Malaysian Student Technology Leaders

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Abstract: Under the auspices of the Malaysian Technical and Vocational Schools (BPTV), along with partners Generation YES and LabTech, is implementing an innovative model of technology support to Malaysian secondary schools. There is a growing need to ensure that schools and teachers have the support they need to use 21st century technologies for the benefit of their students.

The best way to accomplish this technology integration is to build partnerships between teachers and tech-savvy students working together to create 21st century schools. The Malaysian Student Technology Leaders (MYSTL) program will teach students aged 12 to 18 to help teachers, staff, administrators, IT personnel, and other adults in their schools integrate technology to improve the learning of all the school’s students in every subject area. This paper describes a major national effort to prepare a group of students to provide the majority of technology support including infrastructure, teacher professional development and technology literacy for every student in Malaysia.

Keywords: Classroom-based learning, Change processes, Digital Literacy, Evaluation and Assessment, Learning communities, Net communities, New literacy, Problem based learning, Teacher Education, Theories and philosophies of learning, Tools for learning, Web 2

1. Background

The Malaysian Student Technology Leaders will support four crucial technology goals:

- Help teachers and students learn how to use hardware, software and network applications
- Use technology to develop resources for classroom use
- Integrate available technology into lesson plans to improve learning
- Maintain the technology infrastructure at the school

The MYSTL program began in November of 2008 when the author (Dr. Dennis Harper), the Indonesia-based vocational materials provider LabTech and the director of Malaysia’s vocational and technical schools Dato Yusoff Harun met to discuss the needs of the nation’s 100 vocational and technical schools. An action
A plan was created that called for three pilot schools to be the first schools in Malaysia to become members of the MYSTL.

Three faculty members at each participating pilot school were trained in early February of 2009 to prepare a group of 20-30 4th form (10 grade) students to become the charter members of the MYSTL club. Results of the first 5 months of implementation will be given at the WCCE 2009 presentation.

2. MYSTL Content

MYSTL at the three pilot schools utilized the GenYES model to train Student Technology Leaders (STLs) to provide technology support to teachers and adults and the TechYES model to provide assistance and assessment to all fourth form students as they produce two projects to show they are technology literate.

The GenYES program includes access to a customized GenYES portal accessed through an Internet browser by participants at each school (http://mystl.my). This portal hosts a suite of web tools to facilitate student-teacher partnerships and extensive curriculum resources. When a teacher in a MYSTL school wants an STL’s help with a technology problem or classroom project, he or she goes to the MYSTL portal to request a Technology Assistance Project (Teknologi Projek Bantuan, or TAP), explaining what they need and how an STL can help them. TAPs are sent to the MYSTL Advisor’s private account, where the Advisor assigns them to STLs. Some TAPs may take five minutes, while some may take hours or weeks. The Advisor supervises STLs as they collaborate with teachers on TAPs, making sure students are providing high-quality, timely, and satisfactory service. The online TAP system allows the Advisor to monitor each STL’s projects, and the GenYES tools include a secure classroom blog, wiki, and commenting features to help the Advisor communicate with their STLs. In addition, the GenYES portal gives the Advisor and STLs access to a wide range of curriculum resources, covering training for STLs in collaborating and working with teachers, developing technology skills, and using their training to promote positive technology use and student leadership throughout their communities.

The TechYES program provides a Student Guide to all fourth form students to help them create their two required technology-infused projects. There are nearly 1,500 students in the three pilot schools that will be nationally TechYES certified. A TechYES website is also available to students to assist with the process. Each fourth form student will be introduced to TechYES through the Student Guide. This Guide walks the students through the process of completing their two projects that can be linked to a school subject, community project, or personal interest. The STLs are available to help the students complete the projects and assess them when they are completed.
3. MYSTL Implementation

MYSTL advisors in each of the three pilot schools along with administrators worked with BPTV, LabTech, and Generation YES to determine how the model would be customized to meet the school’s goals and needs. A MYSTL School Planning Questionnaire was completed and sent to Generation YES to begin this process.

Generation YES trainers held a four-day long training session in February of 2009. This training helped establish online accounts, prepare MYSTL adult advisors to support the STLs, work with the STLs directly, discuss with administrators their role in making MYSTL a success, and talk to the schools staff about how this support will benefit each of them.

After this initial training, BPTV, Generation YES and LabTech staff continued to work both online and onsite to develop a strong foundation for success. In addition, experienced STL students from Generation YES schools in the U.S. were partnered with their Malaysian student counterparts to assist this pilot implementation.

