Islamic Transformation Centre: Enhancing the Knowledge and Skills of Rural School Students by Leveraging Quadruple Helix Model (QHM) Collaboration

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Abstract: **The purpose of this paper is to enhancing the knowledge and the skills of rural school students by harnessing on capabilities of information and communication technology (ICT) via Islamic Transformation Centre (ITC). The important area focuses are mainly on the availability of information and communication technology tools to the rural schools in Malaysia. This will be in collaboration with the "whole-of-government" concept of information and communication technology (ICT) implementation across the schools in Malaysia mooted by Ministry of Education (MOE) and Ministry of Rural and Regional Development (MORARD) in understanding the plans and executions method to benefit the development of the rural schools in Malaysia. The paper is based on literature review, adopting the business model canvas (BMC) framework in building a conceptual solution for knowledge and skill development of the rural schools children. This paper explores the important collaboration of Quadruple Helix Model (QHM) in integration of Government, University, Industry and Citizen ICT infrastructure for education in rural schools, and the success rate of it.**

Keywords: **Islamic Transformation Centre (ITC), Knowledge, skills, rural school students,** *Quadruple Helix Model (QHM)***, Collaboration.**

I.   INTRODUCTION

The paper is an investigation on how an Islamic Transformation Centre (ITC) providing rural basic infrastructure in Malaysia. The main objectives of ITC are to enhance the knowledge and skills of rural school students by harnessing on capabilities of Information Communication Technology (ICT) with leveraging on Whole of Government (WOG) concept. This can be achieved by providing certain services and programs namely: Islamic Knowledge centre, library of knowledge and tuition centres. This program synergize with the Whole of Government (WoG) is collaborated with government agencies to achieve the goals [Habiba, 2013]. Besides that, this program also offered Quadruple Helix Model (QHM), which is an innovation research concept integrates Government, University, Industry, and Citizen [Ania, 2013]. This case studies also discuss the current ITC policies in rural areas and how its impact the school students. The strength, weaknesses of current system and the future plan should be analyzed in detail for the improvement. In particularly the focus will be on the Rural Transformation Centre (RTC) that could help in improving the skills and the knowledge of the rural school students mainly with the collaboration of Network of Mosque (NOM) in setting up on stop centre for the students, teachers, volunteers, Subject Matter Experts (SMEs) and professionals to contribute for the improvement of the rural students knowledge and skills.

Rural Transformation Centre (RTC), implemented by the government of Malaysia, is among the third generation of the rural development programmes in the country. RTC is a site to implement some integrated initiatives for the rural communities within 100 kilometre radius of the sites. There are eight major initiatives under the RTC implementation programmes, which are: training of rural population; setting up of 1Malaysia information kiosks; high-value agriculture initiatives; agro-food products processing; agricultural produce supply chain management; university cooperation; food

safety and pharmaceuticals services; and rural population financial facilities. RTC brings a unique opportunity for members of the rural communities to benefit from a myriad of initiatives and activities related to their livelihood and wellbeing within the same premises. (Shawon Muhammad, 2014).

This paper also investigates the main barriers in implementing technology and ICT in Islamic Education teaching and learning. At end of this study we may contrast and conclude on how Islamic Transformation Centre could be enhanced through Information Communication Technology and develop today's children to be tomorrow's champions by fulfill the syariah (Islamic rules and regulations) of Islam.

II.   PROJECT BACKGROUND

Our nation is divided into Peninsular Malaysia and East Malaysia which is also known as Sabah, Sarawak. State of Sabah and Sarawak are classified as a highest rural population in Malaysia. Rural population refers to people living in rural areas as defined by national statistical offices [Eleventh Malaysian Plan, 2014]. It is calculated as the difference between total population and urban population. We can notice that infrastructure of these rural areas are at poor level. Then it comes to place where government of Malaysia currently working on IT infrastructure policy to improvise the rural areas. There is no point of brought up information technology via Islamic transformation centre without developing infrastructure as a stepping stone for rural development. The infrastructure includes basic needs such as water, electricity, and roadway.

According to [EPU, 2014, 2015],

"Based on Malaysia's Ministry of Education has set forth an ambitious vision to modernize teaching in its 10,000 schools, and support the development of the country as a whole. The Malaysia Education Blueprint, 2013-2025 spans preschool through postsecondary education, and impacts approximately 6 million students. The major resulting Ministry initiatives include significant investments in technology, which will cost-effectively scale up the quality of learning across all of Malaysia.

