EXEMPLARY PRACTICES IN SEARCH FOR YOUTH SCIENCE AND MATHEMATICS RESEARCHERS (SERIES 2): 'MAGNIFICENT ADVANCEMENT FOR YOUNG SCIENTISTS' (MAAYS) SUPPORTING 'SEARCH FOR SEAMEO YOUNG SCIENTISTS' (SSYS)

Ng Khar Thoe Specialist, Research and Development (*R&D*) Division, RECSAM <*nkt@recsam.edu.my*>

> Linda Toh Physics Master Teacher, SMKA Al-Mashoor(L) <*lindatoh2001@yahoo.com*>

Sheila Oyao Specialist, Research and Development (*R&D*) Division, RECSAM <*sheila_Oyao@yahoo.com>* Kim Phaik Lah Director of Studies, Vision Academy (M) Sdn. Bhd. <kimpl9988@yahoo.com>

Francilyn A. Obrien Mathematics Education Consultant, Florida States, USA <franzobrien@yahoo.com>

Hazura Abu Bakar Specialist, Research and Development (R&D) Division, RECSAM <hazura_abbakar@recsam.edu.my>

and

Julito C. Aligaen Specialist, R&D Division, RECSAM <juli_aligaen@recsam.edu.my>

Abstract

The 'Search for SEAMEO Young Scientists' (SSYS) is a biennially organized regional congress since 1997. It provides a platform or venue for intellectual and social interactions among student delegates and educators in the SEAMEO countries and beyond. 'Magnificent Advancement for Young Scientists' (MAAYS) is the international education flagship programme founded in 2003 by Vision Academy (M) Sdn. Bhd. Since the end of 2005, MAAYS.net e-research platform has been supporting the organization of the 5th SSYS (2006) and subsequent congresses mainly through e-learning networking activities. This article reports the second series of activities with evidences of exemplary practices in SEARCH for youth science and mathematics researchers over the past seven years. These were implemented by the authors as founders, webmasters, event organizers, advisors, facilitators and bloggers or e-forum participants. Some main features of MAAYS that promote student-centred learning supported using ICT [e.g. project-based activities (PBA)] with threaded discussion topics that are directly and indirectly related to science and mathematics learning are highlighted. Educational implications on how Web 2.0 plays the role in science/mathematics/technology/environmental education to promote awareness and enhance 21st century skills are deliberated, with future direction elaborated.

Introduction

The advancement of technology education through e-learning portals allows teachers to employ various constructivist strategies that could actively engage learners' interest in science/mathematics education. Literature revealed that interactive web-based learning initiatives provided useful tools for effective and ever-expanding global learning and webbased cooperative projects. These activities involved contextual problem-solving skills as reflected in project-based activities (PBA), problem-based learning (PBL) and participatory inquiry (PI). All these approaches combine investigation, education and purposeful action with knowledge creation and transformation through shared learning (using on-line/off-line blended learning mode) in contrast with transmission approach. Participants in the aforementioned activities are capable of growth, change and creation (Briton, Collett & Cooney, 2010).

Since the inception of RECSAM forty years ago as a regional training institution for science/mathematics education for the SEAMEO member countries and beyond, technologyenhanced learning activities supported by ICT tools were identified as important components in the centre's training programmes. Effective and sustainable uses of e-learning platforms that are supported by innovative technological tools are important to facilitate science/mathematics education with the sharing of exemplary practices. This article reports the second of a series of some completed and on-going e-learning activities facilitated through the web-based learning portal entitled 'South East Asia Regional Capacity-enhancement Hub' (SEARCH) (URL http://www.recsam.edu.my/search/index.html). Evidences of exemplary practices in SEARCH for youth science/mathematics researchers are illustrated. These include activities facilitated under two of its hyperlinked portals, 'Magnificent Advancement of Young Scientists' (SSYS) regional congress organised by SEAMEO RECSAM. Educational implications and future direction are also deliberated.

