

THE IMPACT OF THE MALAYSIAN GRID FOR LEARNING (MYGFL) AMONG MALAYSIANS

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As Malaysia progresses toward an advanced nation, knowledge has been perceived as an important element in economic growth. This means that knowledge and information are viewed as global public goods, and they are tools to enrich the learning environment, support everyday experience, and augment instructional resources. At the same time, people will acquire the information and communications technology (ICT) skills that will prepare them to live and work in a knowledge-based society. The key to long-term social and economic development and job creation is a skilled, information-literate population. To build a knowledge-based society and economy is to endow a given society and economy with the ability to generate and capture new knowledge and to access, absorb, share and efficiently use information, knowledge, data, and communication.

The various questions about the use of ICT to motivate, to develop independent learners, to ensure understanding of concepts, and to integrate knowledge across traditional disciplines depend on the teachers and their skills in managing the educational process. The fast growth of ICT is because it is easy to use and it was designed to give users the ability to send and receive text, graphic images, sound and even video.

The ICT in its role as tutor is used to design tutorials and on-line lessons for a variety of subjects since it has the ability to present information clearly, attractively, and practically (Carvin, 1997). The Web also serves as a platform for students to communicate electronically with each other and learn from each other. The Web as forum allows students who are not comfortable with talking in class to have discussions on-line. This allows students to work with each other and learn from each other. As a navigator, it allows students to explore and discover a variety of fascinating sites and resources available on-line.

Under the e-Learning strategic thrust, the National Information Technology Council (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 then Deputy Prime Minister Dato' Abdullah Ahmad Badawi. 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, hence promoting the lifelong learning agenda and accelerating the creation of knowledge-society.

Apart from providing the integrating platform for e-learning, the core component of MyGfL is the e-learning content. Localized and quality online learning content will be the key factor in determining the success of MyGfL. The MyGfL portal shall host metadata of selected learning content available on the Internet and also some actual learning content in its repository. This content is then made available and accessible to the public through MyGfL portal, a one-stop-

center for quality assured online learning content where the target audiences can perform their online learning anywhere, anytime. The objectives of MyGfL are:

- To provide e-learning systems and tools to enable and support e-learning activities and processes for the purpose of lifelong learning
- To bring together all relevant players in the e-learning ecosystem (learners, enablers and providers) to participate in the overall e-learning value chain and be part of the national learning grid
- To develop e-learning standards to ensure conformance and adoption of best practices in e-learning content and systems
- To encourage sharing and development of local / indigenous content, thus simulating the content industry.

The Malaysian Grid for Learning Pilot Project was targeting on the audiences of deaf children, their teachers and their parents, rural community and young entrepreneurs.

Statement of Problem

The majority of the hearing impaired users in Malaysia have gone through their learning in special schools by using sign language. Teachers of the hearing impaired users always face the problem of explaining the instructional content to these users; this is so especially in explaining abstract concepts. The grasping would be more difficult if the student concerned has a total hearing loss and solely depends on using sign language for learning.

The lack of hearing sensory had also led the users to obtain limited information and experiences; as a result, miscommunication always occurs among the individuals. In addition, many hearing impaired users do not have ICT access at home. This prevents them from obtaining further information from the web apart from the printed materials.

Since the explosion of the World Wide Web, countless materials related to mathematics and science learning have been made available to anyone interested in improving their understanding of mathematics and science. Children and adults could access countless numbers of websites that provided opportunities that could enhance their learning of mathematics and science. One of the efforts by MIMOS Berhad is to set up a portal providing links to some of these websites. Anyone using this portal will be able to access these websites without the need to search for mathematics and science-related materials available online. However, since the availability of this portal, no study had been conducted to ascertain the strengths and weaknesses of the science-related websites linked to the portal. Hence, a study needs to be conducted in order to address this issue.

Significance of the Study

The effective use of ICT in the community capability development process is seen as increasingly important. However, many people especially in rural areas have limited skills, knowledge and experience in ICT. The need to develop their skills and abilities in these technologies has therefore been increasingly recognized. Once they have developed these skills they can contribute to build community capacities, and develop sustainable communities that value lifelong learning.

Objectives

The study is aimed at evaluating the impact of the MyGfL's content and training interventions by considering the changes in behavior, attitudes, actions and performance of the three interest groups involved in the study. They are the hearing impaired children, with their parents and teachers, rural community members and youths. Specifically, the objectives of this study on each of the three interest groups are:

1. To identify participants' perceptions on the tools & services provided by MyGfL in terms of:
 - a. Portal layout and user interface
 - b. Collaboration tools
 - c. Overall content offerings
2. To ascertain the effectiveness of MyGfL in enhancing the discoverability of e-learning content by the community;
3. To ascertain the effectiveness of MyGfL in encouraging sharing and development of local/indigenous content;
4. To ascertain the effectiveness of MyGfL content in helping the learning process of the subjects;
5. To ascertain the effectiveness of MyGfL content in addressing important community needs; and
6. To gauge the success of MyGfL in supporting the purpose of life-long learning.

