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## WORKSHOP REPORT

### Teacher Professional Development for Tomorrow, Today

Kigali, April 27<sup>th</sup> – 29<sup>th</sup>, 2009

#### Background to the workshop

The Rwanda *Vision 2020* identifies the strengthening of Teacher Professional Development (TPD) in an ICT-rich environment as one of the top government priorities for the achievement of its national socio-economic development goals. A key driver for ICT integration in TPD is the current government strategic plan which seeks to computerize all schools and connect them to the Internet by 2012. The vision for enhancing teacher education using ICT is ambitious requiring all higher educational institutions to make computer studies and basic computing an integral and a compulsory subject within their teacher education programmes.

The actual TPD landscape for ICT integration in Rwanda inclusive of pre and in-service programmes is complex and correspondent with experiences in a number of African countries. Fundamental to the complexity is the myriad of national and international initiatives and schemes for new technology integration that have emerged over the last decade. There is an absence of conceptual clarity on the objectives of TPD for ICT initiatives which is reflected in education systems globally. Professional development providers are often unclear as to the purpose, benefits and future trajectories for ICT integration in programmes; and as to its correlation with educational objectives for improving access, quality and capacity for system-wide responsiveness to the exigencies of a 21<sup>st</sup> Century Information Age.



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## **Workshop Objectives**

The strategic objective of the workshop was to examine the parameters for Teacher Professional Development (TPD) for ICT in Rwanda through the identification of current challenges and possible futures for provision and ways to prepare for future scenarios now.

The specific workshop objectives were to:

- review trends and issues in Information and Communication Technology (ICT) and Teacher Professional Development (TPD)
- challenge gaps and assumptions in relation to existing paradigms of provision
- identify driving forces impacting on TPD and how ICT could be harnessed to develop TPD
- explore and analyse a realm of possible future TPD-ICT models in Rwanda and develop scenarios for 'preferred' models
- develop outline parameters for a TPD-ICT framework for attaining preferred future scenario
- increase organizational capabilities for futures collaborative planning



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## Workshop preparation

Preparatory activities for the workshop included two phases of consultation with key stakeholders in TPD provision. In phase one the Country Programme Facilitator (CPF) developed a [problem definition paper](#) based on a desk study of national policies and sector plans and field trips to institutions and schools to identify the strengths and challenges in current TPD-ICT provision. The CPF made suggestions and recommendations for GeSCI's support to the Ministry of Education in this area. The recommendations included a phase two in-depth survey of national institutions and schools which was carried out by GeSCI's research manager and the ICT Unit personnel using dialogical tools of teacher narrative and interviews to engage stakeholders in a participatory reflection on the status of ICT integration in professional learning and implementation in practice. The preliminary survey findings would serve as key material for the workshop planned as a phase three activities to involve stakeholders in a deeper reflection on models and trajectories for integrating ICT in TPD. In this way the [concept note](#) and design for the [workshop programme](#) (topics, types of sessions, and format of sessions) emanated from desk research and the experiences, ideas, issues and concerns expressed by stakeholders in the consultation and field survey dialogue. The concept paper and preliminary findings from the institutional survey were disseminated to invited workshop participants for review prior to the workshop.

## Participants

The workshop was planned for 30 participants representing national institutions related to Teacher Professional Development. As such 25 participants attended from the Ministry of Education, Teachers Service Commission, National Curriculum Development Centre, Kigali Institute of Education, Research Institutions, Development Partners and non-for-profit for the three day event. The attendance per session fluctuated between 9 to 18 participants as participants were under constant pressure to attend to other matters related to their work. It soon became clear that locating a workshop in the vicinity of participants' work zones was detrimental to the quality of their participation and contribution.



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## **Workshop programme and format**

The workshop was jointly coordinated and facilitated by Ministry of Education (MINEDUC) and GeSCI. The workshop programme was formulated and coordinated through the ICT in Education Unit of MINEDUC with support from GeSCI's Country Programme Facilitator and Global Research Manager. The programme was facilitated by Ms. Mary Hooker, GeSCI's Research Manager and Dr. Patti Swarts, GeSCI's Africa Region Programme Managers with co-facilitation support from Dr. Mathias Nduwigoma, Head of the Department of Computer Science, KIE and Mr. Jerome Gasana, Director of RITC.

