

Canada-APEC Workshop REPORT

Integration of Information and Communication Technologies (ICTs) Through Teacher Professional Development

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Acknowledgements

The contributors to this report are the forty-eight (48) participants from the ten (10) APEC Economies who met in Toronto on December 1 to 3, 1999 at the Canada-APEC workshop. It is because of their knowledge and expertise, coupled with their commitment to the process of learning and information sharing, that I am able to provide a rich summation of the proceedings.

Any errors and omissions remaining are mine.

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EXECUTIVE SUMMARY

The effective use of information and communication technology (ICTs) in the classroom requires the commitment and interest of the teacher professional. This cannot be achieved through a top-down approach to teacher development. Rather the change process must be vested in a continuous upgrading of teachers' skills and knowledge bases – beginning with where the teacher is at and consciously planning for the advancement of applications as the teaching population is equipped and resources are made available on an equitable basis.

In December 1999, individuals from ten (10) APEC economies met to discuss the integration of ICTs through teacher professional development. The participating economies included: Australia, Brunei Darussalam, Canada, Chile, Chinese Taipei, Hong Kong China, Korea, Singapore, Thailand, and the United States of America.

There was an overall positive reaction to the value of the workshop expressed by all participants. A series of pre- workshop activities served as important vehicles in setting the stage for the discussions and information sharing that occurred over the three days that participants were together. The workshop served as an appropriate vehicle to facilitate networking, information and idea exchange and to stimulate discussions for future activities.

The lessons learned were:

- There was a remarkable similarity of issues faced by all economies although the context is different in each.
- There is a sense of urgency around this agenda, however there is a practical appreciation of the rate at which change can occur within each of the economies.
- While infrastructure and access to technology are still issues, it was generally felt that the focus needs to be placed on the teacher and the learner.
- The rapid pace at which the technology is changing demands flexible approaches to teacher development and policy determination.
- Quick and easy access to curriculum resources, lesson plans, examples of best practice and models for classroom and learner activities are high priorities.
- Earmarked funding for teacher development and ICTs was seen to be critical. Planning for ICT access and infrastructure should also include plans and funds for teacher professional development and teacher support.

- Some form of cascading model for teacher training was seen to be efficient and practical, given the high demand.
- Assessment must be sensitive to student characteristics, curriculum quality and to the context, not just to the technology. It was pointed out that research should link to theory and practice in order to ensure continuing relevance.
- Ideally, teacher professional development should be an integral part of the daily practice for all teachers and schools. Such activities would be enhanced through the use of ICT for professional development, allowing for interactivity between and among teacher expert groups.

Opportunities for Future Action

It was generally agreed that there is a need for cooperation, communication and collaboration among all education partners especially teachers, students, parents, researchers, governments and the private sector, both within and among economies. Suggestions for follow-up action include:

- Hosting workshops involving different groups of participants in the future. The workshop format was seen as an important first step in connecting people across APEC economies.
- Establish an APEC 'Friendship Net' to build on and disseminate information on ICTs and teacher professional development. This site would be open to a broad audience and could include such elements as: a listserv, on-line electronic forums, an electronic newsletter and a bank of tools and materials, all designed to encourage a sharing of ideas and experiences among APEC economies.
- Identify interest in specific research topics related to the use of ICTs and facilitate the conduct of this research.
- Establish multi-economy, virtually linked pilot sites for teacher collaboration and the implementation of exemplary and innovative practices in the use of ICTs.
- While English is acknowledged as the de facto language of the Internet, it is not the first language of teachers in a majority of the APEC economies. Undertake research and software development to address the barrier of the language of the Internet.
- Develop a charter that would recognize the need to respect the right of teachers and learners to use ICTs to support a learning culture, and the responsibility of economies to support and facilitate those activities.

