

**PRINCIPALS' INSTRUCTIONAL SUPERVISION AND ITS INFLUENCE
ON PEDAGOGICAL PRACTICES OF TEACHERS IN PUBLIC JUNIOR
SECONDARY SCHOOLS IN BAUCHI STATE, NIGERIA**

BY

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DECLARATION

This thesis is my original work and has never been submitted in any other university for certificate award. Where data of any kind was cited, including speech, table, figures or internet sources, these have been duly acknowledged through referencing in line with anti-plagiarism rules

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DEDICATION

In the name of Allah, Most Gracious Most Merciful, this thesis is dedicated to my beloved (late) parents, Malam Garba Dogonyaro (Madaki) and Malama Furera Ahmadu (Yaya) who laboured tooth and nail to ensure my proper upbringing. And to my beloved wife Khadija Isah and our children who contained the psychological trauma and physical difficulties created by my absence from home and stood solidly behind me throughout the programme. I pray Allah in His Infinite Mercy to reward them abundantly.

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ABBREVIATIONS AND ACRONYMS

AEO:	Area Education Officer
BA:	Bachelor of Arts
B.Sc:	Bachelor of Science
DV:	Dependent Variable
EFA:	Education for All
ICT:	Information Communication Technology
IV:	Independent Variable
LGA:	Local Government Area
MOE:	Ministry of Education
MDG:	Millennium Development Goals
MA:	Master of Arts
M.Sc:	Master of Science
NCE:	Nigeria Certificate in Education
ND:	National Diploma
NEEDS:	National Economic Empowerment and Development Strategy
NPE:	National Policy on Education
JSS:	Junior Secondary School
PTA:	Parent Teacher Association
SDG:	Sustainable Development Goals
SUBEB:	State Universal Basic Education Board
UBE:	Universal Basic Education
UNESCO:	United Nations Educational Scientific and Cultural Organization
USE:	Universal Secondary Education
WAEC:	West African Examination Council

ABSTRACT

The purpose of this study was to investigate the effect of principal's instructional supervision on pedagogical practices of public secondary school teachers in Bauchi state, Nigeria. Specifically, the study aimed to assess the impact of principals' supervision of teachers' records on teachers' pedagogical practices. Additionally, to establish how principals' monitoring of students' progress affect teachers' pedagogical practices. And examine the extent of influence of principals' classroom observation on teachers' pedagogical practices. Furthermore, to find out if professional development programmes that principals facilitate influence teachers' pedagogical practices and identify main challenges of principals' instructional supervision in public secondary schools in Bauchi state. The study was hinged on Leithwood Theory of Transformational Leadership. A descriptive survey design was employed for the study. The target population comprised 285 principals of public secondary schools; 3,836 teachers and 37 area education officers in Bauchi South Geopolitical Zone. The sample included 29 principals of the selected schools; 384 teachers and 7 Area Education Officers, chosen by random sampling technique. Questionnaires were the main tools for data collection from teachers and principals. Similarly, data were collected through interviews with the Area Education Officers and documents checklist. Experts' review and piloting were used to improve the validity of the research instruments. Cronbach's alpha determined the reliability of the instruments. Descriptive and inferential statistics were used to analyze the quantitative data with the aid of SPSS. Thematic approach was used to analyse the qualitative data. Simple linear regression was used to test the null hypothesis at .05 level of significance. The study found that principals' checking of teachers' records significantly affect their pedagogical practices ($R^2=.097, p<.05$). And also revealed that principals' monitoring of students' progress significantly influenced pedagogical practices of teachers ($R^2=.099, p<.05$). Furthermore, it was found that principals' classroom visitation significantly influenced teachers' pedagogical practices ($R^2=.138, p<.5$). The professional development programme principals implement was found to have statistically significant influence on teachers' pedagogical practices ($R^2=.060, p<.05$). The research discovered that many principals did not review students' classwork and assessment records. Additionally, it was discovered that the implementation school-level workshops, peer mentoring programme, review of teachers' documents and classroom observation in public secondary schools was inconsistent. Finally, the study revealed that inadequate funding for supervision activities and principals' lack of supervision skills had affected the quality of in-school supervision in public secondary schools. The study concluded that principals' instructional supervision significantly influenced pedagogical practices of teachers in public secondary schools. It was recommended that the State Ministry of Education should organize in-service training for principals to improve their skills of instructional supervision. The study also suggested that principals should intensify supervisory activities to promote instructions and academic achievements. Findings of this study may provide framework in organizing capacity building for in-school supervisory personnel.

CHAPTER ONE

INTRODUCTION AND BACKGROUND OF THE STUDY

1.1 Introduction

This chapter presents the background information, statement of the problem, the purpose of the study, objectives of the study, research questions, and significance of the study, limitation of the study, delimitation of the study, the assumption of the study, theoretical framework, conceptual framework and definition of operational terms.

1.2 Background of the Study

Globally, educationists recognized that teachers play a significant role in determining whether the goal of the educational system can be achieved or not (Alemayehu, 2008). With the innovative curriculum, technologies and growing demands for quality education for all concerning Universal Secondary Education (USE), teaching is becoming more complex especially at secondary school level of education (UNESCO, 2017). Sustainable Development Goal objective No. 4 and Education for All objective No.6 stipulate the provision of improved and quality education to all children (Federal Ministry of Education Nigeria, 2015; SGD, 2017). To achieve quality education, practices of teachers such as writing lesson plan, the scheme of work, lesson notes, giving assignments and regular assessment tests are essential for students achievement (Malunda, Onen, John and Oonyu, 2016; Al-Hosani, 2015).

The SDG global policy about Education 2030 seems to make the supervision of instruction and close monitoring of teachers necessary (UNESCO, 2017).

Accordingly, Zepeda (2010) asserts that instructional supervision is the continuous monitoring of classroom teaching to promote teachers pedagogical practices and enhance the professional development of the teachers in a collegial and collaborative style. On their part, Nolan and Hoover (2011) also described instructional supervision as an organizational function concerned with teacher growth leading to enhanced teachers pedagogical practices in schools.

Instructional supervision, in general, has existed along with the education systems globally for several years, and stakeholders view it as a cornerstone in the administration of educational activities (Alemayehu, 2008; Sullivan and Glanz, 2013; Sergiovanni and Starrat, 2007). Instructional supervision takes place in two significant ways, namely: classroom observation and checking of teachers' prominent records (Zepeda 2010). Leithwood (1994) emphasizes the importance of principals' supervision when he asserts that principal's guidance foster effective application of teachers' pedagogic practices.

England's National College for School Leadership (NCSL) stresses that principals play vital roles in influencing the attitude of teachers to transform the quality of teachers' pedagogical practices and students' achievement (Bush & Middlewood, 2013). Furthermore, NCSL reported findings on teachers' pedagogic practices backed by research results. These findings are emphasizing that principal's instructional supervision is vital in fostering the effectiveness of pedagogical practices of teachers (NCS L, 2012). Related to the preceding, study of principals' roles in England reveals that effective principals persistently focus on developing their teachers and improving working relationships within the school and with the community. In essence, effective principals aim at fostering teachers' pedagogical practices for achievement of learning

programmes (Days, Harris, Hadfield and Beresford, 2000). Similarly, a study by Leithwood et al. (1999) in Canada found that principals often pay attention to improvement of teachers' pedagogical practices as well as facilitating professional growth of the teachers.

The implication is that principals as instructional leaders have the responsibility to organize programmes for teachers' professional growth and at the same time, ensure that teachers apply effective pedagogical practices by preparing well in advance relevant scheme of work, lesson plan, lesson notes and teaching aids (Sullivan and Glanz, 2013). From the foregoing, it can be understood that in the developed nations such as the United Kingdom, principals' instructional supervisory activities are critical in the consideration of reform efforts that focused teachers' pedagogical practices improvement.

In the United States of America Bays (2001) noted that training as an administrator is a requirement for certification of principals. Such training provides the principal with theoretical knowledge of instructional supervisory practices and personnel management that prepares them with general techniques to supervise all their teachers. In the same vein, Sergiovanni and Starratt (2002), observed that schools in the United States of America highly regard instructional supervision as potential means of enhancing teachers' practices. In an effort to determine the roles of principals, Blasé and Blase (2000) surveyed the opinion of 800 American teachers on best supervisory roles of principals and two roles emerged prominent. The first role was principal talking to teachers and making them think about their daily pedagogical practices. The second prominent role was principal design and conduct professional development for teachers such as workshop, seminar and in-service education.

In a study focusing school leadership by Sebring and Bryk (2000) in Chicago, it was revealed that principals' leadership is a determining factor in school success. Further, Sebring and Bryk assert that principals are responsible for ensuring effective instructions and achievement of the overall school goal.

Equally, in Canada Leithwood et al. (1999) observe that principals spend time facilitating their teachers' development and air marking resources for effective instructions. In reviewing instructional supervision roles of principals, the improvement of teaching and students' achievement is a central point (Osae & Joyce, 2012). Several researchers in educational supervision have argued that the principals' instructional supervision activities such as reviewing teachers records, monitoring teaching and coordinating teacher development have direct and indirect relationships with the improvements of teachers' pedagogical practices and students' achievement (Leithwood & Louis, 2010; Sule, Ameh & Egbai, 2015; Malunda et al., 2016, Jeffery, Vivian & Susan, 2007).

In Asian and Arab countries, the importance of principals' instructional supervisory activities in secondary schools has been well noted. For instance, in the United Arab Emirate Al-Hosani (2015) noted that the principal is in charge of what occurs in his school, such as promoting educational activities, supervising teaching methods, conducting classroom visitation to foster pedagogical improvement in teachers. In Malaysia, it was observed that principals supervised teachers' instructions and evaluates them on daily basis. The pedagogical practices of teachers in Malaysia are measured based on the daily lesson plan, induction set, lesson delivery, questioning techniques, student involvement, reinforcement, student exercise, assignment, lesson closure and class management (Veloo, Macdalena, Komuji, and Khalid, 2013).

In African countries also the influence of instructional supervision on teaching and learning was noted. In Kenya, for instance, inadequate supervision of pedagogical practices of teachers was said to have caused a lack of achievement of educational objectives at certain levels of education (Kamindo 2008, Charles 2011). Republic of Kenya (2000), cited in Simbano (2015) outlines some of the instructional supervisory practices that the principal is expected to carry out. They include establishing an enabling environment for teaching and learning process to take place through encouraging healthy interpersonal relationship within the school and induction of new teachers.

In Ethiopia, Netsanet (2014) study revealed that ineffective application of teachers' pedagogical practices was related to poor principals' supervisory methods and techniques. Also, it was found out that falling standards of education in Northern Ghana was attributed to poor teachers' pedagogical practices due weak instructional supervision of teachers' instructions in public secondary schools (Integrated Social Development Centre, 2011). Paul et al. (2016) speculated that teachers' ineffective pedagogical practices were responsible for the poor performance of Ugandan public secondary schools students in national examinations. Subsequently, their study revealed that supervision of instructions was not adequately executed in public secondary schools of Uganda. The implication is that schools where teaching and learning are not consistently monitored, the teachers' records are not regularly reviewed and teacher development neglected by principals, level of students' achievement is usually affected (Kotirde & Yunos, 2014; Leithwood and Jantzi, 2008; Blasé and Blasé 2000). However, where principals can effectively implement

instructional supervision, there is the tendency that teaching will improve and learners will succeed (Lashway, 2002).

In Nigeria, studies by Arong and Ogbadu (2010) reported that inadequate, efficient instructional supervisory activities mainly cause the declining standards of teachers' pedagogical practices and learning in public secondary schools. Usman (2015) study revealed that regular classroom observation and checking teachers' professional records by principals have positive effects on lesson planning and methods of teaching, which in turn affects students' achievement. This means that when instructional supervision is lacking, teachers' performance is likely to be affected negatively. Nnabuo, (2011) argues that functional principals' instructional guidance of teachers exists in private schools. Hence their students tended to perform better academically. Further, Nnabuo argues that lack of functional instructional supervision exists in public secondary schools. On their part, Ekundayo, Oyerinde, and Kolawole, (2013) study findings suggest that shortage of qualified personnel and lack of adequate training for the supervisors are challenged to efficient supervision affecting pedagogical practices of teachers in public secondary schools in Nigeria.

In line with the preceding argument, it has been observed that achieving quality learning depends largely on effective supervision of teachers which will, in turn, improve the academic performance of students in schools' (Akinfolarin, Babalola, Aina and Alade, 2017). Essentially, it was observed that principals serve as a quality control mechanism towards educational goal attainment (Babatope and Gabriel, 2014).

In Bauchi state, to improve teaching and learning, the state government had employed more teachers, supplied learning materials and improved teachers' remunerations. Also, Zonal Education offices were expanded to intensify supervision (Aminu, 2014). Given this focus, Bauchi state appears prominent in terms of efforts to develop secondary education in North-Eastern Nigeria (Federal Republic of Nigeria, 2010). However, records from the Ministry of Education Bauchi state and some national examination bodies such as the West African Examinations Council (WAEC) indicate that performance of Bauchi state secondary schools students in national examinations has been consistently low (Salihu and Filibus, 2015).

