Tuijin Jishu/Journal of Propulsion Technology
ISSN: 1001-4055
Vol. 44 No. 3 (2023)

Expert Agreement towards the Orang Asli Community Learning Center Model Based On the Local Environment: Analysis of the Fuzzy Delphi Method

Mazzlida Mat Deli[1*], UmmuAjirah Abdul Rauf[2], AyuAstri Purwati[3], Ramlan Mustapha[4]

[1*,2]*Graduate School of Business, UniversitiKebangsaan Malaysia*

[3]*Faculty of Business, InstitutBisnisdanTeknologi Pelita Indonesia, Indonesia*

[4]*Academy of Contemporary Islamic Studies, UniversitiTeknologi Mara Pahang, Raub Campus*

Abstract

The purpose of this study is to obtain the agreement and opinion of experts towards the framework of the Orang Asli Community Learning Center model based on the local environment. This study has used Fuzzy Delphi method as well as using a 7 Likert-scale to collect feedback from 11 experts in various fields of education at public universities in Malaysia. A total of 5 main elements and sub-item elements of the questionnaire were given to experts for evaluation. Data was analyzed using triangular fuzzy number and position (ranking) with each element of the model is determined using defuzzification process. The results of the analysis of expert agreement and consensus have been shows that the agreement value is at a good level. This shows the elements of The Community Learning Center model has received good expert approval. The elements are arranged according to the priority (ranking) that has been agreed by experts.

Keywords: *Expert agreement, Orang Asli, Community Learning Centre, Local Environment, Fuzzy Delphi Method*

1. Introduction

In Malaysia, various initiatives are carried out by the government in an effort to empower the Orang Asli community in terms of socioeconomic development. Since the Seventh Malaysia Plan (1996-2000) until the Eleventh Malaysia Plan (RMK 11) 2016-2020, the government still aims to improve the socioeconomic quality of the Orang Asli. In fact, the report on the second wave of PPPM 2013-2025 also shows that the government is concerned to provide a holistic education system that fulfils the rights of every individual regardless of ethnic status, place of residence or socioeconomic background. In addition, the Indigenous Affairs Development Department (JAKOA) and non-governmental organizations (NGOs) have also planned and implemented various development projects including land infrastructure upgrading projects as well as education and health projects (Alam et al., 2013).

Based on the scenario that occurs in developed countries and developing countries as reported by APPEAL (2001), ARBE (2008), UNESCO (2001) and UNESCO (2013), the neglect of basic facilities and training is feared to make it difficult for the implementers to succeed in the educational transformation program for every layer and ethnicity of society including the Orang Asli community. Many local and foreign researchers have proven the quality of life of the Orang Asli community from the aspect of basic facilities such as electricity and water, housing (Martin, 2008), and education (MohamadJohdi&Abdul Razak, 2009) which are still at a low level and unsatisfactory (Harun & Idris, 2012; Nicholas, 1999). Based on the Orang Asli Quality of Life Index (IKHOA) study conducted by local researchers, it shows that 39.6% of the Orang Asli have a moderate to very low quality of life (Harun&Idris, 2012).

This finding coincides with the report of the Orang Asli Development Department showing that the location of Orang Asli settlements that are far inland and on the outskirts of the city is one of the main contributors to this low quality of life (Mazdi, Jabil &Rosmiza, 2014; Wee et al., 2012; Norwaliza, 2015; Norwaliza&Ramlee, 2015). This describes a critical situation that causes improvements in terms of living standards and infrastructure development to be optimally inaccessible to these minorities (MohamadJohdiand Abdul Razak, 2009). The same problem point was discussed in a study by Habibah, Hamzah and Mushrifah (2010) who reported that more than 80% of the Orang Asli community in TasikChini did not get basic facilities, especially electricity and clean water. A recent study by Suhailaet al. (2018) also discussed the location factor and lack of infrastructure as the main factor in the failure of efforts to improve the quality of life of the Orang Asli.Various activities and programs have been planned and implemented by various parties specifically for the Orang Asli community (IntanFarhana et al., 2014; Abdul Rahman andYusri, 2011; Andrew, 2012; Megan et al., 2013). However, the findings of previous scholars have shown the existence of several problems in the implementation of the program such as the low level of basic literacy achievement and the lack of appropriate training (IntanFarhana et al., 2014; Schwab, 2001), the incompatibility of the pedagogical model that successfully creates meaningful learning (Aniza, 2015), as well as incomplete basic facilities for the continuation of the learning process (IntanFarhana et al., 2014). This becomes more complicated when the issue of limited electricity supply causes the quality of life of the community to remain at an unsatisfactory level.

"It [the learning center] was here so I didn't have to travel. I knew everyone on the course and we had a laugh. It just fitted around me and my family needs." (learner)

An effectiveCLC should provide adequate basic facilities, training support, good use and maintenance so that the use of PPK is optimal and users can independently manage the facilities provided (UNESCO, 2011). Any effort to establish PPK will fail if it ignores aspects of basic facilities such as electricity supply (Kirubi et al., 2009; Wan Afizi, ShaharuddinandNoraziah, 2014) and training programs to use and maintain the system well (Keith, 2014).

Problem Statements

Previous studies related to Community Learning Centers (CLCs) have been done by Ahmad Esaet al.(2015) showed a CLC construction project in 2011 in KampungNumbak, Kota Kinabalu, Sabah involving community members who did not attend school, especially the refugee community from the Philippines. Additionally, Zolfaghari, Sabran and Singh (2009) have also conducted a case study related to PPK and Wright et al. (2013) which aims to identify the factors that contribute to the success of the CLC program. In addition, there are also studies about the role of CLC as a tool to improve the community learning process (Riley et al., 1999), education for sustainable development (Osborne, 2010), independent language learning centers (Morrison, 2003) and the main needs of CLC management (Brown, 2011).

Nevertheless, PPK studies that integrate elements of solar energy innovation have received less attention, especially CLC studies that apply solar systems in the context of the Orang Asli community in Malaysia. While based on the report issued by APRBE (2012), UNESCO (2001) and QCC (2015) which involves the development of PPK programs throughout the Asia Pacific states that in an effort to empower the target community is through the integration of solar energy technology. This is also proven by Suhaila et al. (2018) and Carter (2010) who state that the supply of basic needs such as electricity supply and operator training must be met first before any improvement can be successfully implemented.

Based on reports issued by APPEAL (2001), ARPBE (2012), UNESCO (2001) and UNESCO (2013), the implementation of CLC programs in 18 Asia Pacific countries only targets urban and rural communities, including in Malaysia. However, this CLC program does not specialize in the Orang Asli community in Malaysia which has caused the Orang Asli community to continue to be marginalized in the national development process. UNESCO (2016) states that globally there are 61 million communities around primary school age still excluded from formal education including those who are marginalized and have no power or are vulnerable such as the Orang Asli community.

The Orang Asli Development Department report shows that 31.7% of Orang Asli villages are located in the countryside, 61.45% in the suburbs and 1.38% in the city (Norwaliza&Ramlee, 2015). It is well known that the location of the settlement of the Orang Asli community is scattered in the interior (Juli 2006; Mazdi, Jabil &Rosmiza 2014; MohdNurSyufaat, Wee &Maryati 2014). This illustrates why their lives are left behind and behind the modernization process. This is in line with a previous study by Hasan (1998) who explained that the government's high expenditure allocation is still unable to meet the needs of the Orang Asli. The factor of being

located far in the interior is one of the main factors in their view that their children have no interest in following the formal education system at school which ultimately causes Orang Asli children to drop out of school.