Research Questions

Specifically, this study seeks to answer the following research questions for the three interest groups as mentioned earlier.

1. What are participants' perceptions on the tools & services provided by MyGfL in terms of:
 - a. Portal layout & user interface
 - b. Collaboration tools
 - c. Overall content offerings
2. How effective is MyGfL in enhancing the discoverability of e-learning content?
3. To what extent has MyGfL encouraged sharing and development of local/indigenous content?
4. How has MyGfL content helped with the learning process of the subject?
5. How has MyGfL content managed to address important community needs?
6. How has MyGfL supported the purpose of life-long learning?

Methodology

A systematic and detailed evaluation of the MyGfL Pilot Project was conducted using appropriate research methodology that allowed the identification of its strengths and weaknesses. The methodology also allowed the evaluation of e-learning by specific Malaysian communities. It also allowed the assessment on how e-learning content can help these communities in resolving specific issues. It resulted in findings that may help in full implementation of the MyGfL program throughout the country. It may also benefit e-learning implementers in conducting programs or courses for the community using online content via MyGfL for the following areas:

Hearing Impaired Students, Teachers and their Parents. Eighty six hearing impaired students, 12 parents and 42 teachers from five primary schools (i.e. 4 special primary schools and 1 primary school with integrated program) were involved in the hearing impaired program. Training on the hearing impaired students, their parents and teachers was conducted on different days, from June 17th, 2005 until October 31st, 2005. Prior to each training session by MIMOS Bhd., the content specific test was administered to three different groups of respondents, namely teachers, hearing impaired students or parents. Each pretest session lasted 30 minutes. The session that followed was a one-hour training workshop on MyGfL conducted by MIMOS Bhd. After the training, the equivalent content specific test and the perception test were administered to the respective groups of respondents. The posttesting session took 30 minutes. The administration of the instruments was done by the researcher or the research assistants from University of Malaya. Throughout the pretesting, training, and posttesting, observation was done using an observation checklist.

Science and Mathematics for the Youth: Two hundred and fifty secondary school students aged between 12 to 19 years from nine schools, with one class of students for each school from Perak, Kuala Lumpur, Pahang and Selangor Darul Ehsan were involved in the Mathematics and Science Programme. MIMOS Bhd. personnel had trained 9 teachers from 9 selected schools and exposed them to the MyGfL portal, especially the sections related to the science and mathematics content in a workshop conducted on 29th July 2005 at the Computer Lab of the Faculty of Education, University of Malaya. These teachers then selected one class of students and exposed them as registered users of the portal. The students were shown some examples of the websites link to the portal that is related to the learning of science or mathematics. The students were asked to access the portal when they need help in their learning from time to time. They were given 10 weeks to access and use the MyGfL portal to help them in their mathematics and science learning. Two questionnaires were administered to the students between October 7th, 2005 and October 22nd, 2005.

Rural Community. Participants of KEMAS Sewing Training Program and KEMAS Community Developers (Trainers) which included 23 KEMAS trainers, 65 trainees and 77 members of the public from the rural community were involved in the rural community programme. A series of training programs had been conducted by MIMOS Bhd. from July 16th, 2005 until September 25th, 2005, at: Medan Info Desa (MID), Kg Sungai Gulang-gulang, Tg. Karang and Pusat Kegiatan Masyarakat, Sri Manjung, Perak. Three instruments in the form of perception questionnaire were developed in this study for three different groups of respondents: trainer of KEMAS Sewing Training Program, trainees of KEMAS Sewing Training Program, and public users of rural community. The instruments were administered on the spot where training was conducted by MIMOS in collaboration with KEMAS. Interviews with selected groups were conducted in order to get detailed feedback on certain aspects.

Findings

Generally, it was found that the learners of the study gave favorable perceptions towards the MyGfL Pilot Project, such that MyGfL facilitates information searching, is easy to use, provides the platform for collaboration and content expansion, has helped in their guiding session, and in enhancing their knowledge and skills. As such it is recommended that its outreach be extended throughout Malaysia.