Programmes Brief, Related Activities and Exemplary Practices

'Search for SEAMEO Young Scientists' and 'MAgnificent Advancement of Young Scientists'

The 'Search for SEAMEO Young Scientists' (SSYS) is a regional congress organised by SEAMEO RECSAM. It provides a platform or venue for intellectual and social interactions among student delegates and educators in the SEAMEO countries and beyond. It was conducted in the form of Science Exhibition/Congress for the youth to share/exchange ideas, experiences and disseminate information related to their scientific and mathematical research projects. It was initiated in 20 to 22 October 1997 with the 1st theme 'Conserving the environment through youth science research'. Since then, it has been held biennially with a specific theme related to Science, Technology, Environment & Society (STES). From 5 to 7 July 1999, the 2nd SSYS congress was held with the theme 'Technology for us', whereas the 3rd SSYS congress (4 to 6 March 2002) was conducted with the theme 'Creating intelligent cities for the harmonious societies of the new millennium'. The 4th(8 to 10 March 2004), 5th(6 to 9 March 2006), 6th (3 to 6 March 2008) and 7th (2 to 5 March 2010) SSYS congresses were organised with the themes chosen specifically in support of United Nation's 'Decade of Education for Sustainable Development' (DESD) from 2005 to 2014. The themes for the subsequent events were 'Towards a sustainable future', 'Sustainable development for a better world', 'Sustainable community development through Science and Mathematics' and 'Sustainable solutions for the local community' respectively (Baharum, et al., 2010; Mangao, et al.,2008; Ng, et al., 2006).

'MAgnificent Advancement for Young Scientists' (MAAYS) (URL: http://maays.net) [formerly known as 'Malaysian Academy for the Advancement of Young Scientists' (MAAYS) and 'Young Scientists Network' (YSN)] is the international education flagship programme founded in 2003 by Vision Academy (M) Sdn. Bhd. An action research study was conducted to document, review and reflect on the various efforts made by local, national and international organizations. This study indicated that although there were various efforts having themes that focus on developing young scientists through several strategic activities such as science camps, fairs, congresses, workshops, there was yet a concerted effort to promote the young scientists in a networking environment using the concepts of information, knowledge and values-based society. This study proposed that young scientists who are ICT savvy should be gathered to be a critical mass to present the 'dot force' needed to propel the growth of science and technology in this digital age. Through various concerted efforts to prepare the modus operandi for developing young scientist for the on-line and off-line activities [discussing the pertinent 'Problems, Issues and Opportunities' (PIO) for collaborative efforts in promoting YSN programs], the e-learning platform was finally prepared as venue of collaboration in sourcing human and material resources (Kim, 2003).

Objectives of SSYS and MAAYS programmes

SEAMEO RECSAM's SSYS congress is a platform that provides opportunities to enhance the vast potentials of youth through intellectual activity in conceptualising ideas, and through cooperative teamwork in organising those ideas into more tangible investigative research projects that will benefit the environment, society and economy. More specifically this project-based programme aims to:

- encourage young learners to apply scientific and mathematical knowledge into technological problem-solving and R&D activities to address sustainable development.
- involve young learners in project-based activities that will generate much interest in science and mathematics related studies.
- increase the awareness of young learners about the relationship between science, mathematics, technology, environment, economy and society.
- identify and give recognition to outstanding youth science and mathematics researchers.

Seeing the need to form an intellectual community to encourage further communication, foster camaraderie and possible collaboration, networking activities were initiated since the 5th SSYS 2006 congress. During this event, the MAAYS team members were invited to facilitate the international networking activities during the biennially held event. The MAAYS.net e-community has members from different age groups with same vision. More specifically MAAYS.net aims to:

- seek, exchange and share knowledge to widen the horizon of humanity and global understanding on scientific investigations.
- serve as e-research platform for all interested parties or stakeholders participated in the Community of Practice (CoP).
- provide opportunity for intellectual venture and an effective medium to promote lifelong scientific/mathematical values, interests, skills, attitudes and motivation among the youth.

MAAYS Activities Supporting the Organization of SSYS Regional Congress

MAAYS activities prior to the organization of SSYS congress

Prior to the organization of the 7th SSYS (2 to 5 March 2010) congress, the MAAYS team members explored a new approach to involve wider groups of students to submit project proposals to participate in the i2discovery competition before 31st January 2010. The event was advertised on the MAAYS.net portal (Figure 1) with further details of project proposals

on its e-forum site (Figure 2). 'Judging' and 'guidelines of submission' were also posted its eforum site. Appendix A is the screen capture of detailed guidelines for 'i2discovery project proposal competition'.

