Multimedia Development Corporation
and New Zealand Trade & Enterprise

ADVANCING E-EDUCATION: NEW THINKING

Sharing New Zealand and Malaysian Experiences

ABSTRACT

Malaysia is looking to e-Education to drive forward the next generation of students and knowledge workers. By harnessing and leveraging on the full power of the convergence of technologies, e-Education will lay the foundation for a new era of "everyone, everywhere and anytime learning."

Malaysia makes reference to implementation of e-Education initiatives in other nations that have gone ahead in e-Education and New Zealand is one prime example. In fact, Malaysia's Multimedia Super Corridor (MSC Malaysia) blueprint for the Smart School Flagship Application made reference to that of New Zealand IT e-education way back in 1999. In a benchmarking study conducted in 2003, New Zealand was identified as one of the countries where the ICT-mediated education was closest to Malaysia's education path.

ADVANCING E-EDUCATION: NEW THINKING

A two-day seminar titled "Advancing e-Education: New Thinking" – Sharing New Zealand & Malaysian Experiences" was held on 28–29 June, 2005 at the Hilton Hotel, Kuala Lumpur. Jointly organised by the New Zealand Trade & Enterprise and the Multimedia Development Corporation (MDeC). The objectives of the seminar are as the following:

1. To benchmark our e-Education practices against New Zealand
2. To derive a strategic direction
3. To draw specific steps/actions for the way forward.

A total of six workshops were held and this report is a summary of the various sharing of experiences and discussions that arose from this seminar as well as the recommendations made by the New Zealand experts for moving forward.

Representatives from the Ministry of Education (MoE), Ministry of Finance (MoF), Malaysian Administrative and Modernisation Planning Unit (MAMPU), Ministry of Science, Technology and Innovation (MOSTI) and Ministry of Energy, Water and Communications (MEWC) along with key industry players within the e-Education sector attended the seminar. Dr. Muhammad Ghazie Ismail, Senior Vice President of the Multimedia Development Corporation and His Excellency Geoff Randal, the New Zealand High Commissioner delivered a "Welcome Address" which was followed by a pre-recorded video from Mr. Howard Fancy, Secretary of Education, New Zealand kickstarted the seminar while Dato' Dr Haji Ahamad bin Sipon, Director General of the Ministry of Education closed the two-day seminar with a speech.

Meanwhile, the New Zealand delegation comprised key officials from the Ministry of Education and the private sector with the expertise in developing and implementing government-led e-Education initiatives.

EDUCATION OVERVIEW OF BOTH COUNTRIES

The seminar gave participants deeper insights into the New Zealand and the Malaysian education system. The contrast is fascinating. For a start, New Zealand has only 2,700 schools. Malaysia on the other hand has 10,000 schools.

Education in New Zealand is a lot more decentralised, adopting a more bottom-up approach with the Ministry of Education taking the lead in policymaking and providing the financial resources. Some 90% of the funding for New Zealand education goes towards the development of the teaching capability rather than the purchase of school assets and to this end, the focus is more on the teacher/student participative learning environment to ensure a more well developed school as a whole rather than on individual development.

In New Zealand, there are also no compulsory assessment exercises involved, no uniformity of the educational syllabus and diversity is fully encouraged. In contrast, Malaysia's education system is top down, highly centralised and incorporates a compulsory assessment system and where the educational system is uniform throughout the nation. Complicating the matter further is the fact that Malaysia has multi-racial, multi-cultural issues to contend with and has been traditionally, heavily focused on delivering good examination results while New Zealand only introduces national examinations at Levels 11, 12 and 13.

The next section provides the key outcomes of the workshops. The notes of the workshop have been prepared by Fortner and Associate which also served as facilitators in the various workshops at the seminar.

WORKSHOP FACILITATION NOTES

Introduction

The seminar was designed to bring together both the Malaysian and New Zealand governments, educationists and commercial bodies to learn and share from each other's experiences in e-education. There was strong response from both the Malaysian and New Zealand participants at all the workshops that were held. Time constraints, prevents us from discussing all the agenda items of the workshop itself. In some cases, due to the high interest level of the participants, the workshops focused on a single agenda or moved across various items throughout the session. The following notes summarise the discussions/sharing of experiences from the various workshops and the recommendations that emerged from the discussions.

