

**BIOLOGY TEACHERS' PERCEPTION OF THE INFLUENCE OF COVID-19
LOCKDOWN ON TEACHING AND LEARNING OF BIOLOGY IN SENIOR
SECONDARY SCHOOLS MINNA MUNICIPAL, NIGER STATE**

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2017/3/69317BE

**DEPARTMENT OF SCIENCE EDUCATION
FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA,
NIGER STATE, NIGERIA.**

AUGUST, 2021

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ABSTRACT

Corona virus (COVID-19) pandemic seriously causes concerns to global educational systems which has led to the total lockdown of major cities globally which resulted in the early closure of schools in the cities affected, Nigeria inclusive. The study evaluates biology teachers' perception of the influence of the COVID-19 lockdown on teaching and learning of biology in secondary schools in Bosso local government, Minna, Niger state. Descriptive survey design was employed in the study. Population for the study is 328 biology teachers from which a sample of 64 biology teachers from six selected schools were randomly selected using simple stratified sampling techniques respectively. Data was collected using a structured questionnaire. The reliability of the instrument was found to be 0.70 using Cronbach Alpha. The data was analyzed using descriptive statistics of mean and standard Deviation to answer the research questions and inferential statistics using t-test to test the null hypotheses by the means of the SPSS statistical package. The result of the finding showed that; biology teachers perceived that teachers were not motivated to teach during the covid-19 lockdown with a grand mean score of 3.36, students were not motivated to learn during covid-19 lockdown with a grand mean score of 3.33, that covid-19 lockdown affected students' academic performance with a grand mean score of 3.55, and finally biology teachers perceived that covid-19 lockdown has really ruptured school academic calendar with the grand mean score of 3.46. The following recommendations were made: there should be a need for government to organize ICT training for both teachers and students which will help them in the use of online applications for e-teaching and learning, the government should carefully check issues experienced during the sudden emergence of the pandemic lockdown and prepare an alternative in education against future occurrences.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the study

The Education during Emergency Plan (EDEP) is mainly designed for learning and teaching environment continuity during the COVID-19 and aim to develop interactive distant learning and media channeled approaches to ensure learning continuity for all public school students during an emergency, ensure accessibility, and keep stimulating innovative practices and continuous improvement on long term to sustain those approaches.

The corona virus pandemic also known as the covid-19 pandemic was first discovered as an epidemic in Wuhan, city China (WHO, 2019). It is a global pandemic that is caused by the severe acute respiratory disorder. The COVID-19 virus also known as coronavirus 2(SARS- coV-2). The causative agent of COVID-19 was isolated and identified as a novel corona virus, initially designated as 2019-nCoV (Gralinski and Menachery, 2020).

The outbreak of deadly Corona virus disease in China during the month of December 2019 spread to various parts of the planet in a few months. On 11th March 2020 World Health Organization (WHO) declared it as a pandemic. To prevent this uninhibited spread of corona virus the whole world was forced to go into complete shutdown to maintain social distancing. Along with the severe health crisis illustrated by COVID-19 impacted the education sector in a disastrous way. Education is one of the key determinants of a country's economic growth, which can neither be avoided nor ignored. The countrywide lockdown led to the closure of schools, colleges, and universities for an undefined period of time. This sudden shutting down has blocked all academic activities and caused to immediate loss in the learning and further loss in

human capital, job opportunities, and economic growth, in long run. The United Nations Educational Scientific and Cultural Organization (UNESCO) in 2nd June 2020 stated that nearly 1.2 billion students are facing unprecedented disruption in education throughout the world and more than 200 million students of higher education institutions were left out from their institutions.

The Ministry of Human Resource Development (MHRD) Government of India recorded that 993 Universities, 39931 Colleges and 10725 stand-alone institutions were left closed. More than 32 scores of students had to suffer by the various restrictions and the nationwide lockdown since mid of March 2020 (Jena, 2020). In the midst of this lockdown period in order to provide uninterrupted learning opportunities many institutions have started online mode of learning as an alternative to face-to-face mode of learning. Online learning is the only option left out in the hands of academicians to carry out academic activities, which is in line with the precautionary measures of COVID-19. Many professional course-running institutions like teacher education institutions where both theory and practical sections are equally significant to exercise have also started imparting education through online mode. The sudden swap from traditional approach of learning to a new approach of learning integrated with technology didn't give any chance to students as well as teachers for making a proper plan for lesson delivery, assessments, technical arrangements or providing any support thereof. In this context, it is deemed to be important to assess the e-readiness and perception of student teachers towards online learning.

Adaptation to emergency is the key for the successful response. Strategic planning for emergencies is of vital importance to ensure solid measures of preparedness. Nevertheless, strong preparedness does not always support adaptive response. In many cases, emergencies come in unexpected forms or acceleration rates, which

requires incorporating adaptive responses measures early in the preparedness phases; like dynamic referral procedures for collating further support, mobilization more resources and manpower, and maintaining correlation and communication channels among all autonomous sectors to backbone institutional task forcing, strengthen national response and ensure continuous improvement.

From that perspective, the Ministry of Education developed the Education During Emergency Plan (EDEP) convening synergetic approaches and collating the following three major phases to promote systematic institutional capacity building from the Ministry of Education central to school level to implement emergency proactive support that is of gradual pace to ultimately ensure solid institutional bases are formed and reinforce sustainability take-out. All phases are well correlated and presenting scheduled series of activities.

1.2 Statement of the Problem

The ultimate goal of secondary education is to develop the individual's mental capacity and character for higher education and useful living within the society. These objectives place enormous task and burden on the teachers, whose responsibilities are the planning, coordination, impacting knowledge, guiding, monitoring, assessment and evaluation of the students for efficient and effective performance in their subjects' curriculum.

However, the change in educational system owing to the COVID -19 pandemic which has caused classroom and laboratory classes to be shifted to online classes during the lockdown will affect effective and learning processes.

Unfortunately, teaching of biology in secondary schools involves classroom and practical classes. Practical is an integral part of biology, and while classes have shifted to online, has been a very difficult thing to conduct practical for students

online. It is against this background, that this research will be carried out to investigate the academic performance of students with the shift in laboratory practical class to online classes in some selected secondary schools Biology classes in Minna Municipal.

1.3 Aim and Objectives of the Study

The aim of the study is to survey Biology Teachers perception of the influence of covid-19 lockdown on teaching and learning of Biology in Secondary schools. Specifically, the following objectives are set to be achieved:-

- i. to identify the influence of covid-19 lockdown on teachers' motivation to teaching as perceived by biology teachers.
- ii. to identify the influence of covid-19 lockdown on students' motivation to learning as perceived by biology teachers.
- iii. to identify the influence of covid-19 lockdown on students' academic performance in secondary schools as perceived by Biology teachers.
- iv. to identify the influence of covid-19 lockdown on schools' academic calendar in secondary schools as perceived by Biology teachers.

1.4 Research Questions

The following research questions are developed to guide the study:-

1. What is the influence of covid-19 lockdown on teachers' motivation to teaching as perceived by Biology teachers?
2. What is the influence of covid-19 lockdown on students' motivation to learning as perceived by Biology teachers?

3. What is the influence of covid-19 lockdown on students' academic performance as perceived by Biology teachers?
4. What is the influence of covid-19 lockdown on schools' academic calendar as perceived by Biology teachers?

1.5 Research Hypotheses

The following research hypotheses are formulated to answer the research questions:-

HO₁: There is no significant difference between the male and female biology teachers' perception of the influence of covid-19 lockdown on teachers' motivation to teach.

HO₂: There is no significant difference between the male and female biology teachers' perception of the influence of covid-19 lockdown on students' motivation to learn.

