Using ICT in the Education Sector

IICD's education projects are primarily focussed on enhancing the competencies of the teacher, improving the quality of learning materials, developing young people's learning skills and an overall improvement of the learning process through ICT. Operating through partnerships with international organisations, government agencies, ministries, schools, teachers, civil society organisations and the private sector, IICD has worked to develop and implement programmes that incorporate a broad range of educational projects. Across the nine countries in which we are active, the projects have so far involved approximately 360,000 teachers and students, with around 2,300,000 direct and indirect beneficiaries.

IICD projects within the education sector emphasise ICT in the teaching and learning processes. This includes teaching materials, school administration, and the ability of teachers and students to use ICT in the classroom. The focus is on primary and secondary school teachers, and secondary school children.

As a result of the locally-owned projects that IICD is helping to develop and support, educational content is being created and enhanced; schools are being provided with an ICT infrastructure; and students have become computer-literate and some have also received sufficient training to be able to train others to select, install, maintain and repair hardware and software.

IICD is also working with national governments, providing them with guidance and advice on formulating sector-wide ICT policies and implementation strategies. The projects provide empirical and practical experience of how ICTs are being applied in an educational context for the governments and are used to gain a better understanding of the value of ICT in helping to achieve educational objectives.

In the education sector, at project level, IICD is focused on one of three key goals.

Firstly, improving the competence of the teacher. In practice, this is realised through provision of ICT training in teacher training colleges, or through introduction of ICT into the teaching or process. Secondly, improving the learning process by enhancing the quality of teaching materials and strengthening the curriculum. Lastly, improving efficiency in management and administration tasks in order to focus more time on providing improved education services to students.

Students at Rhodes Park Junior School taking part in the Global Teenager Project. Zambia.

Country Case: Education in Zambia

In Zambia, The Netherlands is one of the eight development partners providing support through a common pool account, and is among the largest donors in the sector. The Embassy has developed a partnership with the World Bank, whereby the Embassy will also represent the World Bank in the education sector.

The holistic overview held by the Embassy has enabled education projects to compliment each other, allowing different organisations to work together to achieve their shared goals.

Supporting the Education Sector

The education programme in Zambian began with a roundtable in 2003. There are currently 5 projects in implementation and we also provide support to the Ministry of Education in the development of their ICT policy and implementation plan for the education sector. IICD is using ICTs to support the education sector in a number of key ways:

Teacher training

IICD has supported a number of projects that focus on improving teacher training. The focus on teacher training evolved from the need to secure sufficient human capacity to enable an appropriate use of ICT in the education sector.

ICT is has been introduced as a new subject in the standard curriculum of Teacher Training Colleges so that future teachers can leave school with basic ICT skills and knowledge. However, it is also important to secure the integration of ICT in the overall teaching and learning process of Teacher Training Colleges.

IT Trainer outside his classroom.
Chawama Youth Skills Project. Zambia

strengthening the curriculum through worldwide initiatives such as the Global Teenager Project.

Projects also help teachers to use ICT in order to digitise materials for use in the classroom. This requires teachers to be trained not only in basic ICT skills but also in pedagogical skills to use online tools and teaching materials in the classroom.

Integration of ICT into the Copperbelt College of Education curriculum

The IICD-supported project focuses on the integration of ICTs in the curriculum, content development and equipping the lecturers with the necessary teaching skills and knowledge. The purpose of the project is to contribute to the improvement of the quality of teaching by using ICT to facilitate a learner-centred approach. The medium-term perspective is to fully mainstream the project activities within the college. This entails having all departments involved and the content of all subjects offered by the college adapted.

Teaching and learning in the class room

A wide range of educational content has been produced by teachers and supporting institutions within the scope of the IICD-supported projects. This includes educational support materials for mathematics and languages; providing teachers with swift access to useful training materials, including access to text books and model exams papers over the internet; and overall

---

Global Teenager Project, Zambia

Zambia's GTP currently involves fifteen secondary schools from Lusaka, but plans to include twenty-five schools by the end of 2008, extending to schools outside Lusaka. Alongside enabling classroom discussions to 'go global, The Global Teenager Project (GTP) gives secondary schools a kick-start in the use of ICT and enlivens the educational process as teachers incorporate new ideas and methods into their classes.

Enhancing the Visual and Presentation of Educational Content (ENEDCO)

The Mpelembe Secondary school and 6 other schools jointly own the ENEDCO project. The main objective of the ENEDCO project is to improve content so that teaching is more effective and the project's principle focus lies in the visual representation of the content of existing teaching materials. The users of the project are the teachers who use the visualized teaching materials as well as other schools in the region. An important and integral part of this project is the need to disseminate information to other schools interested in the improved teaching materials.

Management and administration

Institutional capacity in the education sector needs to be strengthened in order to manage and plan activities more effectively. Information is mostly in hardcopy format and is not easily accessible. Data about teachers, salaries, student grades, the number of pupils per class, and statistical information in general are scattered and are not readily available.

Improve youth learning skills

In a world that is increasingly connected and moving towards an information or knowledge-based society, new ways of learning are crucial. In this context, learning skills go beyond learning through the formal education system. As many young people drop out of formal education, ICT can enhance vocational training for early school leavers or unemployed adults to help them to gain technical skills.