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Figure 1. The index page of MAAYS.net portal with the advertisement on i2discovery competition posted on http://maays.net/category/ssys/

Figure 2. The e-forum site of MAAYS.net portal with further details on 'judging' and 'guidelines of submission' for 2discovery competition.

(http://forum.maays.net/viewtopic.php?=6&t=1 6 and &t=17)

MAAYS activities during and after the organization of SSYS congress

Since the organization of the 5th (6 to 9 March 2006) SSYS congress, networking workshops were conducted by MAAYS.net team members. This paper will briefly elaborate the activities during the latest event. During the 7th SSYS 2010 regional congress, the networking session was conducted at ICT Lab 1 at SEAMEO RECSAM from 9 a.m. to 12.30 noon on 5/3/2010. It was held concurrently with 'Exhibition for Public Viewing' in Thailand Room 1 and 2. The delegates were also invited to register with social networking site (URL: http://www.recsam.edu.my/html/SSYS%202010%20Web/index.html) as well as Young Scientists' Network (YSN). The SSYS delegates were invited to register on-line with the 'Magnificent Advancement for Young Scientists' (MAAYS) (URL: http://maays.net/). In addition to opportunities for international networking, the objectives of this workshop were to provide a platform for academic discussion and e-research activities with exchange of ideas and intellectual discourse in global learning community for capacity-building activities [URL: http://forum.maays.net/viewforum.php?f=29]. The web-based learning activities include use of 'forum and blog' for on-line discussions, to initiate project ideas and/or exchange findings about investigative projects possibly guided by 'More Knowledgeable Others' (MKO) (URL: http://forum.maays.net/viewforum.php?f=8&sid=56ec35bad6d4aa50647a7f7c079645e2).

Due to the constraints of having to complete the MAAYS activity within the time schedule in concurrent with another Exhibition event, the student delegates were divided into three main groups (with about an hour allocated for each group). This was to ensure that they could take turns to enter the computer lab, while other project team member(s) could be assigned on duty in the exhibition room. The project teams were given a survey form to indicate their preferred time of registration on-line before the activity started in the morning. The workshop was led by the second author, also assisted by the first author and other helpers to ensure that adequate assistance was provided for each student delegate during on-line registration with briefings and Q&A sessions facilitated. The following students were involved in the webdesign and networking activities during SSYS congresses: (1) Mr Ang Kuan Chin (student from SMJK Chong Hwa, Kuala Lumpur, university graduate in scientific field); Mr Chong Min How (student from Universiti Malaya, Kuala Lumpur university graduate in scientific field) for SSYS 2008; Mr Patrick Ang Kuan Ping (Vision Academy, MAAYS webmaster from 2006 to 2008, currently pursuing medicine in Moscow); (2) Mr. Ang Jing Teong [student from SMJK(C) Chung Ling, Penang. MAAYS.net webmaster from 2008 to 2009, university undergraduate]; (3) Ms Christine Hung Jun Fang and Ms. Lee Xin Ee [students from SMJK(C) Perempuan China Pulau Pinang or Penang Chinese Girls' High School (PCGHS)]; Mr David Yong Seng Chai and Mr Ong Chee Yi [students from SMJK(C) Chung Ling (CLHS), Penang, MAAYS.net webmasters since end of 2009, currently doing preuniversity programmes]. The following are screen capture pages of MAAYS main activities during previous SSYS congresses including old (Figure 3 and 4) and new portals (Figure 5 and 6).