HO₃: There is no significant difference between the male and female biology teachers' perception of the influence of covid-19 lockdown on students' academic performance.

HO₄: There is no significant difference between the male and female biology teachers' perception of the influence of covid-19 lockdown on academic calendar.

1.6 Scope of the Study

This research study is restricted to some selected schools in Minna Municipal of Niger State. Six (6) Schools in Minna were used. The study was carried out by distribution of questionnaire to the Biology teachers of secondary schools to

determine only the perception of the influence of covid-19 lockdown and its influence on teachers motivation to teaching, influence on students to learning and influence of covid-19 lockdown on students' academic performance and also how it influence academic calendar. Questionnaire was used to generate data.

1.7 Significance of the Study

The finding of this study will be of benefit to the educational stakeholders such of the federal capital territory ministry of Education, foreign bodies on education, communities and individual that owns schools, since it will provide adequate and useful information on the need for preparedness for alternatives for non-stop teaching and learning platforms in the case of global pandemic. It also addresses how this can yield improvements in academic performance of students and also motivate them to learn.

The findings of such a study would also help various stakeholders, school leaders and teachers to also improve on their computer skills and to be well prepared resource-wise. In addition, the findings could be useful to both teacher training institutions and the Ministry of Education and Human Resource Development (MoEHRD) in the provision of online training skills, financial and human resources respectively to meet up with the present challenges and prepare against and future occurrence ahead.

1.8 Operational Definition of Major Terms

Lockdown: A lockdown is a restriction policy for people or community to stay where they are, usually due to specific risks to themselves or to others if they can move and interact freely. The term "stay-at-home" or "shelter-in-place" is often used for lockdowns that affect an area, rather than specific locations

Perception: The ability to see, hear, or become aware of something through the senses. A believe or opinion often held by many people and based on appearance.

Learning: Learning is the process of acquiring new understanding, knowledge, behaviors, skills, values, attitudes, and preferences. The ability to learn is possessed by humans, animals, and some machines; there is also evidence for some kind of learning in certain plants.

Influence: It is an action exerted by a person or thing with such power on another to cause change. It involves the ability to change development of a thing

Motivation to teach: This refers to reasons that emanating from individuals' intrinsic values to choose to teach and sustaining teaching, and the intensity of teacher motivation which is indicated by effort expended on teaching as influenced by a number of contextual factors.

Motivation to learn: This is the willingness of the student to improve study or acquire knowledge.

Academic Performance: It is the measurement of student achievement across various academic subjects or what a learner is able to accomplish in a course of a study. Teachers and education officials typically measure achievement using classroom performance, graduation rates and results from standardized tests.

Covid-19 pandemic: is defined as illness caused by a novel corona virus now called severe acute respiratory syndrome corona virus. It hits a wide geographical area and affects a large proportion of the population.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter contains the relevant literature reviewed and discussed under the following frameworks: -

- i. Conceptual Framework,
- ii. Theoretical Framework
- iii. Empirical Studies
- iv. Summary of the literature Review.

2.1. Conceptual Frameworks

2.1.1. Concept of Covid-19 pandemic

Covid-19 pandemic is defined as illness caused by a novel corona virus now called severe acute respiratory syndrome corona virus 2 (SARS-CoV-2; formerly called 2019-nCoV), which was first identified amid an outbreak of respiratory illness cases in Wuhan City, Hubei Province, China. It hits a wide geographical area and affects a large proportion of the population. Covid-19 is transferred from human to human by respiratory droplets close contact with diseased patients and probably by fecal-oral and vaporizer (Hindson *et al*, 2020). The best way to prevent transmission of these illnesses is to avoid being exposed to the virus. Therefore, some measures taken included washing of hands often avoid close contact, cover mouth and nose with a mask, cover coughs and sneezes, clean and disinfect regularly touched surfaces daily (CDC, 2020). In this regard, wearing of face masks in public corresponds to the most efficient means to prevent inter- human transmission (Zhang, 2020).

The COVID-19 pandemic has changed everyday life, imposing unprecedented sanitary, political, economic, social, and educational challenges. Home confinement and temporary school closures have also affected educational systems worldwide (Reimers and Schleicher, 2020). The transition to distance learning placed a heavy strain on teachers, students, and their parents (Hiraoka and Tomoda, 2020). The rapid shift in the delivery mode of instruction and an uncertain future may have led students to experience considerable challenges in maintaining their academic motivation. However, to the best of our knowledge, although some evidence exists, for instance, on student's learning habits during COVID-19 (Trung *et al.*, 2020).

2.1.2. Influence of Covid-19 lockdown on Education

The outbreak of Corona virus negatively affected educational activities worldwide. The corona virus pandemic affected educational systems worldwide, leading to the widespread closures of schools (Wikipedia, 2020). It created serious disruptions in academic activities, as well as in career plans. As part of the global efforts to combat COVID-19, many countries across the world closed down schools in an attempt to contain the corona virus pandemic. According to the United Nations Educational, Scientific and Cultural Organization (UNESCO) monitoring, over 100 countries implemented nationwide closures, impacting over half of the world's student population (UNESCO, 2020). Even Britain where Prime Minister Boris Johnson- one of those who earlier opposed the move, later admitted that "closing down schools could place further downward pressure on the upward curve of the Corona virus outbreak". (ABC News, 2020). Some of the countries that closed down schools due to COVID-19 include, Nigeria, Ghana, Senegal, South Africa, China, Ethiopia, India, Japan, Germany, and South Korea just to mention but a few. No doubts, unplanned school closures can cause severe problems for students, educators, parents and the

society at large. It could negatively affect the academic interest and performance of students. If the students are not engaged productively, it could lead to idleness which might result in youth involvement in crimes, loss of interest in learning, and poor academic performance. The US Centre for Disease Prevention and Control (CDC) also expressed concerns about the implications of school closures. According to the CDC, “longer closures may result in more students congregating outside of schools. Quentin (2014), states that school closing is very controversial, and it can have spillover effects on a large number of students in receiving schools. It can affect the quality of teaching and learning and academic achievement particularly for students with special needs or those with learning difficulties that often requires more physical attention and guidance from the teachers. Though, technology can be used to remedy some of the fall outs from school closures, but it cannot replace the important effect of face-to-face learning.

2.1.3. Influence of Covid-19 lockdown on teachers

Teachers are not ready yet because the pandemic came suddenly and changed the education system in Nigeria, it makes teachers confused about how to teach. During the pandemic of Covid-19, the teachers didn't have the other way of teaching except online, every day they spent a long time with online learning. It made teachers get involved in the online learning system all time. However, the area of teacher motivation has not received as much attention even teachers themselves sometimes overlook the importance of their motivation in the profession.

The engagement of scholars had a crucial role in teachers' satisfaction and motivation. For teachers formal education was more successful than online education because of full communication and interaction (Orhans Beyhan, 2020). Online

learning improve teachers' performance, during the pandemic teachers' suddenly have to be smart dig up a lot of media, in a short time we have to do online learning at first we only use the closest application, which is WhatsApp. Advantages of online learning for instructors: tutoring can be done anytime, anywhere, online materials can be updated, and learners can see the changes immediately. When learners can access materials on the internet, it is easier for instructors to direct them to appropriate information based on their needs, it is use to determine learners' needs and to assign suitable materials for learners to select from, to achieve their learning goals. For teachers, formal education was more successful than online education because of full communication and interaction (Nambiar, 2020).

2.1.4. Influence of covid-19 lockdown on students

Academic performance of students is a key feature in education (Rono, 2013). It is considered to be the Centre around which the whole education system revolves. According to Narad and Abdullahi (2016), academic performance is the knowledge gained which is assessed by marks which a teacher and/or educational goals set by students and teachers to be achieved over a specific period of time.

