturally Responsive Pedagogy Model Using Folktales, it also potential to meet the learning needs of indigenous children and diversifying teaching approaches that can be implemented by teachers in the classroom. The impact of this project can be seen especially the achievement of early children's literacy skills, children's social interaction, preservation of traditional cultural values of society through folktales, and parental involvement in children's teaching and learning. In addition, the project also adds a collection of indigenous folktales books that are suitable as children's reading material.

5.2   *Challenges and Suggestions for Future Community Engagement Improvement*

The Culturally Responsive Pedagogy Model Using Folktales has been implemented in the community in the form of a Pedagogy Module for the basic literacy skills of kindergarten children. The implementation of this module requires the skills of teachers to master several strategies for folktales delivery. In addition, teachers are also faced with the

constraints of supporting teaching materials such as drama props and puppets that are suitable to be used during storytelling activity in teaching and learning sessions based on this module.

Suggestions for improvement to the implementation of this module would be to increase enrichment and improvement of activities for each storytelling session. This is important to provide space and opportunities for children to express themselves in an open environment. In addition, to review the elements of tradition, culture and practices of indigenous peoples that can be adapted as an appropriate, interesting also effective teaching and learning for indigenous children. Involvement of the local community in children's learning activities can provide motivation for the success of a community project.

6. Conclusion

The culturally responsive pedagogy model using folktales is an alternative form of teaching and learning that is suitable to be carried out by teachers specially to teach children's early literacy skills. Based on the model, the process of teaching and learning activity will more relate to the daily lives of children. The creativity of the teacher's presentation through a story can attract children's interest and it helps children master the learning outcomes. This culturally responsive pedagogy model using folktales can attract the interest of students because the stories are closely related to the context of their daily lives. They will find it easier to understand a situation or story if it closely related to their daily lives. Furthermore, culturally responsive pedagogy model using folktales also provides space for teachers to ensure that children are comfortable, there are no distractions and able to make them focus on the story also can engage children by providing opportunities for them to answer questions or explain the stories that has been shared.

References

Allison Skerrett(2010). ''There's going to be community. There's going to be knowledge'': *Designs for learning in a standardised age*. Teaching and Teacher Education 26 (2010) 648–655.

Berryman, M. Nevin, A. SooHoo, S, & Ford, T. (Eds.). (2015). *Relational and responsive inclusion*. New York, NY: Peter Lang. http://dx.doi.org/10.3726/978-1-4539-1547-9

Catherine Cynthia Felix dan Mohd Nazri Abdul Rahman (2020). *Teachers' Perceptions on The Employment of Creative Music and Movement to enhance early reading among indigenous preschoolers*. Journal of Educational Research and Indigenous Studies (Special Issue): 23-31

Edward M. Anthony. Approach, Method and Technique. *ELT Journal, Volume XVII, Issue 2, 1 January 1963,* Muka Surat 63–67

Edward M. Anthony. Approach, Method and Technique. *ELT Journal, Volume XVII, Issue 2, 1 January 1963*, Muka Surat 63–67.

Fatimah Baharin (2014). *Kajian Tindakan Bahasa Melayu Teknik Bercerita*. Diambil daripada https://www.slideshare.net/mummytim/kajian-tindakan-bahasa-melayu-teknik-bercerita pada 03hb Mei 2018.

Ford, T. (2015). Connecting with Māori whānau and community. In M. Berryman, A. Nevin, S. Soohoo, & T. Ford (Eds.), *Relational and responsive inclusion: Contexts for becoming and belonging* (pp. 183–201). New York, NY: Peter Lang.

Hanzalah Tajudin (2014). *Teknik Bercerita*. Diambil daripada https://www.slideshare.net/HanzalahTajudin/topik-8-teknik-bercerita pada 03hb April 2018.

Huanshu Yuan (2018). Preparing Teachers For Diversity: A Literature Review And Implications From Community-Based TChen, D. W., Nimmo, J., & Fraser, H. (2009). Becoming a Culturally Responsive Early Childhood Educator: A Tool to Support Reflection by Teachers Embarking on the Anti-Bias Journey. *Multicultural Perspectives*, *11*(2), 101–106. https://doi.org/10.1080/15210960903028784

Hye Suk Haa et.al (2014). Teachers' Efforts to Facilitate the Social Development of Multicultural Children. *Procedia - Social and Behavioral Sciences 159 (2014) 110 – 114.*

Katherine Massa (2018). *Storytelling As A Strategy To Increase Oral Language Proficiency Of Second Language Learners*. Diambil daripada shttp://teachersinstitute.yale.edu/curriculum/units/2008/2/08.02.01.x.html pada 04hb Mei 2018

Kementerian Pelajaran Malaysia. 2014. *Pelan Pembangunan Pendidikan Malaysia 2013-2025*. Putrajaya: Kementerian Pelajaran Malaysia.

Ladson-Billings, G. 1994. *The dreamkeepers*. San Francisco: Jossey-Bass Publishing Co.

Robert D. Friedberg (1994). Storytelling and Cognitive Therapy with Children. *Journal of Cognitive Psychotherapy: An International Quarterly, Volume 8, Number 3,1994.*

Najeemah Mohd Yusof. 2006. Patterns of social interaction between different ethnic groups in Malaysian Secondary schools. *Jurnal Pendidik dan Pendidikan*. 21,149-164.

Nur Farhana Shahira Rosly et.al(2016). Interaksi Ujaran Kanak-kanak Menerusi Elemen Pendigitalan dalam Penceritaan. *GEMA Online® Journal of Language Studies 89 Volume 16(1), February 2016.*

Pedagogy, C. R. (2020). Pedagogi Responsif Budaya: Kesedaran, Pengetahuan dan Kesediaan Guru (Culturally Responsif Pedagogy: Teachers' Level of Awareness, Knowledge and Readiness). *Jurnal Pendidikan Malaysia*, *45*(01SI), 25–34. https://doi.org/10.17576/jpen-2020-45.01si-04

Wearmouth, J. (2004). Learning from 'James': lessons about policy and practice for literacy difficulties in schools' special educational provision. *British Journal of Special Education, 31*, 60–67. http://dx.doi.org/10.1111/j.0952-3383.2004.00330.x

Wearmouth, J. (2017). Employing culturally responsive pedagogy to foster literacy learning in schools. *Cogent Education*, *4*(1). https://doi.org/10.1080/2331186X.2017.1295824

Wearmouth, J., Berryman, M., & Whittle, L. (2011). 'Shoot for the moon!' Students' identities as writers in the context of the classroom. *British Journal of Special Education, 38*,

92–99. http://dx.doi.org/10.1111/bjsp.2011.38.issue-2 Wenger, E. (1998). *Communities of practice*. Cambridge: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511803932

Wan Anita & Azizah Hamzah(2013). Media Dalam Kehidupan Dan Perkembangan Kanak-Kanak. *Jld. 15, Bil. 2, 2013: 27–39 | Vol. 15, No. 2, 2013: 27–*

Wan Muna Ruzana &Vijayaletchumy Subramaniam (2014). Daya kreativiti kanak-kanak: Satu kajian kes. *Procedia - Social and Behavioral Sciences 134 (2014) 436 – 445.*

Wearmouth, J., & Berryman, M. (2009). *Inclusion through* participation *in communities of practice in schools*. Wellington: Dunmore Publishing.

Zulhairi   Osman   (2011).   *Kaedah   Bercerita*.   Diambil   daripada
https://www.scribd.com/doc/61097579/Kaedah-Bercerita pada 03hb April 2018.

CHAPTER 4

Empowering Orang Asli School Children's Oral Health

By

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Abstract

The objective of this paper was to introduce an educational programme that will enable Orang Asli (OA) children to sustain good oral hygiene practices within the community. The educational programme comprised pre-training, training, and post-training, involving researchers, school administrators, parents, and students. The study population was drawn by convenient sampling of OA school children aged 7- to 12-year-old from standard 1-6 at SK Lanai, Kuala Lipis, Pahang, Malaysia. A total of 203 school children participated, 57.6% of them were females and 42.4% were males. School administration, parents and school children were cooperative in the pre-training. The training which involved knowledge transfer, a customised dental kit (consisting of a tri-lingual oral health booklet using Semai language, toothbrushes and fluoridated toothpastes for adults and children, tooth-brushing chart as well as stickers), hands-on toothbrushing technique, and toothbrushing drill was well received by the OA school children. Post-training showed commendable support from school administrators, tooth brushing chart filled up by most school children and good oral health knowledge and awareness based on the feedback, question and answer sessions and quiz responses. Geographical factor affected accessibility to facilities and low socioeconomic caused lack of ownership of toothbrushes and toothpastes among the OA school children. Betel nut chewing habit played an important cultural role within the OA community. Educational programme that incorporates customised oral health kit with tri-lingual oral health booklet was seen to

cultivate sense of ownership and bridge cultural disparities among OA school children to sustain good oral hygiene practices.

1. Introduction

The indigenous minority peoples of Peninsular Malaysia are known as Orang Asli (OA). 'Asli' originates from the Arabic word 'Asali' which means 'Original', that suitably describes this community. They represent a mere 0.6% of the total Malaysian population and comprise a minimum of 19 different sub-groups (Nicholas, 2006). Most OA communities reside in remote geographical areas that influence their culture and spirituality. Remoteness is the key factor that determines level of access, availability of dental services, oral health status and knowledge within the indigenous community (Smith et al., 2007).

The recent National Health and Morbidity Survey (NHMS) 2017 done in Malaysia reported that three in ten 12-year-old school children had caries and all showed gingival bleeding. In Cameron Highland District, Pahang, Malaysia, it was found that 11–12-year-old OA children had high prevalence of caries and gingivitis where majority chewed betel nut regularly (Berhan Nordin et al., 2019). Poor and moderate oral health knowledge and attitude levels were also seen among most of the 11–12-year-old OA children in the Cameron Highland District (Samosir et al., 2018). Despite numerous preventive measures to promote dental awareness and to improve oral health status, lack of continuity of programmes targeting OA children was observed. Therefore, the objective of our research is to introduce an educational programme that will enable OA children to sustain good oral hygiene practices within the community.

2. Literature Review

Indigenous children of all ages were reported to show more dental caries than non-indigenous children due to high levels of risk factors (Roberts-Thomson et al., 2010; Mejia et al., 2010; Williams et al., 2011). Individual-level risk factors include sugar consumption, alcohol, smoking, oral hygiene practice, delay in seeking dental care and dental anxiety (Erickson & Patrick, 1993; Schulz & Northridge, 2004). Family and other community members can greatly influence the dietary habits of indigenous children, in particular sugar consumption (Roberts-Thomson et al., 2010). An ecological and educational assessment of indigenous children aged 5–12-year-old in New South Wales, Australia found that lack of tooth brush ownership, frequent consumption of sugar in large quantities, as well as inconsistent toothbrushing with fluoridated toothpaste predisposed them to high risk of developing dental caries (Dimitropoulos et al., 2018). A cross sectional epidemiological study of Indigenous Chepang school children (8-16-year-old) in Nepal reported that out of 56% children who cleaned their teeth daily, only 24% brushed their teeth twice and about 82% of the children were unaware about importance of fluoride to dental health (Prasai Dixit et al., 2013). Oral hygiene practices among indigenous children may be hindered by their temperaments such as grumpiness or unwillingness to brush teeth. Moreover, the parents of these children were too tired from their daily strenuous work and faced little time to supervise or help in toothbrushing (Prowse et al., 2014). Although oral health services and community visits involving schools were carried out in some indigenous community, it was found that many children either were not enrolled in schools or choose to be absent on the visit day (Williams et al., 2011).

Across the globe, poor oral health has been linked with high prevalence of caries and periodontal diseases. However, the concept of poor oral health is perceived differently by different communities. Decayed or missing teeth may be worrisome for community in urban areas, whereas it may be perceived as inevitable by the indigenous community. The Xavante Indians, one of the numerous Brazil's indigenous peoples, were oblivious about toothbrush and used wooden toothpicks to clean their teeth (Arantes et al., 2010). The children of Xavante Indians found it rather amusing to use toothpaste as body paint instead for toothbrushing. Parents from indigenous community have been reported to treat rotten teeth in their children by either using herbal and traditional medicines themselves or seek help from traditional healer (Prowse et al., 2014). The differences in cultural values among indigenous children may influence their acceptance to oral health education and preventive practices (Patrick et al., 2006). Regular dental check-ups may not be feasible when an

indigenous child belongs to a cultural group that does not practice preventative oral health as a norm. This may be associated with poverty, misinformation or competing priorities for family time and expenditure (Scrimshaw, 2003).

Heightened dental fear caused by community beliefs or personal negative dental experiences may have a deleterious effect on children's attitude to gain access for dental care or treatment (Hilton et al., 2007). Cultural factors can become a significant barrier in reducing prevalence of oral diseases when dental service framework and providers fail to relate traditional medical practices, attitudes and health knowledge of the indigenous community (Nash & Nagel,2005; Butten et al., 2019; Mejia et al., 2010). A holistic model that trains the indigenous community to be part of an oral health programme can be a way to reduce oral health disparities (Tiwari et al., 2018). Culturally appropriate dental programmes that engage involvement of the indigenous community have been reported to be successful because they enhanced sense of ownership and participation (Tsai et al., 2017).

Living in a rural area is seen to be highly associated with poor oral outcomes among young indigenous children (Jamieson et al., 2006). Rural or remote locations deprive the indigenous community from access to clean water, oral health services, oral health-promoting foods (e.g., fresh produce) and obtaining oral self-care aides (e.g., toothbrushes and toothpaste) (Mejia et al., 2010; Rowan-Legg, 2013; Durey et al., 2017). For example, oral health services that were dependent on fly-in fly-out airplanes or boat faced high risk of closure due to staffing issues, weather conditions and financial constraints (Campbell et al., 2015). In addition, healthy indigenous food was difficult to preserve and the availability of local store within the community that sold attractive processed food as well as sugary drinks at reasonable price may increase caries rate in children (Levin et al., 2017). Since indigenous children were exposed to different water sources such as rainwater, rivers, lakes and springs, their level of fluoride intake may differ (Cook et al., 2008). Although efforts to conduct water fluoridation projects have been put forth, they have been unsuccessful in these remote communities due to technical, operational, funding, and policy issues (Spencer et al., 2010).

3. Methodology

Pahang is known to have the highest number of OA in Malaysia whereby it constitutes 37.9% of the entire OA population (Jabatan Pendidikan, 2014). As part of the UM Community Engagement Centre (UMCares) programme, a visit to a school in Kuala Lipis

district located at Pahang State, Peninsular Malaysia was arranged. The target community were indigenous school children aged 7- to 12-year-old schooling from standard 1-6 at SK Lanai, Kuala Lipis, Pahang, Malaysia. This school was chosen as we received consent from all the related parties.

The inclusion criteria for the participants of the programme were as listed below:

- Must be OA children.

- Both parents should be from OA origin

- Able to communicate, read and write in Malay language (Bahasa Melayu)

- Parents should give their consent for their children to participate

The planned programme comprised of 3 stages which were pre-training, training and post-training, involving the researchers, school administrators, parents and students. The stages were summarised in Table 1.

Table 1: The three Stages of Programme.