Consequently, there was a growing perception among stakeholders and the general public that teachers in public secondary schools are applying ineffective pedagogical practices in the process of teaching. The perceived poor teaching is evident in the persistent massive failure of Bauchi state secondary school students in national examinations (Mohammed, 2015; Usman, 2015). Given this situation, principals' supervision of instructions has come under public criticisms for being compromised. This situation calls for investigation of principals' instructional supervision activities and how they affect teachers' practices in public secondary schools in Bauchi state.

Table 1.1 shows the position of Bauchi state in national examinations out of the 36 states of Nigeria.

Table 1.1 WAEC Students' Performance in 2015

Position	State	Candidates	Percent passed
1st	Abia	52,801	63.94%
2nd	Anambra	46,385	61.18%
3rd	Edo	62,327	61.05%
31st	Bauchi	29,702	15.06%

Compared to other states on a national examination administered by the West African Examination Council (WAEC) in 2015, out of 36 states of Nigeria, Bauchi came 31st with only 15.06 percent passing rate. Given these results, even though the performance of students appears to be low nationally, the position of Bauchi state in terms of academic performance was very discouraging.

Stakeholders highlight that Bauchi situation is peculiar considering the attention which the government has given to the education sector generally and secondary education in particular (Aminu, 2014). Ideally, one would have expected a paradigm shift in the students' performance given the fact that Bauchi state government had employed more teachers and improved teachers' remunerations; supplied instructional more learning materials and expanded zonal education offices to enhance instructions. Nevertheless, students' poor performance in national examinations persists in public secondary schools. (Aminu, 2014; Mohammed, 2015). The table below indicates the performance of students in public secondary schools in Bauchi state over several years. In this study, the researcher cited results on national examinations of Bauchi state students for the period from 2011-2015 as a point of reference.

Table1.2 School Certificate Examination Results for Bauchi State 2011-2014

Year	2011	2012	2013	2014
Candidates Fielded	11900	1800	29332	20749
Percentage passed	4.3%	4.2%	4.5%	5.28%

Source: *Salihu & Filibus, (2015)*

In Table 1.2 results of Bauchi state students in the School Certificate Examinations administered by West African Examination Council in the recent times showed a persistent massive failure rate of 95.7, 95.8, 95.5, 94.72, 84.94 percent in 2011, 2012, 2013, 2014 and 2015 respectively (Salihu and Filibus, 2015). One-time Provost, Bauchi State College of Education was quoted as saying "I don't believe there are no teachers... however, the teachers are not well supervised, and as such, they are not living up to their responsibilities;... with good monitoring and supervision as well as check and balances put in place by the ministry officials, I believe better results can be obtained" (Salihu and Filibus, 2015). In line with the above assertion, Kotirde and Yunos (2014) observed that the process of instructional supervision in secondary schools is becoming a critical concern yet to be tackled.

Bauchi state government was frustrated by the poor performance of students in national examinations. As a result, it planned and carried out verifications of credentials of all teachers and principals in 2014. The aim was to flush out the unqualified teachers to improve the standards of teaching and learning in public secondary schools (Daily Times News Paper, 2014). Studies carried out in

public secondary school in Bauchi state did not address the influence of principals' instructional supervision on teachers' pedagogical practices.

For instance, Jacob (2013) investigated the causes of falling standards of education in Bauchi state public secondary schools. The study found out that large percentage of teachers was not devoted to their responsibilities. Finding further revealed that most teachers hardly use teaching aids and neither do they vary teaching methods. Jacob (2013) study concluded that the teaching strategies used by most teachers did no promote critical thinking in learners; hence the poor students' performance. Also, Mohammed (2015) researched the role of educational inspectors in curriculum implementation in public secondary schools of Bauchi state. The study revealed that educational inspectors did not provide adequate professional guidance to teachers for effective curriculum implementation. The study concluded that teachers' application of ineffective pedagogic practices had contributed to the poor performance of students in national examinations. Moreover, a one-time Provost of the Bauchi State College of Education had attributed the dismal performance of public secondary school students in national examinations to poor teaching.

It is a known fact that principals have a vital role in determining teachers' performance. However, little research has been undertaken to investigate the effect of principals' instructional supervision on teachers' pedagogic practices in public secondary schools in Bauchi state. Hence, this leaves a gap that the current study sought to fill by way of determining the influence of instructional supervision conducted by principals have on teachers' pedagogical practices in public secondary schools of Bauchi state, Nigeria

1.3 Statement of the Problem

Bauchi state had employed more qualified teachers, improved teachers' remunerations, supplied more instructional materials and expanded zonal education offices to enhance instructions. Given these efforts, ideally one would have expected a paradigm shift in the students' academic performance. Available records show the persistent poor performance of students in national examinations over several years. There has been widespread perception by stakeholders and the public that the poor results of public secondary school students in national examinations was due to inadequate teaching. However, principals have been mandated to supervise teachers' instructions and students' learning in public secondary schools. Persistence of poor results means that SDG Goal 4 and EFA Goal 6, which stipulate the provision of improved and quality education to children are hardly achievable in Bauchi state. By implication, a more significant percentage of secondary school leavers in Bauchi state will never attain higher education. Worse still, the sub-professional workforce produced at the secondary level will be ineffective. With this development, parents and guardian wondered whether sending their children to public secondary schools was worthwhile.

The poor performance of students raises questions on principals' supervision of teaching in public secondary schools in Bauchi state. Previous studies focused mainly on the activities of designated supervisors and inspectors of education. Many researchers did not focus on the fact that principals have significant potentials to improve the quality of pedagogical practices in public secondary schools. Consequently, very little research has been undertaken on how principals implement supervision of instructions and its influence on teachers'

pedagogical practices in public secondary schools. Therefore, the essence of this study was to examine how principals' instructional supervision was affecting teachers' pedagogical practices in public secondary schools of Bauchi state.

1.4 Purpose of the Study

The purpose of this study was to investigate the effect of principals' supervision of instructions on pedagogical practices of public secondary schools teachers in Bauchi state, Nigeria

1.5 Objectives of the Study

The specific objectives that guided the study were:

- i. To assess the influence of principals checking of teachers' professional records on teachers' pedagogical practices in public secondary schools of Bauchi state, Nigeria
- ii. To establish the influence of principals' monitoring of student progress on teachers' pedagogical practices in public secondary schools of Bauchi state, Nigeria.
- iii. To determine the influence of principals' classroom observation on teachers' pedagogical practices of in public secondary schools of Bauchi state, Nigeria.
- iv. To find out the influence of professional development programmes principals implement on pedagogical practices of teachers in public secondary schools of Bauchi state, Nigeria
- v. To investigate the perspectives of Area Education Officers, Principals, and Teachers on the constraints on principals' supervisory activities in public secondary schools of Bauchi state.

1.6 The Null Hypotheses

(i) H_01 : Principals' checking of teachers' professional records does not significantly influence pedagogical practices of teachers in public secondary schools of Bauchi state, Nigeria.

(ii) **H₀2**: Principals' monitoring of students' progress does not significantly influence pedagogical practices of teachers in public secondary school of Bauchi state, Nigeria.

(iii) **H₀3**: Principals' classroom observation does not significantly influence pedagogical practices of teachers in public secondary school of Bauchi state, Nigeria.

(iv) **H₀4**: Professional development programmes that principals implement do not significantly influence pedagogical practices of teachers in public secondary school of Bauchi state, Nigeria.

1.7 The Alternative Hypotheses

(i) **H_a1**: Principals' checking of teachers' records significantly influences pedagogical practices of teachers in public secondary schools in Bauchi state

(ii) **H_a2**: Principals' monitoring of students' progress significantly influences pedagogical practices of teachers in public secondary schools of Bauchi state

(iii) **H_a3**: Principals' classroom observation significantly influences pedagogical practices of teachers in public secondary schools in Bauchi state

(iv) **H_a4**: Professional development programmes that principals implement significantly influence pedagogical practices of teachers in public secondary schools in Bauchi state

1.8 Research Question

(i) What is the perspective of Area Education Officers, Principals, and Teachers on the main challenges of principals' supervisory activities in public secondary schools of Bauchi state?

1.9 Significance of the Study

The findings of the study would be useful in several ways, including:

First: The results of this study may assist principals and other supervisory personnel such as the vice principals designated supervisors in understanding how best to organize supervision in terms of classroom observation, monitoring students' progress; reviewing teachers records, as well as organizing workshops for their teachers.

Second: Findings of the study may motivate the Faculties of Education in Universities and Colleges of Education to expand existing courses on instructional supervision programmes for comprehensive In-service education for school administrators.

Third: The study findings may provide a source of reference for scholars and stakeholders in education. The study may as well serve as a springboard for further studies in the area of teacher instructional supervision.

Fourth: The study findings may provide Ministry of Education Bauchi state with a framework to develop guidelines for the training of principals to acquire necessary skills of instructional supervision that would enhance teachers' pedagogical practices in public secondary schools.

Fifth: Proprietors of private secondary schools and colleges may use the findings of the study to plan supervisory activities for fostering teachers' pedagogical practices in their schools.

Sixth: The study may bring to the limelight problems which principals were facing while implementing instructional supervision in public secondary schools of Bauchi state.

1.10 Basic Assumptions of the Study

In this study, the researcher assumed that:

1. School-based supervision of instructions executed by principals or their delegates affect teachers' practices in public secondary schools.
2. Sufficient principals' instructional supervision activities of checking teachers' records, monitoring students' progress, classroom visitation and teacher development programmes have positive effect on students' achievement in public secondary schools.
3. The principals and teachers participating in the study provided truthful and correct information.
4. Effective teachers' pedagogical practices promote public secondary schools students' performance at national examinations

1.11 Limitations and Delimitations

This section presents the explanations of the conditions that may have impact on the methodology and investigation of this research. Additionally, the researcher describes the boundaries of this study in this section.

1.11.1 Limitations of the Study

The principals and teachers reluctance to participate in the study was one of the limitations encountered. They expressed fear that Education Authorities might victimize them upon filling the questionnaires. To mitigate this problem, the researcher explained to them that the aim of the study was for advancing teaching and learning. Furthermore, they were assured of the absolute

confidentiality of their identities. Therefore, names of schools and respondents were concealed.

Another limitation encountered by the study was the complaints of lack of time by some respondents to fill the questionnaires in the school as requested by the researcher. To resolve this problem, respondents with the complaints about time were allowed to retain the questionnaires for some days and the researcher retrieved them later.

1.11.2 Delimitations of the Study

Although researchers in education have identified various factors that influence teachers' pedagogical practices, this study restricted itself to the principals' instructional supervision practice as a potent factor affecting the teachers' practices in public secondary schools of Bauchi state, Nigeria. This variable was considered because little research has been undertaken in Nigeria and Bauchi state in particular to investigate the impact of in-school supervision on teachers' practices. More so, in recent times the national policies on education in Nigeria have placed emphasis on school-level quality monitoring mechanism.

The study was delimited to public secondary schools. Private secondary schools in Bauchi state were not included in the study. This consideration was made because the problem under investigation was more prominent in public secondary schools. Consequently, since the study was undertaken in public secondary schools of Bauchi state, the findings might not be generalizable to include private secondary schools.

The study restricted itself to teachers' pedagogical practices concerned with curricular activities of the learners. Extra-curricular activities were not included in the study. The decision was taken to enable the researcher have sufficient time to delve into the current issue extensively.

1.12 Theoretical and Conceptual Framework

This section presents the theoretical and conceptual framework of the study.

1.12.1 Theoretical Framework

This study was guided by Leithwood (1994) Transformational Leadership Theory for Education. Leithwood (1994) developed the transformational leadership theory for education with a primary focus on principals' supervisory roles. Leithwood postulates that 'Transformational Leadership styles promise to foster school leadership's ability to make the necessary school transformations that facilitate meeting stakeholder accountability and performance improvement demands.'

Leithwood theoretical theory advocates three fundamental goals of transformational leadership in school, (i) Assisting teachers to develop and maintain collaborative, professional school culture. Concerning this study, this goal advocate principals' supervisory role of organizing school-level workshops and peer mentoring by which teachers learn from one another through interactions. (ii) Fostering teacher development. This informs the current study by emphasizing on principals' role in teachers' professional development. The principals are responsible for designing and implementing such teacher development programmes as induction, in-service education, workshops, conferences, and seminars. (iii) Help teachers to solve problems more

effectively. This implies that it is the duty of the principals to assist teachers in preparing for instructions by ensuring that scheme of work, lesson plan, records of workbook and lesson notes were prepared well in advance. In view of the foregoing, Leithwood (1994) Model suitably guided the study because its fundamental principles stated above best describe the principals' supervision of instructions roles, which were the focus of this study.

Leithwood (1994) Theory stresses that instructional leadership roles of principals enhance teachers' classroom behaviour and overall school improvement. Primarily, Leithwood linked principals' transformational instructional leadership to improvement in teachers' instructions. The theory proposes that the specific strategies used by principals who practice transformational leadership in schools include : Visit to classrooms; render direct assistance to teachers; monitor students' progress; encourage teachers to visit each another's classes, organize peer observation and learn from each other; involve the teachers in deliberating on school goals; protect instructional time; check teachers' records as a way of enhancing their growth; involve teachers in governance functions; encourage teachers to experiment with new ideas; bring workshops to their schools to enhance teachers growth; share information with teachers on conferences that they attend. (Sagor 1992, Leithwood 1994, Leithwood and Jantzi 2008, Poplin 1992)

This study focused on principals' supervisory activities as the independent variable, which was portrayed as the fundamental goal and strategy of Leithwood theoretical model (1994). The theory upholds the components of principals' instructional supervisory activities highlighted in this study, thus its relevance to the study.

