

MyGfL: A Lifelong Learning Platform for Malaysian Society

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Abstract: MyGfL which stands for Malaysian Grid for Learning is a One-Stop-Center for quality assured online learning content, tools and services with the aim to promote and support the lifelong learning agenda in Malaysia. It is a platform that enables anyone to learn, unlearn and relearn from anywhere at anytime through any web browser so as to accelerate the growth of K-Society. The main objectives of MyGfL are to enhance discoverability of e-learning content from heterogeneous sources through the use of metadata, to develop e-learning standards to ensure conformance and adoption of best practices in e-learning content and systems, to provide e-Learning systems and tools to enable and support e-Learning activities and processes for the purpose of lifelong learning, and also to encourage the sharing and development of local/indigenous content. Pilot programs have been conducted at different levels of the Malaysian society where processes and factors involved in implementing e-learning to the community and observations of societal acceptance of e-learning were noted. Utilization of MyGfL by the pilot groups has furnished vital information regarding acceptance/perception of use, current standards of computer literacy and skills. This case study will depict the impact of MyGfL with regards to its objectives and public perception towards MyGfL as a platform for lifelong learning.

Keywords: e-Learning, Lifelong Learning, Malaysian Grid for Learning, MyGfL, Learning Content.

1. Introduction

In line with Malaysia's Vision 2020, the Third Outline Perspective Plan (OPP3) has set a target to develop Malaysia into a knowledge-based economy, where the generation and the utilization of knowledge will contribute to a significant part in economic growth and wealth creation. One of the characteristics of a knowledge-based economy country is highly educated labor force. (EPU, 2001)

A highly educated and better-informed labor force will create new values, ideas, skills, and knowledge that will enable Malaysia to remain competitive in the global arena. In order to achieve the goal, the National Information Technology Council (NITC) has launched the Strategic Thrusts Agenda with five strategic thrust areas. One of the areas is e-Learning with the focus on cultivating a lifelong learning culture amongst Malaysian citizens through the use of ICT.

Under the e-Learning strategic thrust, NITC together with Ministry of Education has initiated a project called Malaysian Grid for Learning (MyGfL) in March 1999 that was later endorsed by the Deputy Prime Minister of Malaysia. The main objective of this project is to enable Malaysians from every walk of life to continuously learn through the use of ICT from anywhere at anytime, promoting the lifelong learning agenda and accelerating the creation of a knowledge-society.

MIMOS Berhad has been given the mandate by the NITC to develop the core components of the project which are the integrating platform, content

and standards for e-learning. MIMOS will conduct pilot programmes to assess various aspects of the project before the full scale nationwide rollout. This paper will describe the initial findings and observations from the pilot programmes conducted. This study is still in its initial stage and the final results of the pilot study will determine the accuracy of these initial findings.

2. MyGfL initiative

2.1 Objectives

The MyGfL initiative aims to promote and support the lifelong learning agenda in Malaysia to accelerate the growth of K-Society. Its objectives are:

- To enhance discoverability of e-learning content from heterogeneous sources
- To develop e-learning standards to ensure conformance and adoption of best practices in e-learning content and systems
- To provide e-Learning systems and tools to enable and support e-Learning activities and processes for the purpose of lifelong learning
- To encourage sharing and development of indigenous content so as to preserve Malaysian values and cultural heritage
- To stimulate the growth of digital content industry in Malaysia

2.2 MyGfL framework

The goals and objectives of MyGfL could only be achieved given the right match of info-structure in its framework. Figure 1 shows the three critical components of the framework that are addressed

through MyGfL initiative; content, standards, and technology. The access infrastructure component will be addressed by other initiatives such as the National Broadband Plan. MyGfL will only leverage on the readily available infrastructure.

As shown, each component of the framework identifies solutions to address the goals of MyGfL. Each of the components will be discussed in the following sections.

