

SMART SCHOOL: THE STORY SO FAR

"Ask a question and you're a fool for three minutes; do not ask a question and you're a fool for the rest of your life." (Chinese proverb)

The current education system has been criticised as moulding the young into those who only learn through the mindless memorisation and regurgitation of facts and figures, which they do not know how to apply. The MSC Smart School Flagship Application was designed to address these criticisms, provide a well-rounded learning environment and produce a thinking and technology-literate workforce.

To keep up with the more technology-based world of today, the Malaysian Ministry of Education acknowledged that there is a need to change the knowledge acquisition process of our students today. Together with six other flagships, the Ministry of Education issued a Concept Request for Proposals for its Smart School Flagship Application in July 1997.

When the idea was brought forward, people started to imagine students with their eyes glued to the computers twenty-four hours a day and seven days a week, practically living in the virtual world in order to get their education. This was the misconception that was common then. A Smart School is not all about technology. Technology is only a tool used because it is there. A Smart School is all about the teaching and learning process. It is about the students' own capability to succeed in their education, using whatever that is available for the benefit of all involved. Since it started in 1999, the Smart School Flagship is now well under way.

The objectives

Like many other educational projects, the main goal of this project is for the benefit of the future leaders and generations. It is high time that our future generation is exposed to IT at a very young age, so that when they grow up, they are well equipped, theory and practical wise, with the technology world out there.

With the systematic change in education, the students will be taught to be more proactive, analytical and creative. Students will play a more active role in the classroom, thus inculcating Malaysian values among the students and producing a generation of peace-loving and environmentally concerned citizens.

The concept

Traditionally, teachers are only responsible for disseminating their knowledge of the subject matter to the students and it is up to the students to study them by heart. With the Smart School system, teachers would play the role as a facilitator, organising and preparing a conducive and stimulating learning environment for students, based on the given curriculum. The students on the other hand, have the responsibility of charting out their own path in learning, in short, taking charge of their own learning process.

According to Dr Norrizan Razali, the manager for Smart School Flagship; "The software integrated in the Smart School System provides a very systematic way of monitoring students' level of progress."

A typical scenario of a Smart School would see more of students' interaction among themselves, using the latest technology. Instead of learning solo, students now work in teams physically and virtually. Teachers are there only as facilitators, to teach and guide the students in acquiring knowledge. The faster learners will be able to progress to a higher and more complex syllabus faster whereas the slower learners will continue with the activities until they are ready to move on. This way, everybody has a fair chance of getting their education at their own pace.

The smart school concept has attracted the attention of neighbouring countries and is now being replicated in Myanmar and Lao PDR. Three schools in Myanmar and two schools in Lao PDR have been selected as pilot sites for the smart school in the two countries.

The smart school labs in Myanmar was recently launched by the Prime Minister on August 19, 2002. The pilot projects in these countries aim to share the Multimedia Super Corridor (MSC) experience as well as promote the MSC companies with products and services for the smart school in the region.

The smart school system

So what is a Smart School and what makes it different from the ones that the older generation attended? The Malaysian Smart Schools Project was started as one of the MSC Flagship Applications, along with 6 others. A Smart School is a learning institution where the teaching-learning practices and school management has been systemically reinvented. This is to prepare students for the information era that is so important today.

What distinguishes smart schools from other schools is the use of technology to support and enhance teaching-learning.

Types of smart school:

Types of School	Numbers of Computers/Servers					
	Classroom & Science Lab	Computer Lab	Resource Centre	Teachers' Room	Admin Office	Server Room
A	286	70	20	30	5	3
B+	60	1	10	10	3	3
B	0	21	10	5	3	3

The process not only involves the introduction of IT and multimedia, but is also a catalyst towards creating and implementing a more effective education delivery process.

So far, 69 out of the 90 schools selected for the pilot project are secondary schools. These schools are divided into three types: A, B+ and B.

Type A

Level A schools, or the classroom models; are furnished with state-of-the-art technology equipment. Each school has at least two computer labs and each classroom and science lab are equipped with computers.

Type B+

Level B+, or the classroom and computer lab model; is perfect for group-based activities and project work. Computers are available whenever needed for Internet access and homework. Four computers each are put in fifteen of the classrooms and science labs. Thus, usage of the computers is on a rotation basis.

Type B

This is based on the lab model, where students only have access to the technology supported learning by using a computer lab. Here, they have access to information, software application and work on available courseware.

The curriculum

The curriculum is still based on the KBSM (The Integrated Curriculum for Secondary Schools) but with an added emphasis on IT competency and the English language. The curriculum will be implemented for all levels, channelled through 4 subject areas i.e. Science, Mathematics, Bahasa Melayu and English. The curriculum places importance on the following elements:

- Knowledge acquisition;
- Values inculcation towards

the development of the good person;

- Analytical thinking and the ability to make decisions and solve problems;
- Creativity and the ability to generate new and innovative ideas;
- Proficiency in an international language, networking skills and a global outlook; and
- IT competence.

With the aid of multimedia technology, self-accessed, self-paced and self-directed learning can be encouraged.