Common Findings of the Workshops

All the six workshops, highlighted some common issues. Namely,

1. New Zealand's education system is decentralised. There is no compulsory assessment, no uniformity and it encourages diversity. Malaysia's education system is the opposite, more centralised, has a compulsory assessment system and uniformity.
2. Malaysia's educational system is heavily focused on examination results. New Zealand has only national examinations at Levels 11, 12 and 13. The focus is more on the teacher/student participative learning and whole school development vs. individual development.
3. Resourcing is a major issue for Malaysia due to several issues including the Top-Down centrality, funding, cultural issues and teacher work overload. In New Zealand, the focus is Bottom-Up with the Ministry of Education providing the policy direction and resources. Some 90% of funding goes towards the development of the teaching capability. In addition, New Zealand schools have easy access to computers, smaller class size while the teachers can rely on teaching assistants to assist.
4. In New Zealand too, there are only 2,700 schools while in Malaysia there are 10,000 schools and 300,000 teachers.

WORKSHOP A:

Managing the Deployment of Content/Developing and Deriving Content

Key Discussion Points	Recommendations
Preservation of Moral and Cultural Values: • Malaysia boasts multi-language/ cultural challenges; New Zealand has an issue with bi-lingualism • The curriculum is same in Malay, Indian and Chinese schools; there is no issue with cultural differences as they are all the same and are government driven • The issue of safe/appropriate use of the Internet – cyber safety was also brought up • The New Zealand experience was to bring both the teachers and the language experts together • New Zealand discovered that their teachers were not as diverse as their students	• It was recommended that guidelines be documented for any content policy • There was also a recommendation that there be a common shared resource and that teachers too should be shared • It was advisable to hire advisors to ensure the moral and cultural values are not compromised
Instructional Design and Learning Objects: • Language issues are affecting both countries • Instructional design is something new for Malaysia. There is a need for people to know about teaching as well as the subject matter and IT • New Zealand has been doing this for some time in collaboration with the public service sector and the banks	• Instructional designers need teaching experience. What would be beneficial is the pairing of the designer expertise with the teaching experience • A learning object is nothing on its own; i.e. "ruler" – one needs proper "teaching approach" to bring the lessons vibrant or to make the most of the learning object

Key Discussion Points	Recommendations
Instructional Design and Learning Objects: • The shortage of talent is worldwide. "Where do you get them and what do you do when they are not readily available?" that is the issue • Team approach will lead to shared expertise • Issue then becomes one of quality versus quantity • Malaysia is encountering an issue with getting information from the teachers for design to occur	• Educationists should teach IT and not the other way around • New Zealand advice is not to use the teacher's material but to hire outside help to produce the materials needed
Collaborative Content Development (Ensuring a balance of courseware and printed materials) • The discussion centred on gaming versus courseware. There are more advanced modes of delivery available especially within the the Gaming/3D arena • In New Zealand, the students are instigated into finding the answers for themselves • Malaysia is concerned with the plan to outsource the development and creation of content. The question is how does one keep it up to date? • The discussion also touched on the issue of maintenance versus development. Should it be adaptable enough for the instructor to make minor amendments if needed?	• There is a need to develop interesting software to keep children's interest as opposed to playing games • There is a need to have both the teachers and students involved in designing the courseware so as to involve both parties' perspectives. The students need to be involved to ensure their relevancy. It is important to have the input of both parties to ensure a successful and relevant product. • New Zealand recommended that an outsourced company be asked to handle this • New Zealand has an outsourcing policy but it has installed a check and balance system to ensure there is no rewriting of the said material. New Zealand's focus is more on the framework.

Key Discussion Points	Recommendations
Learning Content Management Systems • There are many systems currently available; the question is, which do you adopt and how do you manage the system? • It is expected that universities that do not offer good quality e-learning will lose students to those that do • New Zealand felt that a partnership was vital between the students, parents and the teachers. In Malaysia, the concentration has been on the teacher/student relationship and does not involve the parents • The crossover of interest among children in Internet/gaming can be extended to educational use • New Zealand believes there is a need to ensure there is quality content. The future choice of a university may be based on the quality of the e-learning • Malaysia wants precise content that is customised (students prefer this). The current school system is more exam based, whereas elsewhere, students are encouraged to look for answers.	• There is a need to custom develop for clients and personalise as per their needs • New Zealand suggested interactive contact between the teachers and the parents to keep the parents posted on the child's progress • New Zealand recommended having testing/pre-exam generic question programmes
Engaging and interactive content development/rich content (Internet based content) • New Zealand's practice is to check with the teachers – can it be reused?	