Figure 3. Screen capture of the index page of the MAAYS old official website (during the SSYS 2006 and 2008 events)

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Figure 4. Screen capture of the activity page of MAAYS old website

[http://www.maays.net/maaysv408/joomla/ index.php?option= com_samgallery&Itemid=39]



Figure 5. Screen capture of the latest MAAYS official website with highlights and write-up on SSYS 2010 congress

Figure 6. Screen capture of the activity page or

e-forum site [http://forum.maays.net] of latest MAAYS official website [http://maays.net]

The SSYS 2010 networking activity was initially planned for SSYS student delegates only. However, many school students had also visited the 'Exhibition for Public Viewing'. After all the SSYS student delegates had registered with MAAYS, the students and teachers who had visited the centre were also invited to register on-line. About more than 134 people registered with MAAYS on the last day of SSYS whereas some of them registered after SSYS to participate in the e-forum activities. The feedback from alumni of maays.net showed that students and teachers benefited greatly from their participation in SSYS congresses including the networking sessions. It was a fond memory of all the events and the students strengthened friendship ties which would last a life time. Some of them were still communicating with one another after the events.

Other MAAYS Activities in SEARCH for Science and Mathematics Researchers

This section elaborates other activities implemented through the MAAYS platform.

(A) Transformation of practices through student-centred e-learning in Community of Practice (CoP)

(1) Promoting project-based activities (PBA) through face-to-face workshops and e-forum initiatives

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Figure 7. Workshop on 'Science across the World' (SAW) programme to promote project-based activities (PBA) was also organized by team and disseminated on MAAYS.net



Figure 8. MAAYS.net e-forum also serves as a platform for communication on SAW. Some exemplary practices were reported earlier by Ng, Toh and Boey (2010)

through (2) Facilitating sharing sessions special competitions, events, science/arts/technology carnivals In conjunction with other events or competitions such as those organized in local and international institutions, the MAAYS team also disseminates information using the eforum platform (http://forum.maays.net) to promote wider participation. An example is the event 'Karnival Bestari Sains dan Seni' that was held at Universiti Sains Malaysia (USM) from 5th to 9th May 2010, where MAAYS advisors and webmasters organized a workshop for secondary school students (Figures 9-12). The workshop's theme was 'Integrating Science with Art and Technology', and students learnt about Project-based Activities (PBA). After the interesting presentation by Angkasawan Major Dr. Faiz Khaleed, participating students and teachers were then asked to make their way to the screening room on the second floor. The second author gave everyone an introduction of Project-based Learning (PBL), followed by the presentation of award-winning project by David Yong Seng Chai (CLHS student, also webmaster of MAAYS) on his research entitled 'Spider-web's wound healing capabilities'. Muhammad Akram bin Mohd Zubir, a student at SMKA Al-Mashoor(L) also presented his winning research project entitled 'Swift Turbidity Marker'. A briefing on MAAYS.net with PBA, e.g. SAW programme was also given by the first author. Subsequently workshops were conducted and facilitated by the following students and teachers to generate project ideas: (1) Group 1: Mr. Ong Chee Yi (MAAYS.net webmaster)(recently completed pre-university programme) (2) Group 2: Mr. David Yong Seng Chai [MAAYS.net webmaster, scholar for International Baccalaureate (IB) programme at Uplands International School] (3) Group 3: Ms. Linda Toh [teacher from SMKA Al-Mashoor(L)] (4) Group 4: Mr. Yeoh Wei Yen (CLHS student, currently pursuing medicine in UKM) (5) Group 5: Mr. Seah Ming Chwen (CLHS student recently completed A-level) and (6) Group 6: Ms. Christine Hung (student from PCGHS) and Mr. Ong Hock Sheng (CLHS student recently completed A-level).

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Figure 9. Workshop on PBA 'Integrating Science with Arts and Technology Carnival' organized at USM museum [http://maays.net/2010/05/08/usm- work-shopproject-based-learning-for-science-fairs/#]



Figure 11. MAAYS advisors and facilitators posed with National Astronaut Major Dr. Faiz Khaleed

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Figure 10. Output of group discussion generated from PBA workshop posted onto MAAYS forum [http:// forum.maays.net/viewforum.php?f=34]



Figure 12. Major Dr. Faiz Khaleed was invited to share the experiences during his astronaut training.