The Tenth Malaysia Plan, 2011-2015, rural development was given priority to enhance inclusivity as the nation progressed towards becoming an advanced inclusive nation. According to tenth Malaysia plan 2011 - 2015 on transforming rural areas to uplift wellbeing of rural communities, government has its own policy such as Providing Rural Basic Infrastructure; Improving Service Delivery; Intensifying Economic Activities, Promoting Entrepreneurship and Empowering Community.

The Government will adopt a two-prong approach in developing the rural community during the Eleventh Malaysia Plan, 2016-2020. First, to scale up existing program that produce desired outcomes and second, to strengthen and streamline the implementation mechanism among the relevant agencies. Efforts will be focused on encouraging more private investment, improving rural-urban linkages, expanding implementation of program under 21st Century Village, promoting use of modern technologies, empowering rural entrepreneur community, encouraging community-driven cooperatives, providing quality rural basic infrastructure and basic services."

According to [Malaysia Well-being Report, 2013],

Measuring the many dimensions of social wellbeing is important to keep track of the progress made in advancing the nation. Malaysia has made remarkable progress in the past 13 years in social well-being, as reflected by the improvement in the social well-being sub-composite index and all its component indices. The top three out of the 9 components are housing which improved by 36.9 points, leisure 31.4 points and governance 28.1 points.

III.   PROBLEM STATEMENT

The focus of rural development was to uplift the wellbeing of the rural community and stimulate economic activities. To bring in Information Communication Technology to rural areas, government should focus on development by providing rural basic infrastructure which increases on community wellbeing and decrease poverty. From there they can build an environment for students to go to institutions to get education.

A. Inadequate Rural Basic Infrastructure and Other Amenities:

Rural areas have limited coverage of water and electricity supply. Development and expansion of economic activities in the rural areas in terms of production, processing, distribution, sales and marketing as well as access to financing and information has been affected.

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Many parts of Sabah and Sarawak, especially in the remote areas are still without road network. In terms of rural water supply coverage, 19.4% of houses in Sabah and 18.3% in Sarawak have yet to be supplied with clean and treated water. Meanwhile, 5.9% of houses in Sabah and 9% in Sarawak are still not supplied with electricity. Public transport services are still limited in the rural areas. Affordability and reliability of existing public transportation is still a major issue due to geographical challenges, high operating cost and unprofitable routes [10].

B. Lack of Islamic Dawah:

The *dawah* (Islamic callings; teachings) in rural areas like Sabah and Sarawak is not sufficient where it's the highest challenge for government to develop IT based Muslim community via Islamic Transformation Centre. At rural areas children are more exposed to do work rather than gaining education [Department of Statistics Malaysia, 2015].

C. *Lack of Expertise and Technology:*

Lack of expertise like certified teachers, lecturers, IT professionals and so on. This is due to the infrastructure and geographical area. At rural areas institute of higher education may not found at all. At rural areas most of business transactions are not automated and done manually. The use of information technology is less and sometimes may not use at all [The Malaysian Public Sector, 2011].

D. Lack of Broadband Services:

The inadequate provision of broadband services has limited the use of innovative ICT applications among rural areas. In addition, most of these businesses are micro and small enterprises with unskilled workers and traditional technology. Consequently, there was a lack of innovation and creativity in rural economic activities. People may not aware of latest technology and current movement. This also affects Islamic dawah through any intellectual media or stream like internet which weakness umaah (community of Prophet S.A.W) [11].

E. Low Productivity and Lack of Integration:

The rural areas, particularly those surrounding the urban centres, have failed to maximise benefits of expanding urbanisation due to poor rural-urban linkages. This has affected creation of jobs, level of productivity and income of the rural community. Moreover, lack of integration in rural economic activities has resulted in limited economic opportunities and hindered optimisation of resources [10]

IV.   METHODOLOGY

This paper explains the systematic and theoretical analysis of the methods applied. All theoretical analysis and principles associated with this branch of knowledge will be discussed further. The combined deployment of Quadruple Helix Model (QHM) collaboration with WoG (Whole-of-Government) concept and Network of Mosque (NOM) of enhancing ITC on rural area to develop students knowledge and skills via ICT implementation.

V.   LITERATURE REVIEW

The Islamic Transformation Centre provides many functions, not only for maintaining the facilities for Ummah followed the Islamic principles but to better the knowledge and skill of the Muslim and their well-being. In having a better and good Islamic centre, all stakeholders have to work together including Government, University, Industry, Citizen, ITC committee, and the society. The collaboration between these group people and entity would improve the social welfare for those people who live in rural especially on students' knowledge and skills from the rural areas.