There was a decrease in students' academic motivation to learn during covid-19 lockdown period due to the challenges posed by the lockdown measures in all countries. Learners' academic performance can be affected by their age and gender, and parents' education can influence academic performance of learners. First, students' age, the younger students might have found it harder to cope with lockdown measures and maintain their academic motivation.

2.1.5 Rationale of the Study

The horrific Pandemic caused by Corona virus held all the educational institution shut down since the very beginning of this year 2020. Ultimately that led to immediate closure of academic activities since mid of March for an uncertain period of time. In such a devastating situation to prevent learners from academic losses the only option left on the hands of educationists was a shift towards online mode, which does not require physical contact and is possible to carry out under the guidelines for preventing the spread of Corona virus. Though online learning was not new to adapt into education sector but accepting it, as a substitute to traditional method (face-to-face) of learning was very much sudden. Online learning started since 1980s'. "A more feedback-oriented version of distance learning, online learning makes use of the internet to connect students with educational material, as well as instructors and sometimes other students" (Desai, 2013). Keeping this in mind many researchers attempted to assess the status of online learning, perception of students and teachers towards online learning and to address the challenges and needs of online learning. Few studies were illustrated as below:

Students' acceptance for e-learning was found to be positive and mobile technology was the preferred medium for this. But a persistent unfamiliarity towards e-learning tools as compared to social media was noticed (Adams, 2016). Smith and Mcdermott (2019) revealed that most of the learners' preferred online learning to other types of learning as it provides more flexibility in learning, time management, offers more courses globe wide.

Azis and Susanti (2019) established that learners' experience on e-learning has a significant influence on the effectiveness of learning process as well as to achieve indirect learning outcomes through the learning process.

Mohalik (2019) found that more than 50% of trainees do not know learning management system, virtual worlds, podcasts and web design applications and majority of trainees use group email and whatsapp for academic work and only 20% of trainees use digital devices for using PPT in class, create digital learning materials, and provide feedback to students. A study to assess students' perception towards e-learning in unusual COVID-19 pandemic situation in India (Nagar 2020) could identify major determinants of effectiveness of online learning sessions are: availability of digital devices, internet connectivity, infrastructural facilities and user friendliness with this learning mode. The researcher found that the sudden swap to online mode of learning significantly affects the perception of students towards it and most of them were first time user. Similar findings were noted from the case study carried out by (Girik, 2020) found that learners perceived e-learning as a good adaptation to teaching learning looking into the severe pandemic situation. But students did not find the instruction and instructional material without teacher's voice note much useful. One interesting finding came out from the study of (Jha *et al.*, 2020) that students preferred group task to individual task in order to help their friends who were not able to access online platform of learning. But teachers' unfamiliarity towards ICT and existence of digital divide across the country are observed constraints for online mode of learning. A comprehensive study by (Ali, 2020) addressed some key areas to be focused for continuing online and distance learning in this pandemic situation. Apart from digital resources, the infrastructural arrangements, learners' and teaching staffs' technological skills, motivation,

confidence, interest, positive attitude for accepting sudden change are the important factors to work on for ensuring uninterrupted teaching and learning. Bhaumik and Priyadarsinini (2020) concluded that most of the learners found online learning not effective and techno teaching approach of teachers and digital skills of both teachers and learners needs improvement. An article published in Business standard dated 1st May 2020 of Delhi edition by Farooqui reflected on the advantages and disadvantages of online teaching based upon the responses of some professors and students under this pandemic period. The advantages of online learning being the uninterrupted learning, flexibility and learning at own pace whereas the disadvantages being the technological constraints, time consuming, ambiguity in assessment, lack of interaction among students and teachers as compared to face to face mode of learning. But all students interviewed accepted online leaning as an appropriate approach of teaching and learning under such unusual conditions. Some students felt online learning as stressful and financially challenging.

As of 10th May 2020, COVID-19 pandemic has gripped 215 countries across the globe and many of these are: 1. Academia was among the first few sectors that faced rapid shut down of all its activities. 2 Thousands of schools and higher education institutions and millions of students are affected by lockdown due to the COVID-19 pandemic as the first response from the educational sector was to completely half its operations. 3 Corona Virus pandemic has triggered the significant change, imposing many challenges in the higher education community globally. 4 After about four months in the global crisis, we have started realizing that the COVID-19 is here to stay and we need to find solutions to move on. This crisis can be looked uponas an opportunity to reconstruct our long-standing educational systems and establish better and updated practices inacademia, suitable for the present generation of learners. 5

We must prepare ourselves for the changing world when COVID-19 pandemic is blown off.

2.1.6 Concept of Online Teaching and Competencies

Online learning is seen as access to learning experiences through some technology. And it can be defined as a subset of distance education that has always been concerned with providing access to an educational experience that is, at least, more flexible in time and space than campus-based education. The definition of online learning during the pandemic is that teachers and students do not go to school but they teach and study from home using technology e.g. smart-phone, laptop, i-pad, and tablets.

Online researchers have examined competencies in online technologies (Guasch, *et al*, 2010). Guasch et al. (2010) analyzed previous research on university teacher competencies for teaching and learning in virtual environments and concluded that online faculty take on a designing/planning function, social function, instructive function, technological domain, and management domain. In this study, we examine four areas of online teaching competencies: course design, course communication, time management, and technical.

2.1.7 Course Design

Course design is identified as a teaching competency, alongside course implementation, facilitation, and assessment. The course design process involves planning instruction with course objectives, instructional strategies, activities, and assessments that align to objectives. Major considerations when designing courses are defining appropriate activities and workload for students (Napier *et al*, 2011). Courses

need to be organized into a structure, a course syllabus, and course guidelines to define requirements (Ko&Rossen, 2017). There is need to design Faculty assessments considering whether students will work individually or interact with peers in groups, striking a balance between independent, interactive, and interdependent activities. Courses also need to provide students with grading criteria (Ko&Rossen, 2017). Course design involves not only preparing materials, course lectures, activities, and assessments in advance, but also providing clear expectations of assignments and/or activities and anticipating student question.

2.1.8 Course communication. Course communication helps in interpersonal communication and interaction between the teacher and students in online courses. Feedback needs to be adequate, timely, and prompt.

Facilitating discussions is a key competency when teaching online (Redmond, 2011). Discussion forums, emails, and chats give educators a variety of tools to promote learner– instructor, learner–content, and learner–learner interaction.

2.1.9 Time management. Competent faculty has adequate time-management. Online course design and planning is time-consuming and takes significantly longer for a first-timer, as all the course objectives, content, activities, and assessments have to be redesigned for an online format. Faculty spends additional time outside of class to help struggling students, including addressing questions about students’ technical difficulties (Napier *et al.*, 2011). Faculty experience on previous online course design and facilitation, and established support at the university might reduce the time for subsequent course design and facilitation.

2.1.10. Technical Competencies Technical competencies make use of specific technology, independent of teaching. They include technical knowledge (e.g.,

knowledge about how to use software, synchronous and asynchronous tools, operating systems, learning systems and tools, and Web browsers, and how to implement security updates) and proficiency in the use of current technology. The expansion of online content, Web 2.0 tools, and audio- and video-based learning materials has put pressure on faculty to curate digital online resources for online students (Espiritu, 2016). Faculty also need to learn how to select, manage, use, and/or produce videos for course lectures, welcome videos, and demonstrations. Faculty are increasingly expected to handle Web-based enrollment courses, as online grade books are becoming a norm (Brooks, 2010).