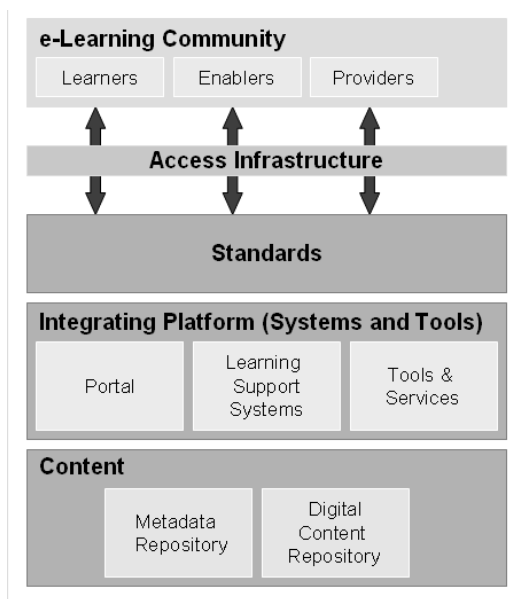


Figure 1: MyGfL framework

2.2.1 Content

Content is king (Nielsen 1999). The availability of relevant and engaging content is critical to the success of MyGfL. The content on MyGfL is targeted at a wide range of learners from all ages, focusing on non-formal learning. The categories of audience that MyGfL provides content for are:

- Children
- Teenagers
- Higher learning
- Adults

Educational resources in MyGfL come in the form of web resources and learning objects. Web resources may come in the format of web pages, portable document files, or any other file that can be viewed or downloaded through the internet browser. Another type of educational resource is the learning object. MyGfL considers a resource to be a learning object when it is centred on a learning objective, has instructional content that promotes the achievement of the learning outcome, and performs practice and feedback to ensure mastery. This content could either be developed in-house, bought off-the shelves, aggregated, syndicated or outsourced, or perhaps through collaboration with content partners. Some content would be provided for free while others are chargeable. MyGfL publishes this content either through their metadata records or by hosting the content at its repository. A metadata

record describes and indexes the educational resources using a set of data elements and controlled vocabulary to ensure uniformity.

Most of the content in MyGfL is populated by content aggregation through metadata tagging. Some of the content is meta-tagged by our cyber librarians and some content partners share their metadata in our metadata repository. MyGfL provides content hosting for content partners who wish to contribute free content to MyGfL. A commercial model for chargeable content is yet to be established. Some of the content in MyGfL is developed by MIMOS and others are outsourced to the content development industry.

2.2.2 Integrating platform

The integrating platform consists of the portal, a learning support system, and various tools and services to support learning activities. The MyGfL portal is a One-Stop-Center for quality assured online learning content that enables anyone to learn from any web browser at anytime convenient to them. The Learning Support System is integrated within the portal to promote collaborative learning among the learners through the use of online discussion or forum, chat tools, web-based email, online bookmarks, and online notes. Other tools and services include a Metadata Management System (MMS) which facilitates the metadata tagging process which

conforms to the international standards of Dublin Core and SCORM 1.2. The metadata tagging process utilises a database of bi-lingual and localised thesaurus based on the UNESCO thesaurus to enhance content indexing and searching. A harvesting engine is in place to harvest metadata records from various international sources but is yet to be fully implemented as the quality screening process of the harvested records are yet to be established.

2.2.3 Standards

Another crucial component in the MyGfL framework is the standards for e-Learning content and systems development. The MyGfL Guidelines on Web Resources, Learning Objects, and e-Learning Systems aims to ensure the quality of the content, tools, and services provided are met by observing the guidelines based on certain practices and principles for e-learning. The standards also aim to guide MyGfL content providers to conform to a set of standards and guidelines for content development, as currently there is no single point of reference to all relevant e-Learning standards in Malaysia. The standards are currently in the process of being accredited as the national standards on e-learning technologies in hopes to achieve Interoperability, Reusability, Manageability, Accessibility and Discoverability of MyGfL content and systems.

