

Chapter 115

The Cloud in Education: Policy, Leadership, and Management Issues

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ABSTRACT

This chapter is based on a review of literature written as part of the project “School on the Cloud” (SoC) launched by 57 project partners in March 2014 in Athens, Greece. The SoC project sought to provide a better understanding of potential impact that Cloud Computing can have on education in Europe. It presents leadership and management issues related to the adoption and implementation of the Cloud in education. It has been developed through a mixed-research approach involving desk-based review, analysis and policy guidance for educational stakeholders. E-leadership issues and support measures are identified for implementing the Cloud in education organisations.

INTRODUCTION

The flagship policy for Europe 2020 recognises that a fundamental transformation of education and training is needed to address the new skills and competences that will be required in the future, if a single market is to be enabled and Europe is to remain competitive to grasp new opportunities. Innovating in education and training has been a key priority in several key initiatives of Europe 2020, for instance the Agenda for New Skills and Jobs, Youth on the Move, the Digital Agenda, and the Innovation Union Agenda, in the 2013 EC Communication on ‘Opening up education’ (European Commission, 2013) and the more recent Open Education Europa Community initiative (www.openeducationeuropa.eu). One of the main targets established to measure the success of Europe 2020 has been the modernisation of European Education and Training systems with the goals of reducing early school leaving and increasing tertiary education attainment.

The contribution of ICT to achieving these targets is recognised by policy-makers and other educational stakeholders. The role of ICT has been highlighted as a key enabler of innovation and creativity

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in Education and Training. However it has been widely agreed that the full potential of ICT is not being realised despite increases in expenditure and greater uptake in formal and informal education settings. However, the value and importance of the Cloud in improving the sustainability of ICT in education by reducing costs, increasing access to online resources and digital content and providing 24/7/365 access, has not been considered in a coherent manner across Europe.

According to Zwartjes et al. (2014), Cloud Computing represents a fundamental change in the way computing power is generated and distributed. It transforms the delivery of ICT tools and products into flexible, on demand services. As a result, many schools, universities and other educational organisations are considering moving their activities to the Cloud. Sultan (2013) described how, when it first emerged in 2007, Cloud Computing received a mixed reaction. He said that while some analysts saw merits in its application, others considered it to be a useless business model. Despite this, Cloud Computing continued to attract many followers, the numbers of ICT companies who embraced it increased and they began to offer many of their services in the Cloud.

Today, few people doubt the economic and organisational advantages and attractions of the Cloud Computing service paradigm. Green (2015) reporting on a university campus Cloud Computing survey by EDUCAUSE confirmed its importance to them for the future. Senior IT officers from more than 400 universities and colleges were interviewed. Three-quarters of them agreed or strongly agreed that Cloud Computing offered a viable strategy for key campus administrative applications and 69% reported that Cloud Computing was an important part of their campus plan to reduce IT costs. This demonstrated that Cloud Computing was becoming important across higher education.

The Cloud Computing market in the EU is expected to continue to grow over the coming years. IDC (2015) estimated that in 2015 \$8.2 billion was spent in Europe on Cloud services. In 2016, 21% of EU enterprises used Cloud Computing services, especially for hosting email systems and storing files and this is expected to rapidly increase (Eurostat, 2017). They reported that 42% of enterprises not using Cloud Computing reported insufficient knowledge about the Cloud as the main barrier.

Without question, Cloud Computing is the technology that will provide the foundation for administrative and operational IT systems in the consumer, corporate, and education markets in the coming years. However education organizations have tended to adopt a careful, risk-free approach to it. In a survey of 372 of its member institutions EDUCAUSE, a US-based non-profit organization that promotes the intelligent use of information technology in higher education, revealed that data privacy and data security risks were among their most important barriers to overcome (Green, 2015).

THE CLOUD: A DISRUPTIVE INNOVATION FOR EDUCATION

Sultan & Sultan (2012) believe that Cloud Computing displays many of the attributes of a disruptive innovation. For example, it has destabilised existing ICT markets that relied on providing traditional, on-premises ICT solutions. It has transformed online business, academic and educational operations, for instance by using software and hardware systems that are based on user demand and with lower levels of infrastructural expenditure like hardware and dedicated staffing.

In terms of leadership and management in education, Sultan (2013) considered the disruptive powers of Cloud Computing. Disruptive innovations have the capacity to generate new markets. According to this, disruption can occur when the characteristics of existing products and services, like the price or complexity, either limit the number of potential consumers or else force inflexible, centralised provisions.

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