There are a number of issues and gaps that have been identified related to program implementation, particularly community learning centers and solar energy systems in the Orang Asli community. The first issue is in setting the objectives or goals of an educational program that should meet the needs and wants of the target group. According to UNESCO (1995), to know exactly what specific needs can be addressed by the establishment of Learning Centers, there needs to be a concrete and grounded study of the real life situation of the target population. This determination is necessary and different in different socioeconomic contexts.

Examining the report released by UNESCO (2013), PPK in Malaysia focuses on providing employment opportunities to individuals below the poverty level. While the knowledge and basic facilities needed in the life of this group are still not fulfilled (Van & Frick, 2015). In addition, most PPK implementations throughout the country focus on literacy and numeracy objectives in addition to the goal of finding sources of income (APPEAL, 2001). Based on recent research reports by local researchers, the issue arising from the Orang Asli community is the lack of knowledge about home appliances and training related to the use of solar energy systems more specifically (Harun &Hoque 2015; Helme& Lamb 2011). While Nizam et al. (2008) proved that effective implementation of training needs to be done apart from technical knowledge of the installation process and practical training in the field.

In addition, issues that are also debated by local and foreign researchers are related to the strategy or method of program implementation. Both stakeholders and implementers have criticized the Orang Asli curriculum which is not suitable for their cognitive and emotional level (KPM, 2010; SUHAKAM, 2010). Discovery after discovery by local researchers prove that the Orang Asli minimum syllabus is very limited (NurBahiyah, 2015), the neglect of psychological elements in education (Thanabalan et al., 2014) and the level of curriculum content is too high (Hamidah, Abdul Rahman &Khalip, 2013) which has caused the dropout rate of Orang Asli students continues (Thanabalan et al. 2014). In addition, Hinks (2011) and Mohd. Nazri (2014) also proved that the lack of teaching and learning practices that use indigenous teaching methods has a negative impact on the educational achievement of the Orang Asli. This shows that the inappropriateness of pedagogy is one of the main causes of learning difficulties for the Orang Asli community (Nor Syazwani, 2017). While the UNESCO (1995), APPEAL (2001) and UNESCO (2001) state that the delivery mechanism (delivery mechanism) or implementation strategy chosen must be appropriate to the user's profile and background from economic, social and cognitive aspects. Brown (2011) also supports that the implementation of any activity should be responsive, flexible and modifiable to avoid wasting time and resources.

Literature Review

The broad term alternative education refers to educational initiatives that are not regarded as official education. For kids who are not enrolled in the official national system, it offers a way to fill the education "gap." They frequently consist of initiatives carried out by people, organisations, and non-governmental organisations (NGOs), and are provided outside the official government education system. A formal curriculum and pedagogy are typically used in alternative education, however instructors are frequently not educated by the relevant ministry or may not get formal acknowledgment of their teacher training or learning programmes by the relevant government (UNICEF, 2015).

In the framework of this study, CLC serves as a centre or location for lifelong learning and presents the Orang Asli community with opportunities, particularly for developing skills based on long-term survival (SitiNurulAinmey, 2013). For instance, Orang Asli students are not need to meet any particular requirements in order to attend CLC. Non-formal education enables the implementer to supply learning content in accordance with the requirements and preferences of the students. The manner in which the educational material is provided is adaptable, student-centered, and dependent on the neighbourhood and environment.

The goal of the alternative education management structure is to modify education at home so that it is consistent with their primary habitation in the forest. This is similar to the Orang Asli community, in that many Orang Asli communities continue to lack official schooling as a result of the mindset of individuals who still desire to remain in their current situation. The Orang Asli community can benefit from educational opportunities and parts of solar technology innovation through the planned building of a PPK model based on the local environment and involvement. These elements will address aspects of the community's access to power.

Qu'anglo Communication and Consulting (QCC) (2015) also criticized the program preparation efforts implemented to improve the quality of Orang Asli education but neglected the aspect of providing basic facilities. Studies conducted by local researchers also show that CLC is less effective when CLC is provided in

an inappropriate location, lacks basic facilities such as electricity (Wan Afizi, Shaharuddin&Noraziah, 2014) and is not provided with optimal training and monitoring (QCC, 2015).

Therefore, the Orang Asli community, especially the teenagers, need to be exposed to education and skills aspects (IntanFarhana et al., 2014). Any reforms introduced to the Orang Asli must be accompanied by training in effective use, maintenance and monitoring. Lloyd, Lowe and Wilson (2001) also revealed that the PPK model introduced earlier lacked emphasis on training, maintenance and they were left without any periodic monitoring. Although there are a few previous studies that have provided training, unfortunately the training provided is not contextually appropriate and ignores the unique learning style of the Orang Asli (SitiFarhah, 2016; IntanFarhana et al., 2014). The difficulty in understanding the context of Orang Asli education is a contributor to the dropout in the field of education (MohdNazri, 2014) further creating a growing gap between the majority group and the Orang Asli community. While scholars have proven over the past decade that the best learning style for the Orang Asli is based on the context and traditions of their ancestors (IntanFarhana et al., 2015).

Based on the effectiveness of CLC implemented in various countries, previous researchers (Gunigundo 2013; Min &Zhiyong t.th; Riley et al. 1999; Wright et al. 2013; Zolfaghari 2009) have suggested that the CLC program model should be used to reduce the educational achievement gap marginalized communities including Orang Asli. What is more important is that the model needs to be strengthened with the support of basic facility resources such as solar technology, the best and most effective use and maintenance training (Mazzlida&Ruhizan, 2016). This globalization, technology is a catalyst that has a positive impact on life especially in the aspect of education, regardless of race (Megan et al., 2013). However, the economic and social status that exists among the Orang Asli community has prevented the sustainability of technology in education. This has been proven by Charlotte and Fred (2009) who stated that half (50 percent) of the Orang Asli students drop out in terms of education due to the lack of sufficient resources and opportunities for them. This status becomes a starting point for the need for the authorities to identify solutions that preserve the customs and traditions of a race in ensuring that the country does not lose part of its human resources that can drive the country's stability (IntanFarhana et al., 2014). Inadequate access to basic education and employment greatly affects their economic status (Kari et al., 2016). Therefore, the construction of the proposed CLC model takes into account the local aspects, background and culture of the Orang Asli so that the model will remain useful and productive (Mazzlida&Ruhizan, 2017). In addition, Norwaliza (2015) also suggested that educational locations should be easily accessible and should be provided in their residential locations so that the application of elements that are compatible with Orang Asli culture such as skills or hands-on can help generate income in supporting their lives (Norwaliza, 2015; Osborne, 2010). This is important to ensure the Orang Asli community has access to basic facilities while continuing to protect the natural environment (Suhaila et al., 2018).

Research Objective

This study aims to obtain expert agreement on the elements of the CLC model based on local environment.