(B) Theme-based approach to science and mathematics learning

(1) Topics of special interests with skills development among e-forum participants

There are many topics of special interests related to current trends and issues. For a start, the MAAYS.net team members had chosen four topics of immediate concern (i.e. Astronomy; Climate change and environmental issues; Water and values-based education; Health science and nutrition) and attracted much participation in e-forum by blog viewers (Figures 13 & 14). In addition, the learning output under the topic 'Water and Values-based education', e.g. 'River was also disseminated under this forum site Ranger' (refer URL: http://forum.maays.net/viewtopic.php?f=32&t=387). Facilitators also used this site for the teaching related to 'Education for Sustainable Development' (ESD). For example, the output of active learning pedagogy incorporating role play was disseminated as forum discussion on 'greenhouse effect' (http://forum.maays.net/viewtopic.php?f=31&t=301). Screen captures of the output are presented in Appendix B.

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Figure 13. Topics of special interest attracted the participation of quite a number of bloggers [http://forum.maays.net/index.php]

Figure 14. Snapshots of some topics of interest under the themes 'Astronomy' and 'Climate Change and Environmental Issues'

(2) Major sciences (Biology, Physics, Chemistry)

Among the major sciences discussed on-line, 'Biology' topics attracted the highest number of posts and responses, followed by 'Chemistry and Physics' topics participated by mostly secondary and even primary school students as well as teachers (Figures 15 & 16). Apart from referring to the school curriculum, students also explored new topics of interests and discuss on-line with others. Occasionally, in-service teachers who had attended courses at RECSAM also posted new challenging questions and responded to the questions posted by students and other teachers.

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Figure 15. Questions posted on 'Biology' column with frequency of views and replies [http://forum.maays.net/viewforum.php?f=13]

Figure 16. Questions posted on 'Chemistry' and 'Physics' column with frequencies of views and replies by blog viewers

(3) Mathematics and technology-enhanced mathematics learning

The teaching of mathematics may also be made livelier if teachers involve students in on-line discussions with sharing of digital resources. Two columns were created in MAAYS.net, i.e. 'Mathematics and statistics mathematics' as well as 'Technologically-enhanced mathematics learning' (Figures 17 & 18). National or international participants and advisors were also invited for sharing of knowledge, expertise and Open Educational Resources (OERs) (*Appendix C*).

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Figure 17.Questions posted on 'Mathematics and statistics mathematics' column with frequency of views and replies [http:// forum.maays.net/viewforum.php?f=20]

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Figure 18. Questions posted on 'Technologically-enhanced mathematics learning' column with frequency of views and replies [http://forum. maays.net/viewforum.php?f=33&t=223]

(C) Dissemination of R&D activities with sharing of information related to trends or issues

(1) South East Asia Regional Capacity-enhancement Hub (SEARCH) MAAYS.net is one of the sub-portals hyperlinked to this SEARCH portal (http://www.recsam.edu.my/search/index.html) (Figure 19 and Figure 20). A special forum site was created to serve as clearing house with links to relevant sites under this e-learning hub and invite more open forum discussions (http://forum.maays.net). Discussions could also be facilitated through another sub-portal 'Science Project/problem-based Activities inCorporating Experiment MANagement' (SP3ACEMAN) (http://sp3aceman.net) with its closed forum site (URL: http://forum.sp3aceman.net). Sharing of e-learning experience organized by the MAAYS team members in collaboration with other educational partners e-forum was also available in the (e.g. http://forum.maays.net/viewtopic.php?f=29&t=260&start=10).

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<i>Figure 19.</i> SSYS, part of SEARCH
portal, is organized biennially and
disseminated through MAAYS.net e-
forum with some downloadable
resources

(2) Useful information for experiment execution

Student-centred investigative activities have been much emphasized in science and mathematics education. To facilitate effective learning and development of such skills, a special section on 'Experiment Execution' was also designed with major themes on 'Experiment designing' and 'Experiment protocol' (*Figure 21*), 'Ideas centre' and 'Resource centre' (*Figure 22*). With the organization of on-line resources for easy reference, not only the learning of science and mathematics will be effective, it also contributes to greening environment in a paperless world!