Stage	Steps /Actions	Parties involved
Pre- training	•Permission obtained from SK Lanai, Kuala Lipis, Pahang and other related parties. •Researchers visited the school, the objectives and tentative of the programme were discussed with the school administrators. •Dates of visits were finalised. •Consent forms were distributed to all standard 1-6 students. •Completed consent forms were then collected from all the students prior to the start of the programme.	Researchers School administrators School children Parents
Training	There were 4 phases in this stage: 1. <u>Knowledge Transfer</u> A dedicated session with all the students were arranged where a video on oral health were shown and a lecture on oral hygiene practices were given by one of the researchers. 2. <u>Introduction of the Dental Kit</u> A customised dental kit consisted of tri-lingual oral health booklet, toothbrushes (adults and children), fluoridated toothpastes (adults and	Researchers School administrators School children Parents

	children), tooth-brushing chart and stickers were prepared by the researchers. The Tri-lingual oral health booklet which were written in Malay, English and Semai was introduced. It was then presented to all the students after an introductory session, explaining the components in the kit and the purpose of using the kit. 3. Hands-on using the Dental Kit The booklet and tooth brushing chart were revised together with all the students. The correct tooth brushing technique was briefed while the students used the materials from their own kit. 4. Tooth-Brushing Drill All the students were subjected to supervised tooth brushing drills in batches supervised by the researchers. Students were told to continue practising good oral hygiene practices at home and updating their tooth brushing chart till the next visit.	
Post- training	• The team visited the school again after 2 months. • A refresher session was carried out. This included feedback, question and answer as well as minor revision of good oral hygiene practices of the students within the 2 months' period. • A quiz was also carried out as an interactive activity to initiate student's motivation and boost their confidence. Those who responded were rewarded with dental care kit and each class were given a hamper of food to be shared.	Researchers School administration School children

5. Findings

A total of 203 students aged 7 to 12 years old participated in this programme whereby, 57.6% of them were females and 42.4% were males. The demographic data is displayed in Table 2.

Table 2: Demographic data of the participants.

Demography of the participants

Primary School Grades	Age	Gender		Total
Standard	Years	Female	Male	
1	7	12	12	24
2	8	19	13	32
3	9	17	15	32
4	10	24	14	38
5	11	28	12	40
6	12	17	20	37
Total participants		**203**		

Based on observations throughout the programme, the students were eager to participate, displayed interest and highly motivated in all the activities. They were aware of all the good oral hygiene practices, and this was displayed by high response rate with correct answers during the question-and-answer session and quiz. The observational findings from the 3 stages are listed in Table 3.

Table 3: Observations/Findings throughout the 3 stages of the Programme.

Stage	Observations/Findings
Pre- training	• School administration gave full cooperation, and the programme was fully supported by the host school. • The parents were cooperative as they put their trust with the school administrators. • The school children showed interest in the programme and gave the team a warm welcome.

Training	• The sharing session with the students using a custom video designed for OA were found to attract the student's attention. • The Dental Kit was well received, and the students were excited to be able to bring it home. • The booklet was well received as it had a section using the Semai language, most of the students were amused using dental terms in their own language. • Group activity like the tooth-brushing drill was viewed as a fun, interactive ice-breaking session between the students and the researchers.
Post-training	• The school administrators were shown to be supportive towards the programme by reminding the students on the good oral hygiene practices. • Most of the students have filled up their tooth brushing chart. • Their oral health knowledge and awareness was viewed as good based on the feedback, question and answer sessions and the quiz responses.

Although the findings were mostly positive, we found a few interesting findings and drawbacks expressed by the students (Table 4).

Table 4: Other findings and drawbacks reported by the students.

Other findings and drawbacks
• The toothbrushes in the kit were shared by the whole family, this made it difficult for the students to brush their teeth as planned and advised.
• Some resorted to use the adult's toothbrush as the kids' toothbrush given to their younger siblings.
• Toothbrushes were not changed as advised; some used the same brush for a year.
• As betel nut chewing was highlighted to be avoided in preventing oral cancer, it was made known to be part of their culture where it was taken to prevent evil spirits in this community.

6. Discussion

It has been highlighted that indigenous people tend to experience oral health barriers to preventive and curative oral health services when compared to general population

(Williams et al., 2011). This can be due to geographical and cultural factors. A study by Jamieson et al, 2006, found that factors such as living in rural area and lack of facilities can contribute to poor oral health. As SK Lanai was based in Kuala Lipis, Pahang, Malaysia which was located about 177km away from Kuala Lumpur, it was a suitable ground to assess and promote oral health knowledge and awareness amongst the OA community. This school is one of the rural schools with majority of the students originated from the indigenous Semai tribe.

This programme involved the creation of a customised dental kit and a tri-lingual oral health booklet that act as aids to facilitate the students, teachers, and parents in adapting to better oral health practices. As a result, this programme can be viewed as a prelude to a well-organised school based oral health promotion. Based on our observations, this programme was well accepted by the community especially the students. However, certain issues were raised by the students such as the lack of oral hygiene kit (toothbrush and toothpaste) as well as the betel nut chewing habit within the community. It was acknowledged through the literature that health education and health promotion program including no access to personal oral and health kit provider can be an issue for the indigenous community (Mejia et al., 2010; Rowan-Legg, 2013; Durey et al., 2017.) Although lack of ownership of toothbrushes and toothpastes within the community can be related to the socio-economic status of OA, the betel nut chewing habit was cultural and shared similarity to findings reported by Berhan Nordin et al, 2019.

6.1 Impact Towards the Community
Educational programme that instils good oral health knowledge and awareness among OA children using native language can promote sustainability of oral hygiene practices within the community.

6.2 Challenges and Suggestions for Future Community Engagement Improvement
Teachers and parents were unable to fully monitor the implementation of the dental care of the OA children. It is hoped that the customised dental kit will be improved and made available for larger scale distribution within the community.

7. Conclusion
Based on the findings of this programme, the oral health knowledge and awareness including good oral hygiene practices and habits amongst the OA community especially

the school children, has been addressed. This was made possible through the implementation of sharing sessions and customised oral health kit with the tri-lingual oral health booklet. The tri-lingual booklet that include Semai language was meant to bridge the cultural disparities within the Orang Asli community. The sense of ownership by having their own language incorporated into the oral health educational programme was seen to motivate them and later enable the sustainability of the knowledge and oral hygiene practices within the community.

Acknowledgement

References

Arantes, R., Santos, R. V., & Frazão, P. (2010). Oral health in transition: the case of Indigenous peoples from Brazil. *International Dental Journal*, *60*(3), 235-240.

Berhan Nordin, E. A., Shoaib, L. A., Mohd Yusof, Z. Y. M., Manan, N. M., & Othman, S. A. (2019). Oral health-related quality of life among 11–12-year-old indigenous children in Malaysia. *BMC Oral Health*, *19*(1), 1-10.

Butten, K., Johnson, N. W., Hall, K. K., Anderson, J., Toombs, M., King, N., & O'Grady, K. F. (2019). Risk factors for oral health in young, urban, Aboriginal and Torres Strait Islander children. *Australian Dental Journal*, *64*(1), 72-81.

Campbell, M. A., Hunt, J., Walker, D., & Williams, R. (2015). The oral health care experiences of NSW aboriginal community-controlled health services. *Australian and New Zealand Journal of Public Health*, *39*(1), 21-25.

Cook, S. L., Martinez-Mier, E. A., Dean, J. A., Weddell, J. A., Sanders, B. J., Eggertsson, H., Ofner, S & Yoder, K. (2008). Dental caries experience and association to risk indicators of remote rural populations. *International Journal of Paediatric Dentistry*, *18*(4), 275-283.

Dimitropoulos, Y., Holden, A., Gwynne, K., Irving, M., Binge, N., & Blinkhorn, A. (2018). An assessment of strategies to control dental caries in Aboriginal children living in rural and remote communities in New South Wales, Australia. *BMC Oral Health*, *18*(1), 1-8.

Durey, A., McAullay, D., Gibson, B., & Slack-Smith, L. M. (2017). Oral health in young Australian aboriginal children: qualitative research on parents' perspectives. *JDR Clinical & Translational Research*, *2*(1), 38-47.

Erickson, P., & Patrick, D. (1993). Health status and health policy: quality of life in health care evaluation and resource allocation. New York: *Oxford University Press.*

Hilton, I. V., Stephen, S., Barker, J. C., & Weintraub, J. A. (2007). Cultural factors and children's oral health care: a qualitative study of carers of young children. *Community Dentistry and Oral Epidemiology*, *35*(6), 429-438.

Jabatan Pendidikan, P. (2014) Perangkaan Pendidikan. *Maklumat Asas Pendidikan 1* (October 29) DOI: 10. 1017/CBO 9781107415324.004

Jamieson, L. M., Armfield, J. M., & Roberts-Thomson, K. F. (2006). The role of location in Indigenous and non-Indigenous child oral health. *Journal of Public Health Dentistry*, *66*(2), 123-130.

Levin, A., Sokal-Gutierrez, K., Hargrave, A., Funsch, E., & Hoeft, K. S. (2017). Maintaining traditions: A qualitative study of early childhood caries risk and protective factors in an indigenous community. *International Journal of Environmental Research and Public Health*, *14*(8), 907.

Mejia, G. C., Parker, E. J., & Jamieson, L. M. (2010). An introduction to oral health inequalities among Indigenous and non-Indigenous populations. *International Dental Journal*, *60*(3S2), 212-215.

Nash, D. A., & Nagel, R. J. (2005). Confronting oral health disparities among American Indian/Alaska Native children: the pediatric oral health therapist. *American Journal of Public Health*, *95*(8), 1325-1329.

Nicholas, C. (2006). The orang Asli: Origins, Identity and Classification In: Hood S, editor. *Peoples and Traditions (the encyclopaedia of Malaysia)*, 20-21.

Patrick, D. L., Lee, R. S. Y., Nucci, M., Grembowski, D., Jolles, C. Z., & Milgrom, P. (2006). Reducing oral health disparities: a focus on social and cultural determinants. *BMC Oral Health*, *6*(1), 1-17.

Prasai Dixit, L., Shakya, A., Shrestha, M., & Shrestha, A. (2013). Dental caries prevalence, oral health knowledge and practice among indigenous Chepang school children of Nepal. *BMC Oral Health*, *13*(1), 1-5.

Prowse, S., Schroth, R. J., Wilson, A., Edwards, J. M., Sarson, J., Levi, J. A., & Moffatt, M. E. (2014). Diversity considerations for promoting early childhood oral health: a pilot study. *International Journal of Dentistry*, 1–10.

Roberts-Thomson, K. F., Slade, G. D., Bailie, R. S., Endean, C., Simmons, B., Leach, A. J., & Morris, P. S. (2010). A comprehensive approach to health promotion for the reduction of dental caries in remote Indigenous Australian children: a clustered randomised controlled trial. *International Dental Journal*, *60*(3), 245-249.

Rowan-Legg, A., Canadian Paediatric Society, & Community Paediatrics Committee. (2013). Oral health care for children–a call for action. *Paediatrics & Child Health*, *18*(1), 37-43.

Samosir, R., Yusof, Z. Y., Mohamed, N. H., & Shoaib, L. A. (2018). Oral Health Knowledge, Attitudes and Practices of 11-12-Year-Old Orang Asli Children in Cameron Highland, Malaysia. *Southeast Asian Journal of Tropical Medicine and Public Health*, *49*(5), 894-908.

Schulz, A., & Northridge, M. E. (2004). Social determinants of health: implications for environmental health promotion. *Health Education & Behavior*, *31*(4), 455-471.

Scrimshaw, S. C. (2003). Our multicultural society: implications for pediatric dental practice. *Pediatric Dentistry, 25*(1), 11-15.

Smith, K., Kruger, E., Dyson, K., & Tennant, M. (2007). Oral health in rural and remote Western Australian Indigenous communities: A two-year retrospective analysis of 999 people. *International Dental Journal*, *57*(2), 93-99.

Spencer, A. J., Bailie, R., & Jamieson, L. (2010). The Strong Teeth Study; background, rationale and feasibility of fluoridating remote Indigenous communities. *International Dental Journal*, *60*(3S2), 250-256.

Tiwari, T., Jamieson, L., Broughton, J., Lawrence, H. P., Batliner, T. S., Arantes, R., & Albino, J. (2018). Reducing indigenous oral health inequalities: a review from 5 Nations. *Journal of Dental Research*, *97*(8), 869-877.

Tsai, C., Blinkhorn, A., & Irving, M. (2017). Oral health Programmes in indigenous communities worldwide—lessons learned from the field: a qualitative systematic review. *Community Dentistry and Oral Epidemiology*, *45*(5), 389-397.

Williams, S., Jamieson, L., Macrae, A. P., & Gray, C. A. (2011). Review of Indigenous oral health. *Australian Indigenous Health Bulletin*, *11*(2), 1-18.

CHAPTER 5

Assessing Klang Valley Youth Awareness towards Achieving Sustainable Development Goals (SDGs)

By

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Abstract

Sustainable development goals (SDGs) are the blueprint adopted by United Nation member states in 2015 in order to address the global changes while ensuring a better and sustainable actions for the future. Malaysia has also taken an effort to integrate the SDGs into our national development plan. This study was conducted to assess the awareness level towards Sustainable Development Goals among youth consisting of high school students in Klang Valley. The evaluation of knowledge, attitude and practice were measured through a set of questionnaires with 60 questions, given to 421 respondents. The minimum number of feedbacks are relying on 95% of confident level and ± 5% margin of error from the overall population. 5 schools were selected and grouped into 3 types: high performance school, cluster school and daily school. The results of Spearman Rho correlation showed a significant but weak relationship [r= 0.435] between attitude and practice for all schools. Moreover, the statistical test showed a negligible relationship between knowledge with attitude and knowledge with practice. The study found that high performance school have the highest score for all knowledge, attitude, and practice part in average. Some external factors like the type of school, academic streaming and student maturity could be contributing to their level of awareness on SDGs. Interestingly, although as high as 84%

from the respondents are knowledgeable about SDGs, only 48.9% have the attitude to practice SDGs.

1. Introduction

Sustainable development is defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Keeble, 1988). Our environment is deteriorating day by day and this situation is alarming. In order to fix the deteriorating situation, human lifestyle and the way we carried out our daily activities either it is personal or in a large scale need to be changed. This is where Sustainable Development Goals (SDGs) come into the picture.

Before SDGs come into focus, it was Millennium Development Goals (MDGs) which started the effort in improving our world. From the year 2000 to 2015, MDGs has helped in providing evidence to monitor poverty. MDGs succeeded at promoting problems like poverty, hunger, education, gender equality and environmental loss (Sachs, 2012). With 8 goals, some developing countries do succeed at achieving those goals and even make improvements from their previous condition. Therefore, MDGs have played an important role in making countries around the world making progress and provide a better future for the next generation to live in. As were discussed by the global representatives, this kind of focus should be continuing as it connected countries to do better for their citizens and cooperate to ensure those problems being laid out can be solved.

Since there is a demand for environmental, economy, and social aspect to be acknowledge from most countries, SDGs become an important focus (Ilham et al., 2022). There is a need for an urgent, high profile and change in producing global goals for most countries as all are being pressured with environmental problems such as land degradation which may include soil quality that may affect food production which then would relate to the quality of surrounding where human lives. Generally, economy would be much depending on the environment too which at certain point, degrading of environment causing a country to lose their income and will affect the quality of life of their citizens which lead to social issues.

For Malaysia, we are on track with the SDG. It is estimated that the Malaysian population will be 80 percent urban by the year 2030. Goals of greening our cities, providing high-level services to citizens through an improved communication technology

should be achievable by that time. By having an improved communication set and high-end tools, we would be able to catch up and expand the economy and encourage innovation (Isa, 2021). Efforts on aligning the 11th Malaysia Plan with SDGs was done to ensure we are able to achieve those goals by 2030 (Karim, 2021).