Conceptual Framework

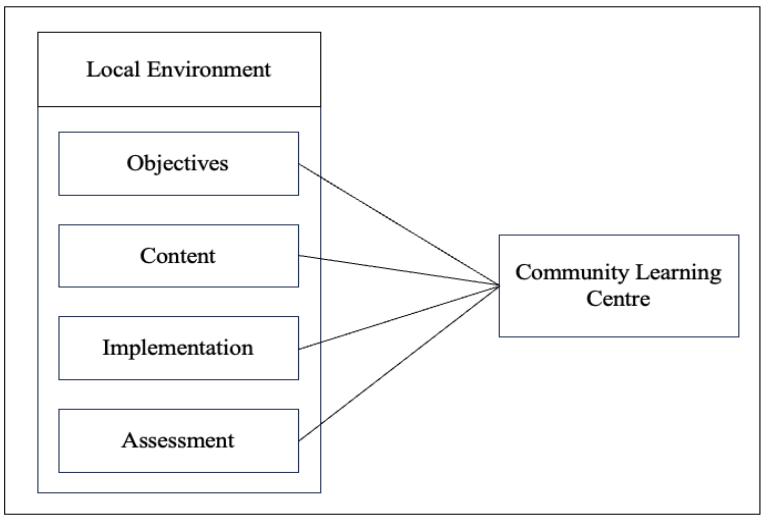

Figure 1: Conceptual framework

2. Research Methodology

In this study, research questionnaire components are created in two stages using literature highlights. In this study, the researcher conducted a literature review to pinpoint the components of the CLC Model based on local environment. After gathering all the relevant information, the researcher created a 7-point expert questionnaire, sent it to 11 experts with relevant experience, and used the Fuzzy Delphi (FDM) approach to analyse the results.

Respondent of the Research

Purposive sampling is used in this research. Since the researcher aims to reach an agreement on a subject, this approach is the most suitable. Purposive sampling, according to Hasson, Keeney, and McKenna (2000), is the best technique for FDM. The expert sample utilised in neither a Delphi nor a Fuzzy Delphi study is expressly chosen and appointed, therefore the representative and random features are not relevant (Ramlan&Ghazali, 2018). Fuzzy Delphi study sampling is also non-probability sampling and can be either criterion or purpose-driven (Ramlan&Ghazali, 2018). Purposive sampling is therefore used in this study's sampling process.

The number of experts utilised in this study is based on Clayton's (1997) recommendations, which say that if the experts engaged are homogeneous, then 5–10 experts are needed. According to Adler andZiglio (1996), if there is a degree of homogeneity (10–15 experts), the Delphi technique should be used. The sample for FDM is between 8 and 12 if the sample is homogeneous and sufficient, according to CavalliandOrtolano (1984), and Philip (2000) indicated that the expert sample is between 7 and 12. As a result, the researcher used a total of 8 experts in this investigation, which is deemed sufficient based on guidelines from the literature.

Therefore, a total of 11 experts were involved in this study. The experts involved are as described in Table 1. The selection of these experts is based on their experience and expertise in their respective fields. Table 1 describes the respondent's gender, race, field of work, work experience and about the expert's field of expertise involved as per to the Table 1.

Table 1: Demographic data of respondents

	Demographic	Frequency	Percentage
Gender	Male	7	64
	Female	4	36
Race	Malay	10	91
	Chinese	0	0
	India	0	0
	Others	1	9
Institution	Lecturer of PTA/IPTS	8	73
	Others	3	27
Years experiences	Less than 5 years	0	0
	5-10 years	2	18
	10-15 years	2	18
	More than 15 years	7	64
Field of expert	TVET	1	9
	Orang Asli Education	5	45
	Policy Maker	0	0
	Others	5	45

According to Table 1, the validation stage model's design and development phase employed 11 specialists in total. According to Table 1, the gender analysis of the experts reveals that 7 of them are men (64%) and 4 are women (36%). Only one expert is of another descent, and the majority of the professionals working on this

phase are of Malay heritage. 8 experts are mostly professors at public or private universities (73%), while 3 experts are from other organisations (27%). The majority of experts have a wealth of experience; there are seven experts (64%) with more than 15 years of experience, while there are two experts each with 10-15 years of experience and 5-10 years of experience. One technical and vocational expert (9%), five experts from the domains of Orang Asli Education and other relevant fields, and other connected fields make up the majority of the experts participated in this phase.

Research Instrument

On the advice of pertinent specialists, the researcher will base their usage of the Fuzzy Delphi technique. The decision to use this technique is consistent with the objectives of the phase, which calls for a thorough assessment and validation of the created model. The Fuzzy Delphi procedure, also known as the Fuzzy Delphi Method (FDM), is a measurement technique and procedure that is based on the Delphi Technique. Murray, Pipino, and Gigch initially developed this technique in 1985. The Fuzzy Numbering Set and the Delphi method are combined to create the Fuzzy Delphi method. As a result, the Delphi Method is not a brand-new tool; rather, it is a tool that has been enhanced from the original Delphi Method. This enhancement has the potential to indirectly increase the effectiveness of the Fuzzy Delphi Method as a measurement tool because it may be used to address unclear problems in research.

In order to get expert consensus on the placement of each item in the community learning centre programme model that NGT and ISM have designed, this study employs the Fuzzy Delphi approach. By incorporating fuzzy set theory into the traditional Delphi technique, this approach transforms the Likert-scale selected by the expert into a fuzzy scale. Fuzzy numbering, which uses binary numbering, is used in this approach.

Expert inquiries to determine whether the model can be used as a reference for subsequent studies, the use of Delphi techniques, and the Fuzzy Delphi Method to obtain expert opinions and agreement on the production model are some of the methods and tools that can be used in this development phase of studies involving the development of a model (Joseph, Tomas, Christian, & Marko, 2014). Because it is well suited to be used based on the key points of the literature and is also effective in the building of a model, the researcher chose this method to verify the model that resulted from ISM.

The model's output is converted into expert questionnaires during this phase. The same 11 experts for the NGT and ISM sessions were then given the questionnaire. The existing understanding and knowledge of the objective of the study and the elements involved serve as the basis for the reason for using the same expert during the model creation process. All of the components that have been constructed are already known to the specialists involved, which will make the validation process of this model easier. For a set amount of time, this questionnaire is sent by email to experts. The researcher will use the Fuzzy Delphi method to analyse the data once it has been collected. The researcher will transform all Likert-scales to fuzzy scales based on the data collected. The collected data will be analyzed using Microsoft Excel software.

Table 2: Likert-scales

7-point Fuzzy Scale	Fuzzy Number		
	M_1	M_2	M_3
Totally agree	0.09	1.00	1.00
Strongly Agree	0.70	0.90	1.00
agree	0.50	0.70	0.90
Uncertain	0.30	0.50	0.70
Disagree	0.10	0.30	0.50
Strongly disagree	0.00	0.10	0.30
Totally disagree	0.00	0.00	0.10

Data Collection and Analysis

First step: choosing the experts. Eleven experts from the NGT and ISM seminars were used in this study. The researcher must take the initiative to gather the information and data. Researchers may choose to conduct scientific seminars or workshops and invite the experts involved, meet in person with identified experts, or disseminate information online, such as via email, to experts who have been identified as knowledgeable in a particular field.Since the researcher was familiar with the line of experts because he had previously hosted a workshop, the ISM workshop, he decided to send expert surveys via email in this study.

