Bridging the Digital Divide: An Analysis of the Training Program at Malaysian Telecenters

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Abstract: Telecenter is a physical space that provides and enables public usage of ICT facilities and Internet access such as online communication tools and online learning resources from educational portal. Malaysian government initiated the bridge digital divide program via telecenter beginning 2000 as an effort to boost the use and access of ICT among rural communities and marginalized groups in Malaysia. One of the important components in ensuring the sustainability of the telecenter and to ensure that telecenter plays important roles in empowering the communities is the ICT training program. This paper presented a study conducted on the effectiveness of the training programs offered at the telecenter which include training for policy maker and telecenter managers. Analysis via document analysis, interviews and observation showed that the absence of a standard training program for all models of telecenters in Malaysia and standard evaluation procedures limit the certification for the telecenter managers and also community members who attended the program. Therefore, it is suggested that a training framework is introduce for all telecenter. The framework, which include ICT related skills as well as roles of the telecenter managers, leadership, developing business plan and marketing strategies, can be used as a template in the implementation of training programs at respective telecenters.

Key words: telecenter, training, digital divide, sustainability, marginalized communities, Malaysia

1. Introduction

Telecenter is a one stop center for those who are at the marginalized and rural areas to use ICT facilities and access to internet for online communication, online learning and e-transaction. Fillip (2007) stated that telecenter is a public access that provides social benefits for the communities via the ICT facilities and internet access offered.
Of late there are many telecenter networks that have been established either at the country or at regional levels. Among them are Mission 2007 (India), PHILCeNET (the Philippines), Telecenter Association of South Africa, Hungarian Telecottage Association, Community Technologies Centers Network (USA) and the biggest is Telecenter.org. The telecenters are formed to help marginalized groups by bridging digital divide and to empower them via ICT activities and training programs. However, experience has proven that much more comprehensive training program needs to be outlined and implemented. Comprehensive training program is not limited to users of telecenter only. But also the for the telecenter supervisors or managers which include the various skills related to ICT, business, leadership, administration and marketing.

Providing training services is an important business activity which contributes to the success and sustainability of a telecenter. For example, Murray and Cornford (1998) found income improvement from training activities between 1995 – 1998 for 200 telecenters in United Kingdom. They also predicted that this activity would become increasingly important in preparing the community for the knowledge economy beyond year 2000. Slabbert (2006) also supported these beliefs when he urged the government (South Africa) to improve and increase the number of IT Workstation or telecenter to enable more unemployed and poor people to be given ICT training. To him, access and increase exposure to ICT, would allows opportunities for individuals to contribute to economic activities. Most countries in the world believe that enhancing peoples’ ICT skill is the way to achieve a steady economy and the appreciation of lifelong learning.

This focus on training is not Malaysian case alone. Telecenter networks in Australia, United States, South America and others are all carrying out various training activities related to improving communities ICT skill. In United States for example, CTCNet (1998), found (through questionnaires) that most respondents reported that telecenter had helped them to overcome the fear of using computer, beside increasing their confidence and skill to use it. Training programs provided by telecenters range from basic skill to higher skill levels. Jamaludin Aziz et. al. (2009) found majority of telecenter in Malaysia provided ICT courses at basic and middle level eventhough some of the trainer are qualified to conduct higher skill level courses. This is very appropriate since their main objective is to decrease digital divide by making sure more people are computer literate. Usually these trainings are given for free. Furthermore, Elmer (1999) concluded that the community-based telecenter able to deliver quality educational resources on a more equitable and cost effective basis. The educational packages delivered are combination of various approach such as drill and practice, simulation and workforce training modules as well as professionel development program and very promising for bridging the digital divide among the developing countries and democratization of education.

2. Bridging Digital Divide
As an effort to bridge the digital divide, Malaysian government via several ministries started the telecenters project beginning 2000 and up to today there are more than 2000 telecenters that have been set up. Malaysian approach to establishing telecenters is based on the reality of its economic development stage, specific features of society, culture, and geographic conditions.

There are various models of telecenters in Malaysia with various names such as Rural Internet Center (PID), Medan Infodesa (MID), Rural Libraries (USP-L), Rural Clinics (USP-C) Community Knowledge Center (CKC) and Community Broadband Centers (CBC) (Norizan 2008; Mohd Safar Hasim et al. 2008). This move is taken to fulfill the main agenda of bridging digital divide among the communities to ensure equal access to the ICT. Generally, the objectives of the establishment of telecenter in Malaysia are firstly, to ascertain the flow of information to local communities especially in rural or underserved areas. Secondly, to build an information centre for relevant communities to access the Internet, to prepare and manage a training program on computer literacy, and to increase the computer application skill of local
communities. The final objective is to stimulate economic and social activities among local communities.