The workshop programme was flexible though it continued to remain focused on achieving the objectives and to respond to the expectations as identified by the participants. The programme was structured around presentations, group work, practical sessions, discussions, and reflections affording a variety of modes to maintain full engagement. The analysis and reflection in the group work and plenary sessions was demanding and time intensive leading to some concerns as to the viability of this workshop format for future engagements.



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## Workshop Proceedings

### *Opening remarks*

The workshop was opened by Dr. Mathias Harebamungu, the Permanent Secretary of the Ministry of Education, who gave an overview of the national vision for a knowledge-based and technology-led economy by 2020, the role of ICT as a primary driver for socio-economic growth in a country lacking in natural resources, and the requirement for teacher competencies and on-going professional development in ICT to ensure a solid base of human resource development. The GeSCI Research Manager, Ms Mary Hooker, outlined the workshop process as a follow-up phase on the survey of the ICT in Teacher Professional Development landscape in Rwanda carried out in national institutions and pilot schools in March 2008. The Vice Rector of Academics, Kigali Institute of Education, Dr. James Vuningungu delivered a [presentation](#) in which he outlined the current challenge of education relevance to achieve the national Vision 2020 and the significance of the workshop process taking place as it was in the space of the National Curriculum and Development Centre - the initiator of most educational change programmes. Dr. Vuningungu emphasised the requirement to strengthen ICT in a more structured ICT improved environment as a collective and coordinated effort carried out by all stakeholders. He considered that the task for the three workshops should focus on assessing the current status of ICT integration, identifying challenges and proposing ways and means for further development of ICT in professional learning programmes. The Director of the Rwanda ICT Training and Research Institute, Dr. Jerome Gasane highlighted the role of TPD in ICT programmes to educate, to create employment and to benchmark Rwanda education with international standards for ICT literacy and integration. Mr. Albert Nsengiyumva, the Director of the ICT Unit provided an overview of current TPD-ICT pre and in-service programmes and the Unit's four pronged strategy for anchoring ICT in Educational provision.



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## Workshop Sessions

Mary Hooker presented the logical overview of the workshop sessions designed to explore the issues and future scenarios for ICT in TPD models through a process of *diagnosis*, *scenario building*, *synthesis* and *recommendations*.

### *Diagnosis – Understanding where we are...*

#### Session 1: Assumptions on ICT Integration in Teaching and Learning

Patti Swarts gave a [presentation](#) exploring the assumptions that exist about ICT in education systems in general and more specifically in TPD. Noting from the literature that 'no single African country has been able to leverage ICT as a *significant* means for improving *access* to affordable *quality* education', she argued that the educational environment is still nevertheless littered with assumptions on the potential of ICT to solve all of our educational problems.

She invited participants to reflect on their own assumptions in groups about ICT and integration, ICT policies and plans, ICT in teaching and learning and ICT in TPD. She compared some of the group [assumptions](#) with assumptions from the literature inclusive of the following:

- ICT integration is a key factor in EFA success / ICT skills for teachers will lead to ICT integration
- ICT policies and plans provide better coordination and guidance, a regulatory framework, an M&E reporting system and an enabling environment for innovation/ Policies and plans will translate into action
- The expense of ICT investment and deployment is greater in developing countries/ ICT investment is a rational decision
- ICT in Teaching and Learning is associated with a successful educational indicator / Policy and innovative practice will filter down to the classroom
- ICT in TPD provides teachers on the one hand with wider opportunities to share knowledge to participate in conference and on the other hand teachers are expected to do more, to extend service, to create/ implement something new/ Teachers will embrace ICTs



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In conclusion, she presented scenario planning as a means to create new insights taking participants beyond the baggage of current assumptions and beliefs and into a process of looking at the issues differently through critical lenses that avoid tunnel vision.