Identifying linguistic variables (determining linguistic scale) is the second step. All linguistic variables must be transformed into triangle fuzzy numbering (triangular fuzzy numbers) as part of this process. Fuzzy numbers are also added to the conversion of linguistic variables in this step. The Likert-scale used in other studies is similar to the linguistic scale, but it also includes fuzzy numbering based on fuzzy triangle numbering. Each response was given three expert opinion-representing fuzzy values (fuzziness expert opinion). As indicated in the diagram below, three values:

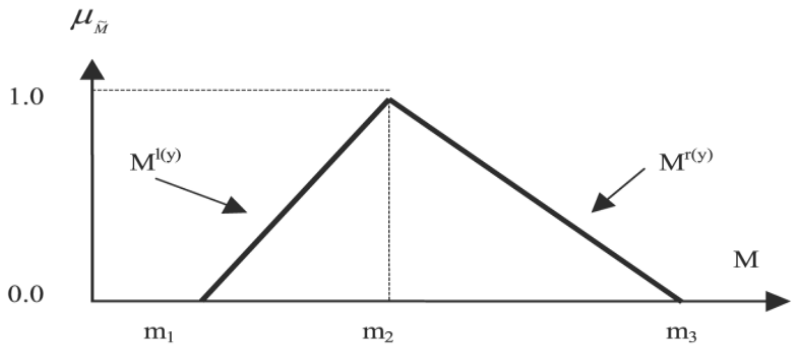

Figure 2: Triangular Fuzzy Number

*M_1 = minimum value; M_2= medium value; M_3= maximum value.

In other words, the linguistic variable scale is transformed into a fuzzy number using the linguistic h scale. The language agreement scale must be 3, 5, and 7. According to Muhammad Ridhuan et al., (2013), the higher the scale, the more precise the respondents' responses were analysed.

Step 3: The researcher must convert all Likert-scales to Fuzzy scales after receiving input or responses from the chosen experts. Identifying the average answers of each fuzzy number is another name for this approach (Benitez, Martin, and Roman 2007). This procedure is based on the following formula:

$$M = \frac{\sum_i^n = 1mi}{n}$$

Finding the threshold value "d" is the fourth step. When determining the degree of expert agreement, the threshold value is crucial. The formula is used to get the distance for each fuzzy number, m=(m1, m2, m3) and n=(m1, m2, m3):

$$d(\tilde{m},\tilde{n}) = \sqrt{\frac{1}{3}\left[(m_1 - n_1)^2 + (m_2 - n_2)^2 + (m_3 - n_3)^2\right]}.$$

The threshold value plays a crucial role in determining whether experts agree or disagree. According to Cheng and Lin (2002), expert agreement is said to have been obtained if the threshold value is less than or equal to 0.2. For each item, the total agreement (group consensus) must be greater than 75%; else, the second round will be used.

After obtaining expert agreement, step 5 involves summing the fuzzy numbers for each item to determine the alpha level of the aggregate fuzzy assessment (Ridhuan et al,, 2013). The following formula is used to calculate and determine fuzzy values:

$$A_{max} = {}^{1}/_{4} (m1_{+}2m_{2+}m_{3}).$$

$$\widetilde{A} = \begin{bmatrix} \widetilde{A}_1 \\ \widetilde{A}_2 \\ : \\ : \\ \widetilde{A}_m \end{bmatrix} \text{ where } \widetilde{A} = r_{i1} \times w_1 + r_{i2} \times w_2 + \ldots\ldots\ldots\ldots r_{in} \times w_n$$

$$i = 1, 2, \ldots\ldots\ldots, m$$

Step 6: The diffusion process phase comes next. The formula for this procedure is Amax= ${}^{1}/_{4}$ ($a1_{+}2a_{m+}a_{3}$). If the researcher use average responses or averages fuzzy numbers, the resulting score number falls between 0 and 1 (Muhammad Ridhuan 2014).

Step 7: The last step involves selecting the model's position (ranking) or sub-phase. By choosing model components based on the defuzzification value based on expert consensus that has the highest value for the most crucial position in the model, the position is determined.

Finding of the Research

Table 3: Items construct for Objectives

Construct	**Items**	**Sum (*defuzzification*)**			***Fuzzy evaluation***	**Average (*defuzzification*)**			***Alpha cut α-cut***	**d-value**	**% Agreement**	**Expert agreement**
		M1	**M2**	**M3**		**M1**	**M2**	**M3**				
OBJECTIVES	**1**	8.90	10.50	11.00	10.133	0.809	0.955	1.000	0.921	0.833	100	**Accept**
	2	9.30	10.70	11.00	10.333	0.845	0.973	1.000	0.939	0.667	100	**Accept**
	3	8.90	10.50	11.00	10.133	0.809	0.955	1.000	0.921	0.833	100	**Accept**
	4	9.90	11.00	11.00	10.633	0.900	1.000	1.000	0.967	0.000	100	**Accept**
	5	9.90	11.00	11.00	10.633	0.900	1.000	1.000	0.967	0.000	100	**Accept**
	6	9.90	11.00	11.00	10.633	0.900	1.000	1.000	0.967	0.000	100	**Accept**
Average									**0.947**	**0.035**	**100%**	**Accept**

Based on Table 3, there are no threshold values exceeding the threshold value of 0.2 (> 0.2). This means that all experts agree and reach a consensus on all items. However, the overall construct d-value shows 0.035 (< 0.2). According to Chang, Hsu, and Chang (2011), if the average threshold d-value is obtained to be less than 0.2, then the item has achieved expert agreement. Currently, the overall percentage of expert agreement is at 100%, which surpasses the requirement (75%), signifying that the expert consensus threshold for the item has been met. Chang, Hsu, and Chang (2011) further stated that the agreement percentage should exceed 75%.

Additionally, all Alpha-cut defuzzification values (average of fuzzy response) exceed 0.5. Based on Tang and Wu (2010) and Bodjanova (2006), the Alpha-cut value should exceed 0.5. This indicates that the OBJECTIVE elements have gained agreement from the involved experts. The agreed-upon items are ranked by priority as shown in Table 3. Overall, all items have received expert consensus with a strong level of agreement and meet the established criteria.

Table 4: Items construct for Content

Construct	**Items**	**Sum (*defuzzification*)**			***Fuzzy evaluation***	**Average (*defuzzification*)**			***Alpha cut α-cut***	**d-value**	**% Agreement**	**Expert agreement**
		M1	**M2**	**M3**		**M1**	**M2**	**M3**				
CONTENT	**1**	8.90	10.40	10.90	10.067	0.809	0.945	0.991	0.915	1.085	91	**Accept**
	2	9.30	10.70	11.00	10.633	0.845	0.973	1.000	0.939	0.667	100	**Accept**
	3	9.90	11.00	11.00	10.633	0.900	1.000	1.000	0.967	0.000	100	**Accept**
	4	9.90	11.00	11.00	10.633	0.900	1.000	1.000	0.967	0.000	100	**Accept**
	5	9.90	11.00	11.00	10.633	0.900	1.000	1.000	0.967	0.000	100	**Accept**
	6	9.90	11.00	11.00	10.633	0.900	1.000	1.000	0.967	0.000	100	**Accept**
	7	9.90	11.00	11.00	10.633	0.900	1.000	1.000	0.967	0.000	100	**Accept**
	8	9.90	11.00	11.00	10.633	0.900	1.000	1.000	0.967	0.000	100	**Accept**
	9	9.30	10.70	11.00	10.333	0.845	0.973	1.000	0.939	0.667	100	**Accept**
Average									**0.955**	**0.024**	**99%**	**Accept**

Based on Table 4, the threshold values that are bold exceed the threshold value of 0.2 (> 0.2). This indicates that there is a lack of consensus among experts regarding specific elements. However, the overall construct's value of d is 0.024 (<0.2). Currently, the overall percentage of expert consensus stands at 99%, which exceeds the threshold of 75%, indicating that it meets the criteria for expert consensus on the item. Additionally, all Alpha-Cut defuzzification values (average of fuzzy response) exceed 0.5. This indicates that the elements of the CONTENT component have achieved consensus among the involved experts. The agreed-upon elements are ranked in order of priority, as shown in Table 4. Overall, all items have achieved expert consensus with a good level of agreement and meet the established criteria.