Therefore, it is interesting to evaluate the awareness towards SDGs amongst the youth in Klang Valley, which is a rapidly developed urban area in Malaysia. The approaches are focused on the students' knowledge, attitude, and practice with the purpose of developing concern towards environmental, economy and social issues.

2. Target Community

Klang Valley covers the area of Kuala Lumpur and part of Selangor. It is a developing area and concentrated with Malaysia industry and commerce. The study was conducted on selected secondary school which consist of students from Form 1 to Form 5 which normally ages around 13 to 17 years old. 5 high schools were selected from this location which consists of 2 cluster schools, 2 daily high schools and 1 high performance school (**Table 1**). These schools were chosen due to its status as Universiti Malaya's Kelab Sahabat partner schools and their commitment to collaborate with this study. All schools involved with the study has already carried out effort in having a sustainable practice in their schools.

Table 5.1: Selected Klang Valley high schools as target community

No.	School Name	Type	Coordinates
1	SMK Damansara Damai 1	Daily High School	3° 11' 29.796" N 101° 35' 32.532" E
2	SMK Seksyen 10 Kota Damansara	Daily High School	3° 10' 9.84" N 101° 34' 47.316" E
3	SMK Damansara Utama	Cluster School	3° 8' 13.632" N 101° 37' 31.512" E
4	SMJK Katholik	Cluster School	3° 6' 27.18" N 101° 39' 7.308" E

5	SMK (P) Sri Aman	High Performance School	3° 6' 7.776" N 101° 37' 41.556" E

3. Methodology

3.1 Participants

The study has focused on the students of 5 high schools. Participants were selected randomly for this research. Students came from different form and streams. For this study, students from form 1, 2, 3 and 4 were involved.

3.2 Sampling

A total of 5 schools agreed to collaborate in this research in Klang Valley, Malaysia. A total of 500 questionnaires were distributed among the students. The respondents' return rate was calculated as 84.2 percent, where 421 questionnaires were received from the students.

3.3 Instrument

The research was carried out using a questionnaire as data collection instrument and it covers all 17 goals of SDGs (**Table 2**). It was included 51 closed-ended questions covering various aspects of the current social, economy and environmental issues in general. Although these questions limit the response to the issues, but it will help the students to gain insights on the SDGs (Reja et. al., 2003). It also guides the students to respond to question easily. The questionnaire consisted of 3 sections: "Knowledge", "Attitude" and "Practice". The Knowledge section consists of 16 questions that require respondents to choose "Yes" or "No". The attitude and practice section consists of 17 and 18 statements respectively with 5-point Likert scale. Some questions are modified and adapted from Jamaludin et al. (2020).

Table 5.2: Goals represented by each statement from knowledge, attitude and practice

	Goal	Knowledge		Attitude			Practice	
1	No Poverty	K5	K6	A5		A6	P5	
2	Zero Hunger	K2	K16	A2		A16		

#	Goal	K	K	A	A	A	A	P	P	P
3	Good health and well being	K11		A11				P4	P13	
4	Quality education	K10		A10						
5	Gender equality	K1		A1						
6	Clean water and sanitation	K7	K12	A7				P7		
7	Affordable and clean energy			A17				P8	P9	P13
8	Decent work and economic growth	K14		A17				P11	P18	
9	Industry, innovation and infrastructure	K4		A12	A14	A17		P6	P11	P18
10	Reduced inequalities	K5		A5				P14	P15	
11	Sustainable cities and communities	K8		A14				P12	P13	P18
12	Responsible consumption and production	K4		A3	A4	A8	A12	P3	P8	P16
13	Climate action	K2	K16	A2	A16	A17		P2		
14	Life below water	K3	K9	A3	A12			P12		
15	Life on land	K9	K13	A13	A14			P2	P12	
16	Peace, justice and strong institutions	K15		A9	A12	A15		P10	P15	
17	Partnerships for the goals	K9		A15				P10		

3.4   *Scoring/ Coding of responses*

The instrument consisted of sections: Knowledge, Attitude and Practice. The first part is knowledge which consists of 16 statements that measure knowledge related to SDGs where scored by "Yes" and "No". The second part is Attitude which consists of 17 statements that is measured by 5 point Likert scale where scored "1 = strongly disagree", "2 = disagree", "3 = neutral", "4 = Agree" and "5 = Strongly agree". The last part is Practice which consists of 18 statements also measured with 5 point Likert scale where scored "1 = Never", "2 = Sometimes", "3 = Once", "4 = More than once" and "5 = Always".

4. Analysis

The Statistical Package for The Social Sciences (SPSS version 20.0) is the statistical software used for analysis of the collected data. The analysis form used in the SPSS was descriptive, frequencies and correlation. The Knowledge, Attitude and Practice were analysed by Spearman Rho correlation to survey the relationship between the variables. On the other hand, significance between different groups were tested using Kruskal-Wallis test. Reliability test was conducted on the questionnaire and validated through Cronbach Alpha coefficient (**Table 3**). From the reliability test conducted, all of the variables of knowledge, attitude and practice on SDGs have good internal consistency, with Cronbach Alpha coefficient reported of 0.814.

Table 5.3: Reliability level for Cronbach Alpha value

Cronbach coefficient alpha (a)	Reliability Level
<0.65	Undesirable
0.65 – 0.95	Satisfactory
>0.95	Overlap

5. Results

5.1 Personal Background of Respondents

A total of 421 respondents were obtained out of 8575 total population from the selected schools. The number of feedbacks rely on the 95% level of significant, with ±5% margin of error. The exact target for minimum sample size is 381 respondents.

Figure 5.1 in the next page shows the percentage of the demographic background for the respondents according to their gender, type of school, academic streaming, student maturity (based on form) and environmental club. Majority of the respondents were female, with the percentage of 65.3% and the male respondents were 34.7. The respondents come from 5 selected schools for this study, and they were grouped into 3 types which is daily school, cluster school and high performance school. Based on Figure 5.1, the background study of the respondents was divided based on their level of study (form). The highest respondents come from Form 2 with 31.6% and the lowest is from Form 3 with 10.7%. Most of the respondents come from Form 1, 2 and 3, and they do not have any specific academic streaming. There is only a slight difference in percentage between respondents from science and art streams. Lastly, only 12.8% of the respondents joined environmental club while most of the respondents were not a member of environmental club in their respective schools.
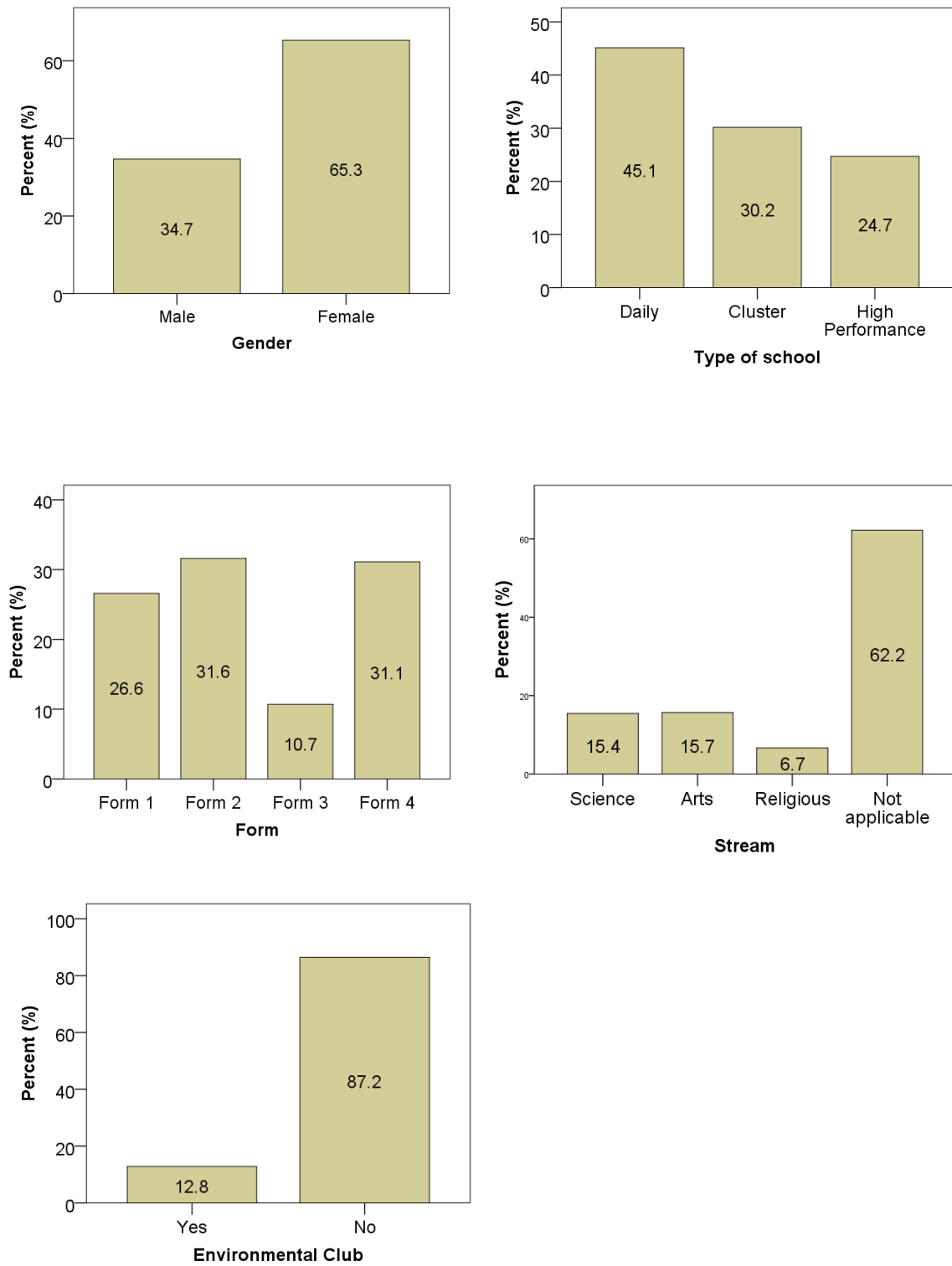
Figure 5.1: The demographic background of the respondents in selected schools

5.2 *Awareness Level of Students*

As depicted in **Table 4** below, the highest percentage were on "Yes" only for statement 'women and men were not given the same opportunity in workforce' and 'number of HIV and AIDS disease case reduced" have a higher percentage of respondents answering 'No'. From this result, it shows that majority of the respondents have a high knowledge on Sustainable Development Goals aspect. The highest percentage for a 'Yes' was 98.6% for the statement 'water is important for all living' showing that they concern about water condition. Some results presented are modified and adopted from Ilham et al. (2021).

Table 5.4: The knowledge of the respondents towards SDGs

Knowledge		Percentage of respondents	
		Yes (1)	No (2)
K1	Women and man were not given the same opportunity in workforce.	43.7	56.3
K2	Climate change affect agriculture.	95.7	4.3
K3	Use of plastics pollute the sea	94.3	5.7
K4	Straw and plastic bottles can be substituted to other substances.	87.9	12.1
K5	Poor citizens are being left behind.	64.8	35.2
K6	Financial aid for the poor citizens is not enough.	77.4	22.6
K7	Water is important for all living.	98.6	1.4
K8	Waste separation is important to reduce use of original resources.	92.9	7.1
K9	Cooperation from various organisation is important to preserve biodiversity.	94.3	5.7
K10	Formal education is important for children from all over the world.	93.3	6.7
K11	Number of HIV and AIDS diseases cases reduced.	41.3	58.7
K12	Clean water sources are still inaccessible for some of the world citizen.	91.9	8.1
K13	Forest areas in Malaysia must be protected to ensure the habitat of animals and acts a carbon storage.	95.5	4.5

		79.3	20.7
K14	Job opportunity depends on the condition of the country's economy.	79.3	20.7
K15	Relationship with various countries is important to preserve peace.	97.1	2.9
K16	Farming activity depends on surrounding weather.	94.5	5.5

The 5-point Likert Scale represent the respondent's agreement towards the statement of attitude on sustainability. Scale 1 represent strongly disagree, while scale 5 represent strongly agree. Generally, the respondents have high frequency of attitude on sustainable life as there were high percentage on 5th scale. It can be concluded that the respondents in the selected schools have positive attitude towards sustainable development.

Table 5. The attitude of the respondents towards SDGs.

	ATTITUDE	Percentage of respondents according to the Likert Scale (%)				
		1	2	3	4	5
A1	I believe that women and men must be given the same opportunity in workforce.	2.9	4.0	13.1	26.8	53.2
A2	In my opinion, climate change affect agriculture.	1.0	3.6	12.1	39.4	43.9
A3	I supported the banning of use of straw to save turtles.	5.5	5.5	13.1	20.0	56.1
A4	I am ready to use aluminium bottle to bring to school.	11.2	10.9	34.6	20.9	22.3
A5	I pitied those poor people who were leave behind.	1.9	2.4	11.2	25.7	58.9
A6	I am ready to donate to help poor people.	1.9	0.7	13.1	29.9	54.4

A7	I feel that a clean water is very important for daily use.	1.7	1.7	2.9	10.2	83.6
A8	I support waste separation activity especially separating plastics.	2.6	2.6	12.4	30.4	52.0
A9	In my opinion, the politicians have to focus on the sustainable needs of the community.	1.7	3.6	17.3	27.6	49.9
A10	I am happy to come to school and learn.	3.8	3.1	29.7	27.3	36.1
A11	I believe that citizens that are free from HIV and AIDS diseases can help in developing a better future.	3.3	4.5	18.8	26.1	47.2
A12	I want the individual who pollute the river to be fine.	4.3	2.9	8.8	22.3	61.7
A13	I feel that forest is a peaceful place and important for human and animals.	1.9	3.6	9.0	25.4	60.1
A14	Online shop reduces the need of a space to be developed.	2.4	5.5	30.2	29.2	32.8
A15	I believe that peace can be achieve by protecting relationship between countries.	1.0	2.4	8.3	28.5	59.8
A16	Future of foods depends on current weather.	4.5	8.1	29.9	30.2	27.3
A17	Online shopping helps reduce carbon footprint.	2.6	7.6	40.9	25.7	23.3

1 – Strongly disagree, 2 - Disagree, 3 - Neutral, 4 - Agree, 5 – Strongly agree

The scale 1 represents 'Never' practice while scale 5 represents 'Always'. The distribution of practice on Sustainable Development Goals was vary from scale 1 to 5. There were only 5 statements that have the highest frequency on scale 5. It showed that the respondents always work hard on a field they like, give up clothes to the needy, would

choose to walk or cycle to school if they live nearby, respect their friends with different religion and only buy things that they need. Overall, the respondents still have a low practice towards sustainable development similar as what has been shown among Malaysian university students (Afroz and Ilham, 2020).