## **Session 2: Overview of Rwanda Teacher Professional Development Programmes in ICT: The Cases of Kigali Institute of Education (KIE) and the Rwanda ICT Training and Research Institute (RITC)**

Dr. Mathias Nduwingoma, Head of the Department of Computer Science, KIE in his [presentation](#) on the status of TPD in ICT programmes in Rwanda provided the framework for ensuing sessions reviewing the current situation and understanding strengths and challenges in provision. He noted the tremendous achievements by national providers in pre and in-service programmes in producing hundreds of students each year in ICT related knowledge as well as the specific role of KIE as the only provider specialized in Education. The combination of political commitment, big budget allocation, policy development, cooperation with partners and multiplicity of initiatives in ICT training for primary, secondary and tertiary levels have contributed to current achievements.

He noted that while there are many technical challenges related to infrastructure, connectivity and accessibility, systemic challenges may constitute the greatest obstacle to technology integration. Teacher educators and teachers who attempt to apply ICT in their programmes find themselves 'prisoners' of traditional curricula and standardized test systems. He proposed multi-stakeholder consultation (students, teachers, curriculum leaders, ICT coordinators, and teacher educators), national institutional roundtable discussions (NCDC, Examinations Council, KIE) and internal review (KIE) on all professional programmes to ensure that every teacher is equipped with a deep knowledge of technology literacy for effective implementation in practice. He further proposed the development of a reasonable strategic plan to enable a 4 level approach to ICT integration in TPD from *emerging* (technology add-on) to *applying* (technology literacy) to *infusing* (knowledge deepening) to *transforming* (knowledge creation).

Jerome Gasana, Director of the RITC, in his [overview of the RITC in-service programmes](#), pointed to the milestone of 6,000 secondary teachers representing some 50% of the teaching cadre, trained in ICT literacy through in-service programmes as of May 2009. This is a remarkable achievement in a relatively young institution established in 2004 under the auspices of the Rwanda Development Gateway Group as a key component of the GoR ICT initiative to build hands-on computer skills nationally and regionally. The Director revealed the intention for training all teachers primary and secondary to be computer literate by 2010.



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### Session 3: Analysis of baseline survey data: Stories of Significant Change

Mary Hooker made a [presentation](#) in which she identified two critical lenses to look at the challenges in ICT for TPD. The first lens consisted of the use of a 'Most Significant Change' technique (Le Cornu *et al.*, 2003) to analyze 4 change stories drawn from the dozens of teacher and student narratives that emerged from the baseline survey of ICT integration in school practice carried out in March 2009. The openness of the conversational lens in story-telling can reveal telling insights on how teachers are using new knowledge and skills acquired in TPD-ICT programmes. It can also reveal the beliefs, values and understandings of teachers and students on the complexity of change taking place in their teaching and learning environments with the introduction of technology.

She invited participants to analyse the [4 stories](#) of Teacher A (primary teacher in TPD in-service programme for 1:1 laptop saturation), Teacher B (secondary teacher liaison in TPD partner whole-school programme for IT literacy), Teacher C (secondary teacher newly graduated from tertiary pre-service programme in Computer Science) and student D (secondary student attending an innovative ICT integration school) in groups by reading and recording the aspects which were most indicative of significant change.

Significantly all groups selected the stories of teacher A and student D identifying domains of change in the power relations and the shifting roles of the teacher and learner with indicators of the 'teacher emerging as co-learner' and the student 'more confident in using technology than the teacher'. Revealingly the stories of teachers B and C were not selected by any group. The facilitator questioned whether there was anything to learn from the 'most insignificant change' stories of teachers B and C.