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Figure 21. Experiment designing and
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Figure 22. Ideas centre and resource centre [http:// forum.maays.net/viewforum.php?f=9 and

http://forum.maays.net/viewforum.php?f=25]

(3) Forum announcement and off-topic discussions forum sites

The MAAYS.net e-research platform leveraged on the accessibility of various useful Internet resources. Apart from the availability of open forums accessible to all on-line learners and blog viewers, it is also a platform for the dissemination of various relevant information and important announcements as posted onto URL http://forum.maays.net/viewforum.php?f=5. To encourage wider participation by non-science major students or teachers towards 'Education for All' (EFA), general and off-topic discussion columns such as 'Brain Teasers' (*Figure 23*)(*Appendix D*) and 'The Lounge' (*Figure 24*) were also created that attracted the participation of secondary as well as primary school students.

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Figure 23. Students were challenged with mind bogging quizzes posted on the 'Brain Teasers' site

[http://forum.maays.net/viewforum.php?f=21]

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Figure 24. Many off-topics discussions mostly related to science/mathematics also posted onto 'The Lounge' to attract further participation [http://forum.maays.net/viewforum.php?f=2

Students share learning with fun quizzes and other related readings that were posted onto the 'Brain Teasers' forum site to challenge others' thinking. They also share life and learning experiences in the virtual 'Lounge' with further networking activities. In fact, students with no ICT or Internet background were first introduced to these sites and coached with various e-learning skills. When they became independent learners, they would then actively participate in other column sites to share academic knowledge and learning experiences.

2

Conclusion and Future Direction

Increasing emphasis has been placed on the enhancing of students' technological skills and ability to access on-line learning resources in the 21st century apart from developing their scientific, higher order thinking and social skills such as communication, research and collaborative project work as elaborated. ICT has been identified as one of the effective tools to extend the knowledge of learners through extensive research and interactive activities over the Internet in the recent years. In this technologically advanced era, a supportive learning environment with pedagogically enriched teaching strategies integrating ICT is also important for educators who wish to incorporate the e-learning portals in science and mathematics education. To achieve this aspiration, a Teacher 'Professional Learning Community' (PLC) was formed by the second author who is also the founder of MAAYS to invite participation of more educators for continuing professional development (CPD) and lifelong learning. This information was disseminated on URL: http://forum.maays.net/viewtopic.php?f=25&t=143. Moreover, all the authors of this paper had also participated actively as advisors of the MAAYS forum as well as project teacher advisor to further enhance science and mathematics education through blended learning approaches with sharing of useful resources. An example is the Teacher's Guide for the Climate Change Integrated Model to promote ESD (CCIESD) (Aligaen, 2010), also known as South East Asia Climate Learning via Integrated Model and Teacher Education (SEA http://forum.maays.net/viewtopic.php?f=37&t=277 CLIMATE) project (URLs: and http://forum.sp3aceman.net).

This paper outlines the major activities of MAAYS.net portal that support the organization of SSYS regional congresses organised by SEAMEO RECSAM since 2006 with evidences of exemplary practices in SEARCH for young science/mathematics researchers that were facilitated through an on-line learning hub. This article also reveals the feasibility of a blended mode to learn the different themes and issues towards building networks for knowledge-exchange and peer learning in science and mathematics education in the region and beyond (Azian, Devadason, Ng & Wahyudi, 2010). In conjunction with the organization of the forthcoming 8th Regional Congress on 'Search for SEAMEO Young Scientists' (SSYS) (scheduled from 5th to 9th March 2012) with the theme '*Beyond 2012: Greening the* Environment for a Sustainable Future', MAAYS.net team members will again organize various networking activities and e-learning initiatives to promote the culture for investigative science/mathematics education. More updates of the activities will be posted http://forum.maays.net/index.php onto the website (URLs or http://forum.maays.net/viewforum.php?f=8).

More promotional activities will be conducted in various workshops to invite participation with dissemination of learning output. Other research evidences (that were disseminated using this site) will also be reported in the subsequent series to illustrate how inquiry-based activities, scientific thinking skills could be promoted through e-learning activities supported by interactive digital learning environments with evidences of students' enhanced motivation and thinking skills.