Learning strategies

Self accessed	Able to access information from various sources, independent of the teacher.
Self paced	Able to learn at own pace without being held back by slower students or having to deal with material beyond capability.
Self directed	Allowed to explore topics of interest without being restricted to a rigid curriculum.

Instead of the more examination-dominated culture that we are used to, the Smart School system hopes to create a thinking culture. In the present system, students have little say on what to learn and when to sit for the examination. The smart school assessment system, for instance, allows learners to sit for an exam when they are ready. Students can register online for their exams which ideally, will only be less frequent. Students can also check their cumulative performance and even get the chance to strategise in order to improve their performance.

The teachers

To make the learning process more interactive and exciting, teaching materials are not limited to printed books, but also



A typical scene at a Smart School where students work in groups, using the latest technology.

include electronic books, multimedia software, courseware catalogues and databases.

To incorporate the new Smart School system, teachers are required to go through a 14-week in-service training course. This is aimed at enhancing the skills of the teachers to undertake their role as facilitators and guide.

The implementation

Since its start in 1999, the project is now nearing completion. As far as technology infrastructure is concerned, all the compulsory installations have been completed in all 3 levels of schools (9 'A' schools, 79 'B' schools, and 2 'B+' schools). The Data Centre and Help Desk are also fully operational. Hardware and database aside, the other parts of the implementation of the Smart School system are divided into three pilot projects. These are:

a. Teaching-learning materials

These are comprehensive teaching-learning materials prepared for the four selected subjects in all grades. These materials leverage on the networks and the teachers' skills, and will enhance teaching-learning strategies and curricula. At this stage, all three releases are installed in the Smart Schools. The fourth and final release is currently undergoing testing. This will be installed in October.

b. Assessment system

The Smart Schools assessment system will be set up to provide extensive and exact feedback on students' progress and achievement. All parties involved, teachers, students and parents, will have online access to the assessment details, where it can be easily analysed. This part of the project is expected to be developed starting 2003.

c. Management system

The Smart Schools management system will help the school administrators to efficiently and effectively manage the resources and processes needed to support teaching and learning functions. This system is also completed and is currently installed in the schools.

Explains Dr Norrizan, all the 90 pilot schools will be ready for the National Rollout by the end of this year. Thus, the whole complete system would be implemented on all the pilot schools simultaneously. She further adds that by the year 2003, the rest of the schools in our country would be upgraded to become Smart Schools gradually.

"Changing and upgrading the schools of the whole nation would take some time. The expansion of the Smart School

system would begin by 2003, where all 9,000 odd schools around the country will be changed. Obviously, these would be done in stages, but how this is done is yet to be determined as there are issues like the teachers' training, the number of schools around the country, their infrastructure, needs to be resolved before we actually get down to implementation," explains Dr Norrizan.

The impact

The vision of Smart Schools across the country is clear as the implementation of the system gradually advances. The betterment of the country and in particular, its future generation is what it is aiming for.

"With the system, the impact is of great transparency, especially in school governance. The key players in the

system, the parents, teachers and students, have a greater involvement in the education process. Parents can access their children's records via online. Students can register and take their exams, and keep track of their records online. Teachers can monitor their students' progress in a more systematic way," says Dr Norrizan when asked on the impact of the Smart School system.

"Students are more motivated as the delivery and acquisition of learning is not rigid. Because of the interactive nature of the system, using the various courseware available, the Internet and e-mails, their interest in learning increases."

By following the Smart School system of education, students get

hands-on experience of the technology world. They would already know the basics of how things run by the time they finish school. Students are more independent as they control their own education under the Smart School system. The process enables students to practice self-assessment and self-directed learning that focuses on individual achievements and mind development.

The future looks good

The whole system not only equips the students academically but also on their everyday life. It teaches them to think critically, to look at things from outside the box. So, with the Smart School system fully implemented by the end of this year, we will indeed see a vast change in our new generation.

With the awareness and readiness of all the stakeholders, this indeed would be a success story for the world to see. All in all, the future generation looks good. ●



Dr Norrizan Razali, manager for the Smart School Flagship.

A Smart School in action

The brand spanking new Sekolah Menengah Kebangsaan Putrajaya in the heart of the country's new administrative centre is one of the 90 pilot schools of the MSC Smart School Flagship Application. We took a look at how 'smart' this smart school is...



At the beginning of the new millennium, Sekolah Menengah Kebangsaan Putrajaya opened its doors to receive 12 IT-trained teachers and 30 students, residents of the area. Led by a dedicated and visionary principal, Dr Salbiah Ismail, the school commenced operations on January 17, 2000. A new era, a new start.

Today, the school is the teaching-learning ground for 80 teachers possessing various academic backgrounds and 1,246 students. The impressive structure offers a serene and calm environment undisturbed by the sounds of traffic and cacophony of sounds so common of schools in city areas.