Table 5.6: The practice of the respondents towards SDGs

Practice		Percentage of respondents according to the Likert Scale (%)				
		1	2	3	4	5
P1	I work hard on a field if I like it.	3.8	10.0	7.4	27.6	51.3
P2	I actively planting trees because I want a cooler environment.	20.2	26.6	27.6	16.4	9.3
P3	I did not use plastic straw.	13.1	37.3	16.2	21.4	12.1
P4	I eat at fast food restaurant less often.	8.3	36.3	13.1	25.4	16.8
P5	I and my family give used clothes to the needy.	8.8	16.6	15.0	26.4	33.3
P6	I used boxes or used items to create something.	12.6	24.0	20.0	26.8	16.6
P7	I collected rainwater for outdoor used.	39.0	18.8	18.0	12.4	11.9
P8	I separate my waste like plastics, paper, tin and food waste.	19.2	26.6	14.3	20.9	19.0
P9	I watch television less often.	18.3	29.0	11.6	17.3	23.8
P10	I dreamed of being a leader to the community.	35.6	13.1	17.8	16.6	16.9
P11	I involved with selling activity.	24.7	16.4	24.7	20.2	14.0
P12	I pick up rubbish in front of me.	4.0	28.3	11.1	30.4	26.1
P13	I would rather walk or cycle to school if I did not live too far.	11.4	12.4	7.6	20.9	47.7
P14	I help people with disabilities.	6.4	18.1	20.9	27.5	27.1
P15	I respect my friends with different religion.	1.2	5.2	7.1	15.4	71.0

P16	I only buy things that I need.	4.8	20.9	12.8	30.6	30.6
P17	I used social media to spread awareness on environment.	27.1	24.9	20.9	14.0	13.1
P18	I buy things online.	20.0	22.6	16.6	18.8	22.1

1- Never, 2 – Sometimes, 3 – Once, 4 – More than once , 5 – Always

Further statistical analysis by Spearman Rho correlation results is depicted in **Table 7**, showing practice and attitude have a significant and strong relationship (r= 0.435), with significant level of p<0.01. Interestingly, correlation between knowledge with attitude and practice is negligible. Negative correlation between knowledge with attitude and practice shows that the level of knowledge that the students have did not affect their attitude and practice towards a sustainable manner.

Table 5.7: Correlation between knowledge, attitude and practice on SDGs

			Attitude	Practice	Knowledge
Spearman's rho	Attitude	Correlation Coefficient	1.000	.435**	-.331**
		Sig. (2-tailed)	.	.000	.000
		N	421	421	421
	Practice	Correlation Coefficient	.435**	1.000	-.267**
		Sig. (2-tailed)	.000	.	.000
		N	421	421	421
	Knowledge	Correlation Coefficient	-.331**	-.267**	1.000
		Sig. (2-tailed)	.000	.000	.
		N	421	421	421

5.3 Community Socio-Environmental Impacts

The institutionalisation of culture to support SDGs activities should involve educational and awareness campaigns, dialogue, series of meetings in identifying the targets, establishing the system, mechanism, and Key Performance Indicators (KPIs). Those must be coupled with the living lab approach which allows contribution from all community members, teachers, students and the supporting staff. Teamwork and top management commitment are identified as critical success factors in building the people and the culture, towards a successful sustainability program. Details on this study have been published earlier (Ilham et al., 2021).

5.4 Challenges and Future Recommendations

There are also several challenges in conducting this research. First, the number of respondents from each school varies due to the students' availability and the restrictions set by the Ministry of Education Malaysia, which forbids the team from interrupting form 3 and form 5 students. However, consideration from some of the teachers, helped us a lot in distributing the questionnaires. Another limitation is from the students itself who might not understand some technical terms, but the research team is always available and ready to help them.

5.5 Concluding Remarks

Based on the results presented beforehand, it can be concluded that the students are knowledgeable on the components of the Sustainable Development Goals, with high positive attitude towards it and acceptable level of practice towards SDGs. Overall, the awareness level can be described to be at an acceptable level. For the three items of knowledge, attitude and practice, there was no correlation between knowledge with attitude and practice. Only attitude and practice had a significant ($p = 0.000 < 0.01$) and strong correlation [$r = 0.435$].

From Spearman Rho correlation analysis, the students' backgrounds were not significantly influenced the awareness level but type of school [$r = -0.239$] and academic streaming [$r = -0.209$] have a weak and negative correlation with knowledge while student maturity have a moderate but negative relationship with knowledge [$r = -0.300$] at significant level of $p < 0.05$.

The recommendation that can be made is to instil the habit and practice towards SDGs among the students to encourage them to apply the knowledge that they gained. Students should also receive more exposures towards the global goals and the SDGs should be integrated into other non-science subjects.

Acknowledgments

References

Afroz, N., & Ilham, Z. (2020). Assessment of knowledge, attitude and practice of University Students towards Sustainable Development Goals (SDGs). *The Journal of Indonesia Sustainable Development Planning*, *1*(1), 31-44.

Ilham, Z., Kamal, A., Wan-Mohtar, W. A. A. Q. I., & Jamaludin, A. A. (2021). Youth awareness level towards sustainable development goals (SDGs) in greater Kuala Lumpur. *The Journal of Indonesia Sustainable Development Planning*, *2*(3), 217-233.

Ilham, Z., Zulkifli, N. E. I., Ismail, N. F., Danik, A. S., Abdul Halim-Lim, S., Wan-Mohtar, W. A. A. Q. I., & Jamaludin, A. A. (2022). Energy conservation: awareness analysis among secondary school students. *Environmental Education Research*, 1-23.

Isa, N. M., Sivapathy, A., & Kamarruddin, N. N. A. (2021). Malaysia on the way to sustainable development: Circular economy and green technologies. In *Modelling Economic Growth in Contemporary Malaysia* (pp. 91-115). Emerald Publishing Limited.

Jamaludin, A. A., Ilham, Z., Zulkifli, N. E. I., Wan, W. A. A. Q. I., Halim-Lim, S. A., Ohgaki, H., Ishihara, K., & Akitsu, Y. (2020). Understanding perception and interpretation of Malaysian university students on renewable energy. *AIMS Energy*, *8*(6), 1029-1044.

Karim, K. N. (2021). A review of the Sustainable Development Goals policy framework for Malaysian local governments. *Malaysian Journal of Sustainable Environment (MySE)*, *8*(1), 157-177.

Keeble, B. R. (1988). The Brundtland report: 'Our common future'. *Medicine and War*, *4*(1), 17-25.

Reja, U., Manfreda, K. L., Hlebec, V., & Vehovar, V. (2003). Open-ended vs. close-ended questions in web questionnaires. *Developments in Applied Statistics*, *19*(1), 159-177.

Sachs, J. D. (2012). From millennium development goals to sustainable development goals. *The Lancet*, *379*(9832), 2206-2211.

CHAPTER 6

Enhancing Experiential Learning for School Children Using Mezoo™

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Abstract

Mobile technology may be particularly useful in experiential learning, where learners gain new knowledge through discovery and exploration outside of the classroom. meZOO™ provides an information system about animals and plants in Zoo Negara Malaysia (National Zoo Malaysia) using smartphone technology and QR code application. This screen-based information system consists of a user interface and an online inventory of animals and plants in Zoo Negara. The information board (signage) in the Zoo Negara has only limited information about the animals such as amazing facts, habitat, and food. In order to provide more information to the visitor, each animal in the Zoo Negara was designated a specific QR code which is placed on the information board. When visitors scan the QR code using a downloadable QR code reader apps (eg. NeoReader, Quick Scan, QR Reader, QR Scanner, etc), information about that animal or plant will be readily available on their smartphone or tablet screen. The information in the system comprises of species name, life span, colour, weight, food, habitat, behavior, reproduction, photos, videos, sounds, and other relevant information about the animals. For plants, it is divided into 5 categories: palms, trees, shrubs, herbal, and other plants while for animals, it is divided into 6 categories: mammals, reptiles, birds, fish, amphibians, and arthropods. The scientific name, local name, taxonomy, origin, habitat, life span, usage, and photos are also available for both plants and animals' web pages.

1. Introduction

The Mobile Encyclopedia of the Zoo (meZOO™) is an online system that delivers information about animals and plants in Zoo Negara Malaysia using smartphone and QR code. This smartphone-based information system consists of a user interface and an inventory of animals and plants in Zoo Negara, Malaysia. To date, meZOO™ has generated 230 QR code about animals and plants in Zoo Negara Malaysia, which covers 69 mammals, 25 reptiles, 45 birds, 40 fish, 8 amphibians, 23 arthropods and 20 plants species. All the relevant information about animals and plants are stored in the meZOO™ system (http://crystal.um.edu.my/MEZOO/) which resides on a dedicated server at CRYSTAL, University of Malaya. A video related to meZOO™ has also been uploaded to YOUTUBE (see: https://youtu.be/NWSMmU-aunA).

By creating this screen-based or smartphone-based information system, it helps to improve visitor's knowledge about the animals and plants that are exhibited in Zoo Negara. In addition, meZOO™ provides experiential learning experience to the children, much more powerful than books, comics or TV nature shows. The children will be inspired to learn more, care more, and do more to save animals and plants as well as their habitats. Furthermore, the children are using the screen-based devices for learning about animals and plants in a natural way (ie. on-site, rather than at home or in classroom).

2. Literature Review

Zoo is a unique place where many animal species thrive among various plants and trees. The zoo immerses people in an awesome, real-time safari of sights, sounds and smells. As such, zoo connect people to the wildlife with interactive experiences and provides experiential learning at its best, much more powerfully than books or TV nature shows.

Experiential learning is the learning process of an individual through experience – making discoveries and experiments with knowledge first-hand, instead of hearing or reading about others' experiences (Kolb, 2015). One example of experiential learning is going to the zoo and learning through observation and interaction with the zoo

environment. The activities contribute significantly to the individual overall understanding of the real-world environment.

David A. Kolb who postulated the Experiential Learning Theory pointed out that there are two goals in the experiential learning process: one is to learn the specifics of a particular subject while the other is to learn about one's own learning process. David Kolb's work on the experiential learning cycle is among the most influential approaches to learning. The experiential learning cycle is a four-step learning process that is applied multiple times in every interaction and experience: concrete experience – reflective observation – abstract conceptualisation – active experimentation. In addition, the Kolb Learning Style Inventory (LINK) describes nine different ways of navigating the learning cycle by learning styles: experiencing, imagining, reflecting, analysing, thinking, deciding, acting, initiating, and balancing.

Experiential education is a powerful and proven approach for teaching and learning that is since individuals learn best through experience. Thoughtful integration of technology can facilitate experiential learning in many ways. Creating engaging, technology-enabled learning experiences could enhance the specific processes of experiential learning. Mobile technology has become more widely available, convenient, and less expensive, particularly interesting for applications in contexts of real-world learning, allowing learners to research and acquire knowledge directly in the field (Petrovic, Kittl & Edegger, 2008; Wu *et al*., 2012)

2.1 Community Engagement

We were eager to use technology and innovations to break through traditional zoo boundaries by enhancing visitors' experiences on the grounds as well as extending the zoo experience to home or school. We were pleased that the Education department of Zoo Negara Malaysia was supportive of the idea. Our engagement with the Head of Education department, Mr Junaidi Omar and his team was successful in the development of meZOO™. Utilizing screen-based devices, QR code application and information of the animals and plants, together we developed a system that encourage learning and inspire change, visitors especially children and parents have more options for exciting and enriched zoo experiences. Visitors obtained more information on the animals and hear recordings in different languages on their smart phones.

3. Methodology

meZoo^{TM} was developed as a unique online web page with linkages to multiple pages for each animal or plants (see the results section). The Uniform Resource Locator (URL) of the system is embedded in a Quick Response (QR) code using a QR code generator. For each animal, there is a specific QR code pattern with its own URL (Figure 1). This allow data of each animal or plant to be updated by the system administrator.
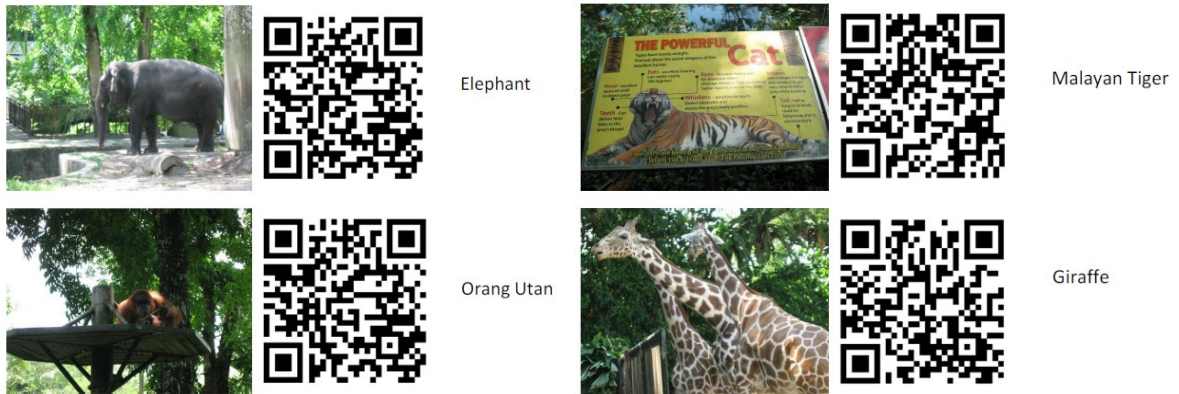
Figure 6.1: Examples of QR codes generated for selected animals

The respective unique QR code pattern was placed on the information board of each animal in Zoo Negara. Visitors need to scan the QR code using their smartphones and information about a particular animal will be readily available on their phone screen. The information in the system comprises of species name, life span, colour, weight, food, habitat, behavior, reproduction, photos and other relevant information about the animal.

4. Results

The interfaces of the main and home pages for meZoo^{TM} are depicted in Figure 6.2.

Figure 6.2: Snapshots of meZOO^{TM} interface on screen-based devices

Animals in the meZOO^{TM} system were categorized into mammals, reptiles, birds, fish, amphibians and arthropods (Figure 3). In addition to the many animals in the zoo, meZOO^{TM} also contain information about plants in the zoo. The plants were categorized into palms, trees, shrubs, herbals and other plants (Figure 3). The information about these plant species comprises of scientific name, local name, taxonomy, origin, habitat, life span, usage and their location in the zoo.

The page that contains information for each animal used simple wording to make it easy for children to read. The children can read in the Malay or English language as shown in Figure 4 for panda. There are also pages containing more detail information which are suitable for students and adults.

Figure 6.3: Snapshots of meZOO^{TM} interface on screen-based devices.

Left panel: animal, right panel: plant

Figure 6.4: Snapshots of the panda page on meZoo^{TM}.

A special signage with information to guide users on how to scan the QR code was placed on the way to the animal area (Figure 6.5). Visitors need to use their smartphones to scan the QR code on the signage of each animal (Figure 6.6).

Figure 6.5: Signage in Zoo Negara with instructions on using the meZoo^{TM} system

Figure 6.6: Animal specific signages in Zoo Negara. Left panel – Tapir (QR code bottom left); Right panel – Flamingo (QR code – bottom right)

4.1 Impact towards Community-Socioeconomic

We received good feedback from the zoo visitors. Volunteers help the visitors to download the QR code scanner and explain the steps required in using their mobile devices to obtain information about a particular animal or plant (Figure 6.7).

Figure 6.7: Helping pre-schools teachers with their smart phones to scan the QR codes

The project was highlighted in an interview on RTM TV1's Selamat Pagi Malaysia on the 27 July 2016 (see: https://youtu.be/vGMvJ8LXPHM) (Figure 6.8). Five copyrights and 1 trademark have been granted by the Intellectual Property Corporation of Malaysia (MyIPO) (Copyrights Notification No.: CRLY00004634 & Trademark No.: 2015071795).

Figure 6.8: Promoting meZOO™ during live RTM TV1's Selamat Pagi Malaysia

The QR code of selected animals and plants from the meZOO™ project were printed on special edition stamps, first day cover and postcards of the '7 wonders of Malaysian

Fauna and Flora', developed by POS Malaysia (Figure 6.9). The stamps, first day cover and postcards were officially launched by His Royal Highness Tengku Amir Shah Ibni Sultan Sharafuddin Idris Shah, the Crown Prince of Selangor on 23rd August 2016 in accordance with the giant panda birthday celebration.

Figure 6.9: Stamps, first day cover and postcards of the '7 wonders of Malaysian Fauna and Flora depicting selected QR codes from the meZOO^{TM} project.