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Appendix A

Screen capture of announcement and detailed guidelines for 'i2discovery project proposal competition': A competition to promote student-centred project-based activities (PBA)

[URL: http://forum.maays.net/viewtopic.php?f=6&t=15, &t=16, &t=17]



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Appendix B

The output of active learning pedagogy role playing 'geologist, earth science expert, environmentalist, etc.' was disseminated as forum discussion topic on 'Greenhouse Effect' posted by RECSAM's participants [URL:

http://forum.maays.net/viewtopic.php?f=31&t=301]



Re: Forum discussion on the greenhouse effect Dity rizkimuammar + Tue May 25, 2010 12:41 pm Fam Mr, Robert, Earth Science Expert from England.

realized that gases in the atmosphere cause a "greenhouse effect" which affects the planet's perature. The level of carbon dioxide in the atmosphere was rising fast. The main function of the

te is using a scripted window to ask you for information. If you trust this website, click here to allow scripted windows			depending in fossil fuel.		
We realized that gases in the atmosphere cause a "greenhouse effect" which affects the panet's temperature. The level of carbon dioxide in the atmosphere was rising fast. The main function of the carbon			Last edited to subjuiladed on Thu Jun 12, 2018 4(15 pm, edited 1 time in total.		
diside present in the atmosphere is to tage the heat obtained from surgified and do not kit is go beyond the stronghere. It is because of the calone diside in the atmosphere that care placet is swarer than any other placet of the subar system. When there is a rise in the preceduage of calone diside is the air, the amount of heat calonet by the calone disoles discovators. This is the contributes beaution could rise in the strong terms in the subar system. When there is a rise in the preceduage of calone disolder distributes in the strong terms of the each which is also strong as going terms of the calone disolder. Set the subar terms of the term when the sub- tage terms of the each which is also strong as going terms of the calone disolder, carbon monoider, nethaner, nithous subarring of the line fuels. Lothere outplaced from calone caloned fiscales, the strong term indial error atmosphere calor. This is alto cause of extended from calone calone disolder, carbon monoider, nethaner, and the atmosphere calor. This is alto cause of extended net an advance and the strong term indial error atmosphere calor. This is alto cause of extended net an advance more than 1 degree failment. An encourse, it is by years, the temperature of the extende of the strong terms the planet. As a result, is the late the opphere calor. This is alto cause of extended net mere than 1 degree failments. An encourse, it have a strong terms the strong terms that altoway increases the planet. As a result, is the late the opphere calor. This is altoway increases the mere than 1 degree failments. An encourse, it have a strong term terms term of the strong terms t			Re: Forum discussion on the greenhouse effect Disr amore: The ADS 12016-04 and relative and the ADS 12016-04 and relative anatomic is local disr to comment on the pioter table by ans. 5 Good rise, P. bits is Gold warming the disr. Totage gialest asseming its ore of the big problems is the workt. The largest tension cardination common from the borning of forsit Select, which relaxes caches disrold and introgen and only and point or rise, the base solution is by using the solution table. Some page and the borning of forsit Select, which relaxes caches disrold and introgen and only using the bio its fast to be point or rise, the base solution is by using the solution table. Some page within by using give the allow with the solution common conduction to make a method by the table table common solution and the allow privit the solution common conduction tables. Some page and the solution of the solution with the solution of the solution o	Ameri Posta J Jacob Post May 10, 2010 Jul Jan	
Is going to increase further in the next handred years. I think, to prevent climate change due to greenhouse effect, we should reduce the consumption of fossil			grandchfidm. So left's keep on beloved warth sustainable. Last edited ty azmir on Thu Jun 10, 2018 8-42 pm, ented 1 time in total.	0	
fuel. In addition, we must discover altenative source of energy that environmentally friendly.			Re: Forun discussion on the greenhouse effect	chalibio11	
Last edited by riskimummer on The Jun 10, 2010 4-25 pm. edited 2 times in total.		0	Dity challball + Thu Jun 10, 2010 10:07 em Hello, my rame is john yoesra. Lam an environmentalist which is concerned on forest conservation. I	Postal 3 Jatrado Tris Jun 30, 2010 9194 ann	
Re: Forum discussion on the greenhouse effect Day Farissi = Tue Hay 25, 2010 12:48 pm	Farissi Poets: 1		believe that forest has great role on human life, from providing organs as the most valuable thing for human life, to supporting human life on goods made from wood. People realize that forest would vanish someday and there are no more animal in this planet. Deforestation is a global problem which is needed		
Lan a chief poligist is a firm of international of cossistance. I strongly agree with the environmental spokespersor. The accounted that there is only a fired amount of forsit fur environming indee the Larbt. The resources should be conserved, and not waited frough burning activities, when fossil holes are burned, they release a considered in the three should be conserved to burned the social should be conserved to burned the social should be conserved. The social should be conserved to burned the social should be conserved to burned the social should be conserved to burned. These are blip problem for our environment. If they release a constraint the social should be conserved to burned the social should be conserved to burned the social should be conserved to burned the social burned. These problems are burned to burned the social burned to burned burned to burned the social burned to burned the burned to burned the social burned burned to burned the social burned to burned burned burned to burned burned burned burned to burned burn	Jaimed: Hur May 15, 2016 3134 pm		exertencies tom everyone is this franck. Degradation of direct associat still never franced all inspat to in decrement of response to this franck. Departicips of entities the matrix given scalar direct and of birth Lato taking a lag rate in it, insighte, that we are competing with unit still and all insig thing of the pages consuming, in addition to onlying any also are as competing with our still and all links the given our place and weath 10		