Ivan (2015) stressed that transformational leadership in the school's context fosters relationships that empower teachers to build trust and develop a sense of unity fit for professional development. Olawole (2009) asserts that transformational leadership enhances teachers' classroom instructional performance. Further, Steven (2012) posits that in the school system, transformational leaders establish suitable learning atmosphere and sustains organizational change. Citing the need for transformational principals, Dragana and Marina (2016) contend that transformational principals improve schools, change teachers' classroom practices and enhance the quality of teaching and students' learning processes.

The Leithwood (1994) theory as applied to the current study, the researcher used it to conceptualize principals' instructional supervision roles in terms of the following four distinct activities: principals' checking of teachers' professional records, principals' monitoring students' progress, principals' classroom visitation, principals' implementation of teacher development programmes. The researcher postulates that the principal' instructional supervision roles of the above activities may lead to the application of effective teachers' pedagogical practices in public secondary schools in Bauchi state.

1.12.2 Strength and Limitations of Transformational Leadership

The major identified strength of transformational leadership is that, in its practice both leaders and followers are change agents Transformational leadership achieves success in transforming organizations because the leader works with all members of the system in executing identified, needed changes Dragana and Marina (2016). The leader demonstrates tasks and then provides supervision, support and guidance for subordinate to attain the same level with

the leader (Leithwood, et al. 2004; Miller and Miller, 2001; Leithwood and Jantzi, 2006). The preceding discussion suggests that transformational leadership style is substantial for school to move forward. In a school environment, through transformational leadership style, principals can create vision, changes and enthusiasms to induce improvement in teachers' quality of instructions and students learning.

On the other hand, followers tend to develop excessive faith in the ability of the transformational leader to always show them how to accomplish tasks. This condition may result in weakening creativity in the followers. Similarly, if the leader's focus is negative, followers could be transformed negatively. Transformational leader is fond of taking risks in order to establish innovations. Imprudent or unwarranted risks can be detrimental to the welfare of teachers and goal attainment. Also, it has been observed that transformational leaders have very high expectations. Over engagement to meet these expectations can lead to burnout within the employees (Brandon, 2018, Natalie, 2019). In a school situation teachers' creativity may diminish if they become over-dependence on the ideas of Transformational principals. Consequently, this situation can cause the failure of the whole system. Also, in a situation where teachers are over worked in order to keep up with the expectations of the transformational principals, enthusiasm and commitment can be disrupted.

1.12.3 Conceptual Framework

Orodho et al. (2016) describe a conceptual framework as the use of a diagram to explain the interrelationships between the independent variables and the dependent variables. This presentation depicts the interrelationships between principal's instructional supervision and teachers' pedagogical practices.

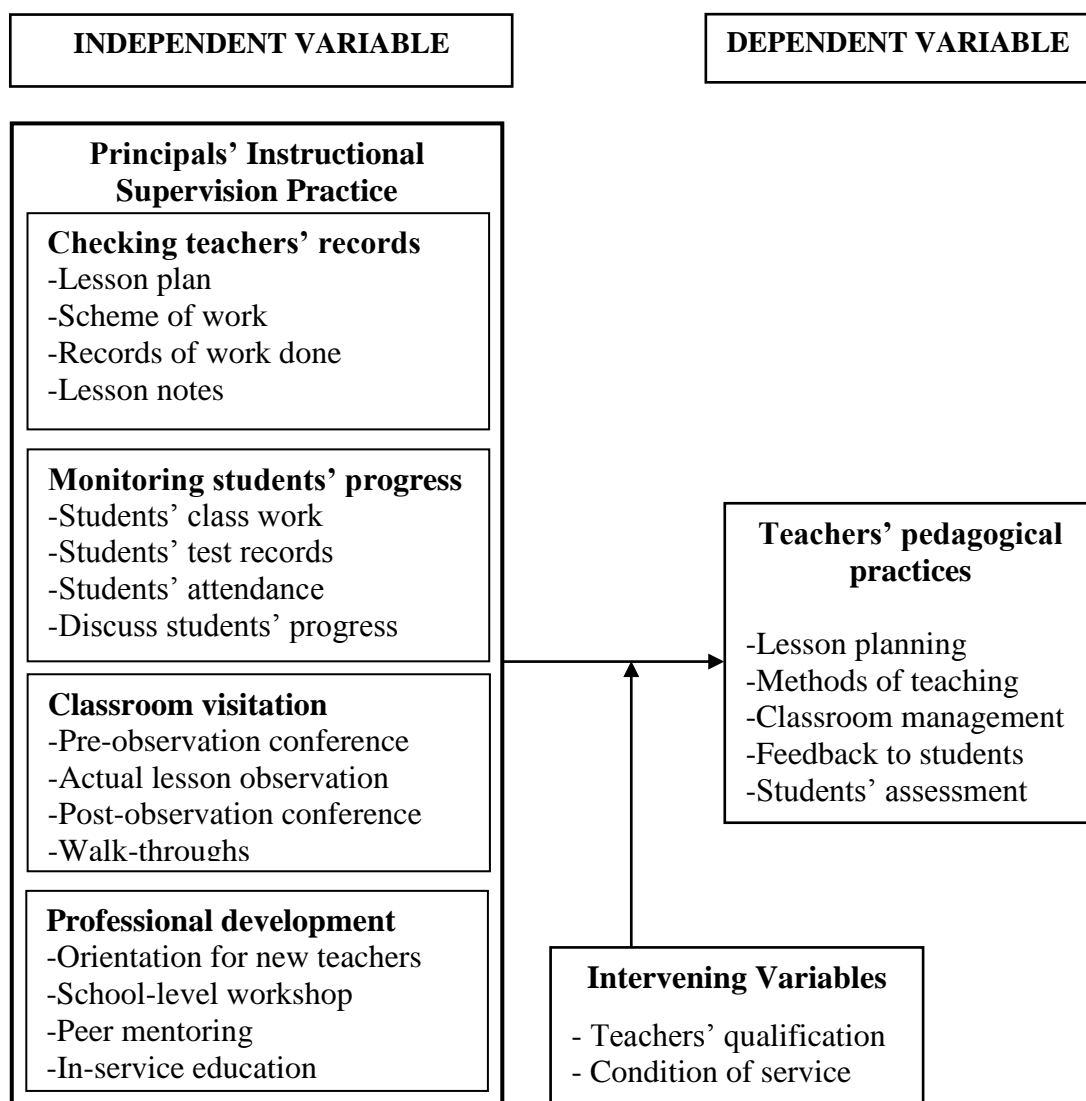


Figure 1.1 Conceptual Framework showing relationship of Principals Instructional Supervision and Teachers' Pedagogical Practices

Source: Researcher (2017)

The conceptual framework above presents a summary of the features concerning principals' instructional supervision activities and its influence on pedagogical practices of teachers in secondary schools. This study was conceptualized on the premise that efficient and sufficient instructional supervision influence the improvement of teachers' pedagogical practices and consequently, the high academic achievement of students. The conceptual

framework design was guided by principals' instructional supervision roles as independent variables identified in the theoretical model and pedagogical practices of teachers as dependent variables.

The principals' supervisory activities of checking teachers' professional records, monitoring students' progress, classroom visitation and teachers' professional development programmes influence teachers' pedagogical practices: Lesson planning, Methods of teaching, Classroom management, Feedback to students and students' assessment. The intervening variables were the qualification of teachers, condition of service. These intervening variables were held constant in the present study.

According to Zepeda (2010) teacher's portfolio includes such records as lesson plans, scheme of work, records of work done, lesson notes, students sample tests, students assessment record, sample students work among others. These records assist teachers in remaining up to date and working in alignment with the school goal. The principals' supervision of checking and monitoring these records would likely keep the teachers on alert, thereby improving pedagogical practices and academic achievement.

Classroom visitation, (formal or informal): This provides an opportunity for principals and teachers to come into face-to-face contact in actual teaching observation. Classroom visit may be formal or informal. The formal visit usually involves a clinical approach, also known as clinical supervision. Glickman et al. (2010) describe clinical supervision as collegial and integrative. The supervisor plans the visit with the teacher and agrees on time and place. The supervisor records data during observation. In the end, the teacher is

provided feedback on the whole exercise. Both formal and informal visits enable principals and teachers to evaluate performance. Teacher's standing is highly improved when identified shortcomings are rectified. Classroom visits also help ensure teachers' regular attendance, punctuality, and the use of appropriate resources and methods. On the whole, the process ensures continuous improvement of the teacher because of the regular interactions and exchange of ideas.

During class visits, the principal offers direct assistance to the teacher in a potentially difficult situation (Glickman et al., 2013). It may be a daily affair in which the principal assists teachers personally with instructional materials, lesson planning, selection of teaching aids and methods, etc. This assistance can be formal or informal (Glickman et al. 2007). This kind of assistance provides reinforcements to teachers' performance and is likely that in turn, students' learning would be enhanced.

Another factor that ensures students benefit maximally from instructions is making full use of the lesson period. When principals endeavor to ensure that no instructional time is wasted, teachers work will be executed as scheduled and in an organized manner. Undisrupted instructional time will enable the principals' activities of checking students' register of attendance, continuous assessment records, and class-work helps to uncover teachers' laxity in tracking their students' academic progress. That will also enable the principal to determine how individual teachers can be assisted in improving instructions.

Professional development programmes such as orientation for new teachers, workshops, conferences, seminars, and in-service education designed by

principals enable teachers to improve their instructional skills and become competent teachers. During such activities, teachers share ideas and materials among colleagues. Through this process, teachers acquire more relevant knowledge, new teaching skills, and competencies. Consequently, teachers' overall pedagogical practices are enhanced. Hence, students' learning may likely improve. According to Zepeda (2007), a clear connection exists between instructional supervision and teacher professional development. Additionally, Sullivan (1997) stress that both instructional supervision and professional growth are interlinked, that both focus on teacher effectiveness of pedagogical practices.

The conceptual framework portrayed the main components of school-based instructional supervision, and teachers' professional growth activities carried out by principals and other in-school supervisory personnel. Instructional supervisory activities are planned and carried out in order to improve the planning of lessons, classroom organization skills, time management, methods of instructions, and feedback to students, among others. Underpinning these assertions, Tesfaw and Hofman (2014) posit that instructional supervision is primarily interested in assisting teachers in improving their pedagogical practices and developing professionally.

It has been observed that in order to implement effective instructional supervision in schools, principals should be competent in relevant supervisory skills as prerequisite conditions (Glickman 2010).

1.13 Operational Definition of Terms

Arts-related Subjects: In this study refer to Languages, Religious studies, Social Studies, Civic Education, Home economics, Cultural and Creative Arts, Business studies

Educator: in this study means teacher. Educator and teacher were used interchangeably in the study.

Evaluation: Supervisory activities carried out to make judgments regarding how the teacher conducts ones' assigned duties.

Influence: In this study refers to 'effect' .The words influence and effect were used interchangeably throughout the script.

Instructional Leadership: Refers to instructional supervisory activities of principals

Instructional Supervision: In this study refers to interactions between teachers and school-based supervisory personnel at work to share experiences aiming at improving pedagogical practices.

In-service Training: Programmes and training activities engaged in by secondary school teachers intended mainly to improve their pedagogical practices further,

Learning Environment: refers to the physical and human aspects of the school that affect the teaching and learning process.

Pedagogical Practices: refer to the various tasks undertaken by the teacher to guide the teaching process and ensure effective students learning. In this study,

they comprise: Planning lessons well ahead of time, conducting instruction effectively, classroom management, using a variety of instructional procedures and methods, giving student feedback, effective students assessment.

Principals' Instructional Supervision: In this study, it is conceptualized as the Principals' supervision activities of checking teachers' professional records, monitoring students' progress, protecting instructional time, classroom visitation and facilitating teachers' professional growth.

Protection of Instructional Time: refer to those supervisory activities principals carry out carried in their schools to ensure that the time allotted for a lesson is fully used by teachers and students. Such activities include restricting visits during lessons, keeping time book and movement book, time table, and ensure adherence to schedule.

Public Secondary Schools: refer to those secondary schools that are funded managed and maintained by the government of Bauchi state

Professional Development: in this study refers to teachers participation in activities (workshops, seminar, conference, study group, peer mentoring) organized and conducted by principals to enhance their pedagogical practices.

Quality Assurance: in this study refers efforts by education authorities sustain educational standards in public secondary schools

Science Related Subjects: refers to Basic science, Basic technology, Mathematics, Information technology, Physical and Health Education, Agricultural science.

School-based Supervisory Personnel: refers to the principal, vice principal

Supervision Challenges: In this study refer to human, material, technical, administrative and financial elements that may hinder successful implementation of instructional supervision in public secondary schools. They comprise time, quality and quantity of personnel, attitude, and budget allocation and among others.