The implementation and success story of meZOO^{TM} was shared with participants of the 4th ALL MALAYSIAN ZOO EDUCATORS CONFERENCE 2015 (AMAZED 2015) which was held in Zoo Negara on the $10^{th of}$ October 2015.

meZOO^{TM} participated in the International Conference and Exposition on Inventions by Institutions of Higher Learning (PECIPTA) in 2017 and 2019. meZOO^{TM} won a bronze medal and a silver medal in 2017 event in Kuala Terengganu, and 2019 event in Batu Pahat, respectively.

4.2 Challenges and suggestions for future community engagement improvement

With the advent of augmented reality (AR), virtual reality (VR) and artificial intelligence (AI), we are embarking on a new project (coined 'RIMBA') in implementing state-of-the-art experiential learning experience based alongside physical exhibits and locations. The advantage of such system is that it contains both user friendly back end and front-end interface for content creation, management and delivery of audio, video, AR and VR contents to end users (Figure 6.10).

RIMBA (Recreational Information Management & Database Architecture) is a comprehensive digital edutainment package which will include: content creation and management system, immersive virtual reality experience, mixed reality using AR technology, geotagging and QR implementation for localised content delivery as well as multilingual audio tour to augment exhibition. The RIMBA system is currently being developed through a collaboration with the industry and will be commercialized (Figure 6.11).

Figure 6.10: An Augmented reality (AR) 3D tiger shown in RIMBA prototype

Figure 6.11: The RIMBA System and its applications

5. Conclusion

Technological advancements have created a whole new category of tools and packages that connect to the emerging interest in using technology to enhance teaching and learning. Mobile experiential learning approach can enhance students understanding and stimulate interest in many topics taught in schools as well as supporting childhood development in thinking, experimenting and learning skills. Experiential learning encourages children to be exploratory, expressive and communicative. With the growth of VR, AR and AI, the future of experiential learning is looking bright and will really be something to behold.

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References

Kolb, D.A. (2015) Experiential Learning: Experience as the source of learning and development, 2nd Edition. Englewood Cliffs, Prentice Hall.

Petrovic, O., Kittl, C. and Edegger, F. (2008). Learning by Pervasive Gaming: An Empirical Study. In H. Ryu & D. Parsons (Eds.), Innovative Mobile Learning Techniques and Technologies. Information Science Reference, Hershey, USA, pp 60-82.

Wu, W., Wu, Y. J., Chen, C., Kao, H., Lin, C., and Huang, S. (2012). Review of Trends from Mobile Learning Studies: A Meta-Analysis. Computers in Education, Vol. 59, No. 2, pp 817-827.

CHAPTER 7

Tuninipot Creative-Literacy Module

By

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Abstract

TUNINIPOT Creative-Literacy Module for Sabah native children combines the creativity and aesthetics of the national Preschool Standard Curriculum with the traditional arts and cultures of the Sabah natives. This study aims to implement a Tuninipot creative-literacy module to improve the reading ability of Sabah Natives children. The data collection process is conducted through interviews, observations, and analysis of documents on teachers and children from five TADIKA at Kundasang and Ranau districts, Sabah. Feedback on the use of Tuninipot creative-literacy module among teachers and children is collected and analysed. The findings show an increased level of alphabet and syllable mastery as well as the ability to read simple sentences among children. While the interview found that teachers are satisfied with Tuninipot creative-literacy module in improving children's creative story writing skills, optimizing cultural values and, environmental resources as the basic teaching materials for literacy. Some improvements are proposed involving enrichment and rehabilitation activities, a variety of teaching and learning materials for children to express themselves in an open environment. In addition, it is recommended that the development of this module also involve teachers of various ethnic Sabah to discuss further the traditional art elements of several other Sabah ethnicities that

are appropriately adapted as activities for the implementation of the Tuninipot creative-literacy Module for children of Sabah Origin.

1. Introduction

Education today is witnessing changes in curriculum structure, the form of assessment and, pedagogy of teachers towards realizing the achievement of teaching and learning quality. Even so, there are still a handful of communities, especially ethnic minority Indigenous people are still marginalized, squeaked, and backward in the aspect of education. The issue of quality educational opportunities and equality of education continues to be on the national agenda. Various initiatives have been undertaken by various parties to address the issue of the education of Indigenous children.

The Indigenous children continued to experience problems in mastering literacy and numeration skills, especially in the inland. The remote geographical position in the interior is a constraint for The Orang Asal children to have access to a perfect education. According to statistics, there is approximately 80 percent of Indigenous children who never completed high school (JAKOA, 2007).

Hence, the issue of Indigenous children's education should be addressed immediately by all parties. This educational issue is not only limited to the dropouts, unschooled, or incomplete schooling but also beyond the curriculum delivery and pedagogy issues used for Indigenous children. Hence, the efforts to develop the use of Indigenous community-based resources as a learning resource for Indigenous children should be intensified as one of the ways to attract Indigenous children to school.

The education of Indigenous children continues to receive attention and becomes a national agenda. The education issues of the Indigenous children include academic issues, personality, language mastery, psychology, socio-cultural and economic issues. As an effort to elevate the Malaysian education system to the international level, albeit the socioeconomic gap between urban and rural and gender in pupil achievement. The government has launched the Malaysia Education Blueprint 2013-2025 which focuses on improving literacy and numeration rates, infrastructure and education infrastructure, and expanding access to quality education (MEB, 2013-2025). Continuity, a five-year transformation plan of Orang Asli Education (2013-2018) has been launched which aims

to provide educational opportunities that relevant to the needs of Indigenous people and Penan children.

Through the Preschool Education Curriculum, Indigenous children are exposed to children's learning experiences before entering Year One in formal schools. However, the issue is there are still Indigenous children who do not have the opportunity to get a formal education because of the geographical position and the willingness of parents to send their children to school. Then, Orang Asli's education should be able to attract children to attend formal schooling. This situation indirectly gives a big impression on the low literacy and numeracy mastery among Orang Asli children (Department of Orang Asli Development, 2009; Ministry of Education Malaysia, 2010).

Thus, as an alternative to the illiteracy issue, low mastery of literacy and numeracy, drop-out, and is not interested in going to school, from the perspective of different approaches should be explored. Therefore, this study aims to implement a module-based responsive pedagogical approach for improving reading ability (Literacy Principles) for children of indigenous peoples of Sabah.

This study aims to implement the Tuninipot module based on a responsive pedagogical approach to improve reading skills (literacy principles) for children from Sabah. The research problem is as follows:

"What is the teacher's reflection on the Creative-literacy Tuninipot Module as a teaching and learning material for literacy principles for children from Sabah?"

2. Literature Review

Highlights of the study bring up the issues and challenges and education for children of indigenous peoples, Children's Educational Challenge of Indigenous Peoples in Malaysia, Literacy Module Development Tuninipot Creative, Creativity and Children and Early Literacy Skills.

2.1 Education Children of Indigenous Peoples

The term Orang Asal in Malaysia refers to Orang Asli in Malaysia and Orang Asal in East Malaysia refers to the population given Bumiputra status. Indigenous people in East Malaysia contain at least 64 Indigenous ethnic groups, which is an estimated 39 ethnic groups in Sabah and 25 ethnic groups in Sarawak (JAKOA, 2020). Orang Asli in Malaysia can be classified according to demographic aspects of the indigenous peoples who are

divided into 3 main races Senoi, Proto-Malay (Melayu Asli), and Negrito (Krishnasamy, D. S., and Asan Ali Golam Hassan, 2016). This classification is categorized by the researcher according to criteria such as language, culture, way of life, and physical characteristics. Senoi tribe is the largest tribe in the Aboriginal community, namely by 55% compared with 42% of Proto Malays and Negritos (3%).

Education of children of indigenous peoples enshrined in several provisions of the law, whether at the national or even international. Starting with the declaration of Universal Human Rights (UDHR) where basic education should be made compulsory and provided free of charge as provided in Article 26 (1) and Article 29 (2). Up to the specific provision that the Education Rights of Indigenous Peoples was gazetted through the United Nations Declaration on the Rights of Indigenous People (UN-DRIP) in September 2007.

In Malaysia, although the National Constitution does not specifically state the Right to Education of Orang Asli, it states that no discrimination is allowed in terms of admission and financial assistance provided for educational purposes through the Aboriginal Peoples Act 1954 revised 1974. Under the provisions of Act 134 (Aboriginal Peoples Act 1954 revised 1974), Article 17 Orang Asli shall not be excluded from any school, stating that:

i. No aboriginal child shall be precluded from attending any school by reason only of his being an aborigine.

ii. No aboriginal child attending any school shall be obliged to attend any religious instruction unless the prior consent of his father or of his mother if his father is dead, or of his guardian should both parents be dead, is notified to the Director-General, and is transmitted by the Director-General in writing to the headmaster of the school concerned.

iii. Any person who acts in contravention of this section shall be guilty of an offense and shall, on conviction, be liable to a fine not exceeding five hundred ringgit.

In 2003, the Education Act 1996 was amended to make basic education, which is school education that compulsory. This means that every child aged 6-12 should follow the school system (Primary School). This amendment is in line with the 1989 Convention on Children's huge implication for indigenous people because not all indigenous children receive formal education in Malaysia.

2.3 Challenges of Indigenous Education in Malaysia.

In the current modernization of the education system today, the Indigenous community is still burdened with problems such as the issue of dropouts in education, academic

achievement, literacy, and low numeracy. Indigenous peoples who typically stay in rural areas have high dropout rates in every level of education, ranging from preschool to institutions of higher learning (Doris et al. 2012; Mazdi et al., 2014; Omar, Abdullah, Azizi, Radzy Razak, 2020). According to Wan Afizi et al., (2014) this dropout phenomenon intentionally causes them to continue to be and stay in rural areas due to economic, political, and social backwardness. Children already accustomed to the socialization process traditionally make it difficult for them to adjust to the school system. The local Orang Asli community gives less emphasis on children's education because they traditionally think school is a place to play and eat (Ali, Samah, Hamsan Khir, 2020).

The Human Rights Commission of Malaysia (SUHAKAM) has recommended to the Ministry of Education to review the approaches used in teaching and learning for children of indigenous peoples as they draw from a background, culture and way of life considerably different from the children of prime as an alternative to efforts to resolve the issue of education for children of indigenous peoples today.

This is because, based on several studies, it has been discovered that teachers who teach Indigenous people face the challenge of adapting teaching and learning approaches to the academic context of Indigenous communities. In the study Wan Afizi Wan Hanafi (2014) and Aishah Abd Malek and Mohd Nazri (2020) found that among the challenges teachers delivering lessons to children of indigenous peoples is a matter of communication, teaching aids (BBM) is limited, the adaptation of the syllabus, and also low pupil attendance.

In addition, teachers are confronted with the issue of Malay language dominance by indigenous children is comparatively poor. This is because the use of the Malay language merely utilises during school only. Thus, it causes a problem in communicating with teachers; the teaching process had to repeat the description of a problem and the teacher had to learn local dialects or languages of indigenous peoples to ensure that indigenous children learn to comprehend things. The situation becomes critical because most of them are inactive in the classroom and cause the teacher to not be able to assess whether the students comprehend what is taught or otherwise (Wan Afizi Wan Hanafi, 2014; Aishah Abd Malek Mohd Nazri Abdul Rahman, 2020)

2.4 CREATIVE-LITERACY Tuninipot Module

The development of the TUNINIPOT *creative-literacy* Module for Children from Sabah represents a continuation of the Literacy Principles Learning Module based on Folklore

from Sabah People. This module combines the component of creativity and aesthetics (Fourth component in the National Preschool Curriculum Standard, 2017) with the traditional values and cultural arts of the Orang Asli community through children's creative writing, Sabahan Folk Tradition Song, and dances. This is an attempt to introduce the values and traditions and beliefs of the Sabah people to children. This effort indirectly preserves the identity of the people of Sabah origin and fosters creativity in children in line with the needs of Education 4.0IR.

The development of the Tuninipot (*creative-literacy*) module for children from Sabah based on 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)

2.5 Children Creativity

Creativity addresses several aspects that are emphasized including inspiration, intuition and manifestation. Much of creativity is directly related to rational, semantic and cognitive and manifests that are associated with daily life and the influence of the environment in society. The definition of creativity is categorized into four which are process, product, individual and stress.

The word creativity comes from the Latin word *'creare'* which means 'to make'. Thus, creativity can be defined as a continuous process of producing something new. Creativity is directly related to a person's ability to process information in producing something new and original. This means that the process of creativity indirectly encourages children to conceive to solve a problem or come up with something new. Briefly, creativity remains the ability of an individual to identify issues and require assumptions to be debated as well as to recognize significant relationships to derive accurate conclusions from present

ones (Pascarella Teranzni, 2005).

2.6 *Early Literacy Skills*

Early Literacy refers to children's knowledge, skills, and behaviors in mastering reading and writing skills before they can read and write fluently. Early literacy skills include 3M mastery skills in school. This is to ensure a child can be prepared and go through the formal school environment effectively. Therefore, these early literacy skills are much needed and need to be formed in a planned and integrated manner at the beginning in the early stages of children's education (Fadzillah Hashim, 2019). Planned and structured exposure to early childhood literacy can help children develop their full literacy potential.

2.7 *Target community / Early engagement with the community*

The implementation of this module involves two learning communities, which is KRT Lohan Unity Preschool, Kundasang and Preschool, Institute of Teacher Education (IPG), Kent campus, Tuaran Sabah.

KRT Lohan Unity Preschool, Kundasang has 25 children with two teachers, while IPG Kent Campus Preschool has 25 children, a teacher, and an assistant teacher. Children that are involved are the children of the indigenous peoples of Sabah Kadazan Dusun. Therefore, the implementation activities of this module involve all children at KRT Lohan Unity Preschool, Kudasang Ranau and IPG Kent Campus Preschool with a total of 50 children.

3. Methods/ Procedures/Preparation before fieldwork

The development of this module applied the Design and Developmental Research approach (Richey Klein, 2014) that involves three phases, which is Phase 1 Needs Analysis; Phase 2 Design and development; and Phase 3 Implementation and assessment. The following is a description of the methodology for each phase:

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

Phase 2: Module Design and Development. The findings of the study from phase 1 serve as inputs to the design and development of Tuninipot module. Next, the Nominal Group Technique (NGT) approach was applied in designing the module. This phase involved 12 experts from the fields of early childhood education, languages and Indigenous people. 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.

Phase 3 Module Implementation and Assessment. The modules that were designed and developed in phase 2 are continuously implemented and evaluated for its effectiveness. The implementation of this module involved a program in the Kundasang districts, a preschool teacher education institute in Tuaran district, Sabah. Data collection was conducted on 50 children and user retrospective study on the use of creative-literacy tuninipot module by teachers and parents at Kundasang Unity Preschool and Preschool in Sabah.

3.1 *Implementation of the Creative Literacy Tuninipot Module*

The implementation of this module was carried out for 10 months at the KRT Lohan Unity Preschool and the IPG Preschool, Kent Tuaran Campus. 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 was 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.

4. Findings/ Results

The findings of this study presents data on the implementation and evaluation of the Tuninipot creative-literacy Module. Feedback obtained from the interview process (In-depth interview), observation and document analysis on the suitability of the Tuninipot Module as a basic literacy teaching and learning material for Indigenous children are based on the following research questions;

"What is the retrospective of teachers, parents and children to Tuninipot- creative-literacy module as a teaching and learning material in basic literacy for Indigenous children of Sabah?"