2.2.4 e-Learning community

MyGfL e-learning community comprises of the learners, enablers, and providers. The learners encompass the learning community at large ranging from preschool to adult learners, who can access MyGfL through its portal. The enablers are individuals who facilitate the delivery and implementation of e-learning such as lecturers, tutors or facilitators. Meanwhile the e-learning providers are generally individuals or organizations that own, provide or sell e-learning content to learners.

2.3 Strategy

Among the strategies to promote and sustain the MyGfL initiative is through the use of open source software in developing the MyGfL platform, providing incentives for the digitization and development of indigenous content, forming partnerships with content owners to channel their digital content through MyGfL, providing affordable access to MyGfL, and conducting seminars and workshops to create awareness on the importance of digital content and metadata.

2.4 Value proposition

It is expected that through MyGfL, the discoverability of e-learning content from heterogeneous sources via a single interface is enhanced, where learners should be able to find learning content that is relevant to them through the MyGfL portal. MyGfL will facilitate easy identification of content through a systematic indexing of content by application of the metadata framework. Learners may easily search for relevant content through the use of bi-lingual, Bahasa Melayu and English thesaurus and metadata description. Relevant and localised content is prepared for learners by adopting best practices in the development of digital content with the latest in instructional design and pedagogy. MyGfL aims to provide a platform for affordable e-Learning solutions to entice learners to the culture of lifelong learning.

The local content industry is expected to benefit as MyGfL helps to create demand for local content and reduce investment risk in content development by providing a content marketplace and generating market demand.

2.5 Progress to date

The MyGfL portal (<http://www.mygfl.net.my>) has been made available to the public since September 2004. In April 2005, a six month pilot program was started for the rural community focusing on skill-based learning, Basic ICT, Basic English and entrepreneurship. Subsequent pilot programs have been conducted for deaf children and their family focusing on storytelling and sign-language.

To date, there are more than 14,000 registered MyGfL users with more than 60,000 hits monthly and a significant increase in hits was recorded after the start of the pilot program and road shows. Currently, various content partners from the government agencies and industries have contributed digital content to MyGfL for target groups such as children, teenagers, adults and students in higher learning. MyGfL as an initiative is scheduled to be officially launched by the Prime Minister of Malaysia in the first quarter of 2006.

3. MyGfL pilot program

MyGfL pilot program aims to investigate the adoption of e-learning approach by specific learners, with the course material replaced or supplemented by on-line content. Specifically the program will focus on the response of the intended learners to MyGfL and its content. One of the program's intentions is to gauge the impact of MyGfL content on learner's learning process

and strategies as well as to explore how e-learning content helps with a particular problem or issue.

The MyGfL pilot program is currently being held targeting three pilot audiences, starting with deaf children and their parents, the rural community, and youth. The pilot program with deaf children will attempt to address some of the issues faced by these children especially communication issues between them and their family members; whereas the pilot program with the rural community will seek to enrich their skills and create opportunities to supplement their income by providing online training on tailoring and sewing of traditional garments through the use of online learning objects in MyGfL. Pilot programmes have been planned for youth focusing on language, ICT, and entrepreneurship. Realizing that the e-learning strategy needs to be driven by the needs of the learners, rather than by the technology (HEFCE 2003), the learning objects for each pilot program were developed together with subject matter experts of the pilot groups to ensure the learning needs of the learners are addressed. The pilot programmes operate with the following objectives:

- To create awareness by promoting the services offered by MyGfL
- To measure uptake of e-learning approach by a specific target group of learners
- To assess how e-learning content helps with a specific problem or issue
- To gauge the processes and factors involved in the implementation of e-learning to the community
- To test the model of MyGfL framework: integrating platform, standards, and content