Supervisory Personnel: In this study refers to Principals or their representatives and Designated Supervisors of Local Education Authorities, Ministry and State Universal Education Board

Stakeholders: People who are directly or indirectly involved in financing education in Bauchi state. These include parents, guardians, students, sponsors, managers of schools

Secondary School: Refers to the post-primary level of education in Nigeria.

Secondary School Teacher: Refers to the academic staff in secondary schools.

Teacher Effectiveness: In this study refers to the teacher undertaking application of pedagogical practices (i.e. writing lesson plan, scheme of work, records of work, use suitable methods) and achievement teaching objectives

Teachers' Records: In this study, they refer to lesson plan, scheme of work, records of work and lesson notes, students' assessment and attendance records.

CHAPTER TWO

REVIEW OF LITERATURE

2.1 Introduction

Chapter two presents reviews of theoretical and empirical literature related to instructional supervision and teachers' pedagogical practices. The review was organized under the objectives of the study, which comprised checking of teachers' professional records, monitoring students' progress, classroom visitation, teacher professional development, and Challenges facing principals' instructional supervision.

2.2 Concepts of Principals Instructional Supervision and Teachers' Pedagogical Practices

2.2.1 Concepts of Principals Instructional Supervision

In an inaugural lecture on supervision and inspection, Nnabuo (2011) asserts that the inspectorial school supervision, which was characterized by an authoritative approach, has now given way to a more productive collaborative modern supervision. Further, Nnabuo observed that specialists of educational In an inaugural lecture on supervision and inspection, Nnabuo (2011) asserted observed that the inspectorial school supervision which was characterized by the authoritative approach has now given way to a more collaborative and productive modern supervision. Additionally, Nnabuo (2011) noted that instructional supervision had been differently conceptualized by scholars and researchers.

In the views of Sullivan and Glanz (2013), modern supervision suggests the assistance for educators that in the long run results in the improvement of

instructions. Furthermore, this assistance comprises of collegial interactions and planned activities intended to improve individual teachers (Glickman, Gordon and Ross-Gordon, 1995). This conceptualization of instructional supervision focuses on the collaborative nature of modern supervision. A publication by Zepeda (2012) also stressed the need for collaboration and collegiality in order that supervision becomes successful. Similarly, Olaniyan (1996) portrayed instructional supervision as the process of supporting the teachers through the evaluation of their practices. Nahed (2012) views on instructional supervision stress much on the attitude of teachers as an important factor that counts in the successful implementation of instructional supervision. Nnabuo (2011), in his study of teachers' supervision, describe instructional supervision as a continuous process, citing that instructional supervision is a cycle of activities between a supervisor and a teacher with the main aim of improving classroom performance.

The views of Nnabuo (2011) that instructional supervision is a continuous process were shared by other scholars. For instance, Ajani (2001) keep up comparable views with Nnabuo (2011) when he opined that instructional supervision comprise of activities which are done with the aim of improving the instructions implemented by teachers and learning for the students. Ekundayo et al. (2013) also stressed that conducting supervision of teaching by principals is a necessary action for the productive running of a school set up. Furthermore, it has been highlighted that effective supervision of instructions provides guidance that can fortify and upgrade instructional activities of the teachers, hence aiding

the improvement of learning by the students. (Ekundayo et al., 2013; Beach and Reinhartz, 2000; Zeped, 2012)

In the perspectives of Beach and Reinhartz, (2000) instructional supervision can be regarded as the procedural training for teachers in their instructional roles which eventually results in quality pedagogical practices. Further, Beach and Reinhartz (2000) stressed that success of teacher development and improvement depends on their endeavours to progress in their classrooms behaviours. This definition focuses on the teachers' long-term development, in addition to improving their routine classroom instructions. On his part, Nnabuo (2011) conceptualized instructional supervision as an intricate procedure that includes working with teachers in a collegial and understanding relating to upgrading the nature of instructions and learning inside schools. From the preceding definitions, it could be deduced that the instructional supervision of the principals may be described as a device for ensuring quality instructions and also enhancing professional development of teachers. The preceding argument as well highlights that in order for supervision to be successful, the supervisor must possess certain qualities like interpersonal relationship and professional competence.

Concerning the qualities a supervisor should possess for the supervision to be successful, some researchers have written extensively. In this regard, Ogunsaju (2006) publication on perspective and practices of educational supervision emphasized that good supervisors should be: honest, objective, fair and firm; they should be opened minded and democratic, approachable, creative, imaginative and innovative; they should be good listeners and observers,

friendly, courteous and consistent in their interactions with teachers and other educational facilitators (Ogunsaju, 2006).

2.2.2 Conceptualization of Pedagogical Practices

Literally pedagogical practices may be described as those activities performed by the teacher to ensure students learn effectively. However, experts in educational practices observed that the concept does not lend itself to easy definition. In this regard, the pedagogical practice has been conceptualized differently by various specialists. For example, Moyles, Adams, and Musgrove, (2002) assert that pedagogical practice is created from a scope of elements including hypotheses, research proof, training, educators' experiences and people's needs. The foregoing explanation shows that what constitute pedagogic practice is intricate as demonstrated by its origination and hence not easily conceptualized.

Some scholars have tended to view pedagogical practices in terms of the specific actions of the teacher intended for influencing learning in students. For instance, Watkins and Mortimore (1999) in their publication titled '*understanding pedagogy and its impact on learning*', characterize pedagogical practice as 'any deliberate efforts by one individual intended to improve the learning of another.' Similarly, Alexander (2003) has his own favoured view, which noted that pedagogical practice requires consultations, conferencing, dialogue and planning. He, therefore, conceptualized pedagogical practices as those noticeable activities of instructions involving consultations, conferencing dialogue, and demonstrations by the teacher.

Furthermore, Alexander maintains that pedagogical practices refer to the skills and the abilities the teacher needs to command, so as to legitimize the numerous attributes of which teaching is comprised. Accordingly, it has been argued that pedagogical practice is a broad term focusing all the activities an educator does for the purpose of impacting learning in students (Department of Education, Employment, and Workplace Relations, 2009). Also, Lakkala, Ilomaki, and Kantosalo, (2011) depict pedagogical practices as the various distinctive undertakings, exercises, and actions embraced by the educators to enable them to teach well.

2.2.3 Elements of Pedagogical Practices

When curriculum contents are organized into teachable components and some skills employed to support effective instructions; the situation constitutes what may be described as teaching (Moyles, Adams, and Musgrove, 2002). In their publication on comparative education, Cowen and Kazamias (2009) explain the concept of planning and implementation of teaching. They contend that when instruction is presented in its barest form, two fundamental indisputable facts arise from it. Firstly, what the students are expected to learn and, secondly what strategy the educator has to use to guarantee that the students learn. This conceptualization of teaching emphasizes that two elements stand out clearly in any planning and implementation of instructions. The first one comprised the topic to be taught, including their well-defined objectives; while the second one includes the techniques and materials to be used to ensure learning exercises are effectively carried out.

Previous researches have established that effective pedagogical practices are identified by certain characteristics that foster teaching and students' learning (NCLS, 2012). A report by the United Kingdom National College for School Leadership demonstrates that effective pedagogical practices give considerable attention to lesson planning, methods of teaching, feedback and management of student's conduct. Additionally, intellectual ability and expertise of teachers to embrace coherent thought about the learning results was equally vital (Voss, Kunta and Baumert, 2011). Further highlight suggests effective pedagogic practices encompass monitoring of learning progress, and consideration for the various needs of students, as well as their individual differences (Watkins and Mortimore, 1999; NCSL, 2012). The preceding discussions highlight that effective pedagogical practices are all-inclusive, goal-oriented, and aimed at all round development of the learners.

Similarly, Farquhar, (2003) asserts that effective pedagogical practice entails teachers' planned actions that enable various students to gain access to information, educational activities, and chances to enhance their abilities in a manner that consolidates on previous knowledge. In support of the above assertion, Voss, et al. (2011) argue that for quality pedagogy, the teachers should have a command of different instructional strategies and know about various forms of assessing learning (summative and formative). Strengthening the preceding points, it was stressed that teachers should be capable of planning effective lessons, structuring clear learning goals and managing effectively the diverse groups of learners in the classroom. (Alexander, 2004; Voss, et al. 2011)

2.3 Supervision of Teachers' Professional Records

Teachers' professional records have been depicted as the documents which teachers utilize in the drawing up, execution and assessment of instructions and learning activities. Teachers' records comprise the scheme of work, the lesson designed, the learning activity notes, and the documented histories of work accomplished. These records help the educator to sort out the way towards conducting instructions progressively and proficiently (Enyiuche, 2017; Doolittle, 1994; Zepeda, 2010; Voss, Kunta and Baumert, 2011).

Various scholars have described teachers' professional records supervision and the records that should be the focus of principals' supervision. The teachers' professional records may be seen as those reliable sources of determining teachers' level of commitment to teaching. In this direction, Mues and Deane (2000) in their book entitled preparing a teaching portfolio review teachers' records as a convincing set of documents that symbolizes the teachers' pedagogical practices in terms of the students' learning. Similarly, Doolittle argues, "A teacher portfolio is a document created by the teacher that reveals, relates, and describes the teacher's duties, expertise, and growth in teaching." (Doolittle, 1994) Furthermore, Doolittle (1994) further observed that the supervision of teachers' records supports the enhancement of the teaching and student learning process. On her part, Zepeda (2010) portrays supervision of teachers professional records as the examination of the educators' documented guide for their practice, for example, the tests exercises designed, tests results in records, plans of work, vocation objectives, diaries, and learning exercise notes.

The preceding discussion illustrates teachers' portfolio as the records that provide clear evidence on the teachers' preparedness for instructions, strengths of teaching experiences, and the sign of potentiality for growth in the vocation. Therefore, principals' supervision of these records would enable the teachers to reflect on their performance and determine areas needing improvements.

According to Oyedeji (2012) as cited by Njideka and Chika, (2016) effective functions of school supervisors (principals), including among others undertaking formal and informal visits to classes, reviewing teachers' records and watch their attendance closely. A study of portfolio supervision by Sule et al. (2015) revealed that a positive relationship exists between principals' supervisory activities of checking teachers' lesson plans and teachers' pedagogical practices. Their findings also indicated a significant positive correlation between instructional supervisory practices of classroom observation and teachers' role effectiveness.

A research was conducted to investigate the effect of principals' supervision of teachers' professional records on their pedagogical practices by Paul, et al. (2016) in public secondary schools in Uganda. Findings of their research revealed that the supervision of professional records had a statistically significant effect on teachers' pedagogical practices. Also in a similar study by Melissa (2016) on the influence of headteachers' instructional supervision practice on teachers' job performance in Kenya, it was found that principals supervision of teachers' professional records significantly affects their job performance. The findings, as revealed by the above pieces of the literature,

suggest the principals' supervisory activities of reviewing teachers' portfolio is very important for the achievement of secondary education.

Similarly, an investigation was undertaken to determine the influence of principals' supervisory roles on students' academic achievement in Nandi County in Kenya by Jeptarus (2014). The study findings revealed that principals check teachers' records like schemes of work, lesson plan, and record of work regularly. The study also reported that principals visited the classroom and observed lessons, thereafter provided teachers with immediate feedback on the lesson. The study concluded those principals' instructional supervision activities of checking teacher' professional records were highly performed in public secondary schools.

Badah, Al-Awawdeh, Akroush and Al-Shobaki. (2013) conducted a research on the difficulties facing the educational supervision process in public secondary schools. The study observed that the supervisory duties of the principal include checking the teaching standards by reference to professional records of the teachers. This finding suggests that the quality of teaching and learning is affected directly or indirectly by teachers' portfolio. In other words, effective teaching may be prescribed by the degree to which teachers organize their professional records. This point was sustained by Eshiwani (1993) argument that sufficient preparation of the teacher is an important factor that determines the academic performance of students in schools. Given this argument, there was the need for school heads to conduct adequate checking of teachers' professional records as it is likely their level of preparedness could be ascertained through their records. In this regard, the present study aimed to

assess the extent to which principals check teachers' professional records in public secondary schools.

A study on the supervisor's role in improving the quality of teaching and learning in Nigeria secondary school education system indicated that schools where principals check teachers' records have high performance (Kotirde et al. 2014). Mohammed (2015) investigated the roles of educational inspectors in curriculum implementation in public secondary schools of Bauchi state. Findings of the study revealed that checking of lesson plans, schemes of work, students' attendance, and academic progress were least performed by designated school supervisors. Mohammed (2015) study concluded that the situation had led to poor curriculum implementation in public secondary schools. However, Mohammed's study did not explore principals' supervisory role of checking teachers' records in ensuring curriculum was effectively implemented. The present study aimed to examine the extent to which principals supervise teachers' records like lesson plans, records of work, scheme of work and lesson notes facilitate teachers' pedagogical practices and students' learning.

Berhane (2014) study on practices and challenges of instructional supervision in Assosa, Ethiopia revealed that lack of objectivity by school principals in records checking was one of the problems. In this regard, Glickman et al. (2013) warn that supervision should have a focus. Therefore, when conducting the supervision of teachers' records, the school principal must be objective and should maintain absolute confidentiality in dealing with the individual teachers. Aforementioned will help in developing trust and confidence in teachers

towards supervision. Consequently, the achievement of the aims of supervision exercise becomes realizable.