Based on the interview (In-depth interview), observation and document analysis, the findings indicated that Tuninipot creative-literacy module suitable as basic literacy teaching and learning for Indigenous children based on the following aspects;

4.1 Improving the mastery of the alphabet and syllables

The findings, observation and document analysis show that the use of the Tuninipot creative-literacy module can improve the mastery of the alphabet and syllables among Indigenous children. This case was stated by teacher B;

"Children are more irritable to recognize and pronounce vowels and consonants through the activities in this module. Furthermore, once they already recognize the letters, teaching syllable conjugation will become easy. In this module, there are also ABC songs and syllables that have the melody they routinely use (traditional songs)".

Based on the observation, it shows that children are actively involved during the implementation of this module. In addition, document analysis on children's work also has supported this teacher's statement. Analysis of these data proves that the module Tuninipot Literacy-Creative Module suitable as learning material in developing early literacy skills of indigenous children of Sabah. A review study of Orang Asli traditional songs by Zakaria bin Khalid (2007) states that the sound elements and language elements contained in Orang Asli songs can increase vocabulary, also traditional dances can be used as a source of teaching and learning of Malay language in schools.

The findings based on interviews, observations, and document analysis indicated positive impacts on Sabahan Native Children after the implementation of Tuninipot

modules. Early literacy proficiency performance showed that all children involved in mastering the basics of literacy could read simple sentences and short stories. In addition, the analysis of the study also showed that children involved were able to write short stories creatively and well.

4.2 *Improve Writing Skills*

The findings based on interviews, observations and document analysis show that the use of the Tuninipot creative-literacy module also can improve the skills of writing children's stories of indigenous peoples. Interview with teacher A found that;

".. children can also write simple sentences to tell what is drawn. Interestingly, this module activity allows children to express their stories in the form of drawings."

Observations on children also indicated children excited to tell stories during storytelling sessions with teachers. Document analysis found that children could write simple sentences to narrate their drawings. Overall, the implementation of this module can improve children's writing and storytelling skills based on the traditional stories of their community.

4.3 *Attracting children in Aboriginal To Learn*

In addition, interviews were also found Tuninipot creative-literacy Module is suitable as a teaching and learning of basic literacy for indigenous children. This is because, through this module, various learning activities based ob their intellectualism are directly adapted to attract indigenous children to come to school the next attending formal education in mainstream schools. This is evidenced by a statement from teacher A, stated that;

"The teaching and learning through this module is very good. The use of activities based on the traditions of the local community allows the children themselves to learn faster and understand what they are learning. This is because they can understand the content of the learning and then attract interest in them to continue learning."

Analysis showed the learning materials are set in the cultural environment and the local community can attract Indigenous children to continue to learn and come to school. The findings also prove that the curriculum based on arts and cultural traditions of the local

community is able to attract the interest of children and enrich the learning experience of Indigenous children. Formal education that succeeds in attracting their interest must incorporate the factors of language, culture and socialization process of the Indigenous people.

4.4 Optimizing the Traditions and Values of the Indigenous community

The findings show that the creativity contained in the arts, traditions and culture of the Indigenous community is appropriate to be optimized as teaching and learning materials for the basic literacy activities for Indigenous children. Besides being able to attract children's interest in learning early literacy, it can also preserve the values and traditions of the Indigenous community among children. This was clearly said by Teacher B;

"Using this module can indirectly maintain and preserve the traditional arts, values and practices of the Orang Asli community among children. The activities in this module prove that traditional arts and local culture can be developed as teaching materials in the classroom by teachers".

The analysis of this study shows that the use of traditional arts and community culture as teaching and learning materials in the classroom can maintain the values and traditions of society among children. A study conducted by Mohd Nazri Abdul Rahman, Mariani Md Nor and Ahmad Shobry Mohd Noor, (2017) showed that children who are exposed to traditional folk arts in teaching and learning can increase the value of self-esteem and their appreciation of tradition.

4.5 Preserving the Orang Asli folk songs

The findings show that the traditional songs of the Orang Asli community are suitable to be adapted as teaching and learning materials for Orang Asli children. Besides being able to improve the early mastery of literacy, story writing skills, it can also preserve traditional songs for the public. This was clearly said by Teacher A;

"Learning through Folk Tradition Songs, especially as early literacy teaching materials, is very impressive for children to learn to recognize letters and develop syllables..."

Based on the interviews, it showed that the use of traditional folk songs indirectly preserves traditional songs among children. The traditional songs of this community can also be accepted and used by future generations so as not to disappear (Mukaddes Agnello, 2009).

Retrospective of teachers and parents on the usability of the module found 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 of the Sabah native community. The implementation of this module has a positive impact on improving their literacy (Reading Skills), children's writing skills, and creativity; increasing the attendance of Indigenous children in schools; encouraging integrations of community traditional arts activities into the curriculum; maximizing their interest to learn about their local arts and culture; preserving the stories and songs of the indigenous people of Sabah; highlighting creative literacy pedagogy application based on the Responsive approach to pedagogy (Yunkaporta, 2009); nourishing the country's harmony by capitalizing Sabahan indigenous culture and art, and encouraging entrepreneurial activity (Social Enterprise) based on local context.

4.6   Impact towards the Community-Socioeconomic

The development of the Tuninipot creative-literacy Module has been converted into project implementation for the communities involved. In general, each community project that is carried out will have an impact either directly or indirectly on the community involved. Likewise, the development of the Tuninipot creative-literacy Module has the potential to accommodate the learning needs of Indigenous children as well as various teaching approaches that can be implemented by teachers in the classroom. The impact of this project can be identified especially the achievement of mastery of children's early literacy skills, increased children's social interaction, encouragement of children's creative ideas, parental involvement in teaching and learning of children's early literacy through creative activities. In addition, the project includes a collection of early children's literacy books based on the creative patterns of indigenous and suitable as children's pre-writing activity material.

The implementation of the project is successfully improved literacy skills and writing skills of indigenous children of Sabah. Based on the Level 1 Diagnostic Test, which was conducted on all preschool students at IPG Kent Campus Preschool and KRT Lohan unity preschool, Kundasang found that 100% of the students had mastered basic literacy and writing skills before entering year 1.

4.7 Challenges and suggestions for future community engagement improvement

The Tuninipot creative-literacy module has been implemented to the community in the form of teaching and learning activities based on community creative arts as a medium for learning early literacy skills of kindergarten children. The implementation of this module requires the skills of teachers to master some of the creative art skills of the Indigenous community. This is because the implementation of this creative module requires the knowledge, skills and wisdom of teachers to impart it to children apart from early literacy skills. In addition, teachers are also faced with the constraints of supporting teaching materials such as reading books, pre-written activity books and suitable music to be used as teaching and learning resources based on this module.

Suggestions for improvement to the implementation of this module would be to increase the number of enrichment and rehabilitation activities for each teaching delivery session. This is important to provide space and opportunities for children to express their creativity in an open environment. In addition, to review the elements of traditional arts, culture, and practices of the Indigenous people suitable that can be adapted as teaching and learning activities of early literacy skills. In addition to attracting the interest of children, it's equally effective for indigenous children to improve early literacy skills. Involvement of the local community in children's learning activities can motivate the success of a community project.

5. Conclusion

The use of the Tuninipot creative-literacy Module presents a responsive pedagogy of Indigenous people through several creative activities based on the traditional arts and culture of the Indigenous community. The use of traditional creative arts of the Indigenous people is seen as the most appropriate element to be adapted as material for early literacy learning for Indigenous children. In conclusion, the use of this module successfully improves their early literacy, attracts indigenous children to learn and come to school. This could reduce the dropout rate in mainstream schools in the future. In addition, the use of

creative arts, traditions, and culture of the Orang Asli community as learning materials can perserve the values and traditions of Indigenous people. Besides that, this module activity is based on responsive pedagogy can also increase the stage of mastering early literacy, which is recognizing letters and developing syllables among Orang Asli children.

Acknowledgement

References

Abdul, R. A., & Zalizan, M. J. (2009). Masyarakat Orang Asli : Perspektif pendidikan dan sosiobudaya. *Bangi : Fakulti Pendidikan, Universiti Kebangsaan Malaysia.*

Abdul, T. B. (2003). Kenali kami masyarakat Orang Asli di Malaysia. *Penerbit KUiTTHO, Batu Pahat, Johor.*

Doris. P. S., A. Hamid, J., Norlida, H. M. S., Redzuan, O., Siti, H. I. (2012) Transformasi modal insan melalui peningkatan pendidikan: Kajian kes komuniti Orang Asli di Cameron Highlands, Pahang. *Proceeding of the PERKEM vii*, jilid 2, pp. 1215–1224.

Edo, J. (2006) *Sewang Orang Asli: Perubahan tema dalam kesenian rakyat.* In: Lagu rakyat memupuk kesantunan melayu. *Dewan Bahasa dan Pustaka.*

Isahak, H. (2013). Laporan kajian kaedah gabungan bunyi-kata (KGBK) sebagai pendekatan alternatif dalam pengajaran awal membaca dan menulis (2M) Bahasa Melayu (Rumi dan Jawi) tahap 1 sekolah rendah. [Unplublished academic exercise). *Universiti Pendidikan Sultan Idris.*

Isahak, H. (2011). Kaedah mengajar literasi awal membaca dan menulis Bahasa Melayu dengan tumpuan kepada kaedah gabungan bunyi kata. *Tanjung Malim: Universiti pendidikan Sultan Idris.*

Idayu, A. S., M. Nazri, A. R., & Mariani, M. N. (2017). Analisis kandungan terhadap aktiviti seni bagi pendidikan awal kanak-kanak dalam jurnal terpilih dari tahun 2010-2016. *Jurnal Kurikulum dan Pengajaran Asia Pasifik, Bil. 5 (1): 55-63.*

Jabatan Kemajuan Orang Asli (2007). *Laporan Tahunan Orang Asli. Kuala Lumpur.* Bahagian Perancangan dan Penyelidikan, Jabatan Kemajuan Orang Asli. Kuala Lumpur.
http://www.jakoa.gov.my.

Jabatan Kemajuan Orang Asli (2009). *Laporan Tahunan Orang Asli. Kuala Lumpur.* Bahagian Perancangan dan Penyelidikan, Jabatan Kemajuan Orang Asli. Kuala Lumpur.

http://www.jakoa.gov.my.

Jabatan Kemajuan Orang Asli (2010). *"Malaysia: Land, autonomy and empowerment for the Orang Asli".* Indigenousportal.com. 2010-09-24. 2010-11.13.

http://www.jakoa.gov.my/orang-asli/info-orang-asli/pengenalan-orang-asli/

Jabatan Kemajuan Orang Asli (2020). *Suku kaum/bangsa.* Bahagian Perancangan dan Penyelidikan, Jabatan Kemajuan Orang Asli. Kuala Lumpur.

http://www.jakoa.gov.my.

Kementerian Pendidikan Malaysia (2017). *Dokumen Kurikulum Standard Prasekolah Kebangsaan.* Putrajaya.

Kementerian Pelajaran Malaysia, (2012). *Laporan Awal Pelan Pembangunan Pendidikan Malaysia 2013 hingga 2025.* Putrajaya: Kementerian Pelajaran Malaysia.

Krishnasamy, D. S., & Asan Ali, G. H. (2016). Resettlement of the Orang Asli and development plan for Orang Asli community in Malaysia. *School of Government College of Law, Government and International Studies, Universiti Utara Malaysia*

Kolb, A.D (1984). Experiential learning: Experiences as the source of learning and development. *Prentice Hall: New Jersey.*

Mazdi, M., Jabil, M., & Rosmiza, M. Z. (2014) Mengupas keciciran pelajar Orang Asli Malaysia: Suatu tinjauan ke dalam isu aksesibiliti sekolah. *Malaysian Journal of Society and Space.* 10 Issues 2 (189-198). ISSN 2180-2491

M. Nazri, A. R. (2014). *Pembangunan model homeschooling berasaskan nilai dan amalam Masyarakat Orang Asli bagi kanak-kanak Orang Asli.* (Unpublished doctoral dissertation). PhD: University of Malaya.

M. Nazri, A. R., Mariani, M. N., Romli, D. A., Shobry, M. N., Arun Daud, R. L., N. Asiah, M. (2017). Cerita Rakyat Orang Asal Sabah Sebagai Medium Pembelajaran Asas Literasi: Analisis Keperluan. *Jurnal Kurikulum Dan Pengajaran Asia Pasifik*, 5 (4), 26-30 (Non-Isi/Non-Scopus).

M. Nazri, A. R., Aishah, A. M, & Mansor, M. A. (2021). Pedagogi responsif budaya menerusi cerita rakyat untuk kemahiran literasi awal kanak-kanak: Culturally Responsive Pedagogy Through Folk Tales for Early Childhood Literacy Skills. *Sains Insani*, *6*(1), 91-98. https://doi.org/10.33102/sainsinsani.vol6no1.254.

Mukaddes, M., Agnello, M. F. (2009) Sustainability/GREEN: Challenges and changes for educators and the engineering curriculum. *American Society for Engineering Education (ASEE) Annual Conference and Exposition Proceedings 2009*.

Pascarella, E. T. & Terenzini, P. T. (2005). How college affects students; v. 2: *A third decade of research.* San Francisco: Jossey-Bass.

Richey, R.C., & Klien, J.D. (2007). Design and development research: Method, strategies and issues, *London: Erlbaum.*

Richey, R. C., & Klein, J. D. (2014). "Design and Development Research." In Handbook of Research on Educational Communications and Technology, edited by J. M. Spector, M. D. Merrill, J. Elen, and M.J. Bishop, 141–150. *New York, NY: Springer.* doi:10.1007/978-1-4614-3185-5_12.

Wan, A. W. H., Shaharuddin, A., & Noraziah, A., (2014). Faktor budaya dan persekitaran dalam prestasi pendidikan anak Orang Asli Malaysia: Kajian kes di Kelantan. Geografia: *Malaysian Journal of Society and Space,* 10(5), 107-122.

Yunkaporta, T. (2009). Aboriginal Pedagogies at the cultural interface. *James Cook University ePrints.*

Zakaria bin Khalid (2007) : Lagu-Lagu Tarian Sewang Di Kalangan Masyarakat Orang Asli: Tinjauan Dari Aspek Intrinsik. *Kuala Lipis, Pahang.*

CHAPTER 8

The Impacts of Universiti Malaya Community Engagement Grant for The Education Cluster: A Community Retrospective

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Abstract

The higher education institutions (HEIs) especially the universities not only play a role in producing quality and holistic graduates, but also help the community through the outcomes and impacts of research. The study is aimed at exploring the impact of the implementation of the Universiti Malaya Community Engagement (UMCE) grant focusing on the Education Cluster to the community. The data collection methods used are in the form of in-depth interviews and document analysis. The study data collection was obtained through in-depth interviews and analysis of UMCE grant reporting documentation. The results of the interviews were analysed, and conclusions were made based on the theme analysis. The findings of the study showed that the UMCE grant program has a positive impact towards the community involved in the aspects of behavior, soft skills, learning achievement, personal ability, and lifelong learning. In addition, the findings also discovered some issues and challenges faced by the community and university in implementing the community engagement program that needs to be addressed by the recipient of the grant for the sustainability of future community engagement project. The results of this study suggested that relevant parties may provide a framework for the implementation of the community engagement program for communities and grant

recipients to resolve issues that arise as well as collaborative support services in establishing close university-community collaboration.

1. Introduction

The rapid development of the world economy has a direct impact on the well -being, prosperity and harmony of the community, but there is no denying that at the same time creating poverty gaps and widening access to education. In Malaysia, despite the development of infrastructure and economic that is growing through various growth indices which are the main indicators, however, the well-being index of Malaysians is at 122.4 where the economic and social subcomposive are 131.0 and 117.7 respectively (Department of Statistics Malaysia, 2019).