Table 5: Items construct for Implementation

Construct	**Items**	**Sum (*defuzzification*)**			***Fuzzy evaluation***	**Average (*defuzzification*)**			***Alpha cut α-cut***	**d-value**	**% Agreement**	**Expert agreement**
		M1	**M2**	**M3**		**M1**	**M2**	**M3**				

IMPLEMENTATION	**1**	9.10	11.0	11.0	10.233	0.827	0.964	1.000	0.930	0.778	100	**Accept**
	2	9.90	11.0	11.0	10.633	0.900	1.000	1.000	0.967	0.000	100	**Accept**
	3	9.90	11.0	11.0	10.633	0.900	1.000	1.000	0.967	0.000	100	**Accept**
	4	9.90	11.0	11.0	10.633	0.900	1.000	1.000	0.967	0.000	100	**Accept**
	5	9.90	11.0	11.0	10.633	0.900	1.000	1.000	0.967	0.000	100	**Accept**
	6	9.90	11.0	11.0	10.633	0.900	1.000	1.000	0.967	0.000	100	**Accept**
Average									**0.961**	**0.012**	**100%**	**Accept**

According to Table 5, no threshold values exceed the threshold value of 0.2 (> 0.2). This means that all experts are in agreement and have reached a consensus on all items. However, the overall construct's value of d is 0.012 (< 0.2). Currently, the overall percentage of expert consensus is at 100%, exceeding the required threshold of 75%, which signifies meeting the criteria for expert consensus on the item. Furthermore, all Alpha-Cut defuzzification values (average of fuzzy response) exceed 0.5. This indicates that the IMPLEMENTATION elements have obtained agreement from the involved experts. The agreed-upon items are ranked based on priority, as shown in Table 5. Overall, all items have obtained expert consensus with a good level of agreement and meet the established criteria.

Table 6: Items construct for Assessment

Construct	**Items**	**Sum (*defuzzification*)**			***Fuzzy evaluation***	**Average (*defuzzification*)**			***Alpha cut α-cut***	**d-value**	**% Agreement**	**Expert agreement**
		M1	**M2**	**M3**		**M1**	**M2**	**M3**				
ASSESSMENT	**1**	8.70	10.20	10.80	9.900	0.791	0.927	0.982	0.900	1.398	82	**Accept**
	2	9.30	10.70	11.00	10.333	0.845	0.973	1.000	0.939	0.667	100	**Accept**
	3	9.90	11.00	11.00	10.633	0.900	1.000	1.000	0.967	0.000	100	**Accept**
	4	9.20	10.60	11.00	10.233	0.827	0.964	1.000	0.930	0.778	100	**Accept**
	5	9.90	11.00	11.00	10.633	0.900	1.000	1.000	0.967	0.000	100	**Accept**
Average									**0.941**	**0.052**	**96%**	**Accept**

Based on Table 6, the threshold values that are bold exceed the threshold value of 0.2 (> 0.2). This indicates that there are differing expert opinions and no consensus reached on specific elements. However, the overall construct's value of d is 0.052 (< 0.2). Currently, the overall percentage of expert consensus is at 96%,

exceeding the required threshold of 75%, which signifies meeting the criteria for expert consensus on the item. Furthermore, all Alpha-Cut defuzzification values (average of fuzzy response) exceed 0.5. This indicates that the ASSESSMENT component elements have obtained agreement from the involved experts. The agreed-upon elements are ranked based on priority, as shown in Table 6. Overall, all items have obtained expert consensus with a good level of agreement and meet the established criteria.

The elements agreed by the experts are arranged in order of priority (ranking) as shown in the following Figure 2.

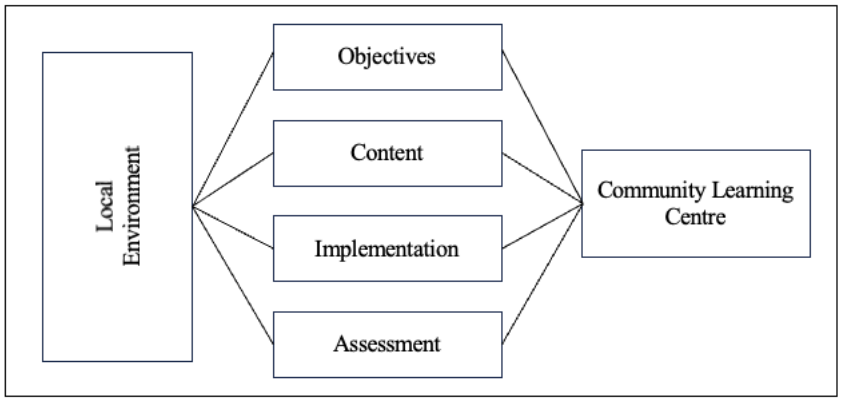

Figure 2: Community Learning Center (CLC) Model

3. Discussion

The CLC acts as a hub or site for lifelong learning and provides possibilities for the Orang Asli community, notably for building long-term survival skills (SitiNurulAinmey, 2013). Based on the local situation, this study emphasizes four CLC model components: implementation, content, aims, and assessment. Expert approval and opinions have been acquired for each of these components.

First, is implementation? The process of putting the Orang Asli Community Learning Center Model into practice is known as implementation, and it necessitates cooperation and interaction with the Orang Asli community to guarantee that the programs are culturally appropriate and pertinent to their way of life. It may be beneficial to take advice from and work with local and indigenous peoples who have adapted their way of life in the forest and maintained close ties to their land (Diansyah et al., 2022). Additionally, in order to effectively engage with the Orang Asli society, industry professionals must possess cross-cultural communication and adapting abilities that are well-accepted by the Orang Asli community (Chew et al., 2022). The use of technology, such as mobile learning, should therefore be incorporated into the implementation in order to broaden access to education, improve their communication, and empower Orang Asli educators.

Next is element of content. There are many different educational and training programs available through the Orang Asli Community Learning Center Model, all of which are catered to the needs of the Orang Asli community. These include indigenous pedagogy research and development, resource centers and libraries, galleries, and community-based learning (Md Nor et al., 2011). The programs are made with cultural sensitivity and consideration for the way of life of the Orang Asli people in mind. Additionally, it entails working with other organizations to upgrade the Orang Asli schools' infrastructure and facilities, such as their student residences, and to invest in the implementation of online learning for ongoing reflection on the teaching of cultural diversity (Meedsen&Sathirapanya, 2023). Therefore, instruction should be created to support the learning objectives and prepare students for their examinations, so they can accomplish the goals.

Objectives come in third. By creating and assessing health education learning packages, the Orang Asli Community Learning Center Model seeks to improve the education of Orang Asli children by offering education and training opportunities to the Orang Asli community (Al-Delaimy et al., 2014). Since the model is intended to be based on the surrounding area, it takes into account the distinctive qualities of the Orang Asli community and its surroundings. Objectives are declarations of the list of skills that students should have after finishing a course or program. Objectives must be clear, quantifiable, and expressed from the viewpoint of the learner. According to Meedsen and Sathirapanya (2023), objectives should be in line with the overall course objectives

and suited to the needs of the Orang Asli community in order to develop knowledge, improve the education of the Orang Asli people, and maintain their culture.

Lastly, assessment. Based on how well the Orang Asli Community Learning Center Model enhances the community's access to education and training, it should be evaluated. The effectiveness of the health education learning package (HELP) on different infections is also evaluated (al-Delaimy et al., 2014). Despite receiving many forms of support, the Orang Asli continue to experience difficulties since they have been marginalized in numerous areas, including education (Ahmad et al., 2022). Hence, in order to properly address the educational issues that the Orang Asli population is facing, the assessment should also include how well the initiatives and programs are working.