In our review of the literature, we found that the discourse among researchers on the competency frameworks, roles, requirements, and tasks to teach online is rich. There is, however, limited research on the readiness of faculty to perform these online teaching competencies. More importantly, such competencies differ for faculty by culture, contexts, organizations, and countries (Guasch *et al.*, 2010), which in turn implies that readiness will vary by these same factors. Thus, there is a need to further study faculty readiness to teach online.

2.1.11 Faculty Readiness to Teach Online

Several institutions use a readiness instrument to assess faculty readiness to teach online, but most of these are not systematically studied or empirically tested. Few researchers have studied faculty readiness for online teaching. Gay (2016) examined the assessment of online instructor e-learning readiness before, during, and after course delivery. They found that the availability of online help desk services is an urgent need of online faculty. Lichoro (2015) found that faculty members do not feel adequately prepared to teach online. However, there is still a need to identify

competencies to prepare faculty to teach online, and by doing so we will be providing guidance to prepare faculty to teach online. Downing and Dymont (2013) examined teacher educators' readiness and preparation for as well as their perceptions of preparing pre-service teachers in a fully online environment and found that teachers considered online teaching time-consuming. Based on the research examined, it was found that faculty new to online teaching felt a lack of readiness to teach online and needed technical and pedagogical support, and time-management strategies.

2.1.12. Attitude (Importance).

Teaching online is different from teaching in the classroom, faculty competencies to teach online require faculty to adjust their attitudes towards technology and teaching. It is essential to examine faculty attitudes on the importance of the various competencies for online teaching, it is important to review the course for accuracy, assessing learners' attainment of learning objectives.

2.1.13. Ability (confidence). *Instructor ability* is conceptualized as the teachers' perceptions of their own competence at teaching, related to use of instructional strategies and teaching effectiveness (Lee & Tsai, 2010). Research on online teaching ability can contribute to understanding how teachers' ability affects what they do when they teach online and contribute to the development of resources to best meet faculty development needs (Northcote, Gosselin, & Reynaud, 2015). (Northcote *et al.*, 2015) measured online teaching ability, surveying the variations in self-confidence to carry out online teaching tasks, such as selecting technological resources, conducting virtual interaction, facilitating content migration, ensuring course alignment, and establishing course structure. Their study revealed that faculty had lowest self-efficacy in selecting technological resources and highest self-efficacy in online course

alignment, which was to effectively align learning objectives, course assignments, assessment strategies, and learning activities within online courses. Perception of online teaching ability was seen to improve with professional development programs for faculty (Northcote *et al.*, 2015).

2.1.14 Demographic Factors in Online Teaching

Studies have examined gender differences in online teaching. Gender pertaining to motivations to teach online. Thus, gender differences related to teaching with technology are worth further investigation. Other factors that influence positive attitudes toward teaching online are prior experience teaching online, availability of online courseware, improved training and facilities, feedback from students, and flexi study showed that the number of times faculty had taught online was an important consideration in how motivated in the online modality; with more experience in the online modality, self-confidence levels increase. Carrol, Sanmamed, and Sellés (2013) found that faculty who have more teaching experience online also have greater perceived ability to perform pedagogical competencies online.

2.2 Theoretical Framework

2.2.1 The Humanistic View of Motivation

Abraham Maslow earned his Ph.D. in a psychology department that supported the behaviorist position. After he graduated, however, he came into contact with Gestalt psychologists (a group of German psychologists whose work during the 1920s and 1930s laid the foundation for the cognitive theories of the 1960s and 1970s), prepared for a career as a psychoanalyst, and became interested in anthropology. As a result of these various influences, he came to the conclusion that American psychologists who

endorsed the behaviorist position had become so preoccupied with overt behavior and objectivity that they were ignoring other important aspects of human existence (hence the term *humanistic* to describe his views). When Maslow observed the behavior of especially well-adjusted persons--or self-actualizers, as he called them--he concluded that healthy individuals are motivated to seek fulfilling experiences.

2.2.2 Maslow's Theory of Growth Motivation

Maslow describes seventeen propositions, discussed in *Motivation and Personality* (3d ed., 1987), that he believes would have to be incorporated into any sound theory of growth motivation (or need gratification) to meet them. Referring to need gratification as the most important single principle underlying all development, he adds that "the single, holistic principle that binds together the multiplicity of human motives is the tendency for a new and higher need to emerge as the lower need fulfills itself by being sufficiently gratified".

The first four needs (physiological, safety, belongingness and love, and esteem) are often referred to as deficiency needs because they motivate people to act only when they are unmet to some degree. Self-actualization, by contrast, is often called a growth need because people constantly strive to satisfy it. Basically, self-actualization refers to the need for self-fulfillment -- the need to develop all of one's potential talents and capabilities. For example, an individual who felt she had the capability to write novels, teach, practice medicine, and raise children would not feel self-actualized until all of these goals had been accomplished to some minimal degree. Because it is at the top of the hierarchy and addresses the potential of the whole person, self-actualization is discussed more frequently than the other needs.

Maslow originally felt that self-actualization needs would automatically be activated as soon as esteem needs were met, but he changed his mind when he encountered individuals whose behavior did not fit this pattern. He concluded that individuals whose self-actualization needs became activated held in high regard such values as truth, goodness, beauty, justice, autonomy, and humor (Feist, 2015).

In addition to the five basic needs that compose the hierarchy, Maslow describes cognitive needs (such as the needs to know and to understand) and aesthetic needs (such as the needs for order, symmetry, or harmony). While not part of the basic hierarchy, these two classes of needs play a critical role in the satisfaction of basic needs. Maslow maintains that such conditions as the freedom to investigate and learn, fairness, honesty, and orderliness in interpersonal relationships are critical because their absence makes satisfaction of the five basic needs impossible. (Imagine, for example, trying to satisfy your belongingness and love needs or your esteem needs in an atmosphere characterized by dishonesty, unfair punishment, and restrictions on freedom of speech.)

Many leaders fall into the trap of focusing on the deliverables/task before building the relationships and focusing on the people in the team.

They create a 'task culture' which may well achieve early success but a culture that isn't sustainable in terms of high performance. As leaders we need to avoid the 'dead body' syndrome.