WORKSHOP B:

Innovation in the Classroom (Teaching & Learning Methods)

Key Discussion Points	Recommendations
Online learning environment The Online learning environment should comprise • A community of communities • An Online environment for the principals • Online facilitators • Curriculum and assessment • Building Science Concept • Provide assistance • Support ministry goals • Student learning environment This environment must: • Provide for a bilingual portal and learning environment for schools • Function as a One Stop Centre for all users in the education environment • Provide a comprehensive wealth of knowledge and quality materials • Catalyse changes on Lead Space • Address such issues as censorship and cyber safety • Provide connectivity to the entire community regardless of geographical boundaries through networking facilities such as broadband, intranet and Internet • Allow users to have access to support from teachers and subject matter specialist online	• Protocols need proper definition, discussion and approval by the Ministry of Education • Establish an ICT Helpdesk to assist with any queries on the Online learning environment • Online chat-interactivity with peers and experts

Key Discussion Points	Recommendations
• Be accessible to all globally • A user can download and utilise the information • Funded by the Ministry of Education Audience: • Principals • Parents • Secondary and primary school students • Teachers	
Establishment of National E-Learning Centre Malaysian challenges • urbanisation versus rural • low purchasing power • content coursework • availability of competence and dedicated teaching staff • availability of information • language barriers • technology phobia • demography and geographical conditions Funding/cost of implementation • broadband and other networking facilities • hardware	• Establishments of such centres will enable the growth of online learning especially to rural areas • Provides support for life long learning • Form partnership in learning with other experienced subject matter specialists • Conduct research and development to address these challenges • Provide relevant training, personal development courses and incentives • Provide multi-lingual courses content to cater to the multi-racial population • Share New Zealand's success story on implementation of Scholarnet for the rural areas • Besides aids from the Ministry of Education, schools largely fund their hardware requirement via various fundraising activities • Sponsorships from corporations/private sector

Key Discussion Points	Recommendations
Teaching & Learning tools to enhance the e-education experience The issue here concerns the effectiveness of the teacher using the resources Higher education variation – connection through broadband • Video conferencing • Video streaming • Discussion boards Recording of the video conferencing enables • peer review • knowledge sharing • revision • replays • access to experts • able to post questions The facilities provide support via • creative integration of existing technologies • embedded online collaboration tools – enhanced interactivity • two way linkage between the streaming video and collaboration tools – improved user control	• A blended media approach through development of digital resources is recommended: ❑ Use of storybooks ❑ Digital writing tools ❑ Email support • Resources need to complement each other to provide opportunities for learners to learn appropriately • Resources provide pedagogical opportunities to learners to learn appropriately • Structured ICT related programmes for teachers in New Zealand is based on a cluster concept which enables teachers to access technology to achieve their teaching and learning objective

Key Discussion Points	Recommendations
Effectiveness of usage of computers in schools. Factors/issues include: • number of computers • exposure to students/teachers • multiple roleplay – teachers as learners and students as teachers • availability to provide learning for various subjects • collaborative efforts amongst all parties – government, schools, parents, society and students	
Must take into consideration the variation of knowledge amongst students – urban versus rural	• This gap is narrowed by the introduction of the Buddy system amongst peers • Scaffolding students' learning improves the child's reading ability
Use unconventional teaching methods for unconventional teaching/learning tools	
Move from Unconscious Incompetence to Unconscious Competence	Develop creative and innovative teachers through ❑ teachers of learning ❑ range of technology to be used ❑ motivating place to learn
Field trips will provide exposure to indirect learning • Learning process is accelerated • Students much more receptive • Provide equal opportunities to all students including the handicapped	Cost to be borne by the: • Ministry of Education • Department of conservation • Corporate sectors – create awareness of their industries and also for future job opportunities.

