

7. Find ways to make ICT **mobile and transportable** so that as many students and teachers as possible can benefit.

A major obstacle to the pedagogical integration of ICT is the difficulty of accessing technologies at school, largely due to rigid management and scheduling policies. To address this problem, some schools have set up mobile computer labs to increase access for students and classes.

8. Use ICT both inside and outside the classroom **for teaching and learning school subjects**.

In addition to teaching computers as a subject, ICT can be used as support for teaching and learning other academic subjects such as French, math and history. Online teaching resources (e.g., dictionaries, grammar books, interactive novels, self-correcting French exercises) can greatly enrich classroom lessons, and students can access them after school hours.

9. Set up **projects** that put students in contact with students from other schools, regions and countries.

The Internet has opened up possibilities for communication and sharing that transcend the usual space–time limitations. Today it is easy to interact, in real time or not, with all kinds of people that we would never meet in daily life. Teachers and students have a golden opportunity to meet up with their peers and learn about them as well as themselves by participating in collaborative educational projects.

10. Designate an **ICT resource teacher** to each school or to a number of schools (no need for computer experts).

A teacher who is adept at technopedagogical applications can help his or her colleagues integrate ICT into their teaching practice. Having an ICT resource teacher is a good way to motivate other teachers to start incorporating technologies into their work.

11. Promote **collaborative work and social interaction** by having students use ICT.

Of all the aspects that have been affected by ICT, communication has surely been the most radically transformed. ICT have opened up undreamt-of ways to share and collaborate, which have in turn provided new and enormously diversified ways to teach and learn. This means that students can be better prepared for the professional and personal lives that lie ahead of them.

12. Use ICT to **facilitate school organization and administrative management** (e.g., student's records).

ICT can be used to manage information more efficiently, resulting in better organization and administration. All information is centralized in one place (the computer). A large number of documents are readily accessible and can be rapidly shared via the Internet. In schools, ICT have become indispensable tools for managing student records, compiling exam scores, handling finances, and so on. Schools can only benefit from this innovation.

Need more information about these recommendations?

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When
technology
makes a
difference:
12 ways to
optimize the use
of ICT at your
school



12 ways

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As researchers, educators, administrators and trainers, it is up to us to manage the changes that information and communication technologies (ICT) have wrought in teaching, learning and society as a whole. Given its current rate of development, Africa cannot escape this imperative. The PanAfrican Research Agenda on the Pedagogical Integration of ICT (PanAf) aims to contribute to this effort. PanAf is the first continent-wide network of African researchers to document pioneering initiatives for ICT integration into education. It has received widespread international recognition for this bold and innovative effort to develop scientific capacities, and for establishing the ICT Observatory (<http://www.observatoireict.org/default/use?locale=en>) as a hub for collecting and sharing information. The Observatory hosts a freely accessible database of over 20,000 documents submitted from across the African continent, with contributions from about fifty African researchers who have conducted studies with over 300,000 students as well as 9,000 teachers and other education staff in some 140 schools, based on recognized scientific indicators. PanAf will soon be completing its mandate, and the recommendations presented here are meant as a summary of the outcomes of this ambitious, five-year scientific undertaking. The recommendations were developed collaboratively, drawing on the empirical findings of the national research teams from 13 participating countries. In order to provide some practical implications, each recommendation is accompanied by a brief explanation and a videotaped interview with a researcher that can be accessed online.

We hope that these recommendations will prove helpful in orienting and facilitating the pedagogical integration of ICT in Africa.

The PanAf Team

1. Ensure **equal access to ICT for all students**: girls as well as boys.

Girls find it more difficult than boys to get access to computers. To ensure equal access for all, one school made its computers and technology resources available on an alternative schedule: one day reserved for girls, the next day for boys, and so on.

2. Ensure **equal access to ICT for all teachers**, particularly in the teachers' room.

Not all teachers are comfortable using computers in front of their students, especially when their computer skills are weak. To encourage teachers to use computers, a number of schools have put computers in the teachers' room. This allows teachers to work on computers without facing criticism by their students.

3. Given the potential of the Web, ensure that all computers at the school are **connected to the Internet**.

The Internet provides access to a vast store of resources that can be used to improve the quality of teachers' lessons and provide new stimulus for student learning. A reliable Internet connection is therefore indispensable to tap the full educational potential of ICT.

4. Organize **relevant training programs** so that all teachers can use ICT in their teaching practice.

Appropriate training for teachers is a determinant factor in the pedagogical integration of ICT. To be effective, the training must meet the teachers' needs and be appropriate for their level of computer skills and respective subject area.

5. When teaching computer courses, take into account the students' **technology needs and skills**.

Students are increasingly using technologies outside the school. Schools can effectively help students develop computer skills by being aware of their computer habits and skills and adapting computer courses accordingly.

6. Find innovative ways to **motivate teachers** to make collaborative use of ICT.

Some teachers resist bringing technology into their teaching practice. They can be motivated by talking it over, showing them simple and efficient ways to use technology for teaching, pointing out the advantages, and providing them with support when they introduce technologies into their teaching practice.