Review of the teachers' professional records though very important is not enough to address teaching problems. Studies have indicated that some principals overstressed on checking professional record to the extent that writing and submissions of records by teachers become a ritual (Mbuso, 2015). This assertion was supported in a study on obstacle to effective instructional supervision in Kenya by Kiamba in 2011. Findings of the study revealed that many at times, teachers prepare professional records to appease to supervisors. Furthermore, Kiamba found that instructional supervision activities of reviewing teachers' records lacked thoroughness. It was discovered that some teachers' records were not endorsed by principals (Kiamba, 2011)

It has been observed that school-based supervision is very relevant in fostering pedagogical practices and student learning. In this regard, a study by Osae (2012) examined the effect of principals' supervision of teachers' records on staff performance. Respondents describe external supervision as control and visit oriented and that it makes little or no impact on staff performance. Further, findings indicated that teacher respondents' preferred internal supervision which is characterized by records checking and class visits; citing the reason that both principals and teachers are in the full picture of the existing conditions and in a better position to handle it within their schools. Similarly, a study on the impact of supervision on teacher effectiveness by Njideka and Chika (2016) uncovered that principals' supervision has a high positive effect on teachers' pedagogical practices. The scholars distinguished that primary function of principals'

supervision is to incorporate procedures for powerful educational programmes usage, conveyance of guidance, and instructive administration.

Furthermore, a related study by Jeffrey, Vivian, and Susan, (2007) on the impact of supervision on student achievement revealed that an immediate relationship exists between instructional supervision and both teachers' pedagogical practices and students' achievement on the other hand.

Akinfolarin et al. (2017) conducted a study on academic supervision as a correlate of students' academic performance. Their study findings noted that supervision of teachers professional records positively correlate with students' academic performance and teachers' practices. It has been observed that normally, teachers tend to prepare and structure their lessons effectively in a school where the principal regularly and thoroughly review teachers records (Chapman 2001).

A study on the influence of headteachers' supervisory strategies on pupils' performance by Ngunjiri, (2012) stressed that maintaining records by teachers should be seen as a vital component in the running of the school activities. Emphasizing the importance of records further, Ngunjiri recommended that every teacher should try to make and maintain records such as lesson plan, the scheme of work, records of work done, students' progress record book, attendance register, and other vital records. In line with this argument, Onyango (2005) has also stressed that maintaining record is an important aspect in the running of any organization.

Accordingly, Nyamwamu (2010) asserts that regular updating and maintenance of teachers' professional records promote the activities of teaching and learning in a school. Consequently, Nyamwamu warns that principals should endeavour to supervise teachers' professional records on a consistently. The preceding works of literature point to the fact that supervising teachers' record is a vital role of principals in ensuring teachers' preparedness, and this may have a direct impact on the students' academic performance in the long run.

In teaching and learning process, such activities as writing scheme of work, lesson planning, and writing notes of exercises and records of work done are very vital. The essence of these records is to ensure effective organization and implementation of instructions. According to Achuonye, (2007), planning of work in form of the lesson is a summarized breakdown of the syllabus to depict daily exercises with the end goal of precise and efficient instructions. This assertion implies that well planned lessons enable the teacher to implemented learning content on a week by week basis.

Furthermore, a lesson plan is viewed as the last stage in educational programmes usage. Primarily, it highlights exercises planned, mapping out methodologies, and the normal learning results (Achuonye, 2007). The lesson plan demonstrates the dimension of teachers' readiness for instructions. The topic within the proposed lesson should align with that in the scheme of work and indicates continuity from work accomplished (Achuonye, 2007). On the other hand, the scheme of work as conceptualized by the Ministry of Education, Science and Technology, Kenya (2004) is an action plan made by teachers as part of preparations for instructions. It reduces the broad topics from the

syllabus into teachable units, indicating specific items to be taught at what particular time, and the relevant learning activities.

The preceding discussions show that teachers' records have been viewed from different perspectives. The common denomination for all the arguments is that teachers' records assist teachers in preparing well and teaching effectively (Enyiuche, 2017). Therefore principals' supervision of teachers' records is a very vital activity that will help to determine the level of teachers' preparedness for instructions (Ngunjiri, 2012; Doolittle, 1994). However, little research have been undertaken to determine the effect of principals' checking of teachers' records on teachers' practice. It is in this regard that the current study sought to assess the influence of principals' checking of teachers' professional records on pedagogical practices of public secondary school teachers in the Bauchi state, Nigeria.

2.4 Monitoring Students' Progress and Pedagogical Practices of Teachers

2.4.1 Concepts of Monitoring Students Progress

Several studies have shown that monitoring students' progress has been part of the responsibilities of the principals in school administration. The purpose of monitoring generally is to guarantee quality in teachers' instructions and students' learning process. According to Grauwe (2007), the performance of monitoring process began in the 1980s and 1990s and is said to have spurred much of the major reorganization of the education system of New Zealand, England, and Australia. Various scholars have viewed the monitoring of students' progress in schools differently. For instance, Halverson (2010) described monitoring as the procedure of deliberate assembling and recording of data about a programme with the aim of utilizing that information to refine the

learning procedure. While Omogbehin (2013) conceptualizes monitoring learners' advancement as an arrangement of linked actions with the aims of figuring out what learners have achieved within a given set up standards.

Studies have shown that principals' monitoring of instructions and student learning has a positive impact on pedagogical practices and academic achievement. For instance, Leithwood, Seashore, Anderson, and Wahlstrom (2004), study about influence of leadership on student learning in the USA observe that in secondary schools with outstanding academic performance, their principals usually talk with individual teachers about the students' progress. Leithwood and his associates further argue that learners' educational attainments were superior in schools where teachers made use of learners' progress records as a guide to refine their teaching. In supporting the preceding argument, Omogbehin (2013) contend that the goal of monitoring learning activities is to ensure quality.

Bambrick-Santoyo (2010), writing about the evaluation of schools performance driven by data in Jossey, United States of America asserts that utilizing learners' progress information had a constructive effect on achievement. The author observed that in well-organized schools, principals and teachers always employ learners' progress information to examine school development. It was also found that learners' progress information was used to inform students about their academic performances. In the same vein, Boudett, Murnane, City, & Moody, (2005) study on using students' evaluation data, express a similar viewpoint that principals make use of students' evaluation information to provide feedback to parents concerning the progress of their children in specific

subjects. This detailed information on student performance would enable parents and guardians to advise children on career focus in their early life.

In a related development, Bays (2001) study on supervision of special education instruction in rural public school districts in the US, recommends that in order to assure positive learning outcomes for students, principals should interact with teachers on a daily basis with a focus on improving instructions. This recommendation by Bays emphasizes further the need for principals to be talking to individual teachers about their students' progress. These studies, however, did not explore the influence of principals' monitoring of students' progress on pedagogical practices of teachers.

2.4.2 Strategies used by Principals for Monitoring Teaching and Learning

Currently, it is indicated that various techniques are employed for the monitoring of teaching and learning activities in schools. With regard to this, a study on principals' role in monitoring students' progress in southern California was undertaken by Omogbehin in 2013. The findings of the study revealed that various strategies were employed to monitor students' academic progress. They include teachers' submission of students' assessment records after every two weeks; teachers' presentation of their students' assessment results to colleagues during meetings. Other strategies of monitoring revealed by the Omogbehin's study include classroom walkthroughs to see how students cope with ongoing lesson and principals having discussions with individual teachers about their students' progress.

Principals' supervisory activities of monitoring students' progress were highly performed in public secondary schools in Nandi, Kenya (Jeptarus, 2014). The findings of the study on instructional supervisory roles of principals by Jeptarus (2014) further revealed that principals often discuss the progress of students with individual teachers in addition to checking students' assessment records and exercise books respectively. On the other hand, a study by Oduol (2006) indicated that there was a need for systematic monitoring of attendance in public secondary schools in Kenya.

A research was conducted on strategies principals used for monitoring teaching and students' learning by Mbuso (2015), in South Africa. The study revealed that principals in public secondary schools monitor students' academic progress in their schools through weekly review of teacher files; verification of student and teacher lesson attendance; scrutiny of assessment tests before their application on students. Other strategies of monitoring revealed by studies include class visits to measure teaching and students' learning progress and checking students' exercise books on a weekly basis to determine the level of teaching and students' academic progress (Al-Hosani, 2015; Benedict, 2013; Jeptarus, 2013; Zepeda, 2012; Aseka, 2016)

2.4.3 Challenges Principals Face in Monitoring Students Progress

Although studies have shown that principals make use of several strategies in an effort to monitor students' progress, it is not without challenges. Mbuso (2015) study about monitoring students' progress in South African secondary schools established that principals face various challenges in their supervisory activities of monitoring students' academic progress. According to the study findings, in

some schools, principals were full-time subject teachers. It has been observed that teaching loads often interfere with principals' time for supervising teachers (Kieleko, Kanori and Mugambi, 2017; Mjimba, 2016; Issah, 2012). This means they have limited time, yet they were expected to carry out their supervisory responsibilities. Another constraint revealed was that some teachers have a negative attitude towards monitoring of their instructional activities, especially where students progress was to be monitored in relation to the teacher's performance (Mbuso, 2015, Joseph, 2014).

Further to the above, it was found that some literate parents out rightly write their children's assignments, thereby making the principals checking of exercise books to determine their performance less effective. Their real ability cannot be ascertained as they did not do the work themselves. Furthermore, the study revealed that absence of specific punishment provided by the ministry of education to deal with teachers who fail to comply with some regulations regarding monitoring teaching and students' progress was a challenge (Assefa, 2014; Mbuso, 2015). This rendered the principals handicapped for they could not punish defaulters for serving as a deterrent. Moreover, the study indicated that poor classrooms' condition and inadequate instructional materials also prevented teachers from implementing planned tasks; as a consequence, the principals' monitoring teaching and learning become difficult (Joseph, 2014; Ogununu, 2005).

In Nigeria, certification of secondary school education is based on national examinations administered by the West African Examinations Council (WAEC) and National Examinations Council (NECO). Unfortunately, the performance of

public secondary schools students in these examinations in Bauchi state has been below average in several years (Aminu, 2014). With systematic and efficient principals' monitoring of students' academic progress in schools, the problem of poor performance would have been detected and addressed before the final assessment. In this regard, Lezzote (2010) study on effective schools contends that effective school leadership is characterized by systematic monitoring of learners' progress. This observation is emphasizing the point that monitoring teaching and student learning is critical in determining the achievement of educational goal.

The literature reviewed showed that not much studies were done to determine statistically the how principals' monitoring of student progress affect teachers' pedagogical practices (Mbuso, 2015; Jeptarus, 2014; Oduol, 2006; Lezzote, 2010; Omogbehin, 2013). Also, there was dearth of literature in principals' instructional supervision in than Bauchi state on Nigeria. In regard to these gaps, the current study sought to assess the influence of principals' monitoring of students' progress on teachers pedagogical practices in public secondary schools in Bauchi state, Nigeria.

2.5 Principals' Classroom Visitation and Lesson Observation

The improvement of teachers' instructions would, in turn, improve the students' performances. This is because when the teacher teaches well, there is the tendency that student learning will be enhanced (Zepeda, 2010). This assertion signifies that principals' classroom visitation is conducted for the sole purpose of improving teaching. According to Rashid (2001) research about the perception of teachers on supervisory practices in Riyadh schools, classroom

visitation enhances teachers' performance. The study further revealed that conducting classroom visitation through clinical supervision process (procedural) seemed to have the quality to improve both teacher and students' standing (Rashid, 2001). Clinical supervision appears to have been enhancing students' learning process (Nahed, 2012). Many educational systems widely use the procedure of clinical supervision as a viable means to enhance the supervision process and improve instructions (Benigno, 2016).

There are multiple ways of conducting the supervision of instruction. However, the clinical supervision model is highly accepted in many parts of the world (Glickman, Gordon, & Ross-Gordon, 2014). Sullivan and Glanz, (2009) stated, that research on clinical supervision, which has emerged as a major force in educational supervision since the 1970s has been replete with concepts of collegiality, collaboration, assistance, and improvement of instruction. Morris Cogan (1973) originated the idea of clinical supervision process at the Harvard University School of Education. The term 'clinical' is a borrowed word from medical and suggest the practice of mutual understanding in supervision processes (Glickman, 2007; Pajak, 1993). Tesfaw and Hofman (2012) conceptualized clinical supervision as a supervisory process for the improvement of professional growth, which usually consists of several stages such as pre-observation conference, observation of instruction by a supervisor and post-observation conference.

Initially five stage process in actualizing clinical supervision was outlined. However, these days three expansive stages in clinical supervision are utilized (Glickman, Gordon, and Ross-Gordon 2014). Pre-observation discussion is the primary stage, trailed by the real lesson observation, and then post-observation

meeting (Blasé and Blasé, 2004). Clinical supervision is identified with developmental evaluation planning to improve the instructor's educational practices (Nahed, 2012). As indicated by Sergiovanni and Starratt (2007), clinical supervision is an "eye to eye contact with teachers with the aim of improving guidance and expanding professional development". It is a successive, cyclic, and orderly supervisory procedure, which includes a close and personal connection among teachers and principals, intended to improve the teachers' classroom performance (Kutsyuruba, 2003).