3.1 Rural community

The rural community was chosen as a target community for the MyGfL pilot as they account for 38% of Malaysia's population (APCD, 2005). Among the issues surrounding the rural community is the lack of opportunity and empowerment of skills and knowledge regarding the potential of ICT to enhance their lives. In terms of internet connectivity and access they have limited access to infrastructure and limited affordability to connectivity. Content for the rural community is also limited as there is a language barrier with international content, insufficient

relevant content and lack of skills and knowledge to access and utilize content. (Songan, Hamid, Yeo, Gnaniah, Zen, 2004)

Five MyGfL pilot programs were conducted by MIMOS and the Department of Community Development (KEMAS) under the Ministry of Rural and Regional Development. Traditionally, KEMAS has been conducting various skill-based classes and workshops to the rural community through its centers nationwide. The classes are facilitated by KEMAS trainers who teach the students through face-to-face learning method. One of the skill-based classes that are very popular among the rural women is the sewing classes. Through the pilot programs we introduced online learning to these women on tailoring and sewing of traditional garments through the use of online learning objects in MyGfL. This program was held at the rural community tele-centre called *Medan Info Desa* (MID) in Sungai Gulang-Gulang Village, Tanjung Karang, Selangor where each of the rural women is equipped with a sewing machine and a computer. All of the computers in the MID are connected to the internet using a shared 512 kbps satellite broadband connection.

The selection criteria of the participants are as follows:

- They must have basic ICT skills (know how to operate a computer)
- They must have basic sewing skills
- They must not have experience in sewing the Malay traditional garments (Baju Kurung and Baju Melayu)

During the participants' selection process, it was a great challenge to get participants who have basic ICT skills. In Malaysia, the rural community at large is still digitally divided and lacks ICT skills. Acknowledging the issue, the pilot programs still accepted participants without the required basic ICT skills. Out of the 85 participants, 38 of them (44%) had never used a computer before. Some of them do own a computer at home, but it is mainly being used by their children.

In terms of participant's age, the majority of the participants (57%) were above 40 years old. Table 1 describes participant's age group distribution and knowledge in basic ICT.

Table 1: Participant statistics

| Pilot Group | Age Group | | | | | # Participants with Basic ICT | Total # Participants |
|-------------|-----------|-------|-------|-------|-----|-------------------------------|----------------------|
| | <20 | 20-29 | 30-39 | 40-49 | >49 | | |
| 1 | - | 4 | 7 | 5 | - | 12 | 16 |
| 2 | 2 | - | 4 | 8 | 2 | 7 | 16 |
| 3 | 1 | 4 | 5 | 5 | - | 6 | 15 |
| 4 | - | 3 | 2 | 9 | - | 6 | 14 |
| 5 | - | - | 4 | 9 | 11 | 16 | 24 |
| Total | 3 | 11 | 22 | 36 | 13 | 47 | 85 |

Pilot groups 1 and 3 were introduced to the learning object on sewing of Malay women's traditional garment or *Baju Kurung*, whereas pilot groups 2 and 4 were presented to the learning object on sewing of Malay men's traditional garment called *Baju Melayu*. Pilot group 5 was targeted at the KEMAS trainers themselves to use the learning objects when they conduct their sewing workshops after the pilot programs have ended.

Despite the lack of ICT skills and no experience in sewing the traditional garments, all participants from pilot group 1 and 3 were able to sew a complete *Baju Kurung* in 3 days solely using the learning object. In a traditional sewing class, it will normally take 5 days to sew a complete *Baju Kurung*. The learning object has managed to reduce the sewing class duration by 40% as the learners were able to learn independently and at their own pace as compared to the traditional sewing class. A trainer from KEMAS was present to facilitate the program but offered little or no help in the sewing steps and methods.

For both pilot groups 2 and 4 the participants were separated into two groups which we will call Group A and Group B. Parallel sessions were held in two separate rooms where Group A learned using only the learning object whereas Group B depended very much on their teachers. As a result 100% of the participants in Group A managed to complete their *Baju Melayu* but none of the participants in Group B managed to finish theirs on time. This further enforced that self paced online learning is more effective given the appropriate and effective learning material. Observations on pilot groups 2 and 4 revealed that the *Baju Melayu* learning object is an effective learning material, and the teacher who insist their students to always refer to the learning objects becomes the key factor in promoting the use of the learning object.

