Chapter II

REVIEW OF RELATED LITERATURE

2.0 INTRODUCTION

The purpose of this review of the literature is to analyze, review, and synthesize exciting research regarding the challenges of implementing ICT in schools, especially at the upper primary level by teachers. Additionally, it explores the causes of challenges that hinder the use of ICT and find out the suggestions and recommendations from previous research on the same problem. The objectives of this review of the literature are as follows.

1. To describe the current status of research regarding challenges of implementing ICT in schools at the upper primary level by teachers.
2. To draw a conclusion based on existing research to guide the focus and design of this current study.

Dr. Kassimu and A. Nihuka (2014) investigate the challenges facing the implementation of the ICT curriculum in primary schools in Dar es Salaam by considering issues of perceptions, ICT literacy of teachers and students, pedagogical knowledge of teachers, and access to ICT facilities. The study has revealed that generally implementation of the ICT curriculum in primary schools in Tanzania is facing several challenges, which include; unwillingness to teach ICT, lack of interest amongst some teachers to teach ICT, lack of ICT literacy amongst teachers and pupils, lack of pedagogical knowledge and limited access to ICT facilities.

Hannatu Abdullahi (2014) examined the role of ICT in science education in Sokoto state schools and stated the overview of ICT in education, the reality of ICT execution in the school sciences lab, the importance of ICT in education, one of the importance is to promote students' intellectual qualities through a higher order of thinking, problem-solving, improved communication skills and deep understanding of the learning tools and concept to be taught. The implication of ICT in science education was also discussed. Therefore, ICT in education is generally considered a discipline, resource, and key skill, within these three broad areas ICT, offers enormous benefit to society.

OKORAFOR, A. O. & OKORAFOR, P. N. (2011) found that any successful transformation in educational practice requires the development of a positive user attitude. Filling the schools with relevant ICTs neither improves instruction nor creates a more

effective learning environment. Getting educated solely depends on the individual teacher's role to set conditions and generate environments for learning. The benefits of ICT in science education could only be achieved when teachers that are still key to learning have developed positive attitudes and competencies for instructional use of ICT.

Lisanti*, R Ambawati, EK Putri, DA Rahayu, and F Khaleyla (2021) reported the difficulties faced by science teachers in succeeding in online learning. The difficulties faced by teachers were caused before the Covid-19 pandemic: they never held online learning. The teacher had not possessed the experience and forwardness to succeed in online learning. Teachers' difficulties came from the factor of technology, students, and teacher. Most of the participants stated that internet connection availability was the main problem in online learning. The other difficulty was teachers had to motivate students to join online learning since they were lack of motivation and discipline. Personally, the teacher got difficulties to make proper online learning that can help students to understand science concepts. The effort done by teachers to overcome difficulties were applying active learning, using multimedia, associating with parents, giving achievement, and communicating with every student personally.

Dr. Devi (2019) found that the initiative of ICT in Higher institutions should start from top-level management and should go from teachers to students. The top management is responsible for the availability of ICT tools and the provision of training to teachers. It is the responsibility of the teachers to utilize the same properly. The students should accept and benefit from using ICT in their learning process. The teaching staff should have ICT knowledge and be able to integrate it into the teaching-learning process. They also encouraged their students to use ICT to learn so that they can develop their knowledge and become competent. It is opined by the teachers that the teachers who have ICT knowledge and the ability to integrate it into the teaching-learning process can encourage the students to use ICT in the learning process so that they can develop their knowledge and become competent. This can only be achieved through the availability of ICT tools in the institution. Only the environment can bring changes among teachers and students. Education is important for the society ICT is important for quality education and the ICT-enabled environment is important to all these.

Vesna Ferk Save (2017) investigated, **that** despite the rapid development of ICT and the great level of advances in science and technology in the previous decade, science teachers are

facing many challenges and opportunities in science education in their school practice. The article attempts to address some of the aspects relevant to this very current topic. Thereby, teachers' Technological Pedagogical Content Knowledge (TPACK) can be recognized as a dynamic, integrative, and transformative knowledge of technology, pedagogy, and science content needed for the pedagogically meaningful integration of ICT in science teaching. Although the general TPACK framework has been accepted in a wide range of areas and is also extensively used in the science education field, some researchers have proposed variations of the TPACK framework to address the specific needs of science teachers. The concept of Technological Pedagogical Science Knowledge (TASK), is a framework for TPACK specific to science education.

2.1 Research Findings

After I reviewed available research, I found three main threads that provide insight into this study. For purpose of this review, I divided the research into three main categories of focus: (a) Teachers' perception of challenges for implementing ICT. (b) Availability of resources of ICT. (c) Impact of ICT on the teaching-learning process.