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(by SIG in UNESCO-PROAP on ICT Module Development)

MASTER PLAN FOR THE TRAINING OF TEACHERS ON ICT

1. Background and Statement of Issues and Problems

The new learning environments that are taking place in this Knowledge Society are impinging on the roles of teachers. These new learning environments are characterized by paradigm shift in education from the old concept of education to learning, from shifts in the teaching-learning process as well as the emergence of new spaces of learning from schools to work places, communities and mass media, from childhood to adulthood and from real to digital and virtual learning environments. These changes have generated new types of learners, new process of learning and new approaches to evaluation of learning, which in turn have contributed to the changed roles of teachers from the conventional ones to a series of new roles. No longer are the teachers the sole source of information, they are only one of the multiple sources of knowledge and thus will work better as a facilitator of knowledge, a friend and guide in exploring and discovering ideas, a proactive agent of change and active participant in transformation, a specialist in teaching with new technologies, and a teacher continuously learning throughout life.

These changes in the roles of the teachers and therefore their corresponding competencies have to be either developed or upgraded, if the teachers are to deal with the demands of the new learning environments and to ensure that the learners they are responsible for are being prepared to face the challenges of the new knowledge-based economy as well. This implies training and retraining of teachers in the new tools and technologies of education, especially through the pre- and in-service teacher education and other professional development courses aimed at not only equipping the teachers with knowledge and skills to use ICT in classrooms but also in renovating all aspects of teacher education.

There are many issues which are related to the task of building knowledge and skills of teachers in the use of ICT in classrooms which need to be examined.

1. Currently, the knowledge and skills in the use of ICT by teachers is at the beginning stage. This condition is aggravated by lack of research and training on ICT in teacher education which will show where we are now. A few countries are just starting to collect data to paint the profile of the teacher in terms of his/her levels of knowledge, skills, and practice in the use of ICT in classroom, their access to hardware and software, and their attitudes towards the benefits to be derived from the use of ICT.
2. Even if some countries like Australia and South Korea have forged ahead in teacher training in ICT, generally this endeavour is at its infancy stage in the region. For some countries which have attempted at initiating programmes to equip their teachers with skills on the use of ICT, they tend to be unsystematic, sporadic and not well orchestrated. The training curriculum and methodologies

tend to be rigid, mostly technology-oriented, adapted from external resources which tended to be irrelevant. Because they have not been developed from the point of view and the specific needs of the teachers, they do not become well-integrated into their training and teaching, for lack of a sense of ownership as well.

3. Very often, the training courses that have been given to the teachers basically only taught them how to operate a machine but not necessarily incorporate the use of specific software applications into teaching of specific subject areas. There is no wonder that after the training, teachers continue to use the traditional approach of teaching and remaining practically unskilled in the real use of ICT. On the other hand, those countries which have zero base in teacher training on ICT need to start from the very basic, minimum learning competencies. They need to become more aware and appreciative of the value added of using ICT in their teaching and learning. They also need to start from the first step of building confidence in the use of ICT by learning the basic functions and operations of ICT.
4. The limited existence of research in this area is making it difficult to develop a training course that can be objectively evaluated in terms of enhanced learning outcomes. Indicators to measure the learning which have taken place from a training course on ICT need to be formulated as experiences in this area accumulate.
5. Also, because of insufficient research in this area, caution must be placed in the development of training programmes to build the skills of teachers. Among other things, the pedagogical aspects must not be ignored in the enthusiasm to develop ICT skills that are too technology-oriented. Specifically, the efforts should acknowledge ICT as a tool only and not for its own sake.
6. Given the diversity within the region in this area, there is a need to determine the baseline data and profiles of teachers on ICT use and group them according to different categories which can be used in any professional development programmes on ICT use.
7. In the planning and implementation of training programmes on ICT for classroom use, the following need to be taken into serious consideration:
    - The need to seriously consider transforming the approach to teaching and learning from a transmittive to a constructivist
    - The importance of capitalizing or mobilizing the innovations that ICT can offer especially with regard to enhancing learning/teaching principles and pedagogy. Those best practices on the use of ICT for training and teaching which have already been documented should also be adopted or considered in these training programmes.
    - In considering the use of ICT, cultural and contextual sensitivities should be paid attention to. It is important that the images, contents and materials projected by the ICT reflect the indigenous knowledge and values of the region.
    - The modules should be flexible enough so that they can cater to the diverse backgrounds of the users in terms of availability of hardware and ICT infrastructure in the countries, their national ICT policies and strategies, availability of resources including partnerships between government, private/business sector and community. In order to promote flexibility and

ease of adaptation by countries, the modules should look at the different competencies required by teacher-learner and offer an array of scenarios which they can adapt.