Rural Transformation Centre (RTC), implemented under the National Blue Ocean Strategy 4 (NBOS4) by the government of Malaysia, is a site to implement some integrated initiatives for the rural communities within 100 kilometre radius of the site. There are eight major initiatives under the RTC implementation programmes, which are:-

1. training of rural population;

2. setting up of 1Malaysia information kiosks;

3. high-value agriculture initiatives;

4. agro-food products processing;

5. agricultural produce supply chain management;

6. university cooperation;

7. food safety and pharmaceuticals services; and

8. Rural population financial facilities.

The implementation of these initiatives is led by various ministries with the support and cooperation from other relevant ministries. Under the initiative of skills training for rural population, The Ministry of Rural and Regional Development (KKLW) provides training opportunities to rural communities with the objective of enhancing their knowledge, skills and abilities so that they can get better job opportunities, earn more money and improve their living standards. Some of these training initiatives are in the areas of entrepreneurship, entrepreneurial motivation, packaging and branding, product performance, animal feed management, fertigation techniques, air conditioner repair skills, and welding skills.

1Malaysia information kiosks, a one-stop information centre that combines information and services offered by various ministries and government agencies, is another initiative of the RTC. Five information kiosks located at the RTCs will offer a variety of services, which are: KKLW kiosk to provide Info Desa (Information Village) information and agencies' mailing system; Malaysia jobs kiosk to offer employment opportunities; Agro food Business Development Centre kiosk to allow people receiving information on agro-food business and community development; KPDNKK kiosk to facilitate consumerism issues like the Price Watch current price forums and users' SMS application service; and My EG kiosk to facilitate receiving a range of useful information of various government agencies.

The initiative university cooperation aims at creating awareness through students to produce a knowledgeable society with the objective of enhancing the socioeconomic status of rural communities. Lead by the Ministry of Higher Education, the volunteering activities under this initiative are Rural Ambassador, Educate Malaysia and Health for Malaysia.

In order to develop ITC for enhancing knowledge and skill of students in rural area all QHM stakeholders have to work together including Government, University, Industry, Citizen, ITC committee, and the society must make their contributions. Which will bring value added to the students around the RTC compound by having better programs in collaboration between RTC, Mosque committee and teachers of the surroundings to make one point of reference for the students to improve their knowledge and skills.

VI. LITERATURE FINDINGS

A. *Inadequate Rural Basic Infrastructure and Other Amenities:*

During the Tenth Plan of Ministry of Rural and Regional development, rural road coverage expanded by 11.7% from 45,905 kilometres in 2009 to 51,262 kilometres in 2014. In Sarawak, 250 kilometres of ex-logging roads were upgraded to provide accessibility to 31,512 people in underserved rural areas. In terms of utilities, coverage of rural electricity has reached 97.6% and water supply at 93.8%, as shown in Figure 1. 188,270 water tanks were also provided to supply clean water to 251,200 rural households in remote areas of Sabah and Sarawak.
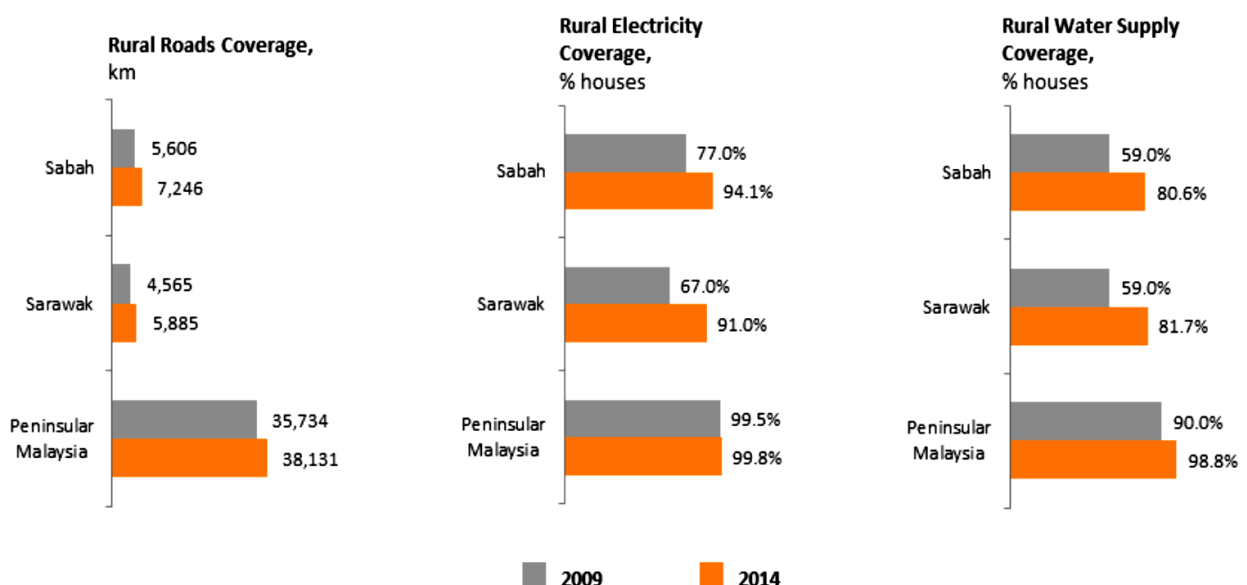