The objective of this paper is to investigate the effectiveness of the training programs offered at these telecenter which include training for policy maker and telecenter managers. This evaluation was done to assist the telecenter to be sustainable and successful as a one stop center for the rural and marginalized communities.

3. Methodology

The evaluation of the effectiveness of the telecenter training programs was conducted via mixed approach qualitatively via face to face interviews with 16 telecenter managers and quantitatively via survey of the applications of computers among users at the selected telecenters. The locations of the telecenters and model of the telecenters. Documents analysis was also conducted and document analyzed include the training modules of the telecenter managers and training modules to the users. The data was analyzed according to three themes: training components, training needs and also sustainability of the training programs at the telecenters.

3 Results and Discussion

3.1. Personnel

All the telecenters observed were managed by one or two personnel with diploma as minimum academic achievement and had undergone ICT training prior to their appointment as telecenter managers. All of them were trained how to use computers and basic computer repairs during two week training program by the training consultants appointed. After the two week program the telecenter managers are able to use and do basic and minor repairs but the evaluation shows that they are still in need of continuous and further training on the use of ICT especially on the advanced software and e-government applications. The training offered also lacks components on the business strategies and plans to ensure that the telecenters can also be one stop service center which can generate income for sustainability purposes. The personnel also need basic leadership/managing skills to lead their telecenter to ensure its relevance to the community, as well as skills in developing suitable training modules and content. This component of the training is very much needed since majority of them are competent in computer technology but not in business strategy and human relation.

3.2. Users

From the observation the number of users who frequented the telecenters in the study is 556 and they are from all different categories. Table 1 presents the types of occupations and categories of the telecenter users.

Table 1: Types of the Occupation of Telecenters’ Users

<table>
<thead>
<tr>
<th>Type of Work</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative and Support</td>
<td>25</td>
<td>5%</td>
</tr>
<tr>
<td>Businessmen</td>
<td>11</td>
<td>2%</td>
</tr>
<tr>
<td>Farmers</td>
<td>12</td>
<td>3%</td>
</tr>
<tr>
<td>Pensioners</td>
<td>3</td>
<td>1%</td>
</tr>
<tr>
<td>Self-employed</td>
<td>22</td>
<td>4%</td>
</tr>
<tr>
<td>Students</td>
<td>277</td>
<td>50%</td>
</tr>
<tr>
<td>Housewives</td>
<td>23</td>
<td>5%</td>
</tr>
<tr>
<td>Laborers</td>
<td>19</td>
<td>4%</td>
</tr>
<tr>
<td>Not Stated</td>
<td>138</td>
<td>26%</td>
</tr>
</tbody>
</table>
Among all telecenters’ users, more than half of them use the computer to surf the Internet, that is, 66.8% (372 persons), and almost half of them use the computer to use email application (49.1%), office suite application (46.6%), and computer games (47.6%). This result shows that these four applications are the most popular applications among the users; hence, it is appropriate that relevant trainings continue to be conducted for local community.

Since computer games are one of the most popular computer applications, users’ training, especially among students, should include game elements. Likewise, the software should be edutainment in nature and that it should also promote self-learning. Besides that, simulation games that encourage critical, creative, logical and strategic thinking such as chess, soduko, red alert and warcraft should be allowed for a limited time such as on Saturdays and Sundays. Therefore, advance courses in Internet application and MS Office Suite can be offered to users who have taken basic courses, besides other continuing courses as demanded by users.

**Table 2: Types of Applications Used**

<table>
<thead>
<tr>
<th>Applications</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet Surfing</td>
<td>66.8</td>
<td>33.2</td>
</tr>
<tr>
<td>Email</td>
<td>49.1</td>
<td>50.9</td>
</tr>
<tr>
<td>Entertainment/Computer Game</td>
<td>47.6</td>
<td>52.4</td>
</tr>
<tr>
<td>Office Suite</td>
<td>46.6</td>
<td>53.4</td>
</tr>
<tr>
<td>Information Search</td>
<td>38.8</td>
<td>61.2</td>
</tr>
<tr>
<td>Software/Photo/Picture/Painting</td>
<td>31.7</td>
<td>68.3</td>
</tr>
<tr>
<td>Interest Group</td>
<td>30.8</td>
<td>69.2</td>
</tr>
<tr>
<td>Download Software</td>
<td>30.2</td>
<td>69.8</td>
</tr>
<tr>
<td>Chat</td>
<td>24.3</td>
<td>75.7</td>
</tr>
<tr>
<td>Online Services</td>
<td>21.5</td>
<td>78.5</td>
</tr>
<tr>
<td>Others</td>
<td>18.8</td>
<td>81.2</td>
</tr>
</tbody>
</table>

3.3. Content of Training

From the evaluation and analysis of the interview data, document analysis and observation the components of the training offered at the telecenter were identified. All the 16 telecenters training modules were evaluated and it was found that all telecenters do not use standard training module. However, there are similarities in training offered. Generally, all training modules offer training on basic ICT knowledge and skills such as the use of Microsoft office. The use of open office software is just beginning and not being offered at any telecenter under study.