BPTV, LabTech, and Generation YES will closely monitor this pilot study to learn how to expand MYSTL to all vocational and technical schools. Open communication and collaboration was between all partners was essential to make MYSTL a success.

4. MYSTL Evaluation

The focus of the MYSTL pilot evaluation design emphasized the factors that would be necessary for all Malaysia’s secondary schools to implement the model in the future.

4.1 Focus of the evaluation design and intended outcomes of MYSTL

The evaluation plan included both formative and summative evaluation components to assess the impact of the MYSTL activities. Formative evaluation activities consisted of assessing the impact of the project on student motivation and learning outcomes. Formative evaluation activities involved establishing criteria for evaluating the quality of both MYSTL projects students do for teachers and the two TechYES projects that each fourth form student in each participating school produces and the degree to which they contribute to students’ acquisition of academic content, technology skills, and career goals.

An external evaluator from Generation YES and BPTV will be responsible for the summative evaluation. For teachers, it is expected that both what they teach
(the infusion of technology into their courses) and how they teach (access to resources, supporting models, pedagogical approaches, etc.) will change as a result of the help they receive from MYSTL students and the projects that all 4th form students will complete. The evaluation plan must therefore be multidimensional.

In addition to determining the immediate results of the professional learning opportunities, the evaluation should determine if teaching practices in the school have changed in ways that are promoted by the project.

The MYSTL online and printed materials that are developed or modified from existing GenYES materials included appropriate evaluation and field-testing of prototypes. The basis for any comparisons will be described.

4.2 Methods of Evaluation

In general, the MYSTL evaluation detailed above will determine whether:

- Program goals and designs are convincingly supported by research
- There is compelling demonstration that the program develops complex learning and thinking skills.
- There is complete and compelling demonstration that MYSTL promotes coherent organizational change.
- The research design meets high standards of quality.
- There is compelling demonstration that the MYSTL model is adaptable for use in multiple contexts.

University partners, teachers, and external evaluators collaboratively derived quality indicators such that the two TechYES projects will have a set of clear criteria and rubrics for evaluation. Learning outcome measures will include technology skills and a rating of creativity and innovation of the projects.

Extensive, regular surveys of students, teachers, and MYSTL staff are integrated into the online project activities for all participating schools. These surveys will be an ongoing part of project activities, and allow cross-validation by means of reports from various participants with different points of view. The external evaluator will provide summaries and analyses of these surveys, including comparisons to nationwide and, in some cases, regional statistics.

Evaluation of the MYSTL online community’s dialog will help determine how best to utilize this and other Web 2.0 strategies to strengthen MYSTL as it expands throughout Malaysia. This analysis will also help identify students who show exceptional leadership abilities so that schools and BPTV officials can utilize their talents in a variety of ways.

4.3 Results used to refine, improve, and strengthen program

Findings that will be presented at WCCE 2009 will include detailed quantitative and qualitative data, charts and interpretations clarifying the implementation and
impact of the MYSTL project, descriptions of sampling, instruments and processes, and other information necessary for both professional and lay readers to understand and evaluate the findings. An executive summary and recommendations for policy makers based on the data will be included in presentation. As the WCCE 2009 proposal was submitted in January (7 months prior to WCCE), the results were not known at the time but will be presented in Brazil.

5. Significance of MYSTL

This pilot Malaysian Student Technology Leaders project implementation essentially unleashes secondary school students and provides gifted and talented students with a proclivity toward technology and leadership abilities to effect how both teachers and students use technology in their lessons, learning, and life. By emphasizing every 4th form student is technology literate by constructing two projects ensures that in time, every Malaysian student in grades 7-11 (forms 1 to 5) will be able to use any present or future technology to invent their lives and move the nation forward. MYSTL will provide teachers a constant onsite pool of technology expertise that will encourage technology integration and bring students and teachers together working collaboratively in ways heretofore unheard of. The impact on the future of schooling in Malaysia and any nation is potentially enormous.

The results of this large MYSTL pilot have shown that only when students are integrally involved in their education and educators tap into their technology prowess and proclivity with technology will schools truly see systemic change. This MYSTL implementation is based on years of solid research and provides an exciting formal model aimed at moving student-centered technology support to new levels. It is anticipated that the success of this MYSTL pilot will provide the necessary proof of concept that will enable Malaysia to provide a powerful, cost effective technology support model to all its schools.