Ramano (2014) studied teachers' views on principals' supervision in junior-senior high school districts in Nassau County, New York. The study finding indicated that in consensus, the respondent teachers portrayed that the classroom observer should be honest, objective, maintain confidentiality, and utilize the process for the express purpose of promoting instructional improvement. This finding emphasized the need for establishing a collegial relationship between supervisor and teacher in order to make principals' supervisory activities trustworthy and rewarding.

Accordingly, Hussen, (2015) study investigated the instructional supervisory approaches practiced in preparatory schools of Arsi zone, Ethiopia. The findings of this study showed that classroom visitation was not regularly conducted. Supervisors did not provide direct assistance to teachers during lessons. The results revealed further that supervisors did not often inform teachers before visiting their classes for lesson observation. Zepeda (2010) stressed that supervisors' classroom observations could only positively influence teacher job performance when a good relationship exists between teachers and supervisors. Abebe (2014) study, examined classroom observation procedures

at government secondary schools of Kamashi. The findings revealed that although supervisors carried out classroom visits, they would not arrange such visits with the teachers concerned.

Principals' supervisory activities of classroom visitation were under-researched generally in developing countries like Nigeria and in particular Bauchi state (Mohammed, 2015). The present study examined the extent to which principals' execute classroom visits in public secondary schools of Bauchi state. Furthermore, the current study assessed the influence of principals' supervisory activities of classroom observation on teachers' pedagogical practices in public secondary schools.

Malunda et al. (2016) study on the effect of supervision on teachers' practices revealed supervision of teachers' instructions was not adequately conducted in public secondary schools in Uganda. The study concluded that inadequate effective supervision of teaching and learning had led to poor students' academic performance in public secondary schools. Supporting this conclusion, in a paper on supervisors' practices and teachers' effectiveness, Sule, et al. (2015) posits that the competence level of teachers increases with classroom observation. The present study assessed the extent principals performed classroom visits and how much pedagogical practices of teachers' are affected by them in public secondary schools.

Sultans (2017), studied the effects of supervision on teachers' performance in Kuwaiti high schools. The participants comprised 24 teaching staff taken from secondary schools in Kuwait. In response to the research question of whether

supervision influences the work performance of teachers, the participants unanimously agreed that principals' instructional supervision significantly influenced the teacher's performance.

The study further reported the opinions of teachers regarding supervisory styles in Kuwaiti secondary schools. One of the teachers opined that the present supervision process had numerous inadequacies; citing specifically that the school heads relied upon only what they saw, totally neglecting having discussions with teachers on the issues confronting them. The study concluded that principals' activities of supervising teaching were not effectively carried out in the majority of public secondary schools. Similarly, Minnear-Peplinski (2009), dissertation on principals' and teachers' perception of supervision revealed that in many schools principals' supervision of instructions lacked cordiality. Sailesh, Marohaini, and Sathiamoorthy (2011) also carried out research to determine perceptions teachers held on instructional supervision in three Asian countries. Major issues that came up in the study included, that the process of instructional supervision should be continuous; that teachers should be involved in the process of instructional supervision from the pre-observation conference, through the observation to the post-observation conference. Furthermore, the study findings suggest that there was a need for supervisors to employ the support of a subject specialist to assist them in lesson observations.

Principals adopt different strategies in conducting classroom visits and observation of teachers' instructions. In a study of supervision of special education instruction in rural public school districts Blacksburg, Virginia Bays

(2001) found that principals employed three main techniques to implement supervision of instructions in their schools. First, they used the observation and evaluation process as formal means; secondly, they adopt supervision by wandering (walk-throughs) and thirdly, they utilize open communication with the teachers. Similarly, procedural (clinical supervision), cited earlier in this discussion is characterized by three broad stages, namely pre-observation conference, lesson observation, and post-observation meeting (Nolan and Hoover, 2011; Sergiovanni and Starrat, 2002).

2.5.1 Pre-observation Conference and Planning

Pre-observation conference signifies the formal discussions held between the principal and the teacher or teachers to be observed (Glickman et al. 2013). During pre-observation discussions, the principal informs teachers about the objective of the exercise, what materials may be required, and then they agree on the time and venue. Nolan and Hoover (2011) contend that pre-observation conferences are required in order to establish cordial relation and trust between principal and the supervisee. Zepeda (2010) writing about successful supervision, asserts that instructional supervision objectives can only be achieved when there is collaboration between the teachers and the principal. The implication of these assertions is that principals should be equipped with skills of interpersonal relationships. Furthermore, it is clearly indicated by the researchers that principals must have competent skills in instructional supervision for them to succeed.

2.5.2 Observation and Data Collection

Classroom observation also called lesson observation is the actual supervisory activity of watching the teacher while conducting instructions. This comes after

all arrangements have been concluded between the supervisor (principal) and the supervisee (teacher). The principal sits in the classroom, watching the teacher delivering the lesson. The principal records data on all the activities carried out by both the teacher and the students throughout the lesson. Heneman, Milanowski, Kimbal, and Odden (2006), in a study of teacher evaluation, noted that based on the school and the principal, different format of data collection is used. Principals in some schools device their own strategies of making notes while observing teachers (Simbano, 2013). In other schools, standardized checklists are adopted and used by principals (Glickman, et al. 2010).

In a study of the influence of principals' supervision on teachers' work performance in Tanzania, Simbano (2013) observed that teachers and supervisors commonly share the assessment process. The notes taken by the principal during observation of instructions form the basis for discussion after the lesson (Simbano, 2013). When discussing the importance of lesson observation, Massey (2004), the paper asserts that observation foster teacher' pedagogical practices and, in turn, improve students learning. The present study assessed the degree to which principals involve teachers' in the classroom observation process.

2.5.3 Post- observation Conference and Feedback

Presumably, the post-observation conference is the final stage of lesson observation. During the post-observation conference, the principal is supposed to discuss with the teacher whose lesson was observed, the notes they recorded during instructions. Zepeda (2012), writing on instructional supervision in

public schools noted that during the post-observation conference, teachers whose lessons have been observed are provided with feedback on the performance in the lesson. Similarly, Glickman et al. (2013) contend that during the post-observations conference, data recorded and analyzed by the principal concerning behaviours of both teacher and students in the course of observation were reflected. Furthermore, Sultan (2017) study in Kuwaiti high school on the effect of instructional supervision on the teacher indicated that feedback from lesson observation had a positive, significant impact on teachers' work performance.

The findings in the preceding studies suggest that if principals organize supervision activities collaboratively with their teachers, implement them in a collegial manner, and discuss the outcome, it would be more successful. However, in a related study on practices of instructional supervision in public schools in Ethiopia, Hussein (2015) found that principals did not inform teachers before the observation and also they did not hold discussions with them after the lesson observation. It has been observed that the discussion of lesson observation findings significantly improves teachers' instructional performance (Massey, 2004). Regarding this assertion, lack of feedback on lesson observation would make principals' instructional supervision a futile exercise.

Zepeda (2012) noted that feedback in which the teacher participate in the evaluation could assist the teacher in becoming aware of his or her strengths and weaknesses from an outsider's viewpoint (Zepeda 2012). These assertions suggest that teachers can become committed and improve classroom instructions if given feedback that confirms positive characteristic in their

instructions and also reflect on areas needing improvement. In this direction, Days et al. (2000) observe that good relationship in the school enhance teachers' commitment and focus on school goals.

Many reviewed literature focused on principals implementation of classroom observation and challenges they encountered. However, there was a need to determine how teachers were responding to classroom observation. The present study therefore aimed to examine the causal relationship between principals' classroom observation and teachers' pedagogical practices with a view to improving instructions.

2.6 Principals' Implementation of Teacher Development Programmes

In addition to administrative functions and supervision of instructions, principals are responsible for their teachers' growth. Therefore, apart from undertaking lesson observation to improve teaching, principals are expected to organize and implement programmes that will foster teacher professional development (Kamal, Yunus & Salomawati, 2012) Such programmes as in-service education, school-level workshops, teacher orientation and peer mentoring could be facilitated by principals to support the professional development of teachers. In an overview of literature on supervision and staff development, Wanzare and Da Costa (2000) conceptualize teacher professional development as a continuous teacher training focusing on improving teachers' instructional techniques, their classroom organization ability, their capacity to adjust teaching to fulfill learners' requirements and setting up a professional culture which is significant in teaching-learning situation.

In a study about teachers' and supervisors' perceptions of current and desired observation practices, Ramano (2014) argues that supervising and assessing teaching, checking learners' advancement, ensuring utilization of instructional time and motivation of teachers and learners are parts of principals' roles connected to teachers' professional growth and performance. Ramano Further asserts that promoting teachers' professional development is the most prominent instructional leadership role of school heads at both the elementary and high school levels. These views suggest that principals who focus attention on even a small number of important teacher growth activities can expect a good outcome with teachers.

Nyamwamu (2010), researched the effectiveness of supervision of instructions concerning the implementation of the curriculum. The findings of the study revealed that principals play a vital role in staff development, instructional implementation, and school culture development. School culture implies the existence of a cordial working relationship between school leadership and staff, among teacher colleagues and between students and their teachers.

On the relationship between instructional supervision and teachers' development, Sullivan (1997), studies about whether teacher development is supervision or not, contend that the fields of instructional supervision and professional growth are interlinked. Sullivan further stress that educational supervision and professional growth can, and should overlap as specific needs prescribe. Regarding the areas to emphasize in teacher development, Sergiovanni and Starratt (2007), in their writing on redefining supervision, suggest that teachers' professional improvement programmes ought to provide

teachers with the prospects and facilities that will enable them to review their practices individually and collaboratively with colleagues.

Tesfaw and Hofman (2014), investigated the relationship between instructional supervision and teacher professional development in Addis Ababa, Ethiopia. Findings of the study established that a strong relationship exists between principals' supervisory activities and teachers' professional development. Similarly, Esia-Donkoh and Ofofu-Dwamena (2014), in a research on the effect of educational supervision on professional development reveal that supervision significantly affects teachers' professional development in terms of enhancing their experiences in the methodology of teaching, handling of learning materials; managing their students and improvement of their assessment strategies. The study concluded that supervision fosters teachers' instructional skills as well as widens their professional knowledge.

A study by Wanzare, (2012) examines the current condition of instructional supervisory practices and techniques in public schools in Kenya. The findings of the study revealed that principals were often not prepared to supervise teachers; that they always appeared busy with administrative work. Results also revealed that principals lack consistency and professionalism. Furthermore, it was revealed that many principals did not encourage collaboration and teamwork among teachers. This finding indicates that current instructional supervisory activities in public secondary schools were conducted haphazardly. Also, the competences of the supervisors have been questioned. Consequently, teachers' professional development process was jeopardized.

Assefa (2014) examined the implementation of instructional supervision in public secondary schools of Borena zone, Ethiopia. Findings of the study indicated that the current performance of principals about the implementation of staff development activities was below average. Furthermore, Assefa study revealed that principals do not organize orientation, nor in-service programmes; that peer mentoring programmes were absent. The study also revealed that teachers do not have access to professional resources such as researched materials; conferences and seminars were not facilitated by principals. The study concluded that professional development programmes were least performed by principals in Borena zone, in Oromia. The current study tried to examine the extent to which principals implement staff development like orientation, in-service programmes, and peer mentoring programmes and its influence on teachers' practices.

Hussen conducted a study to examine the practices of instructional supervision in government preparatory schools in Arsi zone, Oromia Regional state in 2015. Findings of the study revealed that principals' efforts at teacher development practices were weak. The study further established that professional assistance for teachers before and after an observation was not practiced. Furthermore, the study indicated that only a few of the principals attended a specific course on school supervision. The study also revealed that workshops and training programmes at school-level were rarely organized by principals. Finally, the study revealed that teachers were not satisfied with professional development in their schools. The present study further investigated the influence of teacher professional development that principals implement on teachers' pedagogical practices.

Teachers are the light of the society; their development naturally translates into societal transformation. Therefore, teachers must be up to date to align with the dynamism of a contemporary society. In this regard, Fullan (2001) suggests that teachers of today and tomorrow need to do substantially more learning at work, or parallel with it, where they can always try out, refine, and get input on the upgrades they make. The suggestion by Fullan emphasizes the need for principals to develop a proactive approach in designing and implementing programmes for teachers' professional development.

Various scholars have described the orientation of teachers as one of the principals' programme for teacher development. For instance, Okumbe (2001), writing about human resources management in the educational perspective described orientation as an appropriate placement. Okumbe explains further that orientation implies the procedure of coordinating the teachers to both the constituents and the conditions of the employment offered to them.

Depending on the needs arise, orientation could be organized for all categories of teachers. For instance, in addition to development, orientation processes also serve for adjustment and retention of teachers (NOUN, 2006). Dawo (2011) did an investigation concentrating on the quality of instructions in Kenyan schools. The study uncovered that the induction of teachers was an essential element in the professional development of the teacher because the induction of new teachers provide practical information on preparations for real teaching work. Likewise, the study discovered that induction programmes help recently appointed teachers to rapidly understand the scholarly, social, and even the political conditions in their new schools. In view of the foregoing, the need

for orientation for teachers cannot be overemphasized. This is especially because of the obvious challenges newly employed teachers encounter in terms of work overload, inadequate working materials, reaching professional support resources, and social interactions in the new environment (Wanzare 2007).