Key Discussion Points	Recommendations
Use of Learning collection: • Radio collection • Museum • National library • Index New Zealand & EPK • WickED community These collections will enable: • Access to quality materials • Interaction amongst various parties • Students to create their own stories/ exchange ideas • Knowledge sharing • Audio conferencing live with experts Online conversations – security and protocols • Train principals on how to establish and maintain protocols on protection of cultural values and censorship	
Education games	Learn through games where • Scenarios are given, students walk through the whole process of the game by learning through trial and error • Crossword puzzles • Quizzes

WORKSHOP C:

Upskilling/Training of Teachers and Achieving Student Autonomy in E-Education

Key Discussion Points	Recommendations
Online Teacher Training: • Malaysia has concerns over the cultural issues. The soft side of learning needs to be looked at and changing the hearts and minds of the teachers should be the focus • Malaysian studies show that: 1) Teachers are worried about the loss of control 2) There is a fear of looking ignorant. The teachers need more confidence and greater capabilities • Culture is a major issue. Teachers need to change to become leaders and help to change the future. They need to learn to let go and not be afraid. Another issue is the fact that Malaysian teachers are predominately female • There is also the issue of who owns the learning? In Malaysia, ownership is top-down. In New Zealand, it is bottom-up • Malaysian participants referred to the lack of understanding the decision makers have of the grass roots level • Malaysia outlined many barriers it is experiencing in this area: ❑ Teacher's fear ❑ Examinations ❑ Low level of ownership ❑ Teachers moonlighting ❑ Variable levels of access	• Technology is not the main thing. Learning is facilitated through ICT not because of it • New Zealand's experience is that success happens through participative learning. It brings about a sharing between the teacher and the student with the student being fully aware and in control of their learning • New Zealand focused more on the curriculum to learn and engage the teachers in learning new knowledge for themselves. This is the grassroot approach and the teachers are responsible for designing their own learning goals instead of a top-down approach. Online learning sits alongside the curriculum, it does not drive it. There is a 3 years fulltime online programme being offered in New Zealand called Ultravercity. Students can choose the option of learning through attending the programme or going online • No 'one size fits all' approach will work. Learning must take into account the cultural and socio-economic situations in order to be effective • New Zealand – You need to improve teacher quality through ICT and support. The ideal is where the student can identify/articulate what the learning is

Key Discussion Points	Recommendations
❑ Systemic issues – teachers must take ownership without resources being assigned ❑ English is the primary language of the Internet ❑ The scale of the issue is daunting. There are 300,000 teachers and 10,000 schools • The retraining issue in Malaysia is said to take too long to make changes and the approach taken is top-down. Malaysia conducts Train the Trainer sessions and cascades the information downward. There are two issues related to this approach. The first touches on the quality of the master trainer. The second is in getting the teacher freed up and out of the classroom to receive the training.	• Professional development should be focused on empowering teachers to enable students. Teachers should perform self analysis and transform their educational environment. You need to change the teacher's practice in the classroom. Teachers should become professional learners or "participative learners" • New Zealand's research shows that teachers that are allowed to set their own goals display greater success in development • New Zealand recommends you leave the teachers in the classrooms and train them there
• How do you incentivise participants? Impact of e-education: 1) provides access to learning 2) relevance in learning (i.e. multi-cultural content) 3) quality in learning (processes can ensure access to the best of the best)	• New Zealand recommends that you look at the intrinsics to get the teachers involved. New Zealand has found there are three success factors. 1) Personal Interest – teachers need to be stimulated personally by online communities 2) Schools need to have an interest – you need leadership/guidance/ structure and 3) Credentials/qualifications – upgrade skillset