the generation of renew depending on fossil fuel.

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Re: Forum discussion on the greenhouse effect Dep Farisi > Tue May 25, 2010 12:48 pm I am a chief geologist in a firm of International oil consultants. I strongly agree with the environmental spokesperson. I'm concerned that there is only a fixed amount of fossil fuel remaining inside the Earth. The resources should be conserved, and not wasted through burning activities. When fossil fuels are burned, they release carbon dioxide into the atmosphere which leads to acid rain and global warming. These are big problems for our environment. Another concern is that we will eventually run out of fossil fuels. Fossil fuels are non-renewable sources of energy because it takes millions of years to create them. That's why it's so important that we start to develop better ways to use renewable sources of energy such as wind and water power. In addition, the execution to obtain the fossil fuels inside the earth will damage the Earth construction.	Farissi Potts: 1 Joined: Mon May 10, 2010 3:24 pm	
Last edited by Farissi on Thu Jun 10, 2010 4:25 pm, edited 1 time in total.		¢
Re: Forum discussion on the greenhouse effect	ulfa	
Dby uffa * Tue May 25. 2010 12:33 pm As we may concern about the green house effect, how can the economic spokesperson for brazil, Ms Vieira, said that business doesn not caused the green house effect? It is so clear that by opening up the large area of rain-forests for the production of timber, building road, mine and farm for business, whereas more trees will be chopped and indirectly cause this effect. You should think more about the dissadvantage before you do all that. can you imagine what will our world become in the next 10 or 20 years?	Posts: 11 Joined: Mon May 10, 2010 3:13 pm	
And for the car manufactures, im glad to hear that you already produced a friendly environmental car. But still you are burning the oxygen in this world. I hope you can be more considerate about this issues in your company. Last edited by ulfa on Thu Jun 10, 2010 3159 pm, edited 1 time in total.		

Appendix C

Screen capture of experts' sharing on topic 'Technological-enhanced mathematics learning'

[http://forum.maays.net/viewtopic.php?f=33&t=223]



We can find excellent resources for geogebra from these websites: http://www.geogebra.org http://www.geogebra.org/en/wiki/index.p f_Malaysia A collection of different GeoGebra logos can be seen at this page: http://www.geogebra.org/en/wiki/index.p tute_Logos http://www.geogebra.org/forum/ The website for the International GeoGebra Conference, (Linz, Austria on 29-31 August), is now completed and fully functional. Proposals can be submitted and registration for the conference is available through this link: http://www.geogebra.org/en/wiki/index.p rence_2011 Subject: [IG] NTLC Award news Dear friends of GeoGebra, 	Joined: Mon Jul 05, 2010 4:12 pm	
http://www.geogebra.org	0	
Re: GeoGebra to promote technologically-enhanced Maths Learn	vletchumi Posts: 13	

Appendix D

All types of students and bloggers were challenged with mind bogging quizzes posted on 'Brain Teasers'

[http://forum.maays.net/viewtopic.php?f=20&t=12]

