

# Cloud-based Home Learning: Critical Solution During Emergency School Closures

Recent years have seen the rise of health epidemics such as SARS, H1N1 and Hand-Foot-Mouth disease. These events have disrupted the delivery of school curriculum when emergency school closures take place. To solve this, Singapore schools have been co-operating with learning management solution (LMS) providers to tap on cloud-based learning systems which would enable access to both teachers and students. Such cloud-based home learning systems would assist in curriculum delivery, and enable school teachers to keep abreast of students' learning progress even when they are away from the classroom.

## ORGANISATION

Schools under the Ministry of Education, Singapore

## INDUSTRY

Education and Learning

## CHALLENGE

Disruption of school curriculum delivery; school administrators' inability to track progress of students during mandatory school closures

## SOLUTION

Cloud-based learning management system which is accessible by both teachers and students anytime, anywhere

## BENEFITS OF CLOUD SERVICES

- Easy accessibility to students
- Elimination of additional (costly) peripherals
- Flexibility and Scalability
- Quick links to Web-based information
- Time savings
- "Green" advantages

## The Challenge

The education system in Singapore is well-known regionally for its quality curriculum as well as delivery process; and most academic institutions have operated on tight semestral schedules. However, recent years have seen global health-related epidemics which have adversely affected (at time, prevented) effective participation in the curriculum by students and schools.

For example, during the height of the SARS epidemic in 2003, the Singapore government ordered the closure of schools within a two-month period. Teachers were caught unprepared and students were advised to stay home, hence the delivery of curriculum was affected. In 2009, to cope with the H1N1 virus, the Singapore government issued a 7-day Leave of Absence for all school staff and students as a precautionary measure.

School administrators realised that an "always-available" learning system needed to be in place, in preparation for the possibility of another similar epidemic.

## The Solution

Learning management systems (LMS) have been implemented in various countries in the last decade, but its benefits have been especially pronounced in the last few years, in locations where there were enforced school closures. During non-critical periods, LMS providers have been confident of supporting up to 15% of concurrent usage. But during emergency times, the required support rises to at least 50%—within an average 48-hour period. Hence LMS providers need to run the system on a flexible platform which allowed scalability in the shortest possible time—while being cost-effective.

## The Benefits

### *Pay-per-Use*

As most schools work on a limited budget in curriculum delivery, cost-effective in content delivery by LMS providers is a key consideration. Hence the cloud-based platform which allows for “Pay-per-Use” fit in well with financial considerations. This eliminates heavy investments in hardware and / or software needed to run the LMS.

### *Flexibility and Scalability*

Cloud-hosted LMS may also easily—and quickly—scale up (or down, depending on the latest curriculum requirements). As most school learning components consist of text, Web-resolution visuals and limited videos to be streamed, the “real work” is in user ID creation—which may be created quickly.

### *Elimination of Additional (Costly) Peripherals*

With cloud-based platforms, LMS providers are able to build and implement learning systems without users having to possess the latest hardware or a long list of software. The demand for other equipment such as external hard drives will also be eliminated, as quick access to cloud-hosted LMS would allow users to share and update work done online.

### *Quick Links to Global Information*

LMS on cloud platforms offer another plus: a quick and direct link to Web-hosted information for students and teachers. As Web-hosted search engines and information rapidly become a reliable source of information, learning content needs to be easily and quickly refreshed by available content on the Web.

### *Time Savings*

With cloud-based LMS, students and teachers anytime, anywhere – simply with a working computer and Internet access. Hence school administrators will use less time to manage, monitor and report on progress, thus gaining time to work on other critical tasks.

“I am able to structure the discussion to scaffold the teaching and learning of argumentative texts easily and limit the discussion to take place with groups of four or five. The set-up also facilitates learning outside of curriculum hours, providing a more holistic and enriching discussion,” said Ms Mookaiah, former head of department at Fairfield Methodist Secondary School.

### *“Green” Pluses*

Aside from obvious cost-savings, the infrastructure is a nod towards a “green” attitude and more responsible computing. Less waste is produced — paper or obsolete electronic products—and less time is needed to implement a cloud-based learning system.

### **A Sustained Solution**

“Educators and students are now able to easily create, share and reuse content and resources within the LMS making teaching and learning more holistic. It's the ideal platform for both teachers and students to collaborate. There's almost no boundaries to where they are geographically, as long they can connect to the Internet, they are able to work on the same assignment or project with minimum hassle,” said Chng Eng Leok, general manager of Marshall Cavendish Online, a LMS provider.

## About the National Grid

The National Grid is a national effort that draws together commercial grid service providers to offer pay-per-use access to compute, storage and software facilities. The three consortia who have been appointed National Grid Service Providers are Alatum led by Singapore Computer Systems Ltd (now part of SingTel), nGrid led by New Media Express Pte Ltd and PTC System (S) Pte Ltd.

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