

Position Paper on Information Communication Technology in Education

Executive Summary

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Embedding Information Communications Technology (ICT) in education is about teaching and learning, about resources, and about global competencies for the 21st century world. We adopt the position that education is designed to equip young people to reach their potential, to function as citizens guided by the ethics valued by their country, and to contribute to society's goals. Education must reflect its society but move beyond it.

Our definition

ICT refers to use of computers, electronic whiteboards, and mobile devices with their associated applications and software for the purposes of using and building knowledge. ICT facilitates access to information and transmission of it; and provides a vehicle for collaborative learning and for assessment.

Different goals

One goal for ICT in education centres around pedagogy in the claim that ICT enables the student to become a more autonomous learner than in a traditional system. Issues associated with this model include the degree to which autonomy is highly valued in the society, whether it is regarded by that society as a useful approach to education, and if there is indeed evidence for the claim across different age and grade levels. The pedagogical implications of the model leave the teacher with less need to spend time in providing content, and more time for actually teaching for understanding.

Another goal is based on identification of the skills and attitudes expected of graduating students from school. These expectations are guided by the values of the society, and by economic and social drivers, for example "the desire to be globally competitive, grow the economy, and improve social conditions is often used to justify significant public sector investments in educational improvement and the application of ICT in schools" (Kozma, 2005).

In the Philippines context

These goals need to be considered in the context of the vision, mission, and values of Basic Education in the Philippines.

The *vision* of BESRA is to develop functionally literate Filipinos and its *mission* to provide access for all for lifelong learning (Luistro, 2012). The emphasis on lifelong learning presumes individuals' capacity to direct their own learning and to take responsibility for it, a presumption consistent with the claim for ICT literacy that it may enhance and promote individual autonomy in learning. The *core values* are Maka-Diyos, Makatao, Makabayan, and Makalikasan (Luistro, 2012). Although ICT literacy does not address any of these values directly, their dissemination may be maximised through the medium.

Different mindsets

Lankshear and Knobel (2007) identify two mindsets on ICT, one which holds that there has been no substantive change in the modern world, and that it is merely characterised by significant technological advancements; the second that the modern world has changed in a fundamental way. The two mindsets imply very different practices and approaches in the classroom. At the simplest level, the first can be characterised as the replacement of pen and paper by the keyboard and screen. The second implies major changes in the classroom and the workplace, the parameters of which are unclear.

The two mindsets on ICT can be accommodated by a literacies approach - *learning to use, using to learn, and learning to apply*. This approach provides a very clear progression of learning which can be used as a basis for policy makers to make decisions about the range and extent of implementation of ICT within the education system.

Infrastructure

The most immediate response by policy makers and educators to arguments for the implementation of ICT centres around infrastructure and funding. For example, ICT in education is dependent on the availability of infrastructure such as electricity and internet access. The ICT Development Index (International Telecommunication Union) considers ICT use and growth in all sectors of a country and its economy. In the IDI Rankings for 2011, the Philippines ranked 94 out of a total of 155 countries. Closest countries within the Asia and Pacific in the rankings are Thailand, slightly above, and Indonesia slightly

below. Data such as these, and funding costs, are important, but should be considered independent of considerations about the essential value of ICT in education.

The student

Reported student outcomes related to use of ICT in education include:

- Positive effect on student communication, organisation, access to information and productivity (Levin, 2006)
- Improvement in student engagement, school attendance and classroom behaviour (Holcomb, 2009)
- Links between literacy and numeracy performance and technology use, mediated by increased engagement and motivation (Gulek & Demirtas, 2005).

The teacher

Use of ICT in classrooms has:

- Raised issues for teachers about their pedagogical role and authority (Ertmer, 2005)
- Highlighted need for teacher professional development
- Enabled teachers to match the pace of learning to suit individual student needs and improved capacity to tailor the content of lessons to meet individual student needs (Griffin, Care, Tsurutani & Woods, 2010).

Resources

In the Philippines, given the large school-aged population, existence of remote and rural schools, budgetary constraints, and a rapidly changing curriculum, reliance on hard copy resources is a risky approach to the provision of educational materials. Notwithstanding early high cost of infrastructure provision, the longer term benefits of a major ICT stimulus to education are difficult to deny. ICT can play a major role as a facilitator of reform in its own right, both in terms of curriculum revisions, and shifts in assessment and pedagogy. ICT can act as a reform stimulus rather than as a reactive mechanism.

The challenge

“learning to use, using to learn, and learning to apply”

The challenges of developing a fully functioning and driving ICT system is apparent in the mere listing of the aspects that must be considered. Kozma (2008) highlights the factors that ICT implementation needs to consider:

- Infrastructure development to ensure access to schools, networks and resources for learning

- Teacher training, both initial and in-service, to ensure use of ICT in learning processes
- Technical assistance at both administrative and pedagogical levels
- Changes in curricular and pedagogical approaches to take advantage of the features provided by ICT
- Development of content in order to facilitate the interactive potential ICT can offer in the teaching and learning process.

The imperative for any education system is to identify the elements of the learning environment that are required in order to meet the goals, values and mission of the system. After this policy decision is made, the implementation and logistics implications can be considered. In the Philippines context, immediate questions concern student access to curricular resources, development of 21st century skills, state of the art assessment practices both nationally and internationally, integration of ICT throughout the curriculum, and an informed and well equipped teaching force. These are the driving issues for ACTRC’s research activities, thinktanks and symposia with education and IT stakeholders.

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