Recognizing this fact, the higher education institutions (HEIs) in Malaysia especially public universities are seen as the significant platform in resolving the issues and challenges faced by the society and preparation for the industrial revolution- IR4.0. This has resulted in emerging of various programs that promotes the relationship between the university and community such as the Community Engagement (CE) Program, Service-Learning Malaysia-University for Society (SULAM), and many other programs for the community.

This initiative is seen as an effort to highlight the results of knowledge gained at the university level through research or relevant innovations through social services in an inclusive and continuous manner. Due to this importance, efforts to mobilize involvement between HEIs and the community are continuously given support and guidance at national and institutional level.

2. Problem Statement

Recently, there has been an increase in public discourse that discusses the social responsibility of universities, among others are efforts to preserve education for community development, social empowerment and increase community capacity through the HEIs. The traditional role of HEIs is to develop human capital that meet the demands

and challenges of globalization and K-economy. Thus, there is a need for the government to reorient the role and functions of HEIs for the socio -economic development of the country. The role of HEIs is not only limited to producing manpower but also creating new knowledge and human capital that are capable of sparking new civilizations in today's digital age.

However, academic research related to university- community engagement is still limited in Malaysia (Samsul Bahri Mohd Tahmrin, 2020). As an effort to fill the gap, this study was conducted to explore the impact of Universiti Malaya Community Engagement (UMCE) program for the Education Cluster to the targeted community as an important component to assess the success of the university's engagement with the community. This study adapts a qualitative approach to assess the impact of university-community programs, especially towards the empowerment and sustainability of Malaysian society. Through the community engagement projects, the university can directly strengthen the university's involvement in social projects for community development.

In accordance with the needs of digital economic growth, the living standard of society is increasingly challenging. This phenomenon occurs where the Malaysian economy is growing rapidly, but the well -being of Malaysians through Malaysian Psychological Well -Being Index found that there are gaps in various aspects of society today. The implication is that the society is now living in a state of widened economic and social disparities. In this regard, there is a need to review the role and involvement of various stakeholders in the society, especially related to the education ecosystem. Higher education institutions (HEIs), especially public universities have the potential to contribute to bridging the economic and social gaps in the society. Higher Education Institutions (HEIs) should focus to its main role apart from the economic development of the country, which is to jointly address various issues and challenges of society, especially social problems on the principle of "Social Responsibility and Community Networking". According to Grau, Escrigas, Goddard, Hall, Hazelkorn & Tandon (2017), in the context of globalization, the social responsibility of a university should meet local and global needs. The role of the university is to consider between the priorities, demands and needs of channelling knowledge, skills, and values to the local and global communities.

As such, there is a need to examine and review the aspirations and role of universities as an agents of community development in today's digital age. Various issues and challenges faced by the society today require expertise, skills, and research from the university to solve these problems. The university should use this opportunity and channel to re -establish the relationship between the university and community towards realizing the sustainability of community development through research and university expertise.

3. Purpose of the Study

This study aims to explore the Universiti Malaya Community Engagement (UMCE) projects with the community which involves their participation in aspects of planning, implementation, and cooperation of the communities to further improve its management in the future. This study focuses on the community's reflection on their experiences after being involved directly in the activities spearheaded by the university. To achieve the purpose of this study, the research question is: "What is the community's retrospective towards the impact of the UM CE projects?"

4. Literature Review
4.1. Community Engagement (CE)

In general, the concept of CE between university-community supports the principle of mutual benefit of the two parties. The CE involvement can be implemented either at the regional, national, or global level by focusing on the sharing of knowledge and skills between the university and the community. According to The United Nations Educational, Scientific and Cultural Organization or UNESCO (2015), community engagement is not only limited to the role of the university to the community but a more comprehensive joint involvement of universities-communities beyond innovation and sharing of skills and knowledge. Through the involvement of the university through the community project onsite, the community indirectly benefited the results of research for example in product creation, knowledge and skills sharing. Although there are various definitions and interpretations of CE, but at the University of Malaya, CE means "active and meaningful involvement within and outside the university at the local, national and international levels with the aim of exchanging knowledge and enabling learning for the benefit of society".

The CE is implemented in six forms, namely: (i) linking learning with community service, (ii) linking research with community knowledge, (iii) knowledge sharing with the community, (iv) designing new curricula and courses, (v) teachers as practitioners and (iv) social innovation by students (Tandon, 2014). In Malaysia, several innovative forms of CE were introduced especially in HEIs, for example Community Service, Service-Learning Malaysia-University for Society (SULAM) and Knowledge Transfer Program grant.

4.2. Background of the UM Community Engagement (UMCE) Program

The UM Community Engagement (UMCE) Program is a grant-based program mobilized through the allocation parked under the governance of the Universiti Malaya Community Engagement Centre or in short- UMCares. UMCares serves as a one-stop referral canter of the university for community resources and services. UMCares also responsible to connect the experts or academia of the university with the community or vice versa.

The implementation of UMCE Program which initiated in 2015 aims to bring academicians synergistically closer to the local community with the spirit to transfer the research outcomes for the benefits of the community. This program highlights the resources available within UM, especially the expertise from various backgrounds to solve problems encountered by the local community members through the transfer of knowledge, technology or skills through the research results to the community.

The UMCE Program supports and upholds the global Sustainable Development Goals (SDGs) agenda. Therefore, as the university support and commitment to help the nation success of this special agenda, all projects under the UMCE grant should aligned with the 17 SDGs. Apart from supporting the global agenda, the UMCE Program covered nine clusters, namely Environmental Development, Rural Development, Sports and Recreation, Preserving National Heritage and Culture, ICT and Technology, Entrepreneurship, Education, Health, and Social Welfare. As a leading higher education institution in Malaysia, Universiti Malaya has long carried out community service activities to the local community. Through various community programs spearhead by the academicians, the university will be able to help the community to face the life challenges, especially by improving the education development of the community.

The Universiti Malaya Community Engagement Centre (UMCares) was established in April 2014 to facilitate community involvement and sustainability through a network of the university's staff, students and researchers collaborating with non -governmental organizations, government bodies, private organizations, and corporations. Beginning in 2015, the management of the university has allocated funding to UMCares to guide and assist UM researchers to carry out community engagement projects with the local community through the UMCE grant. Through this grant, the researchers may conduct community engagement programs and further increase the visibility of the university in helping the community and increase cooperation between industry, Non-governmental organizations (NGOs), and government organizations through the corporate social responsibility roles. From 2015 to 2020, about 200 community engagement projects were conducted lead by researchers in various fields along with 450 communities who have received knowledge, technology or skills transfer (UMCares Annual Report, 2018).

4.3. Target community

This qualitative study was conducted exploratively based on the retrospection of study participants. The exploration was carried out through interviews with communities which directly involved and benefited from the UMCE grants. To answer the research questions, interview methods and document analysis were conducted.

Project Methodology

4.4. Project Design

Retrospective study is a form of study that reviews the experience of respondents to obtain information about what has happened in the past to explain the current situation (Shahrul Arba'iah Othman, Norzaini Azman, & Manisah Mohd Ali, 2008). The selection of this method is in line with the objectives of the study which aims to obtain a further and in -depth retrospection of study participants for the impact implementation of the UMCE grants particularly focusing on the Education cluster.

4.5. Sampling

The study will use purposive sampling or criteria, where locations and individuals are deliberately selected to understand the main phenomena of the study. The sample consisted of 16 community members who were directly involved in the UMCE Education Cluster related projects. The profiles of the study participants are shown in Table 1.

UMCE Education Cluster	Total Number of Study Participants (=16 participants)
Indigenous Kids Education	2 members of Village JKK committee
	2 2 *Tok Batin* (community leader)
Education of Non-Malaysian Children	2 teachers
Undocumented Children	2 parents
Science Education	1 1 teacher
	1 1 parents' representative
Teacher Support Services	2 teachers
Rural Children's Reading Module	1 teacher
	1 representative from the village
English Module	1 1 volunteer
	1 1 representative from the village

Table 1: Study Participants Profiles

In this study, participants were selected through purposive sampling with four main criteria, namely:

a) participant who directly involved in any community engagement activities supported through UMCE grants
b) The UMCE project has won awards either at the university or national level
c) The community member interviewed is a head or committee member in that community
d) The UMCE project has entered the final phase or completed implementation (at least one year)

Participants from communities directly involved in the UMCE program from 2019 through 2020 were invited to participate in the study through an invitation letter and contacted for an interview session. Interview sessions were conducted in parallel with document analysis based on the final report. With this method, the researcher can directly identify information related to the aspects studied. The process of contacting the community receiving the UMCE program is stopped when the information obtained reaches a saturated level for community involvement in the UMCE program and the impact on the community. At the end of the interview sessions, a total of 16 community members were directly involved in the UMCares community networking program.

4.6. Data Collection Procedures

Data were collected by making triangulations to methods and sources. The data collection methods used were in -depth interviews, and document analysis. The sources to the data are the communities involved in the UMCE grant program and the grant reporting documents. The instrument of this study consisted of semi-open-ended interview questions adapted from the UMCE Community Feedback Form to find out the retrospection of the communities involved in the UMCE Program. The interview method is used to explore the real experiences of an individual and personal nature that the community has gone through and try to understand the meaning given to those experiences (Shahrul Arba'iah Othman et al., 2008). Interviews can also provide data on the fruits of thoughts, what is remembered, attitudes, feelings and so on that have been experienced by the community that is directly involved in the UMCE Program.

Document analysis was carried out by selecting the desired data and retyping all the entries written in the form of field entries, at the same time the coding process was carried out simultaneously. The content in each document was reviewed to ensure its appropriateness and match the research questions. In this study, two main documents have been identified for analysis, namely the Final Report of the UMCE Grant and the Community Feedback Form which contains information related to the implementation of the grant projects.

According to Bogdan and Biklen (2003), the validity and reliability of this kind of study approach is by done validation of study participants through transcript texts of

interviews and observations. Therefore, the completed transcript was handed back to the study participants to be read, evaluated, and verified by signing as a sign of validation of the transcript.

4.7. Data analysis

According to Noraini Idris (2013) the results of the interviews transcribed in verbatim is a process in data analysis during the process of collecting data. In the process of reading and marking the transcripts, interesting interview excerpts were labelled with specific titles. Similar or nearly identical titles are grouped and given specific codes and categorized. Once all the category coding processes were completed, the related categories were placed in broader categories to form the theme. Themes were determined to the data based on the purpose of the study by considering the validity and reliability of the data that had been collected to form conclusions based on the theme analysis. Other data supporting or reinforcing these community views were obtained by analysis of relevant documents.

5. Findings

Findings of data analysis from interviews of 16 community members involved in the UMCE Education Cluster program and analysis of UMCE Grant Reporting documents on community are presented according to the following research questions:

"What is the community's retrospective towards the impact of the UMCE projects and activities?"

Analysis of interviews with the communities involved in the UMCE Education Cluster program found that 14 of the 16 communities welcomed the projects and activities under the UMCE Education Cluster program. The analysis of the findings shows that there are five impacts of the UMCE Education Cluster program, namely behavior, soft skills, learning achievement, personal ability and lifelong learning.

5.1. Community Behaviour

The analysis showed that all community representatives interviewed gave positive feedback on the projects under Education Cluster of UMCE program. This is because the community feels that the UMCE program is very important to advance and develop the community needs. All community representatives interviewed confirmed that the community's behaviour towards the UMCE program organized was positive. The communities involved in the program demonstrated positive change that involves positive behaviours, attitudes, awareness, and practices in daily life. The following statement made by Community 1 illustrates this.

> "… The students involved show a change in attitude, a positive level of behaviour towards the lesson. There is an awareness to study and review lessons." (Community 1: T2: 15-17)

While the representative of Community 3 stated,

> "… My students have the courage to explore various methods of remembering and reviewing lessons. They show a positive attitude towards the lessons taught, are actively involved in group learning activities, interactions, and are always cooperative and help one another during the revision sessions." (Community 3; T2: 22-23)

Meanwhile, Community 5 was happy with the changes shown by the teachers, students and parents throughout the program. The representative highlighted that the UMCE program conducted had a positive impact on the interests, attitudes and behaviours of students, parents, and teachers.

> "I am very excited to see how this program helps increase the awareness of parents, students, and teachers to work together in their children's education, especially in the academic aspect. The UMCE particularly Education Cluster provides many opportunities for parents-teachers-students to interact and communicate, especially during the implementation of programs such as seminars, workshops, briefings. It also provides more space for students to deepen the content of teaching with the

cooperation of teachers-parents. Positive impact which not shown by other projects…" (Community 10; T3: 32-40)

Analysis of the UMCE Final Report and the Community Feedback Form showed that there was a significant change in the behaviour, attitude and awareness of the community involved in the program. Based on document analysis, 90% of the reports show that the community involved with the UMCE Education Cluster program has experienced changes in behaviour, attitudes, interests, awareness, and practices.

5.2. Community Soft Skills

The analysis of the interviews also found that all study participants acknowledged that community soft skills is an important component that needs to be emphasized during the implementation of the UMCE program. Soft skills refer to generic skills that cross various domains of learning encompassing aspects of personality and group skills. Throughout the implementation of the community engagement program activities, the most significant impact on the community is the soft skills mastered by the community who are directly involved in the activities of the UMCE Education Cluster program either in terms of individual or group skills. The following statements made by a community (Community 11) illustrate aspects of group skills:

"This project succeeds in providing fun, teamwork skills and further improve students' academic achievement..." (Community 11; T2: 25-27)

In addition, among the community showed high abilities in personality traits that involve critical thinking, morals and professional ethics, especially language proficiency, speech style and language manners. Among his views:

"… Students are more confident and able in the language according to the current context, In addition, students can have language skills and present arguments confidently and effectively in a problem raised…" (Community 12; T1: 20-23)

In fact, some study participants also associated with changes in aspects of group skills in communication skills, interaction, teamwork, leadership, and language proficiency among

the community who are directly involved with the UMCE program. The following are the statement submitted:

"… Parents are also confident to express their opinions and suggestions during the discussion session on how to improve their children's performance. The values of tolerance as well as language etiquette in public are also reflected by the community involved in this program. On average, parents have the skills to communicate and interact effectively with the school and the community…" (Community 7; T3: 18-22)

"… Teachers-Parents-students show positive changes in aspects of soft skills where teachers-parents and students interact prudently and respect each other in the process to plan, compile and prepare teaching and learning materials and even help each other to design Learning Aids that suitable for his son ... " (Community 6; T1: 15-20)

Analysis of the community feedback form document found that 95% of the communities involved experienced positive changes in aspects of soft skills especially critical thinking and problem-solving skills; entrepreneurial, moral and information management skills. The report shows that soft skills are among the impacts gained by all communities involved either directly or indirectly towards continuous learning.

5.3. Community Learning Achievement

The implementation of the UMCE Education Cluster program gives priority to issues and problems faced by the community in the field of education, whether at the primary level to HEIs. Issues of literacy and numeracy are among the main concerns of UMCE community grant holders. Some community representatives interviewed mentioned that:

"… The UMCE Program greatly helps students to improve their literacy and numeracy skills. Interestingly the approaches and methods introduced in the literacy and numeracy teaching approach are very effective in improving student mastery.

Additional approaches used are able to attract students to master literacy and numeracy skills" (Community 8; T3: 10-14)

"… The approach introduced is very helpful for students to understand the lessons and unique teaching approaches more easily by emphasizing the learning needs of students". (Community 12; T2: 15-18)

"… Able to improve student learning achievement in examinations and give confidence to students to communicate with the correct and effective language…"
(Community 15; T1: 10-11)

Document analysis of the UMCE Final Report showed that almost all (98%) of the UMCE Education Cluster program reported that the learning achievement by the community showed an increase.