Computer literacy is one of the foundations blocks of technology enhanced learning (Parker 2003). Some participants requested for a full day's training on how to use the computer and internet prior to the actual program. Some participants were observed to have no idea on how to handle a mouse, and their hands were shaking as we

guided them on how to maneuver through the learning object using the mouse. Despite the apparent lack of computer literacy, participants were still very much interested in the program and were willing to learn the skills required.

Following the pilot program, participant's usage of MyGfL portal was tracked and it was found that 38% of the participants continuously visit the MyGfL portal after the pilot program. Considering the lack of infrastructure in the rural areas this is an appreciable number indicating recurring interest in the participants to continuously learn using online content. Many participants were also interested to contribute content to MyGfL. One of the participants prepared a recipe for a local dish, complete with photos of the preparation and cooking process. Participants from all pilot groups are now willing to share knowledge through MyGfL. This indicates the rural community that has been exposed to our e-learning portal shows keen interests to not only learn online, but also to share their knowledge with others through digital means. The completed *Baju Kurung* was worn by the participants during the pilot program closing ceremony. This success has encouraged MyGfL team to conduct more community workshops to create an IT literate society.

3.2 Deaf community

MyGfL does not only function to provide a platform for the e-learning community, but also serves as a driver to deliver learning to all levels of society in Malaysia. This is demonstrated by the pilot project for the hearing-loss community specifically targeting on deaf children and their families. MyGfL has developed three Learning Objects for these children which are available in the MyGfL portal. These learning objects aim to instill moral values to children by telling stories using flash animation together with audio and sign language videos incorporated into the story. The deaf children will be able to understand the story by looking at the animation and sign language video while their family members can listen to the audio and learn the corresponding sign languages at the same time.

MyGfL aims to help the hearing-impaired children learn online and gradually write some sentences

on their own. The pilot program also targets the parents and family members of the hearing impaired students. The teachers from various schools are also trained on the material in hopes that they will continue to use the learning objects and other resources available from MyGfL in their classes and propagate the usage of MyGfL as a learning portal.

The learning objects for the deaf students were developed by MIMOS with the Malaysian Federation for the Deaf giving advice as the subject matter experts. Observations and feedback on the usability of the learning object revealed that there was an issue in the selection of the type of sign language to use in the learning objects. There are two types of sign language in Malaysia, the first of which is called *Bahasa Isyarat Malaysia* (BIM) which translates to 'Malaysian Sign Language', which was developed by the deaf for the deaf, and therefore is widely used in the deaf community. The second is called Kod Tangan Bahasa Melayu (KTBM) which means 'Malay Language Hand Code', which is the formal sign language for learning the Malay language developed by the Ministry of Education, and is not as popular among the deaf community. Two of the learning objects used *Bahasa Isyarat Malaysia* (BIM). BIM is not suitable for schools because the sign does not include prefix and suffix which are important in learning the Malay language. The teachers have suggested Kod Tangan Bahasa Melayu (KTBM) to be used for Bahasa Melayu subjects. Nevertheless, the objective of the learning objects is to deliver storytelling content to the deaf community in an informal learning environment, therefore BIM was used to ease their learning and comprehension.

Some usability issues were revealed about the learning objects for the deaf community. The video playing the sign language for the learning object can be replayed by clicking on the video or right clicking the mouse to show the option to replay. However, most of the deaf pupils are illiterate; therefore, the methods provided were not understood. Even those who can read do not understand the meaning. The subsequent learning objects developed have included a large icon to facilitate the playback of the video. Also, for one of the learning objects the sign language video was too fast for the deaf children. In addition, the colour of the narrator's attire against the background was not appropriate for a clear view. Therefore, the pupils could not capture the sign language clearly.