Hearing Impaired Students, Teachers and their Parents. The hearing impaired students, teachers and parents generally agreed that MyGfL has been an effective service provider tool for them. They agreed that MyGfL was effective in enhancing discovery of the e-learning content; it helped in the learning process of the subject, addressed important community needs and supported lifelong learning. The majority of the hearing impaired students agreed that MyGfL enabled them to learn sign language and agreed that the stories in MyGfL were good. They found that MyGfL helped in their search for information. All the teachers agreed that MyGfL eased information searching, and was able to stimulate learners' thought. All the parents agreed that MyGfL provides services to every user of different age groups, and that MyGfL needs to be updated with additional new information.

Science and Mathematics for the Youth: The mathematics and science related websites linked from MyGfL were able to motivate the learners, help them to identify what is to be learned, and provide learners with active involvement. Through MyGfL, students can compare, classify, analyze errors, or construct support that they encounter in the course of their web searches. Through MyGfL, students may access content related to science and mathematics. They gain access to an exciting learning environment through MyGfL as teachers may integrate the Internet resources into the teaching and learning process which can be accomplished gradually. Through MyGfL, students can learn by actively constructing science and mathematical knowledge as they tackle problems posed to them. Students may search for the relevant information via MyGfL.

Rural Community. The evaluation conducted in this study revealed the best practices in implementing e-learning for community development. Most of the rural community users (98.7%) enjoyed learning via MyGfL. They are now able to interact with others through forum (71.4%), e-mail (79.2%) and chatting (87%). These tools can be the opportunity for information and knowledge exchange among the users. All of them mentioned that they will use the search engine to facilitate the discovery of the required learning content. All of them agreed that MyGfL can be a platform for lifelong learning. They encourage others to utilize this portal for their benefit. The result of the evaluation will be useful in the creation of programs or workshops to promote MyGfL as the lifelong learning platform. It will help the MyGfL team to develop a better integrated platform with enhanced content and improved standards.

Discussion

Hearing Impaired Students, Teachers and their Parents. MyGfL needs to play the role of not just information feeder, but also incorporate the elements of novelty and innovativeness. The feedback also further implies that the teachers and the parents who possess expertise in different discipline might be good resources to help enhance the content of MyGfL. The content of MyGfL is good and very relevant and can benefit more Malaysians from different age groups. This is also in line with one of the goals of MyGfL to provide lifelong learning. Schools should be equipped with computer and Internet access so that students are encouraged and are exposed to e-learning content as frequently as possible, under the proper guidance from teachers. MyGfL has the potential to be used as the main source of information in classroom lesson delivery.

Science and Mathematics for the Youth. The teachers' role in the acceptance, implementation, and outcome of educational technology such as MyGfL has received less attention, even though an overwhelming body of evidence points to the centrality of teachers in the educational innovation process. It is most important to realize that the teachers' existing attitudes, skills, and working habits will have great influence on their acceptance, style of implementation, and outcome regarding educational technology such as MyGfL (Dwyer, Ringstaff, & Sandholtz, 1992; Palmiter, 1991; Streibel, 1995). Web-based content that can be accessed via MyGfL brings with it changing roles for mathematics and science teachers that involve not only changes in their relationship with other teachers and administrators, but also in their relationship with the community, their approach to students, the curriculum, and specific lessons. Those changes affect the very structure of the educational institution.

Rural Community. Strengths of MyGfL included the flexible, open and inclusive nature of its contents, the mutual learning that was developed, the empowering impacts of the portal in providing skills needed by the community and the effectiveness of the ICT in enhancing community capacities. Outcomes and impacts of the portal were particularly positive in sewing skill training which was considered as an important and beneficial skill for the community. The analysis shows that the portal's aims of facilitating participants of KEMAS sewing skill training was met, to varying degrees, for those who participated in the program over its duration. All the trainers and participants in these training series were found to have experienced the new approach of teaching and learning particularly in sewing skills and many other things. Hence their perceptions towards information technology have been changed with MyGfL.

Conclusion

The Malaysian Grid for Learning (MyGfL) has enormous potential for teaching and learning. Youths and the public in general and school students in particular can be provided with an exciting learning environment through MyGfL. However, they first need to develop search skill and to acquire guidance from their teachers or trainers in order to find the needed resources. Through MyGfL, teachers may integrate Internet resources into the teaching and learning process which can be accomplished gradually.

The existence of MyGfL may change the world into a digital society that places information above all. MyGfL has proven to be very beneficial to the three main user groups as studied. It is flexible in the sense that learners can progress at their own pace. Web information is accessible anytime and anywhere provided there is a computer, a modem, a telephone line, and server provider and computer knowledge. Therefore, it makes learning extremely convenient round the clock. Nevertheless, its power will be wasted unless its access and use is well managed. Careful planning and preparations are required when incorporating websites linked via MyGfL as learning tools.

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