



### Business Need:

Malaysian education system gave greater emphasis to science and mathematics education and launched a policy of teaching mathematics and science in English in the Year 2002. It also had the strong belief that Information Communication Technology (ICT) is a key enabler to imparting the learning desire in science from kindergarten to PhD.

### Objective:

To transform the way to teach high school science and at the same time change the medium of instruction from Malay to English.

### Scope:

300 1-hour interactive and autoplay courses for physics, chemistry and biology for grade 8-12 from concept completion delivered in CD and also through web.

### Benefits:

A complex learning transformation challenge was achieved for 350,000 students and 25,000 teachers in 2000 schools with innovative process shift and overcoming various hurdles faced.

Computer simulation and animation are more effective tools for the teaching and learning of abstract or difficult science concepts. Thus it was decided that computer simulation and animation could be presented through custom-made courseware for the Malaysian curriculum.

To ensure that the teaching and learning of mathematics and science in English is well grasped and comprehended by both students and teachers, the Curriculum Development Centre (CDC) decided that the solution was to develop an e-learning platform that would empower thousands of teachers to teach outside of their native tongue. The project would develop multimedia to enable the teachers to deliver with the help of visuals, text and voice-over. The multimedia would not 'take over' all teaching: The 'blended' result would also have teachers using their own experience and techniques while the multimedia based learning modules enhance the effect and delivered the desired results.

### Our Technology:

The technologies used in the development of the multimedia courseware follow E-Learning industry standards. More specifically, SCORM 2004 and standard browser based delivery of the content was developed using **Adobe Flash** and other Adobe tools such as **Director, Authorware, Dreamweaver, 3D Max, Maya and Illustrator** at appropriate technology areas. It would work in various browsers and able to run on Apple, Windows or Linux.

## Challenges Faced:

### Project Management:

This project strategy had to be developed by engaging as many experts as possible as per the directions of the Curriculum Development Centre, (CDC), Ministry of Education, (MoE), Malaysia. To develop a plan, IT Experts, curriculum authorities and other stakeholders were brought together.

### Time & Language Constraint:

The project requirement was to develop multimedia courseware that would fill lessons that lasted for about an hour. Each 1 hr lesson would have worksheets to print, several activities, may be 20 learning objects, explicit learning objectives, text with voice-over, and a science words glossary where a click would show a translation in Malay. Creating over 300 lessons from idea, concept to completion in 24 months with face-to-face and remote collaboration was a daunting task.



### Teacher QC Panel:

What would make this E-Learning project successful in Malaysia was creation of "the council" of local teachers who would judge, advise and approve each of the 300 lessons. The advice from them was a challenge to absorb quickly and implement in the development. Making the best multimedia content for the classroom and making best use of the medium are two different objectives. The best multimedia for the classroom requires inside knowledge of how a lesson works. Experience from inside a Malaysian classroom was needed to make what was wanted for this project and defining what is wanted also required experience. And when the customer is not one or two people, but the viewpoints of a panel, finding a consensus was an exigent effort, which we had to solve.

### Enabling a Process Shift:

The first process shift was to give teachers the role of content developers. The second process shift is to recruit subject-specialist and instructional designers from the UK to advice on the use of multimedia. The third process shift is to develop a process based on experience of panel of 10-20 people (teachers, ICT, ID experts) to follow a lesson plan from conception to completion. These three process shift was the key enabler to complete the project on time and schedule. The project was completed successfully using the newly developed techniques within budget.

### About Us:

After growing worldwide in learning technology solutions, White House Business Solutions (WHBS) our parent based in Chennai INDIA, launched LinkQED in the year 2007 as its US division. We have over 300 skilled learning technology experts to deliver integrated solutions, consulting, products, and services to manage the entire lifecycle of learning and knowledge solutions.



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