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#### Session 4: Analysis of Schooling Systems: The Story of Teacher B

In this session Mary Hooker drew upon the observation of Hepp *et al.* (2004) that teachers beliefs and attitudes to ICT use can distinguish them into three broad categories – the ‘innovators’ who will recognize the potential of ICT early in TPD programmes and will explore quickly tools in their practice, a group beloved of policy makers and planners for their tendency towards early adoption; the ‘resistors’ or ‘outliners’ who tend to resist change in all its forms; and the ‘mainstreamers’ or late adopters of technology, arguably the largest group in education systems and therefore the most important. Teacher B, whose story was ignored by all groups as insignificant, could well represent the face of the ‘mainstreamer’ or slow adopter of ICT use. Ms Hooker presented the second lens of Cultural Historical Activity Theory (CHAT) (Hooker, 2009) to facilitate a closer examination of the school activity system in which Teacher B works, and specifically the social, cultural and organizational norms which influence her attitude and beliefs towards the use of ICT in teaching and learning.

She invited participants to analyse [Teacher B's story](#) through the [school activity system](#) lens in order to identify tensions and contradictions which are challenging processes of ICT integration. Among the main issues and challenges identified through the group analysis were the following:

- Tight time-tables and bureaucratic planning inhibit opportunities for the teacher to research, to direct self-learning to communicate with other teachers on ICT use. Teachers tend to be excluded from school policy and planning on ICT use in the school environment.
- The use of alternative ICT tools and approaches in practice would jeopardize the teacher's ability to fulfil rules and regulations in the traditional knowledge transmission and requisite marking systems. The contradiction reduces the opportunity of the teacher to explore the affordances of ICT tools to improve her practice and incorporate more learner centred approaches.
- The overemphasis on examinations in the school system results in the teacher's unwillingness to use ICT. Regulations to integrate ICT into the curriculum in the field of assessment would be required to create a more conducive environment for technology oriented change across all curriculum areas.
- The lack of adequate communication between teachers and parents in the community brings about tensions in understanding as to the purpose of ICT integration and teachers encounter a lack of support from the community for experimentation. The extended school community is not consulted or involved in the formulation of objectives.

While unveiling contradictions and tensions in school systems can be problematic, if they are handled constructively they can invoke development.



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## **Scenario building – Fore-sighting what should happen...**

### **Session 5: Three Future Scenarios for ICT in TPD in 2020**

Mary Hooker presented an overview of [global and regional trends](#) which are driving the ICT integration agenda in education systems. She focused on the global agendas of Education for All and the Knowledge Society and their challenging requirements for quality education in systems still stuck in 19<sup>th</sup> century factory delivery modes. Traditional TPD models can no longer provide perspective teachers with the necessary skills for teaching students to survive economically in today's workplace. Lifelong learning approaches of professional preparedness, development and research focused on teacher needs and empowerment and supported by technology enhanced learning and collaborative practice are the new emerging modalities. Studies from developed and developing regions have identified four broad approaches through which ICTs can be adopted for TPD on a continuum from *technology add-on*, to *technology literacy* to *knowledge deepening* to *knowledge creation* (UNESCO, 2008a).

Patti Swarts gave a [presentation](#) on moving from 'chaos' to a TPD for ICT framework. The workshop exploration, analysis and reflection processes on the *theme* of ICT integration, the *trends* and *issues* that are emerging from national, regional and global programmes, the *tools* that are evolving in educational systems, the *models* and *approaches* that are developing in response to new paradigms for knowledge construction and sharing and the nodes of *community practice* and *networks* that are emerging around new modalities of delivery, provide the basis for exploring possible future scenarios for ICT integration.

She invited participants to brainstorm three future scenarios for TPD-ICT based on the UNESCO ICT Teacher Competency Framework (UNESCO 2008b) for *technology literacy*, *knowledge deepening* and *knowledge creation*. Groups would explore the scenarios through the [profile](#) of Teacher B taking her on a trajectory to 2020 and thinking outside the box on how the parameters of her working environment would be changed. Some of the salient points emerging from the [group analysis](#) included:

- In the current scenario of ICT integration Teacher B is feeling disempowered, overloaded and stressed – a 'victim' of an under-resourced system.
- In the future scenarios Teacher B would feel more confident, productive, motivated, empowered. TPD would be a rolling process of national review combining top down outreach support for more school-based contextualized training. The work cycle would be changed in terms of *how* time is spent and *what* it is spent on, not in terms of overall hours. She is empowered for a changed role as facilitator,



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curriculum contributor, evaluator, content developer. She has better understanding of policies, is more self-directed, is supported by regular school-based TPD supplemented by authentic learning, online resources and collaboration, peer to peer learning, ODL, training and resource centres and she is contributing new knowledge to thematic conferences based on her own practitioner action research in the emergent field of ICT in education systems.