I. INTRODUCTION

In keeping with the APEC Education Forum's agreed-to joint initiatives: the exchange of information and the exchange of people for education-related purposes, several APEC economies agreed to participate in an initiative called "Integration of Information and Communication Technologies (ICTs) through Teacher Professional Development". The participating economies undertook four broad types of research and action in 1999:

- preparation of a report summarizing issues and trends in teacher development and ICTs,
- identification of clusters of objectives around which training practices are organized and the kinds of practices that are best suited to different clusters of objectives,
- identification and documentation of selected exemplary practices in teacher development, and
- Participation in an international workshop.

In December 1999, forty-eight (48) participants from ten (10) economies were represented at the Canada-APEC Workshop. The goals of the workshop were to:

- share exemplary practices,
- identify lessons learned,
- discuss applying those lessons within each economy,
- discuss applying those lessons in collaborative projects between economies, and
- Provide a report to the Second Ministers of Education meeting in April 2000.

This project was conducted under the leadership of the Council of Ministers of Education, Canada (CMEC), on behalf of the APEC Education Forum (EdFor). The project received the endorsement of the APEC HRD Working Group for central funding. Lead country costs were borne by the Canadian International Development Agency (CIDA), Human Resources Development Canada's Office of Learning Technologies (OLT), and CMEC. This report is a summary of the observations and key points that emerged from plenary and breakout sessions in the Canada-APEC Workshop on the Integration of Information and Communication Technologies (ICTs) Through Teacher Professional Development. All documentation related to the workshop can be found at <http://www.cmec.ca/international/forum/>.

II. OBJECTIVE

The objective of this report is to summarize observations and key points emerging from the plenary and breakout sessions of the Canada-APEC workshop for the purpose of creating a record of proceedings.

III. APPROACH AND METHODOLOGY

The workshop design included a plenary presentation, a summary review of the Comparative Analysis of Issues and Trends in Seven (7) APEC Economies report, case study presentations from Australia, Chile, Canada, Korea, and the United States of America. Further, five (5) economies, including: Brunei Darussalam, Chinese Taipei, Hong Kong China, Singapore and Thailand, provided brief status up-dates on the situations in their respective economies. This information and all the preceding work that led up to the workshop served as the context for the final day of the workshop where participants moved into groups to discuss the lessons they had learned and the opportunities they saw for future action including bi-lateral and multi-lateral partnerships. The key points were then highlighted in a brief summation as a close to the three days.

The participating economies included: Australia, Brunei Darussalam, Canada, Chile, Chinese Taipei, Hong Kong China, Korea, Singapore, Thailand, and the United States of America.

Every effort has been made to accurately reflect the content as well as to convey the richness of the information and the discussions. It was not possible to include verbatim either the discussions or the details of the case studies. The case studies are available at the CMEC web site noted earlier.

IV. RESULTS

Plenary Summary

Dr. Gajaraj Dhanarajan, President and CEO of the Commonwealth of Learning, presented a stimulating and challenging lead-in to the workshop and effectively set the stage for the workshop overall. As a leader in distance education he was able to share his thoughts and perspectives on the challenges for teacher development and the role of ICTs.

It was pointed out that a rapid increase in technology infrastructure has not been matched with a concomitant capacity to produce qualified teachers to work in those classrooms where ICTs are available.

There is documented evidence of a high demand for qualified teachers in developing countries; this high demand suggests need for new approaches to teacher professional development. Technology is viewed as one part of the solution, permitting quicker response time, flexibility in programming, allowing for customization and achieving greater efficiencies and economies.

Four challenges facing governments and the education fraternity are:

- The changing nature of the learner and the learning environment. An independent learner will require rethinking how teachers can best support this learning. Individuals are capable of self-directed learning if provided with well-designed materials that use the technology imaginatively.

- The need to change the structure and nature of the ‘teaching’ organizations to accommodate new administrative arrangements, new forms of academic governance, new delivery systems and new forms of learner assessment including prior learning assessment.
- The need to remove time constraints on the learner, allowing learning to proceed at a pace that is in keeping with learner abilities and requirements. Technology can help break the rule of time.
- The need to ensure that the curriculum is current and relevant to the demands of the world of work and living. Individuals are faced with working in a global economy and the information age, and they require the tools and the knowledge to succeed.