At present the school caters to students from Form One to Form Five, all in the morning session. Forty classrooms are fully equipped with seven computers, six students per computer and one for the teacher. There are also four computer labs with 35 computers each. The school has nine servers that connect the local area network (LAN) and wide area network (WAN) of the school together as well as to the World Wide Web. In total, the school has 535 computers and nine servers, utilises various software and other high-tech devices as aid in the teaching-learning process.

Adapting and adopting

If you had any doubts about how the students would adapt to the new Smart School system, doubt no more. "The students take it very well," said Dr Salbiah. "They absorbed information like a sponge absorbs water! Although IT is new to them, their willingness to learn helped them understand whatever they were taught fast. In fact, you should see their Power Point presentations! I am so amazed and proud of my students' capabilities!"

And proud she should be. The school recorded 100 percent passes for last year's SPM. So, does this mean that the Smart School system is working?

"Definitely," stated Dr Salbiah. "With the new teaching-learning system, aided by technology, students are more willing to learn. They are excited at the notion of using the Internet to do their schoolwork. Just at the click of a mouse, they could get a wealth of information online, faster and more comprehensive. This saves time and teaches the students to be more independent."

According to Dr Salbiah, based on the three learning strategies: self-accessed, self-paced, and self-directed; students have no choice but to depend on themselves and each other when studying. Guided by teachers who act as facilitators, students would be guided in ways of finding materials from various media: paper, electronic and also from the cyber world. This way, the students know what to search for, where to search for it, all at their



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Dr Salbiah Ismail, principal of Sekolah Menengah Kebangsaan Putrajaya.

own pace. Students without computer basics are put through computer literacy classes to familiarise themselves with the necessary computer skills to enhance their learning experience.

As for the teachers, Dr Salbiah said, “All my teachers have computer skills. Earlier this year, 11 of my teachers received 14 weeks of teaching-learning training while the rest of them received 60 hours of the training. The training was conducted by the Teacher Training Division from the Malaysian Ministry of Education. The teachers are having a marvellous time with the students who are enjoying their classes so much.”

In fact, it’s not only the teaching-learning process that is affected by the Smart School system, the administrative matters are also affected, for the better. “Administrative matters get done faster and easier. Records are kept in order and memos are no longer given out by hand. I can just give messages to respective teachers to inform them of meetings and stuff like that. Timetables are arranged nicely and orderly, too,” smiled Dr Salbiah. “Even the students have their own individual e-mails with which they interact with one another and the outside world.”

The change

Dr Salbiah notices that the attitude of both students and teachers differ from what she is used to at schools she has previously taught in. “The teachers here are more confident. The Smart School system allows them to develop their own teaching style. They are always learning, for example, enhancing their computer skills, and sharing their new found skills with their students,” elaborated Dr Salbiah. “The new skills that they acquire, boosts their confidence and self-esteem, making them better teachers.”

Thus, the students benefit, too. With the aim of providing a well-rounded learning environment and producing thinking and technology-literate individuals, the Smart School system equips students with the skills to be analytical and critical in their thinking. “The students are trained to solve problems by thinking in out and working with others. When they leave school, they will become invaluable members of the public contributing towards the betterment of the community and country,” said Dr Salbiah.

Dr Salbiah believes that the success of the Smart School system depends on several key factors that involve a change in the way we think and view things. “We must be ready to accept new ideas and concepts that come with the speed at which technology is

moving. We have to move with the flow and seek to acquire new knowledge on a daily basis. Finally, we must always think positive and have faith in ourselves,” said Dr Salbiah.

Not just another smart school

Dr Salbiah believes that a good school does not exist solely in the academic world. As such, the school has formed various smart partnerships with companies in Malaysia through a programme called the Anak Angkat programme (Adoption programme). The programme was implemented by the school’s Parent Teacher Association, which is chaired by Datuk Seri Aseh Che Mat, chief secretary of the Ministry of Home.

Under this programme, each Form has one adopted parent who organises activities to enhance and augment the students’ learning experience such as camping trips and educational visits. The adoptive parent may also visit the students at the school from time to time. Some of the organisations involved in this programme are Biro Tata Negara (BTN), the Anti-Corruption Agency (BPR), the Ministry of Home Affairs (KDN), the Department of Islamic Development (JAKIM), and Putrajaya Corporation.

Besides this, the school is also part of the British Malaysia School Link, a programme that offers a unique opportunity to link two centres of excellence, Smart Schools in Malaysia with a group of innovative technology-rich schools in the UK. This is an initiative to develop and deliver ICT solutions to teaching and learning in secondary and primary schools in Coventry and Malaysia. This programme is funded by Marconi Plc, a global communications and information technology company.

Facing the future

Dr Salbiah has high hopes for the school. “I would like to bring this school to the highest level. Not only in academic achievements but in all aspects. I hope to produce Malaysians who excel in all aspects of their lives. I want to make them proud of the school that had moulded them into what they will become later on. I also hope to bring this school to a more international level: having it known to whole world for its achievements,” she smiled.

“The bottom line is, the involvement of everybody, the Ministry of Education, principals, teachers, parents and students, is needed to make this a success. The Smart School system is not for us, but for the future generation. I want to see it work, I know it will work!” ●