An impact study is to be conducted where the instruments to measure impact was prepared in the form of questionnaires. While the parents,

teachers and family members of the deaf children are able to answer the questionnaires without difficulty, the deaf children themselves face a problem. It was observed that the study process is not viable for the deaf children group as they do not know what option to choose and they circle whatever number they like at random. Although the teachers have explained using sign language and they seemed to understand the teacher's explanation, they nonetheless circle the answers arbitrarily without even reading the questions. The instrument to measure the impact of MyGfL portal on the deaf children is currently being reviewed.

3.3 Youth

In developing the country towards Vision 2020, continuous effort to develop entrepreneurship among youth needs to be put in to complete their knowledge, skills and sustainability in facing globalization and challenges in information technology and the open market. Youths aged 18-30 years old are prime targets for entrepreneurship programs as they have left school or university and are searching for business opportunities and ventures. Currently about 18% of Malaysia's population are in this age group (IDB 2003). Pilot programmes for this target group have been scheduled to start in October with the following objectives:

- To give exposure to young entrepreneurs about the opportunities in planning, managing and controlling a successful business
- To provide skills set and to cultivate interest in the field of competitive and successful entrepreneurship.
- To equip young entrepreneurs with the language and ICT soft skills which are necessary to compete globally.

4. Lessons learned

The vision of e-learning starts with the assumption that computers and the Internet have the potential to help people learn by delivering personalized instruction (Bajunid 2001). In order to deliver personalized instruction to Malaysians, the need for indigenous digital content in Malay language is apparent. Unfortunately there is a significant shortage of quality local content. The e-learning content industry in Malaysia is still at its infancy stage, and there is a need to address the multi racial and multi-lingual audience of learners.

Significant to learners' involvement in e-learning is the notion of *e-readiness*, that is, their ability to make use of e-learning resources and multimedia technologies to improve the quality of learning. It is observed that the different levels of e-learning readiness for the various learner groups require

policy makers and regulatory bodies have to play a more concerted role in enhancing the image of e-learning programmes so that there is greater engagement in a technology-driven teaching-learning environment (Kaur 2004).

PC ownership, internet and broadband penetration are still low, especially in the rural areas. Multimedia rich e-Learning content demands for high-speed infrastructure for e-Learning to be effective. The Malaysian government is however receptive to the proposals to boost the penetration rate of broadband service in the country to about 40% by 2008, providing a promising avenue for the local e-learning scene.

5. Conclusion

Through the pilot project implementation it was observed that self paced online learning is more effective than traditional instruction, given the appropriate learning material and content which is relevant to the learners. Computer literacy helps the learner proceed with the learning object faster but it is not a critical factor to undertake an online course. Engaging online content will drive the interest of the learner to learn computer skills, and any content can be engaging as long as it is deemed significant by the learner. A wide scope initiative such as MyGfL opens up to tremendous opportunities in addressing the needs and wants of the learning community.

There are challenges that lie ahead especially with the issues of understanding what constitutes lifelong learning in Malaysia. There is also a wide consensus that learning in Malaysia is examination oriented and mostly partial towards certification and employment, thus putting lesser

emphasis on personal development, social inclusion, as well as active citizenship.

Perhaps the stumbling block to the initiative could be the lack of funding for content development for priority content area such as cultural and heritage resources. Our current effort in populating and syndicating online learning resources yields more foreign-based content as compared to local. In addition to this, the issue of funding poses as a problem when content partners are engaged. Besides, it is a known fact that content development is expensive as it involves an appreciable amount of investment in the area of intellectual capital.

MyGfL initiative is promoting best practices in e-learning by addressing the issues for all its stakeholders. This is apparent from the holistic perspective it laid out in its framework; content, technology, standards, and stakeholders. The initiative at its current pilot phase has lots of opportunities that could be explored and challenges that have to be addressed.

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