Figure 1: Rural Basic Infrastructure

B. Lack of Islamic Dawah:

1. *"Census Atlas". Department of Statistics, Malaysia. 8 August 2015. Retrieved 8 August 2014.* Providing Rural Basic Infrastructure, Figure 2 shows the Religious Composition in Sabah and Sarawak.
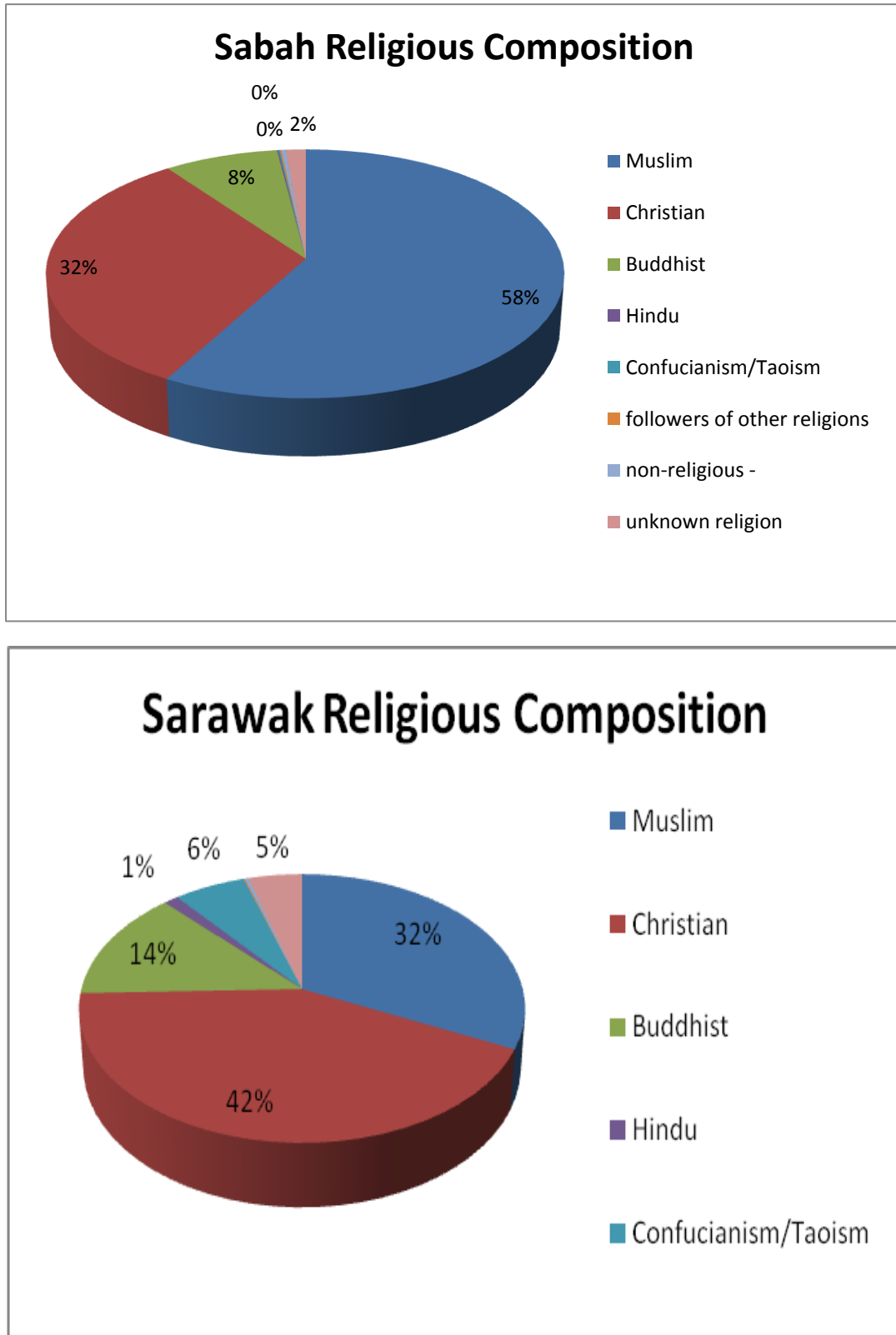

