ABSTRACT

Massification is among the greatest challenges in higher education. In this chapter, the use of ICT was identified as a quality tool for efficient and effective teaching and learning of science and how it mitigates massification; where the ratio of educational resources and class numbers become incompatible, giving rise to stressful learning conditions resulting in loss of quality and lowering standard (Mohamedbhai, 2008). Using the qualitative and quantitative research paradigms, the survey, and single-case and parallel cross-sectional designs, the study involved 294 respondents out of 395 sampled population. The sampling techniques used were purposive, random and stratified. Data was collected through closed-ended questionnaires, oral interviews, direct observation, focus group discussion, and the use of archival records. Analysis was by use of descriptive statistics. Major findings indicated that use of ICT-enhanced quality of teaching and learning in the science-based faculties at Gulu University mitigates the burden of massification.
INTRODUCTION

This chapter explains the importance and achievement of ICT mediation in overall management and facilitation of University core functions (teaching, research and community engagement) in Sub-Saharan Africa and more particularly in Uganda. Amidst this huge success are challenges of low funding, inadequate and ill-trained human capital, inadequate education resources as well as the explosion in students’ enrollment. The chapter draws examples from many Universities in the region on how ICT intervention boosted management and development of academics more especially at postgraduate level. The paper also highlights on how Universities in Sub-Saharan Africa have met various challenges in the utilization and adaptation to ICT and how they have tried to cope up with these challenges.

BACKGROUND

Universities the world over and especially those in Africa and more particularly in Uganda are faced with numerous challenges including low funding, ill-trained human capital, inadequate education facilities and high students’ enrollment. The Economist, 2005 (cited in Mohamedbhai, 2008), advanced four main reasons for students’ explosion, viz; the democratization of education, the rise of the knowledge economy, the phenomenon of globalization which is turning higher education into an export industry, and competition for students, funds and research grants. This quantitative increase in enrollment resulted into situation of massification where the ratio of educational resources and class numbers become incompatible giving rise to poor quality standard (Mohamedbhai, 2008). Furthermore, overcrowding of lecture rooms, laboratories, students’ residences and libraries results in deterioration of the physical infrastructure and wearing out of equipment (Adu & Orivel 2006; Chevaillier, 2000; The Economist, 2005). Indeed, Ajayi et al. (1996) confirmed that “many of the older universities were planned when much smaller numbers of students and staff were envisaged.” Effah (2005) gives the example of Ghana where “a University built for 3,000 students is currently coping with about 24,000 without corresponding expansion in academic and physical facilities, overstretching existing facilities to their elastic limits.” The University of Yaoundé, Cameroun, which in 1993/1994 had over 40,000 students on a campus originally intended for 5,000 students. Calderon (2012) forecasted that by 2035 it is likely that South and West Asia will have about 125 million enrollments in higher education – a global share of 24%, making it the region with the second highest number of enrollments.