Key Discussion Points	Recommendations
• New Zealand participants shared about their "tech angels" programme where they empower the students to work with the teachers and the principals. There was some reluctance to this at first but now it is working very well • Malaysia is experiencing problems sending quality teachers to rural areas. There are 2300 small schools rurally and many one room schoolhouses • Capacity/curriculum is an issue • In Malaysia, the issue is not about teachers being well trained, they are that. The issue is more on the focus of passing grades. If learning does not match up to the examination needs, it will not be appreciated. This issue is the showstopper. If the attitude does not change on exams and grades, all of this is a moot point. It is up to the people at the top to address this priority as it cannot be done at the lower levels. There is a disconnect or communication breakdown at the field level versus concept level. It's a management issue which leads to circular discussions	• In New Zealand, three-quarters of the schools they have are in rural areas. They have engaged these schools in online communities and had a reasonable amount of success in that area which has also opened up new opportunities • New Zealand has Video Conference Cluster Schools for the rural/remote secondary schools. They video one school teaching students in another rural area. Besides offering quality teaching through this method, it has also resulted in the teachers feeling more connected • Sustainable change is the issue and will take time. One needs to look at teacher capability, school capability and system capability • Both sides feel that communication of success stories will help establish and communicate the vision which in turn will lead to larger change. Sustainability will occur through ownership • New Zealand shared their "lessons learned". They had underestimated the importance of teacher training. This was partly due to budget constraints and also due to the fact that it was overlooked. They also took for granted that change management will naturally happen and that they would follow instructions from the top. The students were very eager but the rejection came from the teachers who were not "IT" savvy.

Key Discussion Points	Recommendations
Student Centric/Self Directed Learning	
• New Zealand is still looking for a definition pertaining to this. What levels of control should be given, what are the curriculum issues. Malaysia felt the issue needed to be looked at holistically • Malaysia feels there is a need for accountability. Teachers have lost their professionalism and sense of responsibility. The government should adopt a carrot/stick approach for them. Currently there is no accountability • Malaysia seeks advice on what incremental steps that it should take	• Both sides found that teachers need to be there to support or student learning does not occur. Transparency is needed • The teacher should not be the main source for information. Both the teacher and the student should see the Internet as a source. The teaching experience needs to be transformed and be more objective. This will require a mindset change • New Zealand advised them of its Trojan Horse programmes. One programme (Learns Programme) organised virtual field trips to places like Antarctica and Nepal. Explorers would speak to the students and a curriculum was created for the students. All the students accessed this programme via the Internet • Another programme called Learn Now dealt with 8 to 14 year olds and was an integrated curriculum. Students and entire schools participated in the programme with the content being designed by the students through negotiation
• New Zealand does a self assessment of students in their mini-schools using a portfolio development which includes self and peer assessments	

Key Discussion Points	Recommendations
• New Zealand students' thinking is mapped out from immature strategies at school entry to quite sophisticated thinking (i.e. algebra). Teachers then learn to understand this and strategise the development of their students accordingly. The curriculum is therefore very creative • New Zealaned defined what creativity looked like and then built a curriculum to that definition. Students collaborate with their teachers on this and helped define what a quality piece of work looks like • New Zealand schools have IT support as a resource, it is not centrally controlled. This policy actually created an industry in New Zealand as a result. Every teacher in New Zealand has a laptop that is no older than 3 years old. There is a national help desk (1-800 number) that provides answer to questions on network, connectivity etc. The project took six years to implement and $90M was spent to achieve it. The next stage to this programme is the introduction of broadband to everyone • Redundancy issues in New Zealand are dealt with by the Ministry which puts standards in place and the schools choose to comply and find the money to pay. The Ministry focuses on the poorer areas to make them on par with the rest of New Zealand. Once they are up to the standards, these schools also become independent and responsible for themselves	• E-learning does not necessarily prepare students for life (application). It is more important to define success and what it is. After that it is not important how or what method is used to teach it • Online training does however permit more accessibility • Children are more hi-tech than our generation. We need to reconceptualise the role of school, teachers and the learning process • E-learning does give us several things: 1) access to learning 2) relevance eg. Multi-cultural context 3) quality – processes can ensure access to the best of the best

Key Discussion Points	Recommendations
• In Malaysia the cost of the phone calls and Internet coverage is an issue. E-education becomes the province of a privileged few • Consistent issue in Malaysia is the lack of resources provided to the teachers. Any new initiative is an add-on to the workload they are already experiencing	• New Zealand also had this issue but adapted its approach to the rural areas where telecommunication was a problem. They would burn CD's and transmit smaller files

WORKSHOP D:

Making Assessment Accessible

Key Discussion Points	Recommendations
Definition of Assessment: • New Zealand – path of continuum, its focus is on teaching and learning. Teachers understand precisely the next steps for learners using good assessment tools • Malaysia – defined by a) central exams and b) school based assessment	
Online Assessment vs. Conventional • Malaysia's concern is on security, i.e.: ❑ hackers accessing the exams ❑ profile identity – is Bill really Bill? • Malaysia also had concern with teachers comfort level with putting questions up on the Internet	• New Zealand deals with a smaller student population. The teachers get to know the style of the student so profile identity is not as big an issue there. Plagiarism tools are in place as well and with the two things combined it makes it less of an issue for New Zealand • Risk/reward ratio effects whether this is really an issue. You can create tests randomly so you cannot pre-conceive a test. You would need an adaptive agent to do this and deep funding. New Zealand is researching the problem now
• New Zealand key support is made to the teachers versus the approach of here's the learning and isolating the assessment process from it. Students are involved in their own learning and assessment. They can focus their learning based on their learning gap	• Focus should be made on how you use the data. What does the student know beforehand? The interaction between the teacher and the student provides clarity on learning and the context of learning

Key Discussion Points	Recommendations
• Resourcing issue for Malaysia due to heavy workloads of teachers. • Top-Down versus Bottom-Up was highlighted again. Malaysia's resourcing issue was critical to a teacher's ability to do extra workload. In New Zealand, there are 30-35 students to a classroom, 25-30 in major centres. In addition, New Zealand teachers have teacher assistants. Malaysia has 45 to a class with no teacher's assistants. • New Zealand teachers view exemplars which have been approved by the national panel and have established levels. There is a need to teach the teacher how to use these.	• Real cost is not IT but content. Online assessment does necessarily mean a better assessment. You need to balance between the external and internal assessments with training serving a vital role. • All of the assessment should be linked to clear steps of learning. The critical part is the teacher knowing the learning steps. Information is captured into an online database which will be used to create reports that the school as control over. • Online reports are more important than the negatives of the workload. It provides greater feedback to create learning steps. Teachers can also share results with each other on students. • Mindset change is required for assessment. Assessment is not about blaming anyone for lack of learning but to give them some control. • You would need to do a needs analysis on student achievement/teacher knowledge. Once that is established one then has the level of learning.
Parent Involvement • Systemic issues in Malaysia of culture, tradition, old mindset, tuition and classroom. Parent interaction is very low. Student/teacher interaction is also low.	• E-assessments provides an excellent opportunity to improve this relationship through the introduction of a new environment.

Key Discussion Points	Recommendations
• New Zealand gives students empowerment to check their own status, go online and check their learning. New Zealand has created an exam at the end of each of their sessions on topic materials so students could understand where their learning is at. ❑ Gives privacy away from peer review ❑ Allows parents an opportunity to check ❑ In-built to learning ❑ Content becomes learning – different paradigm ❑ Student sign on at home • Malaysia resourcing issue due to lack of computers in the home, Internet access and the ownership issue.	
International Question Banks • New Zealand has a national framework and has mapped questions to various categories. Around the world the problem is finding a teacher who can create a good question. • Adaptation takes time and money. Some topics such as math are easier to match.	• It was recommended that if you find one good question writer you should get them to write on a number of topics and get the other people to act as critics. • Assessment can speed up the process. Use IT for what is good for and compile the data for reports. Teachers should focus on what they're teaching now and where the students are at. Focus should be away from examination results. Internal policies should be changed to implement this change.
Issues: ❑ different international standards on what to test and what is important. ❑ who writes the answers to the questions ❑ culture can result in translation issues; this may make the question unfair and invalid ❑ each question has a signature which needs to be transferable ❑ legal rights over the question ❑ calibration of the data ❑ customisation to one's country	

Key Discussion Points	Recommendations
E-Assessment • Malaysia is mostly paper based now with few Smart Schools. Online tests cannot occur in most schools due to lack of accessibility and lack of resources. • Valid tools are important to parents and communities. At present, it is still paper-based and everyone gets the same questions and tests. Problems occur only when the tests are different. Malaysia is working on developing national standards as some school levels have lower standards. There is a need to train teachers to develop the questions. Major issues for Malaysia include: ❑ Reliability/security ❑ Philosophy ❑ Performance issues of using paper versus computer ❑ Validity of questions ❑ Legacy issues (British school heritage/ content) ❑ Needs to be separate from certification Major issues for New Zealand include: ❑ When to use ❑ Determining whether this is the best way?	