4. Conclusion

To be concluded, implementation describes the process of putting the Orang Asli Community Learning Center Model into practice. Meanwhile, content is the term used to describe the materials and exercises provided in a course or program to aid students in meeting their goals. The terms assessment and objectives refer to the process of determining whether students have met the learning objectives. Lastly, objectives are statements that describe what students should be able to do after finishing a course or program. The alignment and customization of each of these components should be done in accordance with the needs of the Orang Asli community. In conclusion, the Orang Asli Community Learning Center Model has been developed to offer educational and training possibilities for the Orang Asli community based on their local environment.The model is culturally sensitive and pertinent to the way of life of the Orang Asli people, and its implementation demands community engagement and collaboration. To ensure the model's success and cultural sensitivity, the Orang Asli community should be involved in its evaluation.

Acknowledgements

Authors would like to thank Graduate School of Business, UniversitiKebangsaan Malaysia for sponsorship of this research paper under the GSB-2023-021 and GSB-2023-024.

5. References

[1] Abdul Rahman Ahlan&Yusri Arshad. (2011). The ICT Social Inclusion among Orang Asli Community in Gombak Area.

[2] Adler, M., &Ziglio, E. (1996). Gazing into the oracle. Jessica Kingsley Publishers: Bristol, PA.

[3] Ahmad Esa, J. B. M. Y. & N. B. K. (2015). Malaysia : Regional Meeting on Primary Equivalency Alternative Schooling Programme to Reach the Unreached, 7-9 November 2012 1 (November 2012), 7–9.

[4] Ahmad, B. E., Abdullah, M. A., Shariff, T. I., Nor, M. Y., Ismail, M. R., &MohdAkhir, N. F. (2022). Being successful in school: A case study of the orang asli (aboriginal people) of Malaysia. International Journal of Evaluation and Research in Education (IJERE), 11(4), 1787. https://doi.org/10.11591/ijere.v11i4.23051

[5] Al-Delaimy, A. K., Al-Mekhlafi, H. M., Lim, Y. A., Nasr, N. A., Sady, H., Atroosh, W. M., & Mahmud, R. (2014). Developing and evaluating health education learning package (HELP) to control soil-transmitted helminth infections among Orang asli children in Malaysia. Parasites & Amp; Vectors, 7(1). https://doi.org/10.1186/1756-3305-7-416

[6] Alam S. S, Omar, N. A, Ahmad, M. S, Siddiquei, H. R, Nor, S. M. (2013). Renewable energy in Malaysia: strategies and development. Environ ManagSustDev ,2(1), 51–66

[7] Andrew, T. (2012). Information communication technologies and new indigenous mobilities? Insights from remote Northern Territory communities. Journal of Rural and Community Development, 7(1), 59–73

[8] AnizaMohd Said. (2015). Model KurikulumBerasaskanIlmuPerubatanHerba Orang AsliuntukSekolahRendahMasaDepan. TesisIjazahDoktorFalsafah, FakultiPendidikan, Universiti Malaya, Kuala Lumpur.

[9] APPEAL. (2001). CLC (Community Learning Centre) regional activity report, 1999- 2000; 2001.

[10] APPEAL. (2001). CLC (Community Learning Centre) regional activity report, 1999- 2000; 2001.

[11] APRBE, U. (2008). Community Learning Centres: Country Reports from Asia.

[12] APRBE, U. (2012). Community Learning Centres : Asia-Pacific Regional Conference Report.

[13] Bodjanova, S. (2006). Median alpha-levels of a fuzzy number. Fuzzy Sets and Systems,157(7), 879 – 891

[14] Brown, R. D. (2011). Essential program components of teaching and learning centers (TLC) in community colleges as perceived by TLC directors. TesisIjazahDoktorFalsafah, Azusa Pacific University, California.

[15] Brown, R. D. (2011). Essential program compunents of teaching and learning centers (TLC) in community colleges as perceived by TLC directors. TesisIjazahDoktorFalsafah, Azusa Pacific University, California.

[16] Carter, J. (2010). Displacing Indigenous cultural landscapes: The Naturalistic gaze at Fraser Island world heritage area. Geographical Research, 48(4), 398–410. doi:10.1111/j.1745-5871.2010.00644.x

[17] Cavalli-Sforza, V., Ortolano, L., Cavalli-Sforza, V., &Ortolano, L. (1984). Delphi Forecasts of Land Use: Transportation Interactions. Journal of Transportation Engineering, 110(3), 324–339. doi:10.1061/(ASCE)0733-947X(1984)110:3(324)

[18] Charlotte, L. & Fred, W. (2009). Health Inequalities and Social Determinants of Aboriginal Peoples' Health. National Collaborating Centre for Aboriginal Health

[19] Cheng, C. H., & Lin, Y. (2002). Evaluating the Best Main Battle Tank Using Fuzzy Decision Theory with Linguistic Criteria Evaluation. European Journal of Operational Research, 142, 74-86.https://doi.org/10.1016/S0377-2217(01)00280-6.

[20] Cheng, P. L., Hsu, C. W., & Chang, P. C. (2011). Fuzzy Delphi method for evaluating hydrogen production technologies. International Journal of Hydrogen Energy, 36(21), 14172–14179. https://doi.org/10.1016/j.ijhydene.2011.05.045.

[21] Chew, C.-C., Lim, X.-J., Low, L.-L., Lau, K.-M., Kari, M., Shamsudin, U. K., &Rajan, P. (2022). The challenges in managing the growth of indigenous children in Perak State, Malaysia: A qualitative study. PLOS ONE, 17(3). https://doi.org/10.1371/journal.pone.0265917

[22] Diansyah, M. W., Abas, A., &Sakawi, Z. (2022). Exploring the relevance of engaging the orang asli in Malaysia's forest management. Frontiers in Forests and Global Change, 5. https://doi.org/10.3389/ffgc.2022.1019994

[23] Gunigundo, M. S. T. (2013). Community Learning Centres in the Philippines: Policies and Practices.

[24] Habibah Ahmad, HamzahJusoh&MushrifahIdris. (2010). Sustainable Livelihood of the Community in TasikChini Biosphere Reserve : The Local Practices. Journal of Sustainable Development, 3(3), 184–196. doi:ISSN 1913-9063 E-ISSN 1913- 9071

[25] HamidahYusof, Abdul Rahman Ahmad, &Khalip Musa (2013). Pengaruhlingkungansosialdankeluargamuridtahun 5 Orang AsliSemaiterhadapmasalahpembelajaran. JurnalPendidikanBitara, Universiti Pendidikan Sultan Idris.

[26] Harun, M. & Hoque, M. N. (2015). The Role of Solar Home System (SHS) in Socio- Economic Development of Rural Bangladesh. Retrieved from http://dspace.bracu.ac.bd:8080/xmlui/bitstream/handle/10361/5049/AbdullahHarun.pdf?sequence=1

[27] Hassan Mat Nor. (1998). Wargaperibumimenghadapicabaranpembangunan. KertaskadangkalaBil. 8. JabatanAntropologi, &Sosiologi. Bangi, UniversitiKebangsaan Malaysia.