Avoiding the Dead Body Syndrome

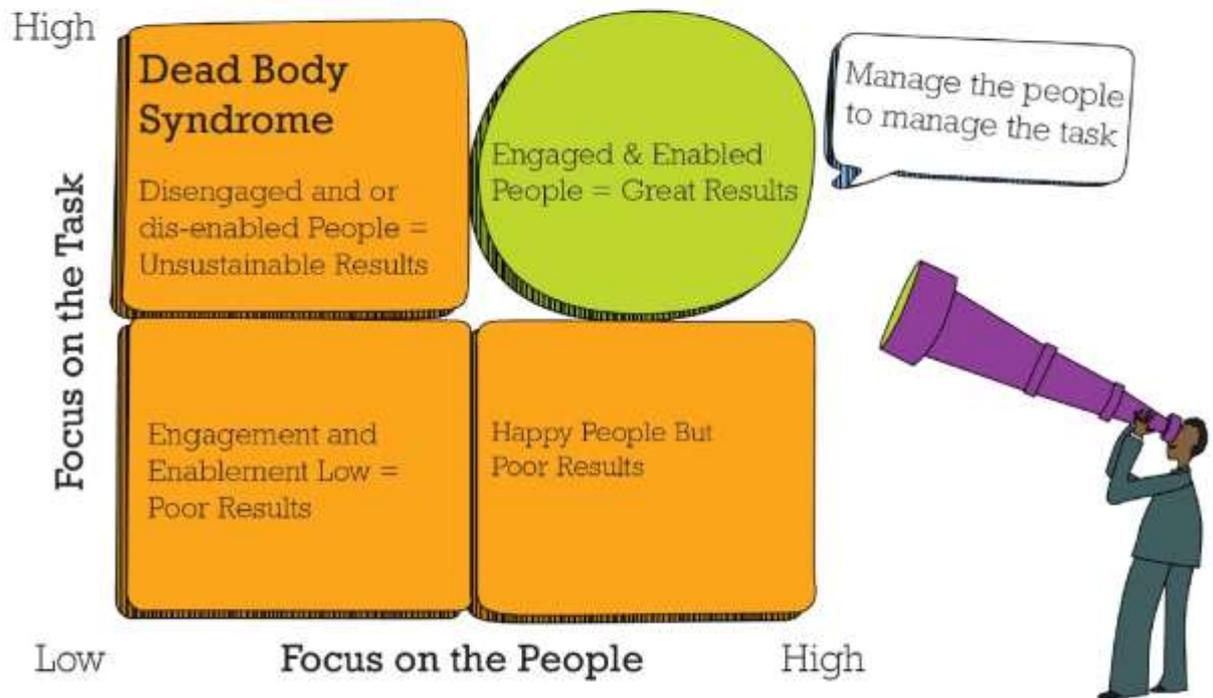


Figure 2.1: Maslow's Theory of Growth Motivation

You do that by ensuring you understand team members and what needs to be in place to create a positive team climate. A good way of understand what needs to be in place is using a well-known theory of motivation. Although very old it still adds value into thinking about what you need to do to lead a team.

Maslow's hierarchy of needs is a theory proposed by Abraham Maslow in his 1943 paper "A Theory of Human Motivation" in Psychological Review. Maslow subsequently extended the idea to include his observations of humans' innate curiosity. His hierarchy of needs is a motivational theory comprising a ve-tier model of human needs, often shown as hierarchical levels within a pyramid. From the bottom of the hierarchy upwards, the needs are: physiological, safety, love and belonging, esteem and self-actualization.

He stated that the needs lower down in the hierarchy must be satisfied before individuals can attend to needs higher up hierarchy.

2.2.3 Maslow's Theory of Motivation



Figure 2.2: Maslow's Theory of Motivation

When building elite teams we focus on making sure all these elements are met individually and people become the best they can be. We do that by making sure the key elements for team success are in place too.

2.2.4 High Performance Team Model



Figure 2.3: High performance Team Model

When you combine the individual and teams needs that's when performance takes on. You'll really start driving your team towards success and achieve outstanding results as a leader.

We need to create a place where everyone is striving to be the best they can be. Their physiological needs are met, they feel safe, loved, belong to something special, they are proud, confident and have high esteem. A place where the team has a purpose, goals are clear and values aligned. A place where spirit, skills, process and health all combine to ensure the magic happens. We usually create that by using the 6Ps Team Canvas method.

2.2.5 The Impact of Cooperative Learning on Motivation

Classroom tasks can be structured so that students are forced to compete with one another, work individually, or cooperate with one another to obtain the rewards that teachers make available for successfully completing these tasks. Traditionally, competitive arrangements have been assumed to be superior to the other two in increasing motivation and learning. But reviews of the research literature by David Johnson and Roger Johnson found cooperative arrangements to be far superior in producing these benefits. In this section we will describe cooperative-, competitive, and individual learning arrangements (sometimes called goal structures or reward structures), identify the elements that make up the major approaches to cooperative learning, and examine the effect of cooperative learning on motivation, achievement, and interpersonal relationships.

2.3 Empirical Studies

Empirical studies related to the influence of covid-19 lockdown on teaching and learning are scares, but the researcher was able to back up this study with few relevant literature.

Retno and Wirza (2020) carried out a research and employed a descriptive design with a qualitative approach. A survey questionnaire and interview were used in this study to elicit the responses of 102 junior high schools English teachers in Bandung. This study's findings revealed that the participants showed a positive perception of the usefulness and ease of online learning systems during pandemic covid-19.

Ogunode (2020), who carried out a survey research using teachers in Abaji area council of FCT Abuja, Nigeria. A structured questionnaire was used to select sample

size. The results of the findings shows that schools close down would affect the academic programme of senior secondary Schools, 80 % of the respondents agrees that school close down has led to suspension of internal and external examinations reduction in investment on education on education and also has led to suspension of teaching and learning in schools, it has also affected the academic calendar of senior secondary schools, it has also led to the suspension of all extra- curriculum activities in senior secondary schools.

Luis *et al.*, (2020) also carried out research on current situation of education in the context of the pandemic caused by covid-19, which Led to the closure of centers and the transfer of face to face education to online education. The purpose of this study is to offer a proposal that optimizes the work of education professionals in the current context of a pandemic through the use of Information and Communication Technologies (ICT) under the novel processes, contributing to meaningful learning in students. The symbiosis of ICT and neuro-education can make a great contribution to the paradigm shift that is taking place today.

Oyinloye (2020) further carried out a research and employed a case study research approach. The researcher carried out the research work in Ado- Ekiti LGA of Ekiti state, Nigeria .A semi-structured interview was used to collect data from the teachers through phone calls and WhatsApp chats. Findings from this study revealed that there is the possibility of a further drop in the pass rate (%) of senior secondary School students' in this year's external examinations if this pandemic is not contained soon knowing fully that the school academic calendar has already been disrupted due to early closure of schools in Nigeria.

Garg, (2020), The Covid-19 pandemic had affected all education sectors like never before. Initially, everyone from political leadership to academic administrators was confused as to what course of action to be taken. After considerable discussions and debates, it was decided that teaching–learning be shifted to e-mode so as to save human lives as well as to compensate the loss of academic semester. Therefore, the change was abrupt, drastic, posing unique challenges to both teachers and students.

Students' perception of online learning in education tend to be greatly influenced by factors like age, gender, learners' computer knowledge and technology tolerance, patterns of learning, lack of awareness, interest, personal touch, and interaction due to connectivity issues.

Affouneh *et al.*, (2020), Students preferred the mixed mode of courses to e-learning course, the main focus of the instructors should not be merely on adoption of Web-based learning in the course of crises, such as the COVID 19 Pandemic, but be on the development and improvement of the quality of learning during the emergency.

Hasan (2020), online teaching emerged as a potential tool to support students' learning remotely. To ensure that education at all levels could continue, the educational institutions across India and worldwide switched to online mode of teaching–learning. The biggest challenge, however, was to make learning accessible and worthy to the learners of all ages and stages in this moment of crisis. The author opined that instead of starting online teaching in an unplanned and hurried way, understanding students' priorities and challenges while learning online would help in aligning technology and pedagogy in tune with students' interests and learning preferences.

Onyema *et al.*, (2020) who carried out a survey research to understand the impact of corona virus pandemic on Education. The data were collected through structured questionnaires administered to 200 respondents that consist of teachers, students,

parents and policy makers selected from different countries. The results of the findings shows that COVID19 has adverse effects on education including learning disruptions and decrease access to educators and students relied on technology to ensure continued learning online during the corona virus pandemic.

However, online education was hindered by poor infrastructure, network, power, inaccessibility and unavailability issues and poor digital skills.

Nsabayezu *et al.*, (2020), carried out a research and reported that teachers' perceptions towards the utilization of whatsApp in supporting teaching and learning of chemistry during the COVID-19 pandemic in Rwandan selected secondary schools. The collected data by using a survey questionnaire were from 18 chemistry teachers in Nyarugengen and Kicukiro Districts.

The result of the findings revealed that WhatsApp is effective for teaching chemistry and supporting students learning.