Basic internet skills are also offered for users to surf internet search and download materials. Online communication skills such as the use of e-mails, and blogs are also covered and taught. The modules lack the applications of the online transactions and higher level of ICT skills such as the use of programming language and creative multimedia packages such as Micromind Director. It was found that the aspects on e-commerce and online transaction are lacking.

3.4. Sustainability of the Telecenters

In order to assist the telecenters to be sustainable, there is a need to offer ICT services needed by the communities to ensure that the telecenter is relevant and popular among the users. Training
courses offered should be relevant to the majority of the users who are youth and school going children. From the interview with the users of the telecenters, apart from the services that are offered the users need skills in designing website, using creative multimedia packages and also using online transactions services. The analysis of the training modules for users at the telecenters, we found that the services that are provided are as shown in Table 3.

**Table 3: Training Contents for users**

<table>
<thead>
<tr>
<th>Training offered</th>
<th>Training lacking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Computer skills and internet</td>
<td>Microcredit and e-entrepreneurship</td>
</tr>
<tr>
<td>Development of local content</td>
<td>Multimedia</td>
</tr>
<tr>
<td>E-government and e-services</td>
<td>Workplace requirement</td>
</tr>
<tr>
<td>Library resources</td>
<td>Website design</td>
</tr>
<tr>
<td>Speed Typing Course</td>
<td>Digital picture</td>
</tr>
<tr>
<td>Computer Typing Course</td>
<td>Community development</td>
</tr>
<tr>
<td></td>
<td>Grass root marketing</td>
</tr>
</tbody>
</table>

For sustainability purpose the telecenter cannot operate alone. There is a need to network the telecenters with other telecenters within one ecosystem. This is to ensure continuous support from the users and the local champions. Each telecenter can contact and collaborate among them. Training can be offered to more users and commercialized. Services can be accessed and ICT facilities can be shared. Networks enable workers or those involved in different telecenters to work together to make sure that their telecenters are relevant, sustainable and capable of becoming an empowering agents for the local communities.

3.5 Training for Manager and Staff of Telecenter

Providing training is an important service at all telecenters. Many supervisors or managers of telecenters spend most of their time training the community members at all age levels. Even though the frequent users of the telecenters are youth and children, housewife also patronage the center mostly after lunch until 5pm. This is no surprise because the core agenda in bridging digital divide and the formation of knowledge society is via ICT itself. The trend in Malaysia is that more digital content will be produced to ensure the communities can access lifelong learning materials at their finger tips. In the future, many courses and ways of increasing knowledge will be offered online. In relation to this, telecenter plays a vital role because it can act as a learning and information centre.

Generally, as telecenter can provide the source and technical facilities for guided study via online tutor or via e-mail and videoconferencing, users of telecenters can be involved in self-development activity and autonomous learners once they are engage with the learning mode online. Thus, training for the users to use computers and internet access is of paramount importance to ensure they are able to surf and download learning materials on their own. This requires higher level of information seeking skills and focus to train them in this area is a must.

Many studies that have been carried out in countries with telecenters showed that all telecenter supervisors and staff should be given training support and guide to enable them to function more effectively. It is found that the staff’s quality, skill, attitude and capacity to work with people from various background are crucial for the success of a telecenter (Fuch 1997, Cissler, 1999). All these can be gained and improved through training. Telecenter supervisor and staff should be equipped with skills which can assist them to deal with the various needs and level of the community that they are involved in.
Training of Telecentre managers/Operators is very important. There is no particular qualifications required for one to become a Telecentre manager. The willingness to help the community is mainly what makes one become a Telecentre manager. This as a result means that Telecentre managers have varying levels of education which can be sited as one of the reasons why some telecentres perform better than others.

A training program for Telecentre managers would therefore bring them at par with the standards required in administering any Telecentre. They will be exposed to a uniform curriculum imparted by experts of the different modules. All these will induce professionalism and the ability to identify activities that will enable his or her Telecentre become sustainable.

At present, training of telecenter supervisors and staff are provided by respective agencies that establish the telecenters. As such the training content varies from one agencies to another. However, it is very clear that the focus of the training is more toward technical knowledge and skills. In future, the training content should be more balance not just for the benefit of the supervisors and the staff but also for the users. Some of the users interviewed mentioned that they do not know what to do with their new acquired skill to improve their life. Through proper training may be they can start their own on-line business or other money generated income through internet. To achieve this, the author propose a framework for training program to be adopted by telecenters in Malaysia.