[28] Hasson, F., Keeney, S. & McKenna, H. (2000). Research guidelines for the Delphi survey technique. Journal of Advanced Nursing, 32(4), 1008–1015. doi:10.1046/j.1365-2648.2000.t01-1-01567.x

[29] Helme, S. & Lamb, S. (2011). Closing the school completion gap for Indigenous students. Produced for the Closing the Gap Clearinghouse. Canberra: Australian Institute of Health and Welfare & Melbourne: Australian Institute of Family Studies.

[30] Hinks, D. (2011). Educational Leaders' Perspectives on Issues and Concerns in Aboriginal Education in Alberta. Canada.

[31] IntanFarahanaKamsin, Rosseni Din, Fariza Khalid, Nor Syazwani Mat Salleh, Analisa Hamdan&SitiZuraidaManaf. (2015). Learning style of orang asli students. International Conference on e-Learning (ICeL), hlm.1–7.

[32] IntanFarahanaKamsin, Rosseni Din, Norsyazwani Mat Salleh, AnalisaHamdan&SitiZuraida Abdul Manaf. 2014. Making Behaviour Change Among Orang Asli Students Through Ict Literacy Program. ICSSR e-journal of the Social Science Researches E-ISSN:2289-4977, 1(2), 27–34.

[33] Joseph, F. H., G Tomas, M. H., Christian, M. R., & Marko, S. (2014). A Primer on Partial Least Square Structural Equation Modelling (PLS-SEM). SAGE Publications.

[34] Juli Edo. (2006). Retorikpembangunan Orang Asli. DalamMohdFauziYaacob (ed) Malaysia menanganiperubahandanpembangunan. PenerbitUniversiti Malaya, Kuala Lumpur.

[35] Kari, F. B., Masud, M. M, Yahaya, S. R. & Saifullah, M. K. (2016). Poverty within watershed and environmentally protected areas: the case of the indigenous community in Peninsular Malaysia. Environmental Monitoring and Assessment, 188(3), 173. doi:10.1007/s10661-016-5162-1

[36] Keith, J. M. (2014). Educational Modules on Solar Energy. 121st ASEE Annual Conference & Exposition,.

[37] Kementerian Pendidikan Malaysia (KPM). (2010). Buku Pembangunan Pendidikan 2001-2010. Putrajaya.

[38] Kirubi, C., Jacobson, A., Kammen, D. M. & Mills, A. (2009). Community-Based Electric Micro-Grids Can Contribute to Rural Development: Evidence from Kenya. World Development, 37(7), 1208–1221. doi:10.1016/j.worlddev.2008.11.005

[39] Lloyd, B., Lowe, D. & Wilson, L. (2001). Renewable energy systems for remote areas in Australia. Renewable Energy Systems for Remote Areas in Australia, 22(1), 369–378. doi:10.1016/S0960-1481(00)00043-4

[40] M. J. (1997). Delphi: A technique to harness expert opinion for critical decision making task in education. Educational Psychology, 17(4), 373-384

[41] MazdiMarzuki, Jabil Mapjabil&RosmizaMohdZainol. (2014). Mengupaskeciciranpelajar Orang AsliMalaysia :Suatutinjauankedalamisuaksesibilitisekolah Deciphering the Malaysian aboriginal low educational achievement : A look at the school accessibility issue. GEOGRAFIA OnlineTM Malaysian Journal of Society and Space 10, 2(2), 189–198.

[42] Mazzlida Mat Deli &RuhizanMuhamadYasin. (2016). Quality Education of Orang Asli in Malaysia. International Journal of Academic Research in Business and Social Sciences, 6(11), 233–240. doi:10.6007/IJARBSS/v6-i11/2388

[43] Mazzlida Mat Deli &RuhizanMuhamadYasin. (2017). Community-Based Learning Center of Renewable Energy Sources for Indigenous Education. International Journal of Academic Research in Business and Social Sciences, 7(4), 828–837. doi:10.6007/IJARBSS/v7-i4/2890

[44] Md Nor, S., Roslan, S., Mohamed, A., Abu Hassan, K. Hj., Ali, M. A., &Manaf, J. A. (2011). Dropout prevention initiatives for Malaysian indigenous Orang Asli Children. International Journal on School Disaffection, 8(1), 42–56. https://doi.org/10.18546/ijsd.08.1.07

[45] Meedsen, P., &Sathirapanya, C. (2023). Developing and implementing an action plan among the "Orang Asli" minority in southernmost Thailand for equitable accessibility to public health care and public services following the United Nations Sustainable Development Goals. International Journal of Environmental Research and Public Health, 20(6), 5018. https://doi.org/10.3390/ijerph20065018

[46] Megan, B., Ananda, M., Lori, F. & Eli, S. (2013). Repatriating Indigenous Technologies in an Urban Indian Community. Sage Publications.

[47] Min, B. J. &Zhiyong, Q. (n.n). Rural Community Learning Centers in Education for Poverty Alleviation. China.

[48] Mohammad JohdiSalleh& Abdul Razaq Ahmad. (2009). KesedaranPendidikanDalamKalangan Masyarakat Orang Asli. DalamMasyarakat Orang Asli: PerspektifPendidikandanSosiobudaya. Bangi: FakultiPendidikan, UniversitiKebangsaan Malaysia

[49] MohdFauziMohdHarun&NorAiniHjIdris. (2012). The quality of life of Malaysian aborigines: measured with a weighted quality of life index for Orang Asli. Akademika, 82, 75–81.

[50] MohdNazri Abdul Rahman. (2014). Pembangunan model homeschoolingberasaskannilaidanamalanmasyarakatbagikanak-kanak Orang Asli. TesisDr.Falsafah, FakultiPendidikan, Universiti Malaya.

[51] MohdNazri Abdul Rahman. (2014). Pembangunan model homeschoolingberasaskannilaidanamalanmasyarakatbagikanak-kanak Orang Asli. TesisDr.Falsafah, FakultiPendidikan, Universiti Malaya.

[52] MohdNizamAb Rahman, RuhizanMohdYasin, KamaruzzamanSopian, JuhariAbRazak, Ahmad Rasdan Ismail &AzamiZaharim. (2008). Initial Study of Renewable Energy System in Rural Malaysia. Res 08: Proceedings of the 2ndWseas/Iasme International Conference on Renewable Energy Sources, (October 2014), 181–185\r290.

[53] MohdNurSyufaatJamiran& Wee, S. T. (2014). The Environment Of Kampung Peta. International Journal of Conceptions on Management and Social Sciences, 2(3), 56–59.

[54] Mohd. RidhuanMohd. Jamil, ZaharahHussin, NurulRabihah Mat Noh, Ahmad ArifinSapar&Norlidah Alias. (2013). Application of Fuzzy Delphi Method in Educational Research. Design and Developmental Research. Dlm. SaedahSiraj, Norlidah Alias, Dorothy DeWitt &ZaharahHussin (pnyt). Kuala Lumpur: Pearson Malaysia Sdn. Bhd.

[55] Morrison, B. J. (2003). The development of a framework for the evaluation of a selfaccess language learning centre. TesisIjazahDoktorFalsafah, The Hong Kong Polytechnic University

[56] Muhammad Ridhuan Tony Lim Abdullah. (2014). Development of activity-based mLearning implementation model for undergraduate English earning. TesisIjazahDoktorFalsafah, FakultiPendidikan, Universiti Malaya, Kuala Lumpur.

[57] Nicholas, C. (1999). The Orang Asli in The Malaysian Nation State: The politics and development of a Marginal Indigenous Community. TesisDoktorFalsafah, FakultiPendidikan, Universiti Malaya, Kuala Lumpur.