- The trajectory of four stages in the development path from *technology add-on* to *knowledge construction* was recognized as an iterative process not a linear one, where development is based on continuous review and learning.
- Finally, the notion of the teacher as creator of knowledge was questioned in terms of what this would actually mean and whether it would be possible to reach the desired transformation level of knowledge creation within a 10 year time-frame.

### **Synthesis – Deciding what should be done...**

#### **Sessions 6: Development Paths for ICT in TPD for 2010 – 2020**

The key to moving towards Knowledge Creation is to leverage current strengths to advance other components in the system. In the final session of the workshop Mary Hooker presented a UNESCO 'Development Path' (UNESCO 2008c) tool to facilitate group planning for ICT integration in the six components of *Policies, Curriculum and Assessment, Pedagogy, ICT, Organization and Administration and Teacher Professional Development*. Groups were invited to develop a 10 year 'development path' (2010 – 2020) for progressive ICT integration in TPD for Rwanda that was tailored to national policy guidelines and the status of current educational conditions and [objectives for TPD for ICT provision](#) as identified in survey of [national institutions](#).

Salient issues and observations which emerged from the ['development path' planning exercise](#) included:

- In some elements teachers have not attained the first stage of technology literacy as yet – while teachers 'know about' taxonomies (Blooms) classifying learning types and levels.
- The UNESCO competency standards may be too high. There is a need to develop national standards using UNESCO standards as a reference.
- The group analysis of the current situation was indicative of a pattern placing current status of provision close to *Technology Literacy* levels in most components.
- Strengths in current provision will provide much leverage for reaching *Knowledge Deepening* and in some components *Knowledge Creation* levels in the 10 year development path for 2010 – 2020.



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### **Next steps**

Senthil Kumar, the GeSCI Country Programme Facilitator in MINEDUC, summarized some of the current challenges in TPD for ICT as well as developments in process to address these. He spoke of the proliferation of initiatives that continue to emerge in the absence of adequate mechanisms and structures for co-ordination and synchronization. The newly established ICT-ODEL Unit will coordinate existing and emerging semi-autonomous units linked to ICT-Education. There are HR capacity gaps in national institutions for training provision which has implications for transfer to school practice. The suitability of partner proposals for training modules needs to be assessed to clarify the purpose of provision – modules that focus on ICT skills will not enable institutions and schools to harness the potential of ICT to transform TPD and teaching practice through knowledge deepening and knowledge creation processes.

He asked participants to consider proposals and options for integrating TPD-ICT initiatives into national vision and educational objectives.

### **Concrete proposals:**

1. Establish a unit to monitor cross institutional planning and implementation in TPD, content and curriculum for ICT integration.
2. Develop and cost a TPD-ICT strategic action plan for 2009-2013 inline with Education Sector Strategic Plan
3. Develop a TPD-ICT policy framework or long term plan to incorporate the four approaches for ICT integration from traditional to knowledge creation levels.
4. The ICT-ODEL Unit should liaise with Teacher Services Commission for TPD-ICT planning and development.
5. Set up a stop-gap coordination committee to take the momentum from the workshop forward - inviting participants from the workshop to form a working group.
6. Leverage HR expertise from TPD, Curriculum and Assessment into a national steering committee.



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## Closing

The closing session was facilitated by Mr. Richard Niyonkuru (Monitoring & Evaluation Advisor of ICT in Education unit, MINEDUC) who expressed satisfaction with the outcomes of the workshop, in particular the ten year 'development path' trajectory for ICT Integration in TPD systems. He expressed deep reservation however on the challenges for developing a two to three year action plan on the basis of the development path given the limited resource capacity of the ICT Unit of the Ministry. The advisor was also dubious as to the viability and sustainability of setting up a working group or steering committee for the task given the desultory previous experiences with the OLPC Committee which rarely convened.