In closing, Professor Danarajan suggested possible actions for consideration by the workshop attendees in their discussions. Among these were facilitating ongoing information exchanges for teacher development, promoting ongoing research, developing models and mechanisms for capacity building, sharing or co-financing projects and regular monitoring and evaluation progress.

Lessons Learned

It was generally agreed that the workshop and all of the preparatory work for the workshop served as very effective vehicles for promoting networking, stimulating ideas and building a common language and understanding among experts in the teacher education field of the participating APEC economies. There was a wealth of information provided, including concrete examples of implementation strategies and planning documents that were made available to all of the participants. This sharing of ideas, models and processes is a good beginning in promoting and fulfilling the APEC Ministers’ commitment to education policy discussions.

While the group recognized that there are numerous challenges facing all of the economies around ICTs and teacher development, the issues they identified were remarkably similar among the participating APEC economies. Of particular note is the recognition that each of the economies is working within different contexts and although the issues are similar the means of addressing them are necessarily different because of the context in which they reside.

There is a sense of urgency around this agenda; however there is a practical appreciation of the rate at which change can occur within each of the economies. A commitment to consultation and inclusion of the teacher is considered to be a positive approach when coupled with clear incentives and adequate support for use of the technology. The case studies reflect a high respect for teacher led initiatives to-date and acknowledgement of their contributions to this change process. Encouraging teacher to produce their own materials and to tell their stories to other teacher professionals was seen to be an essential ingredient in promoting teacher acceptance of ICTs.

While infrastructure and access to technology are still an issue, it was generally felt that the focus needs to be placed on the teacher and the learner. Examples of teaching and learning based on good pedagogy can stimulate teacher interests and motivation. By providing practical examples

that are generated by teachers and are available through 'just-in-time' learning strategies, change can occur at the classroom level. There were few examples provided in the case studies that demonstrated the effective use of ICTs in pedagogy. Most of the case examples were illustrative of skill building in the use of ICTs. While skill development and building confidence in the use of ICTs is important, technology applications focused on effective pedagogy require attention.

The rapid pace at which the technology is changing demands flexible approaches to teacher development and policy determination. Goals and policies for the adoption and application of ICTs need to be guides rather than prescriptions. There is general appreciation that nothing is static and regular review and refinement will be the norm. Balancing local actions with top down policy will help advance the progress in this area. Suggestions were made for high level coordination with decentralized, jagged edge local implementation.

Quick and easy access to curriculum resources, lesson plans, examples of best practice and models for classroom and learner activities are high priorities. Teachers want a choice in what materials they use and how they use them. And they want to know how to manage the new classroom where the roles and relationships between teachers and learners are changing and ICTs are used effectively. Collaborative learning environments and multi-tasking are putting strains on the existing classroom structure. It is interesting to note that during the case study presentations a wealth of information was provided. However, the task of widening the dissemination of and access to this material, which was so generously shared, is still a challenge.

Earmarked funding for teacher development and ICTs was seen to be critical. Many of the participants felt strongly that planning for ICTs access and infrastructure should also include plans and funds for teacher professional development. This was linked to adequate time for teachers to integrate their own development into the classroom environment, to promote communities of learning and to reflect on creative and effective learning through the use of ICTs. Many of the economies have clearly articulated plans for technology rollout with specific targets for attainment; these can be shared more widely if a coordinated dissemination mechanism is in place.

Various models for teacher development activities were presented. Many participants favored a cascading model, where small numbers are trained and then became trainers and mentors for others. This approach (e.g. train the trainer, teacher lead, master trainer) was seen to be practical, economical and helpful in sustaining on-going mentoring and teacher support. Technology can provide a greater reach for more people in a shorter period of time. It was recognized that using the technology in the training design had merit.

Assessment must be sensitive to student characteristics, curriculum quality and to the context, not just to the technology. Applied research by teachers, on what works, what does not work and under what conditions, can contribute to building a continuing body of knowledge for the effective use of ICTs. Theory and practice need to be linked to ensure continuing relevance to both the teacher and learner.