WhatsApp is effective for teaching, and support students' learning. This as well promotes students' motivation, engagement, collaboration, interaction, participation and ubiquitous learning. Despite the facilitation of collaboration, between teachers and their students while using. WhatsApp, the internet connection related problems including its cost and availability were among the hindering factors for effective collaboration for both students and teachers.

2.4 Summary of the Literatures reviewed

The review of literature related to this topic was done under the relevant literature reviewed centered on three frameworks that is the conceptual framework, theoretical framework and the empirical framework. Under conceptual frame work, the concept

of covid-19 pandemic, influence of covid-19 lockdown on education, teachers and students, the concept of online teaching and competencies, which is discussed under four headings: course design, course communication, time management, and technology were reviewed. Under the theoretical framework, Maslow's theory of Growth motivation was reviewed and under the empirical studies closely related studies were reviewed.

In this Chapter, the research reviewed different literature that shows the factors that help in influencing teachers' motivation to teaching. On the effect of job satisfaction on teachers' motivation, it was found that; salary perceived fairness of promotion system, quality of working condition, social relationships, leadership and the job itself affect teachers in teaching. There is need for teachers' reward system in order to motivate them; it was found that appreciation from boss pay, bonuses, Fringe benefits and promotion affect teachers' motivation.

Garg, (2020), The Covid-19 pandemic had drastically affected all education sectors negatively. This brought about a lot of confusion as to how the situation could be managed, until it was later dissolved that educational programs be taken online to minimize the dangers of physical gathering. However, several factors limited online learning in education, these factors include age, gender, learners' computer knowledge and technology tolerance, patterns of learning, lack of awareness, interest, personal touch, and interaction due to connectivity issues.

Hasan,(2020) online teaching emerged as a potential tool to support students' learning remotely. To ensure that education at all levels could continue, the educational institutions across India and worldwide switched to online mode of teaching–learning. Guasch *et al.*, (2010) analyzed previous research on university teacher competencies for teaching and learning in virtual environments and concluded that online faculty

take on a designing/planning function, social function, instructive function, technological domain, and management domain.

Having reviewed all these issues there is a need to investigate the Biology teachers' perception of covid-19 lockdown influence on teaching and learning of Biology in Secondary Schools.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design

The design of the study is a descriptive survey. A descriptive survey design is a type of research design in which a group of people are studied by collecting and analyzing data from only a few people considered to be representative of entire group. The use of this research design is considered appropriate because it establish the opinions of principals on strategies that could help in ensuring managerial effectiveness in secondary school administration through the effective use of administrative leadership processes.

3.2 Population of the Study

Population is the totality of a group of persons which the researcher has focused attention on and chosen as approved topic for the study. The population is made up of all Biology teachers of Government secondary schools Minna, Niger State. The total population of this study comprises of 328 Biology teachers of Government secondary schools in Minna, Niger State.

3.3 Sample and Sampling Techniques

From the overall population, a sample of 64 respondents was randomly selected in Minna government secondary schools. Out of which 32males and 32 females. The sample size is made up of six secondary schools namely; Bosso secondary school Minna, Maryam Babangida Girls Science College, Model Science College Tudun Fulani Minna, Day secondary school Maikunkele 'A', Day secondary school Maitumbi Minna and Abdullahi Dada Secondary school Maikunkele which were selected randomly using simple stratified sampling techniques.

3.4 Research Instrument

The instrument for data collection is a researcher-developed questionnaire titled: Biology Teachers' Perception of the Influence of Covid-19 Lockdown Questionnaire (BTPICLQ). The questionnaire has two parts; A and B. Part A contains information on personal data of the respondents, while part B contains sixteen (16) items built in four clusters, A, B, C and D. Cluster A of the questionnaire focused on the influence of covid-19 lockdown on teachers' motivation to teaching Biology. Cluster B of the questionnaire hinged on how covid-19 has Influenced students' motivation to learning Biology, Cluster C of the questionnaire is on the influences on students' academic performance as perceived by Biology teachers during lockdown, Cluster D of the questionnaire centered on how covid-19 lockdown has influenced academic calendar, All the clusters had four (4) items each, all relating to the research question that guided the study. The response format for cluster A to D is based on a four point scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). In other words, the higher the aggregate scores in the rating scale, the more positive the response of the subjects and the lower the score the more negative the response of the subjects. The respondents indicated their level of agreement by ticking the box on the rating scale. The scale was weighed 4, 3, 2, and 1 respectively.

3.5 Validity of Research Instrument

To determine the face validity of the instrument BTPICLQ initial copies of the instrument with the specific purposes, research questions, and hypotheses were given to the supervisor and two other experts in Science Education Department of Federal University of Technology, Minna. They were specifically requested to assess the adequacy of the items in getting the required information, the quality of its language and the logicity of its arrangement. The experts assessed the suitability of the

language, adequacy and relevance of the items in addressing the research questions bearing in mind the purpose of the study. Their corrections and comments were used to modify the questionnaire before the final copy was produced. All experts adjudged the instrument valid.

3.6 Reliability of the Instrument

In order to determine the reliability of the instrument, (BTPICLQ)Biology Teachers' Perception of the influence of Covid-19 Lockdown questionnaire was pilot tested on 10 teachers in other selected schools in Bosso Local Government Area, Minna. Cronbach Alpha method was adopted to estimate the internal consistency coefficient of the questionnaire. Cronbach Alpha statistics was used because the instruments are in clusters and items are not separately scored. The coefficient obtained was within the range of 0.70 value which is deemed reliable estimated. This means that the instrument is reliable and can be used for data collection.

3.7 Method of Data Collection

An introductory letter seeking for permission to carry out research work was given to the researcher from the department, researcher get access to the data through the Niger state ministry of education, the department of research and planning, was also taken to all the sampled school which permission was granted to the researcher. Questionnaires were administered to the respondents by the researcher using six days for the six selected schools, a day for each school and three trained research assistants who were properly briefed and instructed during a day training to enable them get familiar with the modalities for administering the instrument appropriately. The researcher acquainted them with the purpose of the study, as well as the explanation of the items in the clusters on each research question. It is necessary to use research assistants to make sure that the actual respondents for whom the instrument is meant

for are indeed those who completed the instrument and also help to make clarifications to the respondents on the items whenever the need arises. The instruments were retrieved on the spot to avoid lost and mistake.

3.8 Method of Data Analysis

The data collected were analyzed using descriptive and inferential statistics. Specifically, mean and standard deviation were used in answering the four research questions. The null hypotheses were tested at 0.05 level of significance using t-test statistics. A mean response score between 0.01 - 2.49 was considered disagree (D). While score between 2.5 and above was considered agree (A).By implication, the criterion of the mean response is 2.5 and above. The analysis was done with the application of a computer software programme - Statistical Package for Social Sciences (SPSS) version 23.0.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Demographic Information

Table 4.1

Sample Distribution

Group	Frequency	Percentage
Male Teachers	32	50%
Female Teachers	32	50%
TOTAL	64	100%

Table 4.1 reports the sample distribution of the study. There were 64 Biology teachers who participated in the study, with 32 male teachers (50%) and 32 female teachers (50%) giving the 100% throughout the study.

4.2 Analysis of Research Questions

Research Question One

What is the influence of covid-19 lockdown on teachers' motivation to teaching as perceived by Biology teachers?