8. Finally, because of the diversity in ICT access in the region, any teacher training programmes on the use of ICT should respond or address the issues of social equity and access in order to bridge digital divide obtaining in the region.

II. Objectives

The above-cited issues are just a few of the many which have spurred UNESCO PROAP's Teacher Education programme to implement the development of a package of modules and CD ROM to equip teachers with knowledge and skills in the use of ICT for teaching/learning. To address these issues, this modules development exercise started with an Experts Consultative Workshop which assisted in developing a Master Plan to implement the activity. The group decided that the modules should aim at reaching the primary and secondary teachers who possess zero or basic knowledge on the use of ICT as a first step and then in the second stage and as financial resources become available, go on to develop more advanced modules for the teachers as well as plan for the development of new modules for policy planners and curriculum developers. Thus, this project will zero in first on basic modules which will:

- Develop better awareness, understanding and appreciation of the role of ICT in education and more specifically in teaching
- Promote better understanding on how ICT can enhance various teaching/learning theories and principles
- Develop knowledge on the basic functions and operations of ICT and their generic applications
- Develop skills in integrating the use of ICT and educational software in various subject areas
- Develop competence in using relevant assessment tools for determining learning achievements using ICT and ability to gauge over-all impact of ICT
- The training courses should also benefit from existing resources which are already available on the Internet and should be used through the development of a Web-based portal that will enable easy and quick access to these wealth of materials during and beyond the teacher training course.

Some other efforts had been made also to address the issue through the project entitled, "Building Four Pillars of Education through Information Technologies for Curricular Innovations and Teacher Training". Sponsored by UNESCO ACEID and the Group T of Leuven University, the project will produce a series of training and retraining materials on CD ROM that substantiate the Four Pillars of Education for teachers trainers and school leaders in the Asian partners (China, Japan, South Korea and Thailand) and to develop a manual for CD ROM development of teacher education. The outputs can be integrated into the delivery strategy of the current activity of developing a package of print-based modules and CD ROM by using Group T modules in the planned teacher

training courses that will take place in the dissemination and try-out stage. Furthermore, the Group T's plan of developing skills of teachers to develop their own CD ROM and curriculum materials can be linked to the planned networking of producers of local curriculum and teaching/learning materials which will provide the inputs to a databank to be maintained at UNESCO PROAP Information Programmes and Services (PIPS).

III. Strategies

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2) Planning of the module and CD ROM development - The first step towards the development of the package of modules and CD ROM is the Planning Workshop of Experts who will bring to the meeting their first-hand knowledge of the situation of the teachers in terms of the levels of knowledge, attitude and practice with regard to ICT use in teaching; their access to ICT hardware and software; and training needs Based on this knowledge, the conceptual framework, the objectives, contents and design/format will be developed.
3) Writing up of modules - once the number of topics and modules would have been decided, the preparation of the modules, both in print-based and CD ROM will be sub-contracted to the Writing Team. It is suggested that only two modules in print-based and one CD ROM can be initiated.
4) Pre-testing, review and revision - a number of review meetings should be organized in order to review, refine and revise the modules and CD ROM
5) Publication and production - after several reviews, the revised modules and CD ROM will be produced in try-out version in limited number of copies
6) Try-out - the modules and CD ROM will be tried out in a few sites where teacher training will take place

It is also envisaged that as the module development exercise is going on, UNESCO is setting up a portal on ICT for teacher training which will serve as a resource of curriculum and teaching/training materials, assessment tools, references, best practices and further professional development sites which can support the modules development, training of teachers in ICT and classroom management and teaching. Hopefully, this portal will include a data banks of curriculum/teaching materials and lessons as well as assessment tools produced in the countries in the region.