Key Discussion Points	Recommendations

Pro's/Con's of E-Assessment
❑ Technology use should be appropriate and cost effective
❑ Trade off is the quality of reports/ analysis
❑ Not all teachers see the importance of analysis; need to refocus mindset
❑ Not everything can be assessed by paper or computer. There's a need to look at strategies employed as well and the student's mindset.
❑ Technology gives us analysis; standards, measurement, progress of learning
❑ Technology allows us to track progress over time
 	
Item Banking System
• New Zealand does not have one system as one size does not fit all.
• All their items were fitted into a curriculum level.
• Two examples of item banking systems
  ❑ Assessment Resource Bank – low stakes, informed testing
  ❑ Scholarnet – every topic comes with a test
• Mapped against the Malaysian curriculum
• English is a little more advanced for the rural areas
• Comes with notes and activities	

WORKSHOP E:

Integration, Connectivity and Support Services and Global Standards vs. Creating Standards

Key Discussion Points	Recommendations
How integrated should e-education be? • Remote schools are an issue, i.e. limited Internet availability, independence, managing traffic/networks • Issues: ❑ Working with communications services providers and MoE ❑ Possibly at the "mercy" of dominant providers ❑ Dealing with remote schools ❑ Affordability ❑ Establish video conferencing/cost effect ❑ Deciding on final network architecture	
• Rural areas in Malaysia have no infrastructure in place for internet access and there is a suggestion to use wireless to share with community or other schools. New Zealand said it would not be viable due to traffic issues. • In New Zealand's case, satellite services have been established in remote areas. The community gets to utilise but several issues remain: ❑ Security ❑ Power supply/backup ❑ Need to increase reliability of service • Malaysia listed its concerns on using satellite due to the amount of rainfall.	• New Zealand recommended the use of servers; it presently has limited wireless use; it recommends the use of broadband if it is more cost effective or use satellite; cost-based decision between wireless, cable, satellite/ broadband. Schools are connected with different suppliers using solar/wind power. They also have a "School Zone" private network which is cost effective.

Key Discussion Points	Recommendations
• Technical support is also not standardised throughout New Zealand whether it is in-house or outsourced. There is also a lack of qualified technical people available. Malaysia's smart schools have technicians in every school as well as training the teachers on use of the equipment. The Help Desk in New Zealand is effective for what it was established but still needs work and centralisation. • As New Zealand school system is decentralised, uniformity is an issue. Malaysia's centralised system provides government funding but one needs to use government approved systems. • In New Zealand's case, hardware usage was defined as being between 3-5 years. No refurbished equipment is used. In Malaysia hardware is purchased with warranty. When the equipment needs repair there is a bid for funding with the government. • Malaysia's Ministry of Education funds all aspects (i.e. extended networking, connectivity) • New Zealand is moving towards Open Source and standards. Malaysia recommends Microsoft Office as they find it is better and requires less upgrades but it is also looking at Open Source.	• Overall, the schools need to be part of the process to establish standards and guidelines.

Key Discussion Points	Recommendations
• Obsolete equipment/systems ❑ Maintenance is an issue, there are no dedicated maintenance people, only teachers (Malaysia) ❑ Lack of centralisation, in infancy to take from individual schools the responsibility (New Zealand) ❑ the responsibility of each school (New Zealand) ❑ In Malaysia, since it is government run – there is a need to wait for centralised service through the call centre **Standards** • New Zealand is developing its own standards. Minimum standards include broadband, uniformed quality of network, video conferencing.	• Agreed that Best Practices should be focused on being service oriented

WORKSHOP F:

Strategies for Monitoring and Measuring Impact of E-Education Initiatives

Key Discussion Points	Recommendations
Learning Strategies • Malaysia has a national curriculum standard. • The Malaysian Government conceptualised the vision of the Malaysian Smart School in the document Smart Schools in Malaysia: A Quantum Leap This was subsequently replaced by the more extensive Conceptual Blueprint detailing: 1) the Malaysian Smart School concept; 2) document enables companies to respond and participate in the Smart School system to be established; 3) meets the Vision 2020 objective which calls for a sustained productivity-driven growth, achievable only with a technologically literate and a critically thinking work force; 4) forms the catalyst for achieving the National Philosophy of Education; 5) fosters the development of a work force prepared to meet the challenges the next century. The Blueprint strategy includes: • Providing an all-around development with provisions for individual abilities; • Emphasis on intellectual, emotional, spiritual and physical growth; • Producing a technologically literate work force; • Democratise education; • Increasing the participation of the stakeholders.	