Table 4.2 Mean Responses of Biology Teachers on Covid-19 Influence on Teaching

S/N	Items	Mean	Std.dev.	Remark
1	Biology is not better taught on lockdown	3.3	0.790	Agreed
2	I prefer teaching biology in classroom than during lockdown	3.5	0.872	Agreed
3	Teachers' gesture in class influences the students towards understanding the topic.	3.3	0.654	Agreed
4	Teaching is better and less distracting in the classroom/school environment than during lockdown.	3.31	0.753	Agreed
Grand Mean		3.355	0.7673	Agreed

Table 4.2 reports teachers' perception mean scores of the influence of covid-19 on motivation to teach. From the results, the grand mean was 3.36, standard deviation of 0.77, which is greater than the criterion score of 2.50. Hence it is evident that the teachers perceived that teachers are not motivated to teach during Covid-19 lockdown.

Research Question Two

What is the influence of covid-19 lockdown on students' motivation to learning as perceived by Biology teachers?

Table 4.3 Mean Responses of Biology Teachers on Covid-19 Influence on Learning

S/N	Items	Mean	Std.dev.	Remark
1	My students easily understand in face-to-face classes teaching than during the lockdown.	3.8	0.45	Agreed
2	Students are easily carried away during lockdown than in the classroom environment.	2.8	1.990	Agreed
3	Students are less motivated during lockdown than in open class teaching.	3.1	0.77	Agreed
4	There is less distraction and more level of concentration by the students when they are with their teachers during open classes which helps students to perform better in Biology face-to-face classes than during lockdown.	3.6	0.686	Agreed
Grand Mean		3.325	0.724	Agreed

Table 4.3 displays the mean responses of Biology teachers on the influence of Covid-19 lockdown on students' motivation to learn. From the grand mean score of 3.33, standard deviation of 0.72, it is evident that the Biology teachers perceived that students are not motivated to learn during Covid-19 lockdown.

Research Question Three

What is the influence of covid-19 lockdown on students' academic performance as perceived by Biology teachers?

Table 4.4 Mean Responses of Biology Teachers on Covid-19 Influence on Students' Academic Performance

S/N	Items	Mean	Std.dev.	Remark
1	Students' academic performance is higher while they are with their teachers and colleagues.	3.53	0.534	Agreed
2	Academic environment influences and aids students' performance, which makes them perform better in open classes than during lockdown	3.72	0.487	Agreed
3	House chores and social activities affects students' performance during lockdown.	3.25	0.642	Agreed
4	There is drastic drop in student academic performance level during lockdown	3.7	0.506	Agreed
Grand Mean		3.55	0.54225	Agreed

Table 4.4 displays the mean responses of Biology teachers on the influence of Covid-19 lockdown on students' academic performance. From the grand mean score of 3.55, standard deviation of 0.54, it is evident that the Biology teachers perceived that students' performance was affected by Covid-19 lockdown

Research Question Four

What is the influence of covid-19 lockdown on schools' academic calendar as perceived by Biology teachers?

Table 4.5 Mean Responses of Biology Teachers on Covid-19 lockdown Influence on Schools' Academic Calendar

S/N	Items	Mean	Std.dev.	Remark
1	Academic calendar is shorter during lockdown so as to cover for the lost period of time.	3.3	0.723	Agreed
2	Covid-19 lockdown affected the school academic calendar which in turn affected the subject topics to be covered for the curriculum	3.63	0.519	Agreed
3	There is difficulty to cover for Biology practical academic calendar during lockdown.	3.6	0.531	Agreed
4	Students are not well groomed for external examination syllabus due to constraints in teaching of Biology during lockdown.	3.3	0.740	Agreed
Grand Mean		3.4575	0.62825	Agreed

Table 4.5 displays the mean responses of Biology teachers on the influence of Covid-19 lockdown on school academic calendar. From the grand mean score of 3.46, standard deviation of 0.63, it is evident that the Biology teachers perceived that Covid-19 lockdown has ruptured school academic calendar which in turn affected programmed teaching and learning activities in schools.

4.3 Analysis of Null Hypotheses

H0₁: There is no significant difference between the male and female biology teachers' perception of the influence of covid-19 lockdown on teachers' motivation to teach.

Table 4.6 t-Test Analysis of Gender Difference in The Teachers' Perception of Influence of Covid-19 Lockdown on Teaching

Group	N	Df	Mean	Stand. Dev.	t-cal	P-Value	Remark
Male	32	62	12.4400	3.1930	0.434	.10	Not Sig
Female	32		14.4000	2.3700			

Table 4.6 revealed t-test results of the mean score difference of the teacher's perception of the influence of Covid-19 Lockdown on teaching. The male Biology teachers had mean score of 12.44, standard deviation 3.19, while the female teachers had mean of 14.40, standard deviation 2.37. $t(62) = 0.434$, $p > 0.05$. Hence the null hypothesis was retained as there was no significant difference between the mean perception scores of male and female Biology teachers on the influence of Covid-19 lockdown on teaching.

H0₂: There is no significant difference between the male and female biology teachers' perception of the influence of covid-19 lockdown on students' motivation to learn.

Table 4.7 t-Test Analysis of Gender Difference in the Teachers' Perception of the Influence of Covid-19 Lockdown on Students' Motivation to Learn.

Group	N	Df	Mean	Stand. Dev.	t-cal	P-Value	Remark
Male	32	62	12.8700	2.5510	.620	.110	Not Sig.
Female	32		13.6500	3.0800			

Table 4.7 revealed t-test results of the mean score difference of the teacher's perception of the influence of Covid-19 Lockdown on teaching. The male Biology teachers had mean score of 12.87, standard deviation 2.55, while the female teachers had mean of 13.65, standard deviation 3.08. $t(62) = .620$, $p > 0.05$. Hence the null hypothesis was retained as there was no significant difference between the mean perception scores of male and female Biology teachers on the influence of Covid-19 lockdown on students' motivation to learn.

HO₃: There is no significant difference between the male and female Biology teachers' perception of the influence of covid-19 lockdown on students' academic performance.

Table 4.8 t-Test Analysis of Gender Difference in The teachers' Perception of Influence of Covid-19 Lockdown on Students' Academic Performance.

Group	N	Df	Mean	Stand. Dev.	t-cal	P-Value	Remark
Male	32	62	14.9300	2.196	.465	.148	Not Sig.
Female	32		14.4000	2.063			

Table 4.8 revealed t-test results of the mean score difference of the teacher's perception of the influence of Covid-19 Lockdown on students' performance. The male Biology teachers had mean score of 14.93, standard deviation 2.19, while the female teachers had mean of 14.40, standard deviation .2.06. $t(62) = .465, p > 0.05$. Hence the null hypothesis was retained as there was no significant difference between the mean perception scores of male and female Biology teachers on the influence of Covid-19 lockdown on student's performance

HO4: There is no significant difference between the male and female Biology teachers' perception of the influence of covid-19 lockdown on schools' academic calendar.

Table 4.9 t-Test Analysis of Gender Difference in The teachers' Perception of Influence of Covid-19 Lockdown on Schools' Academic Calendar.

Group	N	Df	Mean	Stand. Dev.	t-cal	P-Value	Remark
Male	32	62	13.2900	2.406	.233	.290	Not Sig.
Female	32		14.1800	2.358			

Table 9 revealed t-test results of the mean score difference of the teacher's perception of the influence of Covid-19 Lockdown on students' performance. The male Biology teachers had mean score of 13.29, standard deviation 2.41, while the female teachers had mean of 14.18, standard deviation 2.36. $t(62) = .233$, $p > 0.05$. Hence the null hypothesis was retained as there was no significant difference between the mean perception scores of male and female Biology teachers on the influence of Covid-19 lockdown on schools' academic calendar.