Simatwa (2010), study the orientation needs of newly employed teachers in Bungoma districts in Kenya. The findings of the study revealed that newly employed teachers needed orientation in areas which include knowledge of school policies; knowledge of social and official relationships in their new work environment; classroom management; operation of teamwork and instructional time; learning resources available and how to source them and the recreational facilities available in the school. Furthermore, the study indicated that there was a need for orientation programmes on a regular basis to enable consultations and planning of mentoring programmes for novice teachers in public schools.

The study concluded that orientation programmes needs of newly employed teachers were numerous and that some could be addressed through seminars in the school organized by the principals. Finally, the study recommended that education authorities should restructure the school system to cater for immediate individual needs of newly employed teachers through effective orientation programmes. The implication of these findings for principals or any person that has been assigned to undertake orientation for newly employed teachers is that resources are needed to design programme. Resources in terms of funding, resource persons and time should be mobilized before commencing the programme.

According to Sullivan and glanz (2013) and Ahmad et al.(2013) the way teachers view instructional supervisory activities in school is a vital factor that determines the end results of the whole process. It has been observed that unless teachers and supervisors view supervision as a means of enhancing the professional growth and students' learning, the supervisory exercise will not have the desired effect (Hussen, 2015). This implies that the way supervisory activities are perceived by teachers and supervisors determines the success or otherwise of the process in terms of developing teachers professionally.

Mentoring is another programme which principals should focus on an effort to develop their teachers. Mentoring in a school system entails assigning a novice teacher to a highly qualified colleague to assist him/her in the improvement of his/her pedagogical practices. In Shanghai and in different areas of China, colleague tutoring has been a conspicuous element of educator training and professional improvement for quite a while (Zhang, 2008). Concerning what peer mentoring entails, Feiman-Nemser and Parker, (1994) paper conceptualized peer mentoring programmes as the pairing of novice teachers with increasingly experienced teachers who can capably clarify school strategies, regulations, and methodology; share techniques, materials and different assets; help take care of issues in educating and learning; give individual and professional help; and guide the development of the new educator through reflection, cooperation, and shared experiences. Furthermore, Ingersoll and Kralik (2004) reiterate that noticeable among the few advantages of colleague tutoring is that it enables beginner teachers to end up being effective in their chosen career.

In a study about teacher mentoring in Shanghai schools, Salleh (2013) had observed that mentoring programme for teachers was found in all Shanghai schools and is executed in two primary ways: teacher-to-teacher (i.e., individual) and congregational mentoring (i.e., by grouping). Salleh observed further that the framework was organized in such a way those novice teachers are attached to veteran colleagues for guidance in all aspects of pedagogical practices.

Several scholars have explained the concept and nature of teacher mentoring. For example, Sullivan and Glanz (2013) argue that the mentoring process is that which encourages instructional improvement happening. They explained further that it is a circumstance whereby the veteran educator (mentor) helps to improve the novice educator (mentee) in cooperative but non-evaluative approaches. Similarly, a study by Murray and Mazur (2009) depicted mentoring as one-to-one correspondence among senior and novice teachers with the aim of fostering the pedagogical practices of the new teacher. The mentee and his mentor are required to work intently. Advancement of the mentee is checked regularly by both mentor and principal. The principal considers the mentor responsible for improving the novice educator under his or her charge (Murray and Mazur, 2009).

The literature reviewed in this section shows that few studies focused on the extent principals implement teacher development programmes in schools. Additionally, very few studies exist on the dependence relationship between teacher professional development programmes principals implement and pedagogical practices of teachers. Moreover, no researcher carried out such a

study in current study locale. In view of this, the present study aimed to find out the extent to which principals implement teacher development programmes and whether or not teachers' pedagogical practices were influenced by professional development programmes that principals implement in public secondary schools at Bauchi state of Nigeria.

2.7 Challenges Facing Principals' Instructional Supervision

Teachers' pedagogical practices can be greatly enhanced by efficient and sufficient instructional supervisory activities. Accordingly, students' achievement, which is determined by effective teaching, cannot be realized in a school system with poor supervision (Zepeda, 2010; Kutsyuruba, 2003 & Lezzote, 2010)As such, when there is poor performance in school the blame tends to be on principals' poor supervision of teachers' instructional activities (Malunda, et al. 2016; Josph, 2014). Supervision, more than any other perceived factors, seems to be an effective mechanism for improving teaching. However, studies have indicated that various constraints hinder instructional supervision (Barhane,2014; Kiamba, 2011; Muhammed, 2015; Wanzare, 2012; Assefa, 2014; Tyagi, 2010) The present study investigated the important challenges hampering the effective implementation of principals' supervisory roles.

In a study of the effect of instructional supervision on secondary school teachers' pedagogical practices in Uganda, Paul, David and Musaaazi, (2016) found that challenges facing supervision include lack of adequate workforce and logistical support to conduct supervision of the teaching and learning processes effectively; that principals focus on fault-finding rather than helping teachers to improve on their teaching competencies. The study also revealed that the failure

of the principals to review teachers' records in details resulted in teachers' lack of adherence to guidelines. Lack of meaningful feedback, emphasis on errors and losing sight of strengths, and failure to engage teachers in the supervision process is commonly reported by teachers about supervisors (Sultant, 2017)

A study to determine major challenges in practices of school-based supervision in government secondary schools of Borena Zone, Oromia Region, Assefa, (2016), revealed that many teachers did not believe supervision is helpful to them. Other issues revealed by the findings of the study include: that supervisors lacked knowledge and skills regarding the supervisory practices. The conclusion by the study was that generally, teachers expressed dissatisfaction, hence hatred for supervisory activities in their schools. In a study of principals' supervision, Simbano, (2013) investigated the influence of the principals' supervision functions on teachers' work performance in Arusha Municipality, Tanzania. The findings revealed that teachers had negative attitudes toward instructional supervision.

Nwakpa, (n.d.) study investigated the main problems of school supervision in eleven states of Nigeria. Findings of the study revealed that the following constraints negatively affected supervision of instructions in schools: Inadequate funding for school supervision; supervisory personnel lacked competence and experience in instructional supervision ; lack of commitment by supervisors; lack of in-service opportunity for training and retaining of supervisors; inadequate time for supervision due to administrative burden; lack of executive power to ensure implementation of recommendations; uncooperative attitude among teachers; lack of follow-up supervision and

corrupt practices among supervisory personnel. This study targeted designated school supervisors as respondents. Moreover, it was not conducted in Bauchi state. The current study included principals and teachers in addition to external school supervisors to investigate the main challenges facing instructional supervision.

Additionally, it has been established that inadequate qualified school supervisory personnel have been one of the severe constraints militating against the effective supervision of schools in Nigeria. For instance, Ogunu (2000) conducted a study to determine the adequacy of supervisory personnel in Nigerian schools. The findings of the study indicated that in one of the states, there were 1008 primary schools and 145 secondary schools. The study revealed that for the entire 1153 schools, only 15 supervisors from the Inspectorate Division of the State Ministry of Education were involved in the supervision of instructions in these schools. The study further revealed that out of the 15 supervisors, only 6 had Bachelor degrees in Education, and none had specialized training in instructional supervision.

In a study on instructional supervision in secondary schools, Wenzare (2012) uncovered that the serious issues disappointing the acts of instructional supervision in public school were those related to the attitude of principals. It was found that principals do not furnish teacher with results of lesson observation. There was no follow-up by the principals. The discoveries likewise have shown that teachers' behaviour towards instructional supervision was not supportive. Also, the study revealed that instructional supervision in schools was frustrated by the lack of required resources for its effective implementation.

On their part, in research about internal and external supervision, Akinloye, Olaoye, and Adu (2014), also found that governments' inadequate monetary support for supervisory activities hinders effective implementation of instructional supervision in secondary schools.

According to Ogunu (2000) publication on educational management, secondary school principals are so weighed down by routine administrative activities that they hardly find sufficient time to visit the classrooms and observe the teachers. Ogunu further notes that some principals give more attention to their correspondence with the Ministry of Education its other agencies, the community affairs, the parents and visitors to the school. The scholar lamented that when principals face those activities, they tend to pay little attention to their main responsibility of taking charge of ensuring teachers provide effective instructions in the school. Sailesh, Marohaini, and Sathiamoorthy (2011), in a study on principals' instructional supervision in three Asian countries, found that teachers were not supportive of the supervision processes. They perceived that supervision was done to punish and insult teachers.

Hussen, (2015), study the challenges of instructional supervision practices in public secondary schools. The findings revealed that there were inadequate resources for instructional supervision in public secondary schools. Other obstacles include: that the principals in public secondary schools were having incompetent supervision skills. Moreover, there was no standard policy guideline (Supervision Manual) to guide the principals' supervision activities; and that the budget allocation was inadequate. Similarly, Abebe (2014)

observed that non-availability of supervision handbook in schools was one of the constraints hindering adequate instructional supervision. The finding revealed further that even where the manuals were available, principals were not using them correctly. Simbano (2013), examined the main problem of school supervision in Tanzania. The findings established that teachers' negative attitude towards supervision was one of the critical constraints hindering the implementation of instructional supervision.

A study on roles of principals in Nigerian schools highlighted that principals supervise the activities of teachers and students; allocate the learning materials and enhance relationships with community members for effective implementation of secondary school educational programmes (Pastor, 2018). In view of these vital roles played by principals in the operation of secondary schools, Pastor (2018) believed that hindrance to principals' performance of these roles would constitute a threat to the achievement of secondary school objectives.

In supporting the above viewpoints, Bays, et al. (2001) stressed that principals are administrators, managers, and instructional supervisors in their schools. Bay added that they performed duties in each of these specific areas on a daily routine. In essence, principals are involved in almost every aspect of the school's regular operation. The preceding observations underscore the fact that principals' supervisory activities are instrumental to the fulfillment of the educational objectives of public secondary schools.

The fact that instructional supervision is essential for improving the quality of teaching and learning is unquestionable. However, available pieces of literature

on supervision indicate that it is relegated to the background in some schools, is being executed haphazardly. Different studies revealed that supervisory personnel were either ill-prepared or inadequate to provide functional supervision of instruction. Therefore, investigation of challenges hindering effective implementation of principals' supervisory role was worthwhile.

The study reviewed generally focused on either teachers or supervisors as respondents separately. The current study investigated the main challenges hampering the effective implementation of school-based supervision by exploring the opinions of Area Education Officers, principals, and teachers collectively in public secondary schools at Bauchi state. Moreover, this study employed an interview schedule to obtain in-depth information about the topic.

2.8 Summary of Literature Reviewed

The researcher examined the literature on the principals' implementation of supervision of instruction in secondary schools. Specifically, the review of the research was concentrated on studies that reported mainly concepts and study findings on principals' supervision of checking teachers' professional records (Akinfolarin et al., 2017; Badah et al., 2013; Berhane, 2014; Sule et al., 2015; Malunda et al. 2016; Jeptarus, 2014). And those study reports on principals' monitoring of students' progress (Halverson, 2010; Omogbehin, 2013; Bambrick-Santayo, 2010; Jeptarus, 2014; Mbuso, 2015; Lezzote, 2010). The review also focused studies on principals' classroom visitation (Nahed, 2012; Benigno, 2016; Sullivan; Glickman, et al., 2014; Ramano, 2014; Hussen, 2015; Abebe, 2014; Zepeda, 2010; Simbano, 2013). Another area reviewed by the current study was the principals' teacher professional development programmes

Tesfaw and Hofman, 2014; Esia-Donkoh and Ofosu-Dwamena, 2014; Sullivan and Glanz, 2013; Assefa, 2014; Hussen, 2015; Fullan, 2001; NOUN, 2006; Dawo, 2011; Salleh, 2013; Mazur, 2009; Zang, 2008).

Finally challenges facing principals' supervision activities in secondary schools (Sailesh S., Marohaini Y., Sathiamoorthy, 2011; Buregeya, 2011; Kedir 2011; Issah, 2012; Ige, 2012; Mito and Simatwa, 2012; Kamal, Yunus and Salomawati, 2012; Benedict, 2013; Netsanet, 2014; Obiluzo 2013; Nwakpa, n.d; Pastor, 2018; Akinloye et al., 2014, Malunda et al., 2016)

Studies reviewed generally indicated that supervision of instructions was not adequately carried out in most secondary schools in different parts of the world (Malunda et al. 2016; Jeptarus, 2014) Consequently, the literature revealed that many teachers applied in effective pedagogical practices. As a result, the students' learning process in many secondary schools was greatly jeopardized, especially in developing nations (Simbano, 2013; Netsanet, 2014). For instance, the literature shows that in India, Malaysia, Kenya, Ethiopia, and Ghana, inadequate supervision of teachers' pedagogical practices has caused a lack of good academic performance of students. (Mbuso, 2015, Wanzare, 2012; Esia-Donkoh and Ofosu-Dwamena, 2014; Tyagi, 2011; Osae, 2012). The literature indicated that Nigeria in general and Bauchi state, in particular, have shared a similar predicament (Mohammed 2015; Akinfolarin et al., 2017).

Given this development, scholars focus attention on principals' supervision of teachers' pedagogical practices in secondary schools as can be seen in the reviewed literature (Badah et al., 2013; Sailesh et al., 2011, Simbano, 2013).