This proposal is in line with what others such as Roman (2000), who conducted a research involving experts from 17 countries (African, Asia, American, European and American Latinate) on training needs among managers of telecenter. He identified 17 training modules needed by them. Among them are the roles and functions of telecenter, the roles of telecenter managers, communication skill, basic computer skill, basic finance and business skill, evaluate community needs and research, training skill, human resource management, skill of marketing and public relation. Telecenter.org (2005) identified few other topics that should be in all training programs for telecenter. They are

- Basic Technology Skill, which is defined as a basic training to take computer and other technology for staff and the public
- Marketing is defined as training to help telecenter operator to access the market by way of developing services based on demand as well as developing a strategy and an outreach program.
- Technical is defined as related training equipment of ICT, installation, maintenance and operation of
- Monitoring and assessment (M&A) is defined as training to develop and evaluate the M&A of a telecenter and ICT access point.

### 4. Propose Training framework

Based on the findings and also the highlights, the writers propose a basic framework that can be a guidance for any telecenter in planning their own training programmes. It can be refined and revamped based on suitability and need. The framework is as shown in Table 4. This training can be offered to various target groups based on their needs.

<table>
<thead>
<tr>
<th>Table 4: Training Framework</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ICT Policy, advocation and digital divide</strong></td>
</tr>
<tr>
<td><strong>Training of Trainers</strong></td>
</tr>
</tbody>
</table>
Courses of managing telecenter | Telecenter manager and staff
---|---
Planning and Preparation of Business plan | Manager and staff of telecenter, future entrepreneur, and the public
Marketing | Telecenter manager and staff, future entrepreneur, and the public
Benefiting from Computer in daily life | Marginalized group, student and the public
Computer literacy courses/basic courses | Marginalized group, student and the public
Introduction to Microsoft-office | Marginalized group, student and the public
Internet usage | Marginalized group, student and the public
Database | Marginalized group, student and the public
Advance Skill | Manager and staff of telecenter, future entrepreneur, and the public
- Website design
- Blog
- Usage of digital audio-visual
- Photoshop
- Publisher
- Print shop
- Illustrator
- Video Studio
- etc.

In implementing an effective training program at the telecenters, there are several challenges identified. To ensure the sustainability of the training program often training program could not be implemented or continued due to the lack of funding, equipment and expertise. Firstly, the most practical way to overcome these shortcomings is by creating network in which partnership can be practised. There is an increasing recognition that networks can leverage content and services development, including the creation, packaging, training and provision of support services. Those content and services can then be replicated and distributed to all telecenter locally or internationally. Secondly, the lack of evaluation standard for training program and curriculum for telecenter consumers and operators. It is also about the accreditation of coach and recipient of training in telecenter. Thirdly, the lack of a clear guideline on community's involvement and participation in training program conducted and finding and training capable staff to become “versatile”, including to handle a training session. Finally, the telecenter managers who posses good and high technical expertise are usually ‘pinched’ by other people and usually temporarily because other industry can provide more attractive wages for them.

5. Conclusion
Telecenter is an idea which is still new in Malaysia, and it is not even a decade old. Therefore, training is vital for all involved in the telecenter activities for example policy maker and planner, telecenter manager and also telecenter users. Although there is an agency at the international and regional levels that have taken the initiative to identify scope, training method and best practice, Malaysia must have a distinctive training plan that takes into account the infrastructure, technology, policy, local needs and the readiness of local communities.
What is clear is that training for trainers program must be multiplied and improved. Also, greater allocation is necessary for this purpose. Resource sharing and expertise through the formation of a network can become a strategy to increase training diversity and quality. Relevant parties also can benefit from online learning and the access to related resources for training that can be obtained through the Internet other than by face to face and hands-on. The proposed framework for training program can be a guide in arranging curriculum based on the target group, source, equipment, and also available expertise.

Although training is one of the challenges faced by a telecenter manager and operator, a well planned strategy will solve the problem effectively. Among the strategies are the training offered at telecenter should be a combination of face to face at the telecenter and also via online. Secondly, training should be supported by tools and sources developed by professional and readily available such as guide book, templates or CD-ROM. The training should be combination of short term face to face training and an alternate with a time period that enables participants to apply what has been learned. Training may be carried out in phases to cover various sessions. Hands-on training that is directly related to the operation of telecenter is the best. Training planned should also be designed according to training needs and knowledge of the targeted groups.

For further research more telecenters should be observed and sample of users can be larger to tap the applications of the computers among them. Understanding of user behaviors and providing what they want is the key to sustain telecenter operations.

REFERENCES