4.4 Discussion of Findings

The study revealed that Covid-19 lockdown has greatly affected teaching and learning of Biology and also on education generally. There are also various barriers that hinders students and teachers engagement in online education for continued learning during the Covid-19 lockdown. The results shows that educational activities were badly affected due to the Covid-19 pandemic lockdown, these effect includes; learning disruption, limited access to learning facilities like: laboratories, lack of motivation for teachers to teach and also lack of motivation for learners to learn. The findings is in line with earlier assertion by (Onyema *et al.*, 2020), that corona virus

pandemic created multiple problems for education sector leading to decreased education opportunities for underprivileged learners and those in rural areas.

Based on the findings of research question one and two, Biology teachers' perceived that teachers are not motivated to teach and Learners are not as well motivated to learn during the Covid-19 lockdown. The teachers said that Biology is better taught in face-to-face learning and students easily understand Biology in face-to-face teaching than during the lockdown, teachers are not paid salary, no quality of working conditions, no social relationship, no teachers rewards, no teacher- learner relationship, Biology practicals are not properly studied through e-learning. Students are not motivated because they become passive learners, no room to ask questions or to interact with their teachers face-to-face. Even with the online learning the students are not motivated to learn due to data cost, poor electricity supply, and no internet accessibility for students, teachers, and parents in rural areas. This is in line with the study of (Quentin, 2014), in his findings it revealed that, schools closing have an effects on a large number of students. It can affect the quality of teaching and academic performance especially those with learning difficulties that often requires more physical attention and guidance from teachers. It also support the findings of (Nambiar, 2020), the findings shows that, for teachers, formal education was more successful than online education because of full communication and interaction. The results also contradict (Nsabayezu *et al.*, 2020), who revealed that WhatsApp is effective for teaching chemistry and supporting students learning.

The findings also revealed that students' academic performance is higher while they are with their teachers and colleagues, academic environment influence and aid students' performance, which makes them perform better in class than during lockdown.

Biology teachers' perceived that Covid-19 lockdown has ruptured school academic calendar which in turn affect programmed teaching and learning activities in schools. There was a constraint in teaching of Biology practicals during the lockdown, Covid-19 lockdown affected the school academic calendar which in turn affected the subject topics to be covered for the curriculum. This study is in line with the findings of (Ogunode, 2020), who revealed that schools closedown would affect the academic programme of senior secondary schools. It has also affected the academic calendar of senior secondary schools. And also support the findings of (Oyinloye, 2020), who further, revealed that, there is possibility of a drop in the pass rate(%) of senior secondary school students' in this year's external examinations if the pandemic is not contained soon knowing fully that the school academic calendar has already been disrupted due to early closure of schools in Nigeria.

It also revealed that there was no significant difference between the male and female biology teachers' perception of the influence of COVID-19 lockdown on teachers' motivation to teach, students' motivation to learn, students' academic performance and schools' academic calendar.

4.5 Summary of Findings

1. Biology teachers perceived that Covid-19 lockdown has affected teachers' motivation to teach.
2. Biology teachers perceived that Covid-19 lockdown has affected students' motivation to learn.
3. Biology teachers perceived that Covid-19 lockdown has affected student' academic performance.

4. Biology teachers perceived that Covid-19 lockdown has affected schools' academic calendar.
5. There was no significant difference between the male and female biology teachers' perception of the influence of covid-19 lockdown on teachers' motivation to teach.
6. There was no significant difference between the male and female biology teachers' perception of the influence of covid-19 lockdown on students' motivation to learn.
7. There was no significant difference between the male and female biology teachers' perception of the influence of covid-19 lockdown students' academic performance.
8. There was no significant difference between the male and female biology teacher's perception of the influence of covid-19 lockdown on schools' academic calendar.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

The overall essence of this study was to evaluate the biology teachers' perception of the influence of COVID-19 lockdown on teaching and learning of biology in secondary schools of Bosso Local Government in Minna, Niger state.

The research reviewed different literature that shows the factors that help in influencing teachers' motivation to teaching. On the effect of job satisfaction on teachers motivation, it was found that; salary perceived fairness of promotion system, quality of working condition, social relationships, leadership and the job itself affect teachers in teaching. There is need for teachers reward system in order to motivate them; it was found that appreciation from boss pay, bonuses, Fringe benefits and promotion affect teachers' motivation.

Results from the findings shows that biology teachers perceived that COVID-19 lockdown had a negative influence on the educational system in Nigeria, due to the effect of lost in contact hours as a result of early closure of schools across the nations, it limited access to learning facilities such as laboratories, lack of motivation for teachers to teach, and also lack of motivation for students to learn.

It was found that teachers were not motivated to teach during the COVID-19 lockdown, salaries were not paid, poor quality of working conditions, poor social relationships, no teachers rewards, biology practicals were not properly carried out through e-platforms. The teachers revealed that biology is better taught in face-to-

face learning and students easily understand biology in face-to-face teaching that during lockdown.

Students were not motivated because they became perceive learners, no room to ask questions, no teacher-students relationships. Some other factors that limited students from learning online includes high cost of data, poor electricity supply, poor access to good internet coverage for students in rural areas.

Academic performance is higher while the students are with their teachers and colleagues, academic environment influences and aids students' academic performance, which makes them perform better in class than during lockdown.

COVID-19 ruptured school academic calendar which in turn affected programmed teaching and learning activities in schools it also affected subject topics to be covered for the curriculum.

The null hypotheses was accepted there is no significant difference between the male and female biology teachers' perception of the influence of Covid-19 lockdown on teachers motivation to teaching, students' motivation to learn, on students' academic performance and also on school academic calendar.

5.2 Conclusion

Covid-19 pandemic has really shake the world's economic, social, political, and educational development in the year 2020.

Based on the findings of the study it can be concluded that COVID-19 lockdown has grossly affected the teaching and learning activities in Nigerian secondary schools in extension, affecting teachers' motivation to teach and students' motivation to learn as well as influenced students' academic performance and school academic calender.

5.3 Recommendation

Based on the results of the study the following recommendations were made

1. The society should be reoriented on the importance of Biology and the role it plays to the national development of any nation.
2. Government should motivate teachers to do their job well. The teachers' life should be enhanced and honored through timely salary payment, promotions, incentives, welfares as well as seminars.
3. A good teacher-student relationship should be encouraged in schools so that the students can be able to tell their teachers what their problem is.
4. Biology teachers and students are recommended to use whatsapp as a supporting learning tool due to its versatility.
5. Parents' boards in charge of education and other educational stakeholders should integrate whatsapp in teaching and learning to compliment classroom learning.
6. Schools and other institutions need to provide support for teachers as they do their jobs under the extra strain of the pandemic.
7. Teachers should also focus on their well-being and practice self-care and remember the sense of satisfaction they have gained from their profession.
8. Teachers' development and well-being should be a priority, the provision of support for parents and the availability of infrastructure for remote teaching and learning.
9. There should be a massive retraining of teachers to teach at a distance and in the use of e-learning.

10. There should be a need for government to organize ICT training for both teachers and students which will help them in the use of online applications for e-teaching and learning.
11. The government should carefully check issues experienced during the sudden emergence of pandemic lockdown and prepare an alternative in education against future occurrences.

5.4 Limitations of the Study

This study is not without limitations. The following are some of the limitations encountered by the researcher:-

1. The sample size used for the research work is limited due to the limited number of biology teachers in Minna Municipal, Niger state.
2. Another limitation is accessing the Biology teachers due to engagement of marking and assessment of students' results.
3. Time frame to cover a wider population is also another limitation encountered.

5.5 Suggestions for Further Research

1. Further research can be carried out on the same topic to investigate Biology Teachers' Perception of the Influence of Covid-19 Lockdown on Teaching and Learning of Biology in Secondary Schools to cover a wider population.
2. There should be a comparative study on students' academic performance before and after the Covid-19 lockdown.
3. Level of preparedness of schools to tackle Pandemics should be investigated.

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