[58] Nor Syazwani Mat Salleh . (2017). Pembelajaran ICT yang diperibadikanuntuk Orang Aslibagimenghasilkankemahiranbolehpindah. TesisIjazahDoktorFalsafah. UniversitiKebangsaan Malaysia. Bangi.

[59] Norwaliza Abdul Wahab&Ramlee Mustapha. (2015). Reflections on Pedagogical and Curriculum Implementation at Orang Asli Schools in Pahang. Procedia – Social and Behavioral Sciences, 172, 442–448. doi:10.1016/j.sbspro.2015.01.376

[60] NurBahiyah Abdul Wahab. (2015). Pembangunan kit rimbaberorientasikanelemenSekolahRimba Malaysia bagipeningkatankompetensisains murid Orang Asli. TesisIjazahDoktorFalsafah Sains. FakultiSains, Teknologidan PembangunanInsan, UniversitiTunHussien Onn Malaysia, Johor D. T.

[61] Osborne, A. (2010). Netagamiou Community Learning Centre: A case study based on action research for Education for Sustainable Development in Rural Communities. Masters Abstracts International.

[62] Philip, R. (2000). New Application for Delphi Technique, Annual “San Diego” Pfeifer & Company, Vol 2, 191-196

[63] Qu’anglo Communication & Consulting (QCC). (2015). CLC Evaluation 2012-2014: The Quest for Sustainability & Best Practices.

[64] Ramlan Mustapha danGhazaliDarusalam. (2018). Aplikasikaedah Fuzzy Delphi dalampenyelidikansainssosial. PenerbitUniversiti Malaya. Kuala Lumpur.

[65] Rashid, S. S., Harun, S. N., Hanafiah, M. M., Razman, K. K., Liu, Y. Q., &Tholibon, D. A. (2023). Life cycle assessment and its application in wastewater treatment: a brief overview. Processes, 11(1), 208.

[66] Riley, L., Plummer, J., Tayler, K. &Wakely, P. (1999). Community Learning and Information Centres As a Tool for Sustainable Development Centres As a Tool for Sustainable Development.

[67] Salleh, N. S. M., Karim, A. A., Deli, M. M., Jz Nun Ramlan, N. F. & Hamdan, A. (2019). An evaluation of content creation for personalised learning using digital ict literacy module among aboriginal students (mlict-oa). Turkish Online Journal of Distance Education, 20(3), pp. 41–58

[68] Schwab, R. G. & Sutherland, D. (2001). Building Indigenous learning communities. Economic Policy, (225), 1–22.

[69] SitiFarhah A. Aziz. (2016). Model kurikulumberasaskantamanbuah-buahandansayur-sayuranberkhasiatuntukSekolahRendah Orang Asli. TesisIjazahDoktorFalsafah, FakultiPendidikan, Universiti Malaya, Kuala Lumpur.

[70] SitiNurulAinmey Sheikh Abd Hamid. (2013). PendidikanVokasionaldalamkalanganmasyarakat Orang AslisebagaiPembelajaranSepanjang Hayat. UniversitiTun Hussein Onn Malaysia.

[71] Suhaila Abdul Hamid, Hoy-Yen Chan, Ah Choy Er, Wong Chin Yew &KamaruzzamanSopian. (2018). Renewable Energy in Developing Countries: Local Development and Techno-Economic Aspects. Dlm. Hoy-Yen Chan (pnyt.) &KamaruzzamanSopian (pnyt.). Renewable Energy World, hlm.73–83. Springer International Publishing. doi:10.1007/978-3-319-89809-

[72] SuruhanjayaHakAsasiManusia Malaysia. (2010). Laporan status hakPendidikankanak- kanak Orang Asli. Kuala Lumpur: SUHAKAM

[73] Tang, C.W. & Wu, C.T. (2010). Obtaining a picture of undergraduate education quality: a voice from inside the university, Springer. Higher Education, 60, 269-286.DOI:10.1007/s10734-009-9299-5.

[74] Thanabalan, T. V., Siraj, S. & Alias, N. (2014). Development of a Respunsive Literacy Pedagogy Incorporating Technology for the Indigenous Learners in Malaysia. The Turkish Online Journal of Educational Technology, 13(2), 44–53.

[75] Thanabalan, T. V., Siraj, S. & Alias, N. (2014). Development of a Respunsive Literacy Pedagogy Incorporating Technology for the Indigenous Learners in Malaysia. The Turkish Online Journal of Educational Technology, 13(2), 44–53.

[76] UNESCO. (1995). Principal Regional Office for Asia and the Pacific. APPEAL training materials for continuing education personnel (ATLP-CE) Vol. VIII: A manual for the development of learning centres. Bangkok,. 127 p. (Asia-Pacific Programme of Education for All)

[77] UNESCO. (1995). Principal Regional Office for Asia and the Pacific. APPEAL training materials for continuing education personnel (ATLP-CE) Vol. VIII: A manual for the development of learning centres. Bangkok,. 127 p. (Asia-Pacific Programme of Education for All)

[78] UNESCO. (2001). Revised recommendations concerning Technical and Vocational Education and Training.

[79] UNESCO. (2001). Revised recommendations concerning Technical and Vocational Education and Training.

[80] UNESCO. (2011). Sustainability of Community Learning Centres: Community Ownership and Support. Bangkok.

[81] UNESCO. (2013). Community Learning Centres: National Qualifications Frameworks for Lifelong Learning and Skills Development. France.

[82] UNESCO. (2016). What is Flexible Learning? http://www.unescobkk.org/education/literacy-and-lifelong-learning/flexiblelearning- strategies/ [1 January 2016].

[83] UNICEF. (2015). Mapping alternative learning approaches, programmes and stakeholders in Malaysia. Kuala Lumpur.

[84] Van, W., J. & Frick, L. (2015). The post-literacy perceptions of newly literate adult learners at a rural community learning centre. Per Linguam, 30(3), 1–15. doi:10.5785/30-3-565

[85] Wan Afizi Wan Hanafi, Shaharuddin Ahmad &Noraziah Ali. 2014. Faktorbudayadanpersekitarandalamprestasipendidikananak Orang Asli Malaysia: Kajiankes di Kelantan. GEOGRAFIA OnlineTM Malaysian Journal of Society and Space, 5(5), 107–122.

[86] Wee, S. T., Maryati Mohamed, MohdNurSyufaatJamiran, ZainalZulhilmi Zainal Abidin &SitiAminahMohd Sam. (2012). Pembangunan SosioekonomiKomuniti Orang Asli Di Malaysia. PersidanganKebangsaanGeografi&AlamSekitar Kali Ke-4, 755–761.

[87] Wright, C. R., Mukami, D. & Priyadarshini, A. (2013). Establishing Learning Centres Anywhere : Keys to Success.

[88] Yasin, R. M., Deli, M. M., Dasman, S. M., Khalid, F., Rahman, M. N. A. (2017). Charting a model of lifelong learning centre for sustainable living of indigenous community: Voices from the ground. Man in India, 97(24), 305–319

[89] Zolfaghari, A. (2009). Community Learning Center Programs and Community Literacy Development in Asian and the Pacific Countries: Bangladesh, Iran, Vietnam and Pakistan as Case. Pakistaniaat: A Journal of Pakistan Studies, 1(1), 10–29.

[90] Zolfaghari, A., Sabran, M. S., Singh, S. & Ahmad, N. (2009). Community learning centre program as an educational tool for rural community literacy development: Community of Nasr Abad as a case study. Pertanika Journal of Social Science and Humanities, 17(2), 179–186.