> ### Skills training for young school-leavers in Zambia
> The award-winning Chawama Youth Project helps young people in the township of Chawama. The centre offers 'life skills' courses in subjects such as Auto Mechanics, Tailoring, Carpentry, and ICT to improve the young people's chances of finding work. Over three hundred people have been trained and the centre has integrated ICT components into several courses. Teachers are using the internet to enhance content (e.g. by accessing diagrams of engines using Google Images instead of drawing on the blackboard); hand-outs are being produced quickly; existing lesson plans are now being stored and re-used.

Developing a critical mass of knowledge workers

The introduction of ICT in any country requires adequate human capacity and effective local support mechanisms. It is necessary to develop a pool of skilled professionals that can install, maintain and repair systems, as well as provide sound advice on hardware and software. Training in the use ICT provides benefits to a wide range of professionals and can provide employment opportunities to students.

> ### The Educational Support Network (ESNet)
> ESNet is a two-year pilot project run by OneWorld Africa to assist poorly resourced schools by coordinating a collaborative effort to improve the relevancy and quality of locally-developed teaching materials and then share them with schools across Zambia. Initially, around 18 teachers and 800 pupils in nine secondary schools across the country will benefit from skills-training sessions and improved teaching materials.

In this area, IICD is helping to build ICT capacity by strengthening ICT training institutions. These are often private sector entities which, in turn, train other project partners and end-users.

Policy and strategy

It is important to include an ICT dimension in sector policies and implementation strategies in the education sector. Engaging in policy dialogues focuses on integrating ICT in teacher training, formal primary, secondary and tertiary education and vocational training as well. In addition, ICT to support management and administrative procedures within the education sector is also a standard focus area to develop as part of the strategy.

> ### Sector policy development for Education
> In Zambia, the Commonwealth of Learning, IICD and a Steering Committee for ICT Policy set up by the Ministry of Education helped the Ministry to formulate an ICT policy for the education sector. In October 2006, the ICT Policy for Education was completed. In 2007, an ICT Strategy Implementation Plan was finalised and is now awaiting funding.

Impact of Education projects

The impact of all IICD livelihoods projects are analysed through a number of key indicators. The Monitoring and Evaluation (M&E) data collected from the outset looks at 4 indicators (*Awareness, Empowerment, Economic Impact* and *Impact on Livelihoods*) which can all give a strong indication of the effectiveness of our programmes. Three will be briefly discussed here:

Awareness

This measure gives an indication of whether end-users perceive an increase in general ICT possibilities, but more importantly, information relevant to the education sector. The projects focussing on developing a critical mass of knowledge workers will help these actors to see what possibilities ICT can provide to help the education partners. Besides awareness these knowledge workers will also become empowered to make use of ICT to train others and support the education partners, enabling them to improve the education sector.
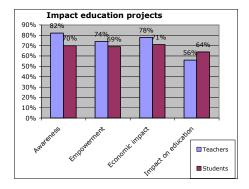
Empowerment

This measure gives an indication of whether end-users perceive a change in terms of skills, self-confidence, and in terms of their influence on decision-making. They also indicate whether users see a change in their social status and whether there have been any noticeable changes in their behaviour as a result of the project. The first steps needed to be taken for all projects are to empower the end-users, so they will be able to make long-lasting changes in their own lives, their work and finally the sector as a whole. Therefore empowerment can be seen as a cross-cutting indicator for all projects.

Economic Impact

This measure gives an indication of whether end-users perceive an improvement in their overall levels of productivity, and whether they are seeing an improved position for themselves in the market. A concrete example of the type of projects focusing on helping end-users to obtain an improved position on the market are the projects aiming to improve youth learning skills.

Impact on the education sector

This measure gives an indication of whether end-users perceive changes in efficiency and a strengthening of the education sector; a change in the quality of education; an impact on the professional development of teachers; as well as changes in terms of infrastructure relevant to the education sector. The three types of projects that are likely to have the highest and most direct impact on the education sector are the those focusing on teacher training; the projects that focus on improving the management and administration within schools; and the projects focusing on teaching and learning in the class room.

Analysis of results

IICD noticed a significant increase in the awareness and empowerment of teachers and students from mid 2007 to mid 2008. Over 70% of the participating teachers and students indicated that they had gained awareness and empowerment through their participation in ICT projects. Although the strengthening of livelihoods of both teachers and students is not a prime objective of the projects, a high positive economic impact was also measured, indicating improved labour-market conditions for the participants, and in particular for the participating teachers.

The impact on the quality of learning and on the teaching process showed a slight decrease compared to previous years, dropping to below 60% for both teachers and students, with the students recognising a greater impact on the sector than the teachers. This is an important indicator, as it is difficult to achieve a strong impact on the quality of both learning and teaching in the short term. Projects with a longer life span generally have a higher impact. This can partially be explained by the fact that in the first phase, teachers are handling basic ICT skills that will not directly support their teaching process. It is only in the second phase that teachers achieve sufficient skills to actually develop and implement teaching materials in the classroom.

More information

For more detail on any of information contained in this document, or more general information about IICD's work visit our website: www.iicd.org.

If you have any further questions about IICD's work, please get in contact with Information Services, who will forward you enquiry to the most suitable person: information@iicd.org.

Impact education projects