Key Discussion Points	Recommendations
The Smart School curriculum promotes: 1) Wholistic learning – allowing children to progress at their own pace, and catering for students varying capabilities, interests and needs. 2) Seeks to ensure that children are educated with critical and creative thinking skills, inculcated with appropriate values and encouraged to improve their language proficiency. **The Smart School pedagogy is designed:** • to make learning more interesting, motivating, stimulating and meaningful • involve the children's minds, spirit and bodies in the learning process • build basic skills to prepare children for greater challenger over time • cater for a range of needs and capabilities among the students **The Smart School Assessment System** • Will be element-based and criterion-referenced to provide a more holistic and accurate picture of a students performance • Teachers, students and parents will be able to access online assessment items • The assessment will be flexible and learner-friendly, while assuring the quality of the assessment information by using multiple approaches and instruments • Lead to living certification, which will attest to a student's cumulative accomplishments and opens him to continued improvements on a lifetime basis	

Key Discussion Points	Recommendations
The rolling out of the Smart School Integrated Solution (SSIS) by 2010 will involve all its 9000 schools in Malaysia. Its main components are: • Teaching-Learning Materials • The Smart School Management System • Technology Infrastructure • Systems Integration • Support Services • Change Management • Centralised project & risk management • Extensive security policy	
What do we want to measure? • The effectiveness of the usage of ICT tools and materials and their impact on the ❑ Outcome ❑ Achieving the objectives • Constraints include the matching problem of meeting the requirements of the programme versus the requirements of the participants Measuring the perception versus the perceived impact of ICT in education • From school to school • Individual teachers in each school Measuring change – resistance to change • administrators • students • teachers	Measuring Teacher Behaviour: • In New Zealand, the Ministry of Education's (MoE) – 3 year program has the schools pooled into a cluster of 80 schools. Teachers from these schools are brought together to discuss their expectations, issues, where they are now and where they want to go. • The MoE provides the framework, funding and facilitation. • It's a reflection of the teachers – their degree of capabilities and integrity and increase in their level of confidences in the usage of ICT • The assessment will build on their collective capabilities • The balancing between monitoring versus autonomy is done through a check and balance approach. • The impact on outcome ❑ Resilient; ❑ Reliability; ❑ Key points; ❑ Technological edge; ❑ Critical thinking

Key Discussion Points	Recommendations
Mechanism of reporting • In New Zealand, the MoE wants valuation and feedback by way of data driven decision making and analysis through a set of significant tools • Under the New Zealand system, schools must submit their strategic plans on a yearly basis stipulating their objectives, standards and goals, ensuring they meet the MoE's curriculum framework. • It's a collaborative exercise involving the community at large, parents, students, teachers, administrators • MoE officials will conduct reviews once in every three years. The measurement will be the school's achievement against its own goals as wells as the national curriculum framework. • The MoE ensures that quality is monitored and complied with consistently. Learning strategies: • Professional Development • Emphasis on learning outcome – peer review and moderation process • Traditional/cultural value • Role of coaching and mentoring • Structured material It is influenced by: • Parental demand; • Administrators-civil servants; • Board of trustees • Children's behaviour • Other stake holders	ICT offers an effective learning culture and real learning through: • professional delivery • professional learners • practices engaged action/research capability/understanding in creative ways

Key Discussion Points	Recommendations
New Zealand MoE's 4 Ships of Change: • Ownership • Leadership • Fellowship • Relationship Learning Integration – New Zealand MoE • New Zealand believes e-learning will be embedded into learning and teaching where: 1) There is consistency between the teaching practices & teaching orientation 2) ICTs are used frequently across a range of topics	

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