Opportunities for Future Action

There is an interest in cooperation, communication and collaboration among all education partners especially teachers, students, parents, researchers, governments and the private sector both within and between economies.

- Participants of the workshop were eager to continue their discussions and to build on the momentum that was created over the course of the three-day workshop. It was recognized that they have had the advantage of meeting face-to-face, which now makes it easier to work through the technology to further their conversations and to develop collaborative efforts.

They seek a mechanism through which they can continue their discussions and share information. This is seen to be one way of encouraging bi-lateral projects to begin between common language APEC economies.

The establishment of an APEC 'Friendship Net', to build on and disseminate the information that was gleaned at the workshop, was proposed. This site would be open to a broader audience and could include such elements as a list serve, on-line electronic forums, electronic newsletter(s) and a bank of tools and materials to share among and between APEC economies. This site could be built with teachers who share a common language.

A cascading model, that begins locally and feeds nationally and then internationally, can be a practical approach to maintaining and managing such a site. Many of the participants in the workshop already have robust web-sites that could be linked to other sites quickly thereby adding value without much effort or cost.

- Encourage the continuation of the workshop format to include a different group of participants in the future, perhaps hosted by another APEC economy. The advantage of this face to face exchange is to build multiple cohorts who have the opportunity to meet and develop working relationships quickly.
- Identify the interest in specific research topics related to the use of ICTs and facilitate undertaking this research. This could include the development of learning materials, private/public partnerships, determining effective models for dissemination of information and best practices across different languages and contexts, and/or measuring the effects of using ICTs in the teaching/learning process.

Undertake research and software development to address the language barrier of the Internet. While English is acknowledged as the de facto language of the Internet, it is not the first language of teachers in a majority of APEC economies. Although translation software is being developed there are still limitations with some of them.

This is an agenda for the private sector that would benefit from public/private partnerships.

- Establish multi-economy pilot sites for teacher collaboration and the implementation of exemplary and innovative practices in the use of ICTs. Build on some of the case examples that were presented and support the exchange of knowledge and application across economy boundaries.
- Develop a charter, by a broader based sector of the APEC educational community, that would recognize the need to respect the right of teachers and learners to use ICTs to support a learning culture, and the responsibility of economies to support and facilitate activities.

V. CONCLUSIONS

There was an overall positive reaction to the value of the workshop expressed by all participants. The pre-workshop activities served as important vehicles in setting the stage for the discussions and information sharing that occurred over the three days that participants worked together. Forums of this nature foster information exchange which encourage implementation of test projects across different contexts and cultures.

The momentum that was created through this meeting can be positively sustained and reinforced through the facilitation of continuing conversations using the technology itself.

The introduction and integration of ICTs into classrooms for the enhancement of teaching and learning is blurring the role of the teacher with respect to the learner. This move towards collaborative models of learning will demand advanced strategies for teacher development in the effective use of information and communications technology.

The effective use of ICTs requires the commitment and interest of the professional teacher. This cannot be achieved through a top-down approach to teacher development. Rather the change process must be vested in a continuous upgrading of teacher skills and knowledge bases – beginning with where the teacher is at and consciously planning for the advancement of applications as the teaching population is equipped and resources are made available on an equitable basis.

Finally, there were many rich examples of exemplary practice presented during the case studies. Participants described approaches to teacher development, opened the doors to a rich array of teacher support, materials for ICTs application, model lesson plans and even technology plans, to name just a few examples. There is evidence of progress in the APEC economies; the challenge and opportunity is to harness this wealth of information and share it among the APEC countries.

By recognizing the achievements of others, and adapting these examples to fit the needs of different situations, we can positively impact on the rate of change in integrating ICTs through teacher professional development.

REFERENCES

Teachers, Technology and (Re) Training, Plenary Presentation by Dr. Gajaraj Dhanarajan

Case Studies from contributing economies available on the CMEC web-site

Comparative Analysis of Issues and Trends in Seven APEC Economies prepared by Judy Roberts & Associates/Associates, Inc. on behalf of the Council Of Ministers of Education, Canada (CMEC)