5.4. Personal Capabilities by the Community

Community representatives involved in the interviews of this study also stated that the personal abilities of each community member involved in the UMCE program increased particularly in the aspects of diligence, determination, perseverance, diligence, honesty, and personal qualities. In addition, through participation in the UMCE program, it also helps the community to improve their digital technology competencies, work ethic and organizational leadership. Here are some of the findings of the study conducted:

"… When many activities are carried out, the community can learn and improve their skills such as leadership, the ability to influence others, confident and honest in performing a task. The community is more competitive with the spirit, motivation and perseverance to learn and succeed." (Community 16; T2: 31-33)

"..It seems that the students are serious about learning and doing a task with sincerity and perseverance even in a state of deprivation, especially in terms of learning facilities and infrastructure. Especially for rural students who are deprived of learning"
(Community 1; T2: 19-21)

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"… The students' determination to master through storytelling, acting and singing approach really affected me. They tirelessly repeated several pronunciations and sentences just to ensure they give best performance. What touched my heart more when they took various initiatives to ensure costumes, they used in acting is suitable even in a state of deprivation. They are very creative" (Community 2; T2: 25-28)

While the analysis of the community feedback form document showed that 80% of the community reported that the community networking program directly helped the community to improve their personal capabilities, especially in terms of communication, appearance, and knowledge.

5.5. Lifelong Learning by the Community

Community representatives who were interviewed also shared their interest in continuing to deepen their knowledge and learning. 70% of community representatives interviewed mentioned that they often involved in courses provided to their community. Overall stated that they are very grateful to UM because through this program, they are able to improve their knowledge and skills specially to help children learn at home. In addition, they also felt that they gained a lot of new knowledge through series of workshops conducted during the program.

The following are statements related to this matter:

Interviews with Community 10 indicated that UMCE program emphasizes improving parents' knowledge and skills to teach and guide children at home for literacy and numeracy skills:

"… It's very fun, I haven't been involved in a course or workshop like this for a long time that can help me understand and know the techniques and methods to teach children literacy and numeracy. Although the teaching skills take time for me to practice but at least I know what my child is learning in school and I can help a little bit"
(Community 7; T2: 16-18)

"I haven't taken a course for a long time, when I follow this program, I can learn new skills and then apply them in my daily life. I can also hone skills that I haven't used for a long time. Through this workshop, I can also exchange opinions and share skills with other communities who are also involved". (Community 9; T3: 12-14)

"… It feels like I want to continue studying again. Through this program I had the opportunity to improve my digital skills and the most fun I had was being able to produce my teaching videos and in turn I was able to share them with my students. It's fun to learn this digital technology. Simple and gives more impact on the teaching and learning process." (Community 4; T2: 10-12)

The analysis of the document found that 90% of the community responded in the final report that there was awareness among the communities that were directly involved in enhancing self-directed learning, experiential learning and exploring new knowledge.

6.   Impact towards the Community-Socioeconomic

The community involved in the UMCE Education Cluster program welcomes the program conducted due to the current needs and problems of the community. Findings showed that the community is positive towards each program conducted. This is shown by the community who give positive feedback through community behaviour that is 100% involved in each program conducted by the community. This finding is in line with the findings of the study of Hall and Tandon, (2017) that communities receive well programs that benefit them by the university. While Singh's study, (2017) showed that the sharing of expertise of the university to the community through community networking programs has an impact on positive behaviour change in the community.

In addition, the community engagement program that connects the university and the community is also able to improve soft skills. The findings show that most of the communities are able to improve their soft skills once they are involved in the organized programs. The study of Agustina, Sari, Sholihah, Rizqi, Octavia, Pramesthi, Prafiantini, and Kardha, (2018), showed that the community programs conducted can help the communities involved improve their social behavioral skills.

Based on the findings of the study also found that the UMCE program can improve learning achievement for the communities involved. Specifically for this study, the selected educational cluster means learning achievement refers to the mastery of the learning content by the students and the community involved. Based on the findings, the community street program has succeeded in increasing the mastery of community learning involved through various programs because of studies conducted by the university for the benefit of the community. According to Kucukoglu's (2012) study, academic learning with community service experience has a significant relationship between personal development and mastery of learning from social, academic, and affective aspects.

The personal ability of the community in terms of communication, personality, character, and leadership are among the main essences of community development. The findings of this study showed that the community that is directly involved with the UMCE Program of the education cluster was able to improve the quality of self-covering cognitive, emotional, physical and affective aspects. Implicitly conducted programs enable individuals to act, think and solve problems faced by the community. According to a study by Yasar, Gultekin and Kaya, (2009) through the university's community program to the community, it provides social benefits to the community where community problems are solved by the university through research and further it can expand the efficiency of university services to the community through various programs.

The results of the interviews also showed that the university's involvement with the community through community engagement programs indirectly succeeded in cultivating lifelong learning among the communities involved. The community is actively involved in various activities organized with the aim of improving skills and knowledge in line with the changes in digital technology today. This finding is different from the study of Ramlan Zainal Abdin, Ahmad Esa and Wan Mohd Rashid Wah Ahmad (2008) who found that among the constraints and challenges of the community to cultivate lifelong learning is the leadership of the school and the local community. Although many HEIs have pioneered the concept of lifelong learning, the bridge has not changed significantly that can erode society's perception that learning must happen all the time (Ramlan Zainal Abdin, Ahmad Esa and Wan Mohd Rashid Wah Ahmad (2008).

7. Challenges and Suggestions for Future Community Engagement Improvement

There were no significant challenges while running this project. However, there is a need to monitor the continuity or sustainability of knowledge transferred to the community, especially in the aspect of education. A CE project and relevant activities were carried out over a period of time and the continuity of activities is highly dependent on implementation by the community. Therefore, monitoring after completion of any CE project is necessary and strongly implemented in any CE management exercise. Post -monitoring for example 3 or 6 months after a CE project is completed is very relevant and should be implemented in determining the sustainability of the project. The involvement of external stakeholders is also appropriate to ensure continuous implementation by the community with the guidance of the parties concerned. With this, the community is able to improve their quality of life with the support and help of various parties.

8. Conclusion

In the digital era of the Industrial Revolution 4.0, the role of HEIs is increasingly important, especially in producing knowledge and skills and eventually shared with the community for the development and sustainability of a society. The main challenge in recent decades has been the agenda of HEIs to develop partnerships with the community that are mutually beneficial to both stakeholders, statutory bodies, and industry. The issues and challenges of HEIs today are not towards creating new knowledge and skills but also addressing the challenges of socio-economic globalization of society and achieving sustainable development of a society. Thus, the UMCE Education Cluster Program indirectly realizes the university's aspiration for community development. The impact of the UMCE Education Cluster program shows that there is continuity in efforts to add value to community development in a more systematic and competitive process.

References

Agustina, R., O.L. Sari, L.A. Sholihah, N. Rizqi and L. Octavia *et al* (2018). Development of innovative picture storybooks to empower parents and teachers for early childhood education in nutrition and social-behavior in Jakarta. *ASEAN Journal of Community Engagement, 2*(2).

Bogdan, R.C. & Biklen, S. K. (2003). Qualitative Research for Education: An Introduction to Theories and Methods (4th ed., pp. 4-7). Boston: Allyn and Bacon.

Grau, F. X., Escrigas, C., Goddard, J., Hall, B. Hazelkorn, E. & Tandon,R. (2017), Towards a socially responsible higher education institution: Balancing the global with the local, GUNI Report. *Girona*.

Hall, B. & Tandon, R. (2017). Decolonization of knowledge, epistemicide, participatory research & higher education. *Research for All, 1*(1), 6-19.

Jabatan Perangkaan Malaysia. (2019). Indeks Kesejahteraan Malaysia 2019, Putrajaya. Kucukoglu, A. (2012). Service learning in Turkey: Yesterday and today. *Procedia Social and Behavioral Sciences, 46* (2012), 3083-3087.

Laporan Tahunan UMCares. (2018). UMCares Annual Report 2018. (https://myumcares.um.edu.my/Image/ANNUAL%20REPORT/Laporan%20T ahunan%20UMCa res%202018.pdf)

Idris, N. (2013). *Penyelidikan dalam pendidikan (Edisi Kedua).* Shah Alam, Selangor: McFraw-Hill Education (Malaysia) Sdn Bhd.

Ramlan Zainal Abdin, Ahmad Esa dan Wan Mohd Rashid Wah Ahmad. (2008). Pendidikan sepanjang hayat: Isu, cabaran dan peranan sekolah membangun modal insan dalam komuniti setempat. *Prosiding Seminar Kebangsaan Pengurusan Pendidikan PKPGB 2008, 16 Oktober 2008.*

Othman, S., Azman, N., & Mohd Ali, M. (2008). Faktor ibu bapa dalam kecemerlangan akademik pelajar pekak: Kajian kes retrospektif. *Malaysian Journal of Learning And Instruction, 5*, 79-98.

Shamsul B.M.T. (2020). Key performance index, strategic planning and industrial engagement transformation in creating impactful community program: The academia perspective. *Proceeding University for Society International Conference, 18hb November 2020.*

Wafa,S. (2017). Gauging the impact of community university engagement initiatives in India. *ASEAN Journal of Community Engagement*, Volume I (1).

ASEAN Journal of Community Engagement, 1(1). Tremblay, C. (2017). Impact Assessment: Community Engaged Research at the University of Victoria. (http://unescochair-cbrsr.org/pdf/resource/ CER_Impact_Uvic_March_2017.pdf)

UNESCO. (2015). Proposed Post-2015 Education Goals: Emphasizing equity, measurability and finance; Initial Draft for Discussion. (https://unesdoc.unesco.org/ ark:/48223/pf0000220033)

Yasar, S., Gultekin, M & Kaya, S. (2008). Community service application in preschool teaching. Retrieved on 11 June 2009 from http://www.oolp.anadolu.edu.tr/Guide/yeni_kilavuz/okul_top_hiz_uyg.pdf.

CHAPTER 9

Infographic on Education Cluster

This chapter provides a summary of community engagement projects based on education-based cluster. Overall, a number of projects on education-based involved data in 2015-2021.

Community Engagement Projects from 2015-2021

Education Cluster by Faculty
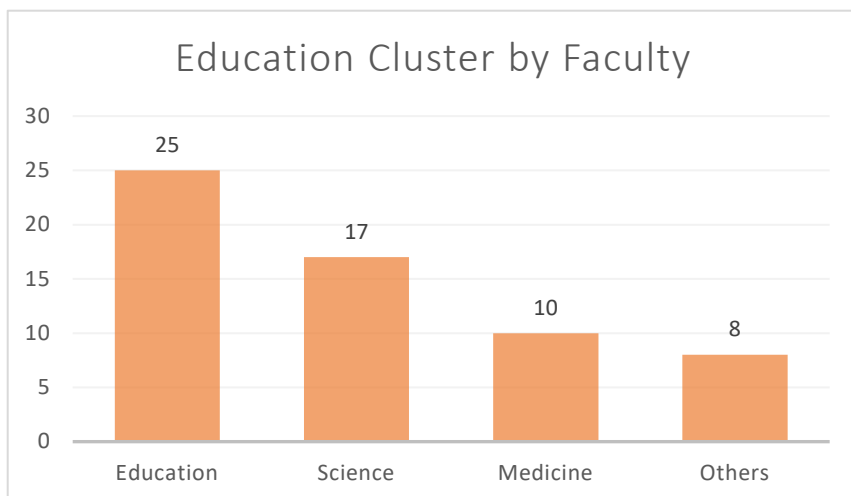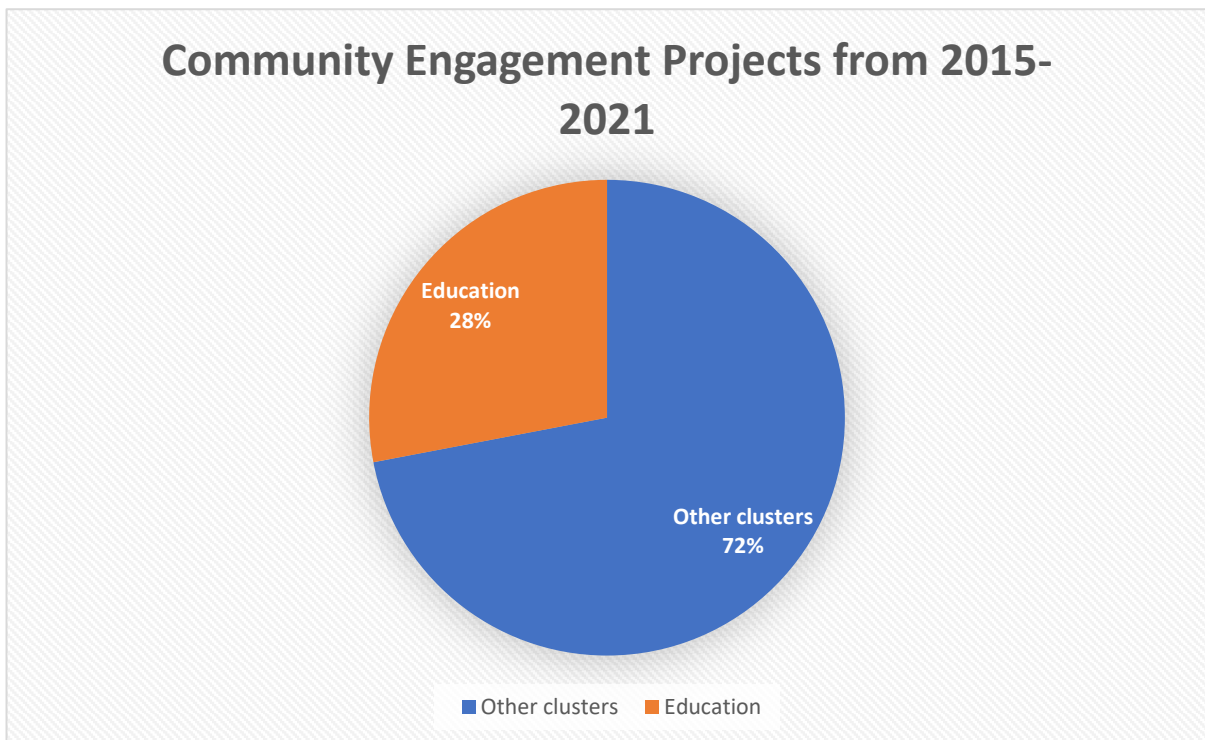
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CHAPTER 1

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CHAPTER 4

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CHAPTER 7

Mohd Nazri Abdul Rahman PhD holds Deputy Dean (Student Affair), Faculty of Education, Universiti Malaya. Started service as a teacher (Guru Cemerlang) at SM St

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CHAPTER 8

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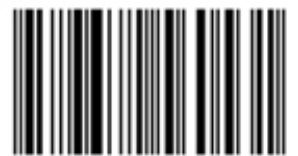
**PUSAT JALINAN MASYARAKAT
UNIVERSITI MALAYA (UMCares)**
*Universiti Malaya Community
Engagement Centre (UMCares)*

Universiti Malaya Community Engagement Centre is to initiate a compilation of a book namely "Community-Engagement Experience in Education-based Context: Knowledge Transfer into Best Practices in Malaysia". The purpose of this book is to provide the current "state of the field" in terms of the study of and practice of community engagement in its many forms (e.g., university-community partnerships, disciplinary/interdisciplinary outreach, and so forth).