**CHAPTER ONE**

**INTRODUCTION**

Learning is the acquisition of knowledge or skills through study, experience, or being taught. Which has to deal with the mode of communication between two or more parties.

Education has been a big factor for growth and the significance of education, especially in developing countries is increasing because of progressing pressure to catch up with the developed world (Mercy 2020). The low quality of education in developing countries are attributed by factors such as poor infrastructure, lack of funding for education, lack of learning materials, having no teacher, or having an untrained teacher, poor means of transportation and many more.

But over the century the learning process has evolved and advanced to meet the needs of the ever-growing expectation of human. The advent of internet technology gave birth to a new possibility of communication and communication in turn gave us a new means of learning. Every year, more of the world’s people become connected to the network, its bandwidth increases, and its use becomes more integrated to all that happens in the globe (Mercy 2020). The access to this global network of connectivity has been key to opportunities, fulfilment for individuals and success in different areas of study and skills sets.

When we talk about education or learning in general the model has been straight forward, up until the pandemic happend. Education by convention where done in classroom of students with a teacher who leads the process. Physical presence was required, and any other type of learning was questionable at its best.

The novel virus (coronavirus) which was nominated as COVID-19 by Chinese scientists (Shereen et al. 2020) originated from China, spread worldwide, and killed many lives across different countries. The COVID-19 which became uncontrollable caused over 120 countries to stop face-to-face interaction and learning; and has resulted in schools and gathering shut across the world with over a billion children out of school and most of the higher education system are now operating through the E-learning model (Arfan Shahzad1  · Rohail Hassan1  · Adejare Yusuf Aremu1  · Arsalan Hussain1  · Rab Nawaz Lodhi2 confirmed ).

In developing countries where digitalisation has influenced our lives one way or the other, the pandemic has forced us to look for other means of learning. For most in developing countries teaching and learning started with WhatsApp, Telegram, Radio and Tv’s which are major mean form communication; and all this would have not been possible without cloud computing.

Cloud computing has made a huge advancement in technology and is widely used in various fields because of its various application and easy deployment. Cloud computing provides the capability of accessing collections of computing resources that can be rapidly and elastically provisioned and released based on users demand to serve a wide and regularly expanding variety of information processing requirements. For learning and teaching purposes cloud computing provides a cost-effective alternative to physical face-to-face interaction, easy of access despite being in different geographical location, on-demand sharing of resources in different formats such as e-books, audio, videos etc... Nowadays with easy access to the internet and mobile devices, everyone can connect and access cloud computing resources and services.

# Statement of Problem

E-learning via cloud computing is needed because it makes it easy for teaching and learning processes to be done via our mobile devices, at our own pace and not affected by difference in location barriers.

For educational settings, the increase in numbers of students and numbers of department has made it laborious to exchange study material and other documents between the students and the faculties; and the requirement to learn form home and not being able to physically interact with individuals has been greatly influenced by the Coronavirus pandemic which has forced everyone to stay at home in other to stay safe.

For developing countries, the shock of no being to interact with one another was devastating for them and they resulted in the use of

For the developing countries like Nigeria the channels used for learning where the applications mostly used for communication and broadcasting of messages. Radio and Televisions were one of the common tools used for learning, but they were fairly limited as the mood of communication was not bi-directional, communication happens in one direction and secondly radios and television could not satisfy all the categories of users as it is limited to a specific targeted user. Applications like WhatsApp and Telegram which are used for private messaging where also common applications mostly used for learning, but they were also limited mostly in the numbers of users that can access a particular resource at a time. E.g., WhatsApp and Telegram limits the number of users in a video calls and groups, sharing study materials were not really organized, it is often difficult to cater to a particular student needs and, they are not properly suited for all age groups of learners.

Furthermore, there are other tools that are actively being used for learning purposes such as Slack, Zoom, Google Meet and much more. The problem with all this application is that they are not design for learning purpose, some are not connected to the cloud as they can only be accessed over a particular area, while some cannot scale to meet the demand of the users. In general, they are not designed for learning purposes are they do not have the proper features to cover the complexity of learning online.

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# Reference

Shereen, M.A., Khan, S., Kazmi, A., Bashir, N., Siddique, R.: COVID-19 infection: Origin, transmission, and characteristics of human coronaviruses. J Adv Res 24(7), 91–98 (2020). https://doi.org/10.1016/j. jare.2020.03.005