There was all in all a sense of frustration with the workshop outcome – a frustration hinted at throughout the workshop process in the daily synopsis overview facilitated by Dr. Mathias where he opined the risk of the rich workshop discourse terminating in the fate of many such events – a theoretical discourse with no follow-up application.

*See workshop slide show.....*



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## Workshop Outcomes and Impact

The following workshop objectives were achieved:

- Participants' exploration and analysis of trends and scenarios for Teacher Professional Development for ICT
- Participants' analysis of tensions and challenges in current systems of provision
- Participants' shared understanding on trajectories for bridging the gap between current and future TPD for ICT scenarios
- Participants' inputs for outline and parameters of a ten year 'development path' in TPD for ICT (2010 – 2020).

In addition to achieving the objectives, the main success of the workshop was the bringing together of national institutions of Teacher Professional Development, Curriculum and Partners affiliated to ICT initiatives into a process of deep reflection on the issues using problem solving tools involving 'Most Significant Change' techniques, Cultural Historical Activity Systems (CHAT) and Scenario planning methodologies in order to map a development path trajectory for ICT integration in TPD over a 10-year period (2010-2020) to align TPD with Vision 2020.

This was a workshop process however that was fraught with tension. The requirement for in-depth reflection and analysis on the issues would impose on the time and availability of personnel already hard-pressed and under pressure in their work environments. Ultimately the workshop discourse and analysis would be confined to a much reduced core group whose commitment and contribution was profound and pivotal to the next phase of the development path. The viability of the workshop methodology of engagement however remains dubious. While the participatory workshop processes are critical for 'ownership' of the outcomes, for building capability and ensuring sustainability, the format needs to be reviewed and streamlined to fit in with the working environment of the Ministry of Education.



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## Synthesis and Recommendations

The process towards a development path for ICT integration in TPD is enriching both MINEDUC and GeSCI's understanding on the issues and challenges. The completed process and activities include the following:

- **Phase 1:** The development of TPD-ICT problem definition document
- **Phase 2:** The development of tools and methodologies for TPD-ICT survey. Survey carried out among the National Institutions, schools and stakeholders.
- **Phase 3:** Workshop for TPD-ICT future scenarios designed in collaboration with MINEDUC. Survey outcome discussed and analysed in workshop process with MINEDUC participants along with global trends. Tentative development path for TPD-ICT defined for Rwanda.

In planning the way forward the following recommendations for GeSCI's continued assistance to the MINEDUC in this area are made:

- Assist the ICT Unit to develop a costed action plan for the period 2009 – 2010 that is based on the workshop inputs for a development path towards ICT integration in TPD.
- Explore the potential for developing a tool for TPD-ICT Development Path planning adopted from the e-Learning Road Map tool introduced and trialled in AKE II in Kigali in 2008. The adopted tool could be used for current and future planning of ICT integration using the 'development path' indicators for technology literacy, knowledge deepening and knowledge creation.
- Examine the viability for setting up a nexus of institutions and bodies affiliated to TPD-ICT programmes (all training institutions, NCDC and TSC) to align a comprehensive strategic framework that incorporates the role of technology in addressing teacher development issues related to expansion of basic education and second language instruction, as well as the long-term development path trajectory for ICT integration outlined in the workshop to achieve the advanced socio-economic goals defined in Vision 2020.
- Support the MINEDUC to identify a consultant to assist in developing the strategic framework. The framework would tailor the policy approaches towards technology infusion in TPD to align with ESSP revised strategy for educational improvement and development.
- Incorporate the analysis of workshop participants on preliminary findings from field survey of ICT in TPD landscape in Rwanda into final report due for presentation to the MINEDUC in June 09.
- Future engagements with institutions and agencies of the MINEDUC should be shorter confined to half a day or a day and focused on one major outcome at a time. Activities requiring more than a day should be conducted outside Kigali to ensure consistent attendance.



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