FIGURE 2: RELIGIOUS COMPOSITION PIE CHART

VII. CONCEPTUAL SOLUTION MODEL

BMC (Business Model Canvas):

Key Partners	*Key Activities*	*Value Proposition*	*Customer Relationships*	*Customer Segments*
• NOM (NETWORK OF MOSQUES) • BAITULMAL • JAKIM • MISITRY OF EDUCATION • PERMATA • MSC (MULTIMEDIA SUPER CORRIDOR) • KAMPUNG WIFI • KKMM (KEMENTERIAN KOMUNIKASI AND MULTIMEDIA MALAYSIA) • KKLW (MINISTRY OF RURAL AND REGIONAL DEVELOPMENT MALAYSIA)	• INFRASTRUCTURE DEVELOPMENT • ISLAMIC FINANCIAL SYSTEM • FREE CLASSES • ISLAMIC DAWAH • INTERACTIVE CLASES & INTERNET CENTER • WIRELESS FIDERATED COMMUNITY *Key Resources* • GOVERNMENT • PRIVATE AGENCIES • IT EXPERTISE • CERTIFIED TEACHERS	• TRUSTED TAX SYSTEM • SPONSORS • TRUSTED DISTRIBUTION UNIT FOR RURAL DEVELOPMENT • CONVIENIENT • EFFICIENT • FAST RESPONSIVE TIME • PROPER INVESTMENTS	• ACQUISITION • MASS CUSTOMIZED • RURAL POPULATION • STUDENTS REGISTRATION SYSTEM *Channels* • DIRECT DAWAH (FACE TO FACE) • ONLINE PORTAL/ SYSTEM	• RURAL STUDENTS • INTERNATIONAL & LOCAL SOCIETY • INTERNATIONAL & LOCAL ENTREPRENEURS • BUSINESS AGENCIES • PROFITABLE & NON PROFITABLE AGENCIES (EXAMPLE: SERVICE PROVIDER, CHARITY, SPONSOR, GOVERNMENT AND PRIVATE SECTORS) • SUBJECT MATTER EXPERTS (SMEs)

Cost Structure	*Revenue Streams*
• IT EQUIPMENTS (PCS, SERVERS, COMMUNICATION HUB, ENVIRONMENT, MAINTENANCE) • NETWORK (WIFI, COMMUNICATION) • RESEARCH TOOLS • BOOKS AND STUDY MATERIALS	• CITIZENS NATIONAL TAX FUND • DONATIONS (WAQAF), ZAKAT • SPONSORS • SERVICE FEES • NATIONAL BUDGET

FIGURE 3: BMC MODEL

Figure 3 show the 9 blocks of Business Model Canvas (BMC) based on the business proposed. Business Model Canvas is a simple tool for designing Innovative Business Models. Business Model Canvas is a simple graphical template describing the nine essential components as below:-

1.0 Customer Relationship:

There are three types of customer relationship such as government agencies, private agencies and rural citizens. There will be collaboration between these three agencies under WoG concept.

1.1 Customer Segments:

The segments are divided into rural students, profitable and non profitable agencies, local and international entrepreneurs.

1.2 Channel:

- Website/portal-Introducing eDawah and eLearning services to rural.

- Face-to-face- The tutor deliver the classes and workshops to rural.

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1.3 Value Preposition:

- Trusted tax systems will improve the investments in rural areas. This will attracts the sponsors to invest more or to develop rural areas.

- Tutors are available at workstations and update current reliable information.

- Information technology awareness and workshops will be helpful for students to explore.

- The online eLearning systems are efficient, more convenient to use and always have fast responsive time.

1.4 Key Activities:

- E-Learning systems that provide free classes and workshops for rural students to improve their basic knowledge on IT.

- Classes, tuitions and free library or in place and provide continuous service.

- Government projects like 'WIFI Kampung' are established to combine rural areas.

1.5 Key Resources:

- IT expertises are assisted based on their needs such as networking, hardware trouble shooting and other technical works.

