

Chapter 8

Role of Cloud Computing in School Education

Vikas Kumar

Chaudhary Bansi Lal University, India

Aashish Bhardwaj

Guru Tegh Bahadur Institute of Technology, India

ABSTRACT

Government and non-government organizations throughout the world are investing a lot in education because it is a primary tool to reduce poverty and crime in society. Still, the drop-out rates in primary as well as K12 education creates big worries for upcoming demands. This requires new strategies to make education motivating and improve student's commitment in learning. Student learning needs to be more flexible in time and place with interesting assignments and engagements. Technology can play a vital role in this and can enrich the student learning in many ways. However, with the advent of new educational tools, their affordability and access has become a significant concern for the schools. The cost factor for adopting technology in education can be addressed by cloud computing technology. School education on cloud computing platform will facilitate the low-cost technology access with inherent features like flexibility, privacy, scalability, provisioning, reliability, and security. Cloud computing-based school education infrastructure will inculcate the participation and self-evaluation skills in the students. This chapter reviews the educational attainment and educational challenges in indifferent countries including the choice of subjects in K12 education for students as well as the technology options available for the students. It then outlines the school education improvement strategy with integration of cloud computing benefits in the school education system.

INTRODUCTION

Education is the backbone of human life and is a basic tool for economic and social development (Sabi et al., 2016; Kumar & Nanda, 2019). School education with primary standards, high school and K12 are essential for career prospects and future growth. A survey done by UNESCO (United Nations Educational, Scientific and Cultural Organization) has found that population of 25+ years who have attained at least

DOI: 10.4018/978-1-7998-0238-9.ch008

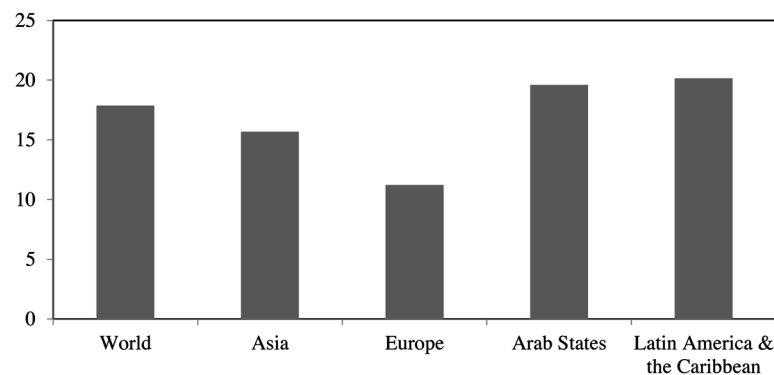
Table 1. Education attainment for population 25+ years (both genders)

Country	Year 2012	Year 2013	Year 2014	Year 2015	Year 2016	Average
Bangladesh	47.62	47.62	48.79	54.75	56.3	51.016
Colombia	73.57	74.51	75.4	76	77.06	75.308
France	98.45	97.9	97.54	97.52	97.63	97.808
Germany	100	100	100	100	100	100
United States of America	98.79	98.87	98.79	98.77	98.88	98.82
Turkey	86.96	87.3	87.83	88.28	80.94	86.262

primary education i.e. standard 1 or higher in different countries is not very much consistent across the world. Table 1 shows this data of different countries in years from 2012 to 2016 and their average (<http://data.uis.unesco.org/#>). If we consider the population of students entering and completing the K-12 education, the drop-out rate is very high. This is typically true for the Science, Technology, Engineering and Mathematics disciplines (STEM). A review of the world wide scenario has been presented by Kumar & Sharma (2017). On the other side, availability of teachers for the school students also does not show a very rosy picture and the ratio of student: teacher is generally very high. This student to teacher ratio is one of the important parameter in determining the effectiveness of school education in any country. The average of pupil – teacher ratio head count basis of years 2012 to 2017 as reported by UNESCO (<http://data.uis.unesco.org/#>) has been presented in Figure 1.

Choice of Subjects in K12

Student passing from Junior School i.e. 8th class are influenced by the experience of seniors, friends and relatives in making choices of subjects for K12 studies. The exposure to subjects like Science, Commerce and Arts helps them in selecting pathways. The over-all performance of school students in different fields, Classroom teaching, Teacher knowledge and Skills, LMS (Learning Management System) etc. always remain a guiding tool for this selection. Also, the target of any student to become Engineer, Doctor, Manager or Administrator guide them for selection of subjects. However, if we consider the Information Technology area, generally there are seven pathways available as a choice of subjects for

Figure 1. Comparison of student-teacher ratio

9 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/role-of-cloud-computing-in-school-education/234249

Related Content

Relationships Between Teacher Presence and Learning Outcomes, Learning Perceptions, and Visual Attention Distribution in Videotaped Lectures

Qinghong Zhang, Xianglan Chen, Yachao Duan and Xiaoying Yan (2022). *International Journal of Technology-Enhanced Education* (pp. 1-15).

www.irma-international.org/article/relationships-between-teacher-presence-and-learning-outcomes-learning-perceptions-and-visual-attention-distribution-in-videotaped-lectures/304079

Online Courses Accessible to College Students With Disabilities

Dorea D. Bonneau and Margaret M. Cramer (2021). *Handbook of Research on Modern Educational Technologies, Applications, and Management* (pp. 937-948).

www.irma-international.org/chapter/online-courses-accessible-to-college-students-with-disabilities/258821

The University-Industry Collaboration

Marcello Fernandes Chedid and Leonor Teixeira (2019). *Advanced Methodologies and Technologies in Modern Education Delivery* (pp. 701-715).

www.irma-international.org/chapter/the-university-industry-collaboration/212853

Investigating the Experiences of Mathematics Teacher Technology Integration in the Selected Rural Primary Schools in Namibia

Clement Simuja and Hilya Shikesho (2024). *International Journal of Technology-Enhanced Education* (pp. 1-15).

www.irma-international.org/article/investigating-the-experiences-of-mathematics-teacher-technology-integration-in-the-selected-rural-primary-schools-in-namibia/340028

Modelling the Contribution of Learning Analytics to Sustainable Education: Institutional, Pedagogical, and Societal Approaches

Eleftheria Atta, Avros Morphetis and Leonidas Efthymiou (2023). *Perspectives on Learning Analytics for Maximizing Student Outcomes* (pp. 263-281).

www.irma-international.org/chapter/modelling-the-contribution-of-learning-analytics-to-sustainable-education/332986