The Torun Vision - IFIP TC3 - 2013 to 2017

Educational stakeholders and purpose: who could be supported better by computers?

Arising from the wide experiences and outcomes of the WCCE 2013 Conference in Torun, Poland, this Torun Vision directs us towards the future WCCE 2017 Conference in Dublin, Ireland. WCCE 2013 outcomes indicated the many widening concerns of those involved in computer science (CS) and information and communication technologies (ICT) in education. To consider the future of CS and ICT in education, a four-year vision must accommodate possible major shifts and developments between now and 2017, as well as a further integration of current CS and ICT practices into education, curricula, teaching, and learning. CS and ICT offer important opportunities for all stakeholders in education – parents, policy makers, educational advisors, managers, software developers, teachers, tutors, counsellors, and learners. All learners have specific needs – whether they are professional, teacher, or student learners. Stakeholders supporting learning can use CS and ICT to benefit lifetime learners, including seniors, adopting lifelong and intergenerational practices. At the same time, differences in values and beliefs of communities across the world – some that do not recognise a need for CS or ICT as basic requirements – are respected; and in this spirit, this vision promotes informing through robust knowledge rather than through shallow advocacy.

The Torun Vision points to balance rather than dichotomy – the need to accommodate and integrate CS as well as ICT in education; to consider the world of work, informal, formal and non-formal learning settings; the need to explore the integration of existing technologies as well as the application of future technologies; the need to develop producers as well as consumers. This vision calls for opportunities for blended rather than divided approaches and practices; the need to understand ways CS and ICT in education can be blended, rather than arguing a ‘one or the other’ case.

The Torun Vision foresees key aspects of our knowledge and understanding being addressed:

• A detailing and shared understanding of the terms and dimensions we use – digital technologies, computing, computer science, computing literacy, informatics, technology enhanced learning (TEL), ICT, ICT literacy, digital literacy, digital fluency, and media literacy, for example.

• Development of knowledge and creativity widened beyond current levels, enhanced through effective communication of practices and approaches.

• The role of computers in positively supporting early child exposure to environment affecting subsequent development.

• Moving from consuming to creating, using informatics and programming as well as applications.

• Computers involved in better supporting different interactions with different stakeholders, according to technologies selected and used (such as those with online or haptic features), accommodating gender, cultural, native language, cognitive and social backgrounds.

• A wider consideration of educational theories relevant to the field.

• More developed roles of active, deep and authentic learning, involving self-expression, problem-solving, collaborative, co-operative and group and team working using computers.

• Effective learning occurring in informal and non-formal as well as formal settings.

• Appropriate curriculum review and development at all levels (professional, pedagogical, organisational, adult, student and trainer, for example).

• Wider professional development for all those who support training and learning (teachers, tutors, counsellors, advisors, and parents).

• Blended models of learning explored, to consider flipped classrooms, MOOCs, serious games, direct instruction, video revision clips, mobile technologies, and information security.

• Emerging blended models of education investigated, impacting learning and support.

• Linking education to training and employment, and the more ready identification of skill gaps.

• Identification of the application, agility and sustainability of emerging technologies for education.

• Matching uses of computers to purpose (socio-cultural, democratic, or economic), to audience, intentions and outcomes (including assessment).