

## Documentation of problems related to evidence of positive effects of educational ICT (in policy papers)

### 2015

"Although educational technology is expected to contribute to improving education in the EU, compelling evidence of the benefits of technology on education remains elusive." (Pastor & Quirós, 2015, abstract)

### 2014

"Learning increasingly takes place in an environment which is constantly evolving to respond to the personal needs of each learner. The emergence of Open Educational Resources and Massive Open Online Courses is expected to offer multiple advantages in terms of increased access to education, reduced costs and flexible timetables, to name just a few. However, there is little scientific evidence to prove the efficiency of these new models. Some critics even argue that they may well be just another attempt to further commercialise higher education." (Katsarova, 2014, p.1)

"Research from the OECD indicates that there is not enough empirical evidence to support the idea that students' use of technology and digital media is transforming both the way in which they learn and their expectations about teaching and learning. Surprisingly, it demonstrates that a majority of students do not wish technology to bring a radical transformation in teaching and learning.<sup>6</sup> Teachers are not adequately prepared for the digital revolution either: an EU-wide survey shows that while 70% of teachers recognise the importance of ICT-supported methods, only 20% of students are taught by digitally confident teachers." (do., p.3)

"It is generally believed that ICTs can empower teachers and learners and that their overall impact is positive. There is, however, little scientific evidence of the concrete contribution of ICTs to the learning process. ICTs' impact remains difficult to measure, because of the lack of appropriate indicators, and therefore open to debate. Evidence is quite often derived from opinion-based studies interpreting perceived,<sup>9</sup> not actual, impact. Some experts describe them as tools to support and improve existing learning processes rather than having any transformative potential. Studies tend to find small positive educational outcomes without ascertaining the causality of the link (i.e. it may be that more effective schools and teachers are more likely to use ICT and digital technologies effectively). Moreover, the cost advantage of digital learning is disputed. A recent comparative study (2012) suggested that the idea that online learning is less expensive is based more on intuition than on fact, since most existing studies lack rigorous control and use self-reported data." (do. p.3)

## 2013

"A PC with the right software can revolutionize the learning process. It can also just be an expensive notepad. A lot points to the latter being the case. IT is being used in education, but has not had a revolutionary effect. And in regards to IT-competences, Danish youngsters between 16 and 25 are placed below average in the international PIAAC-study" (Produktivitetsskmissionen, 2013, p. 94)

"In Kirkwood and Price (2012a) it is concluded that an increased use of technology in itself does very little – if anything at all – to strengthen students' learning". (Kvalitetsudvalget, 2015, p. 127)

## 2012

"...the existing knowledge base is quite scattered and limited in scope: it covers only some of the important aspects related to the inputs (how many devices have been sent to schools, for example); it provides only very limited information about the processes (how many students per device, for example); and it is rather confusing, if not biased, in relation to the outcomes (the effects of technology use on student performance)." (do., p. 136)

"Yet the reality is that even the most well known international sources for education indicators lack basic information about technology policies in education." (p. 136)

"There are also technical issues related to measurement. To begin with, it is worth considering that there are no well-established monitoring systems of teaching and learning practices. In other words, when it comes to analyzing predominant classroom practices, most educational systems are totally blind." (do., p. 137)

"In the domain of technology policies in education, a very simple question is quite often posed: does technology- supported education make a difference? Or, more generally, does technology lead to better student results? When looking for a response in the existing knowledge base about the effects of technology in education, a striking fact seems to emerge: there is no conclusive evidence. This has been known for some years as the "non-significance phenomenon," leading to the overall conclusion that, in education, technology makes no difference because the investments made have not translated into improved educational productivity, thus reasserting Solow's productivity paradox in the education sector." (World Economic Forum, 2012, p. 139)

"Taken together, the correlational and experimental evidence does not offer a convincing case for the general impact of digital technology on learning outcomes." (Higgins, Xiao, & Katsipataki, 2012, p. 3)

## 2011

"Although there is no consensus as yet regarding the actual benefits of technology in ensuring quality learning, ICT are increasingly seen as an integral part of modern education systems." (UNESCO, 2011, preface)

## 2010

"Despite the fact that education systems have been heavily investing in technology since the early 1980s, international indicators on technology uptake and use in education are missing." (Scheuermann, Pedro, & OECD, 2010, p. 5)

## 2009

"Balanskat et al. (2006) reviewed several studies on the impact of ICT on schools in Europe. They conclude that the evidence is scarce and comparability is limited." (Scheuermann & Pedr, 2009, p. 74)

## 2008

"...although ICT has the potential to develop a "learning continuum" that would support lifelong learning and embrace formal, informal and workplace learning, this has not yet been realised" (*COMMISSION STAFF WORKING DOCUMENT: The use of ICT to support innovation and lifelong learning for all - A report on progress*, 2008)

## 2005

"The positive impact of ICT use in education has not been proven. In general, and despite thousands of impact studies, the impact of ICT use on student achievement remains difficult to measure and open to much reasonable debate." (Trucano, 2005, p.6.)

## 2002

"Now, the bad news: while new digital technologies make a learning revolution possible, they certainly do not guarantee it. Early results are not encouraging. In most places where new technologies are being used in education today, the technologies are used simply to reinforce outmoded approaches to learning." (Kirkman, Cornelius, Sachs, & Schwab, 2002, p. 32)

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"However, research on the effect of ICTs on academic achievement continues to be open to criticism (as with all other areas of education). Critics deny positive findings as the result of

flawed studies, while supporters promote positive results, without sufficiently evaluating the quality of their studies." (Haddad & Jurich, 2002, p.39)

## 1987

"But there have also been evaluations in the U.S. of LOGO (problem-solving) applications. Unlike the CAI evaluations, which show a clear trend, the LOGO studies show mixed results. Some suggest significant gains in problem-solving, skills including gains in divergent and reflective thinking. But a major two-year study of LOGO found no significant effect on cognitive skills. Neither do any studies sustain Papert's claim that learning with LOGO-type programs will create new conceptual skills in children." (Daley, Loop, & Carnoy, 1987, p.4)

## Sources

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