- Certified teachers are placed for training and to conduct the classes and tuitions.

1.6 Key Partners based on the quadruple:

Quardruple Helix Model (QHM), where a country's economic structure based on four key factors namely: education, industry, government and citizen. To set up RTC (Rural Transformation Centre) system, there is a need of collaboration from:

- NOM (Network of Mosques) where they are willing to distribute zakat in actual manner for those who needs. The zakat that provided will be used for poor rural people and those who deserved it.

- The Baitumal as a function of storage and distribution for those whom in needs.

- KKLW (Kementerian of Rural & Regional Development Malaysia) to develop rural area to remote area.

- KKMM (Kementerian Komunikasi dan Multimedia Malaysia) helps on improvement of communication.

- JAKIM (Ministry of Islamic Development Malaysia) ensures the Islamic kinds of values are practised and issues that Islamic community faced.

- Ministry of Education Malaysia ensures the standard and quality of Malaysian education through the nation.

- The Malaysia Multimedia Super Corridor (MSC-Malaysia) is the country's most exciting initiative for the global Information Communications Technology (ICT) industry.

1.7 Cost Structure:

- IT equipments servers and hardware setup and maintenance

- Availability of books and other research materials

1.8 Revenue Streams:

- Provision from sponsors through government tax exemption of companies' contribution and involvement.

- The sponsors and wakaf will helpful to setup workstations at rural areas as a centralized point.

- Sponsors from Malaysian ministry and private agencies.

- Future investment based on national budget.

FIGURE 4: QHM MODEL

The Quadruple Helix Model as shown in Figure 4 above, explains on how the collaboration of different agencies through WoG (Whole of Government) concept and Network of Mosque (NOM). WoG is an approach were bringing together of Government sectors, Industry and Private sectors, Institutions and finally the Rural Citizens. The best place that can be implemented is through Rural Transformation Centre (RTC) with the existing 2 initiatives of government; training of rural population and university cooperation. Since the collaboration of universities, the formal students of those institutes can contribute their selves to provide education to rural students at RTC onestop knowledge

The collaboration between these entities will be more value added to the enhancing of the knowledge and skills of the students in rural area. At RTC we can have onestop knowledge centre for the students to explore knowledge and skills. Examples, to setup library, kiosk of knowledge, tuition centre, skills workshop centres, and knowledge development platform. This will be equipment with the existing infrastructure of all facilities that already had been imposed by government at RTC such as computer network faster broadband, electricity stability, water supplies, public transportation and etc.

With collaboration of the mosques' committee under Islamic Transformation Centre (ITC) , we can identify the students capabilities together with their family background that would be an add point to analyse the fundamental lacking. The Mosque can lead the entire programme under their observation and manage it better with more Islamic values. The one stop knowledge centre required more teaching force and it can be provided by mosque committee with their influences surrounding, such as ulamah, professionals (Doctors, Lawyers, accountants), Subject Matter Experts (SMEs) on curtain

skills and knowledge. This can be worked voluntarily by these groups of people or by paying them. Mosque committee can work on with zakat department and few donors on the financial of one stop knowledge centre well-being and sustainable. The Development of Surau, Madrasah and Masjids are essential to gathering students from rural areas. The ITC sponsored or Collaborated via WoG concept should provide with all IT materials such as PCs, workstations, Servers, internet services, books and research materials.

The development should not stop at one level but it should be spread to all rural areas. These will establish through ITC rural citizens to send up their children to get knowledge. The education of *dawah* will reach rural places via young generation where they have chance of convey to the fellow groups and ethnic's. The students are the backbone of community and to bring forward the vision to be achieved. To do so government done few projects at past and still it should be improved at future. There are *Pusat* Internet 1 Malaysia, Free WIFI *Kampung*, and Laptop 1 Malaysia and so on. However, to identify and to explore to rural areas is another effort where government should have plan.

VIII.   CONCLUSION AND FUTURE WORKS

This conceptual solution is suggested to be implemented as "proof-of-concept", adopting the approach of QHM and WoG collaboration, with the ITC as a platform in making the process of one-stop knowledge centre at RTC more convenient and efficient for rural students. Thus, knowledge and skills of rural students been improvised. Other than that, this conceptual solution can improve the function of the mosque as a centre for collecting information's of the donors and professionals. Thus, the motive of this concept will be achieved as a model in demonstrating the meaning of "Rahmatan Lil Alamin", contributing values and mercy to all mankind in all walks of life.

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