Previous studies in this field, as shown by the available literature focused on whether or not principals conduct instructional supervision activities of checking teachers' records, monitoring student progress, and classroom observation in secondary schools (Benedict, 2013; Netsanet, 2014 Simbano, 2013; Sule et al., 2015). However, the degrees to which principals perform these activities have not been widely investigated. Also, very little studies were conducted on the impact of principals' monitoring of student progress on teachers' pedagogic practices. Present study was set to investigate the effect of principals' monitoring of student progress on teachers' pedagogic practices.

Another area not much researched as revealed by the literature was determining the effect of professional development implemented by principals on teachers' pedagogic practices in public secondary schools. It was observed from the reviewed literature that previous studies in this area mainly employed descriptive statistics in their analysis (Assefa, 2014; Hussen, 2015; Simatwa 2010; Nyamwamu, 2010). The implication was that, previous results lacked evidence of causal relationship between principals' and teachers' practices. The current study sought to establish the effect of professional development implemented by principals on teachers' practices using inferential statistics. Therefore, this study may give different results from the previous findings.

Furthermore, a synthesis of information acquired from the several studies revealed the common challenges facing implementation of principals' instructional supervision include: Absence of supervision manuals in schools, Inadequate funding for supervisory activities, Insufficient time on the part of the principals, teachers lack of backing for supervision in schools and principals' poor instructional supervision skills (Abebe, 2014; Hussen, 2015; Akinloye et

al., 2014; Nwakpa, n.d. ; Obiweluozo, et al. 2013; Ogunu,2000; Pastor dr., 2018; Sailesh et al., 2011, Simbano, 2013; Wanzare, 2012). Previous studies tended to investigate the challenges of school-based supervision from the perspective of principals only. The current study aimed to expand the respondents by including teachers and Area Education Officers. Exploring the perspectives of Area Education Officers, principals, and teachers collectively to identify main challenges hindering principals' instructional supervision in public secondary schools may provide a better result.

Apparently, from the literature reviewed, studies were undertaken to examine principals' implementation of instructional supervision, and its influence on teachers' pedagogical practices was very limited in Nigeria in general and Bauchi state in particular. Given these gaps, the present study aimed to investigate the effect of principals' instructional supervision on teachers' pedagogical practices in public secondary schools in Bauchi state, Nigeria. The uniqueness of the current study includes: It has expanded the participants by including Area Education Officers in the study in addition to teachers and principals. Most previous studies used mainly descriptive statistics. The present study employed inferential statistics to test the research hypotheses. This enabled the researcher to determine causal relationship between the variables in addition to description of linear relationship commonly done in the past. Importantly, little research has been undertaken to examine the effects of principals' instructional supervision on teachers' practices in Bauchi state. Hence, this study will contribute to the local literature.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

Chapter three presents the methodology that was used in conducting the study. The research design, the study locale, the target population; sampling techniques and sampling size, research instruments, pilot study, validity, reliability, the procedure of data collection, data analysis procedures and ethical considerations are presented.

3.2 Research Design

This study adopted a descriptive, cross-sectional survey design. The study aimed to investigate the existing conditions concerning the influence of principals' instructional supervision on teachers' pedagogical practices. A descriptive survey design was deliberately chosen because of its suitability for studies that involve assessing and reporting a given situation as it exists (Creswell 2012, Cohen et al. 2011 and Orodho et al. 2016). Other advantages considered for choosing descriptive survey were that the design enables the collection of data on a large scale within a short period. Additionally, it makes possible generalization of research findings (Best and Kahn, 1989).

Considering the foregoing advantages, the descriptive survey design suitably enabled the researcher to determine the influence of principals' instructional supervision on teachers' pedagogical practices in public secondary schools in Bauchi states. Specifically, in respect to the study objectives, the design aided the researcher to examine the current state of principals' supervision in terms of

checking teachers' records, monitoring students' progress, and classroom observation. Other aspects examined were teacher development and the challenges hampering principals' instructional supervision.

3.3 Study Variables

According to Creswell (2012), variables are characteristics or attributes of an individual or an organization that researchers can measure and that vary among individuals or organizations under study.

3.3.1. Independent Variables

Creswell (2012) describe the independent variable as an attribute that influences the outcome of the dependent variable. The independent variable for this study was Principals' Instructional Supervision, characterized by the monitoring students' progress; checking of teachers' professional records; classroom visitation and teacher professional development programmes.

3.3.2. Dependent Variables

The dependent variable is the variable that is influenced by the independent variable (Willis and David, 2011; Oladipo, Ikamari, Kiplang'at and Barasa, 2015). Table 3.1 presents the variables for the study

Table 3.1: The Independent and Dependent Variables

Independent variable	Dependent variable
Principal's instructional supervision -Checking teachers' records -Monitoring students' progress -Classroom visitation -Professional development	Teachers pedagogical practices - Lesson planning -Methods of teaching -Classroom management -Feedback to students -Students' assessment

Table 3.1 shows the independent and the dependent variables of this study. The independent variable was principal's instructional supervision. Specifically, the study addressed itself to principals' supervisory roles of checking teachers' records, monitoring students' progress, classroom visitation and professional development. The dependent variable was teachers' pedagogical practices characterized by lesson planning, method of teaching, classroom management, feedback to students, and students' assessment. These variables were measured at the interval level using Likert Scale which resulted into continuous scores.

3.4 Study Locale

This study was carried out in Bauchi South Geo-political zone, Bauchi state, Nigeria. The zone comprises seven Local Government Areas of the state, namely: Alkaleri, Bauchi, Bogoro, Dass, Kirfi, Tafawabalewa, and Toro Local Government Areas. Bauchi is one of the states in the Northeast region of Nigeria. Northeast region is made up of six states: Yobe, Taraba, Gombe, Borno, Bauchi, and Adamawa. Its estimated population was 16,870,701 people (the Federal Republic of Nigeria, 2016). Bauchi state ranked first in terms of number of teachers in public junior secondary schools in the zone. Also,

statistics indicated that 75% of junior secondary school teachers in the state were qualified teachers (Federal Republic of Nigeria, 2010). Bauchi state is subdivided into three Geo-political zones: Bauchi North, Bauchi South, and Bauchi Central.

Bauchi South Geo-political zone was selected because it has the characteristics that were representative of the other geopolitical zones in Bauchi state. For instance, all the public secondary schools in the area were under the same Education Authorities and implementing similar curriculum. Importantly, the zone contained the highest number of public secondary schools and teachers in the state. These features enabled the researcher to obtain suitable data and sufficient sample for the study. Furthermore, these factors mentioned earlier allowed for the generalizability of findings drawn from data collected in this zone to indicate the situation in the other geopolitical zones of Bauchi state.

This study was preferably conducted in Bauchi state because of its outstanding efforts at improving secondary education and the peculiarity of the problem under examination. In this regard, statistics have indicated that among the six states (Adamawa, Bauchi, Borno, Gombe, Taraba, Yobe) that make up the North-Eastern Nigeria, Bauchi state has the largest number of qualified teachers (75%) in public secondary schools (Federal Republic of Nigeria, 2010). Additionally, records show that Bauchi state had improved teachers' remunerations, provided learning materials and expanded zonal education offices to intensify school supervision (Aminu, 2014). Yet, performance of

public secondary schools students in national examination was persistently dismal.

Records establish that the credit level pass of public secondary schools students of Bauchi state in national examinations was below 16% from 2011 to 2015. In the year 2015 Bauchi state fielded 29,702 candidates and obtained only 15% credit level pass (i.e. 4,455 students). This pass rate placed Bauchi state at 31st position out of the 36 states of the federation (See Table 1.2). Given the earlier stated efforts by Bauchi state to improve secondary education which yielded little results, there was a need to find out the effects of principals' instructional supervision on teachers' pedagogical practices. This study envisions attracting the attention and support of Education Authorities to provide capacity building for principals in instructional supervision techniques.

3.5 Target Population

According to Kombo and Tromp, (2006) the word population is not restricted to the human population only. They expressed that the population is a technical term that refers to the totality of all units of whatever it is that you want to study. What are examined could be human beings or other living and nonliving things. The target populations of this study were all Teachers, Area Education Officers, and Principals of Junior Secondary Schools in Bauchi South Geopolitical zone, Bauchi state, Nigeria. According to statistics from the state Universal Basic Education Board Bauchi (2015), there were 285 Junior Secondary Schools with 3836 Teachers, 285 Principals, and 37 Area Education Officers (AEOs) working in JSS in Bauchi South Geopolitical zone. The summary is presented in Table 3.2

Table 3.2: The Summary of Target Population

S/n	LGA	No. of Principals	No. of Teachers	AEOs
1	Alkaleri	38	359	5
2	Bauchi	60	1031	6
3	Bogoro	36	493	5
4	Dass	18	327	4
5	Kirfi	17	156	5
6	Tafawabalewa	62	798	7
7	Toro	54	671	5
Total	7	285	3836	37

SUBEB Bauchi (2015)

3.6 Sampling Techniques and Sample Size

In this section, the researcher presents the methods of sampling adopted to get the samples that participated in the study.

3.6.1 Sampling Techniques

Sampling is a method of selecting elements from the target population in a way that is representative of the target population (Oladipo, et al. 2016; Orodho et al. 2016). Stratified sampling technique and simple random sampling technique were employed to select the samples for this study. Given the fact that public schools were unevenly spread in the seven Local Government Areas in Bauchi South Geopolitical Zone, the study locale, stratified sampling techniques was suitable. This was because the technique enabled the study to provide the widest possible chance for the population to be sampled.

In a stratified sampling, the target population is sub-divided into more homogeneous groups called strata. This is done to ensure that every segment of the population is proportionately represented in the study samples (Orodho et al.

2016; Kothari, 2013; Mugenda and Mugenda, 2003; Creswell, 2012). Simple random sampling technique was used to select the principals for the study. Principals were selected to participate in this study because they are in charge of school-based supervision of instructions and learners' progress.

The sample size determination, in this study was guided by the suggestions of Mugenda and Mugenda (2003); Gay and Airasian (2003); Kamindo (2008); (Nwana (1992); Amedahe (2002) that a researcher can use 10-30% of the target population as sample size in a descriptive study. Therefore, this study used 384 (10%) of 3,836 the target population of the teachers; 7 representing (19%) of 37, the population of Area Education Officers and 29 representing (10%) of the 285 principals. The sample of 384 teachers was considered suitable in terms representativeness and was manageable. The 7 Area Education Officers sampled for interviewed was also suitable as they were well placed to supply the information needed. Kuzel, (1999) recommended that 5-8 persons are sufficient for interviews.

3.6.2 Sample of the Secondary Schools

Stratified sampling technique was used to select the sampled schools. The schools were stratified based on seven local government areas (LGAs) in Bauchi South Geopolitical Zone. The researcher employed the method of proportional allocation in which each stratum contributed a sample that was proportional to its size in the population (Kothari, 2013; Orodho et al. 2016). The method of proportional allocation is defined by $n_i = n.P_i$, where n represent

the sample size and P_i represents the proportion of population included in stratum i (Kothari, 2013; Orodho et al. 2016).

A sample size 29 was drawn from the target population 285 which was divided into seven strata. Sampling fraction was first calculated thus: $f=29/285= 0.1017$. Then the population in each stratum (Local Government Area) was multiplied by the sampling fraction. Strata and sample schools are presented in schools Table 3.3.

Table 3.3: Stratification and Sample of Schools

Strata	Sub-population	Strata Sample sizes
LGA 1	29×0.1017	4
LGA 2	29×0.1017	6
LGA 3	29×0.1017	4
LGA 4	29×0.1017	2
LGA 5	29×0.1017	2
LGA 6	29×0.1017	6
LGA 7	29×0.1017	5
TOTAL	285	29

After that, lottery technique of simple random sampling was used to select the 29 sampled schools. "Yes" was written on a piece of papers for the exact samples to be drawn and included in the total population. They were put in a container, then for each given name of the schools a piece of paper were picked. Schools that picked "Yes" were included in the study. By this process 29 public secondary schools across the seven strata were sampled.

3.6.3 Sample of Area Education Officers

The Area Education Officers (AEOs) were selected through simple random sampling technique. Random sampling was preferable because it ensured representativeness by providing an equal and independent chance for all subjects to be sampled. (Orodho, et al. 2016; Creswell, 2013). The lottery method of simple random sampling was used to ensure that all the subjects were given an equal chance of being selected. The population was 37, and a sample of 7 (19%) was drawn. The decision to select 7 AEOs for interview was guided by the suggestion that a researcher can use 5-8 participants for collection of qualitative data (Creswell, 2013; Kuzel, 1999; Morse, 2000; Corbin and Strauss, 2015). Also, because the interviews were recorded, the researcher considered seven participants as a manageable size. One officer was selected from each of the 7 Local Government Areas in the study location.

In each Local Government Area, 'YES' was written in one out of the pieces of paper equivalent to the number of area education officers. The paper was folded and put in a container, and then each of the area education officers was allowed to pick one. The seven area education officers who picked 'Yes' in this process (the lottery technique) were included as the sample for the study. Inclusion of the Area Education Officers was informed by the fact that they were formerly principals and headteachers. Therefore, they were well placed to supply information sought by the study on challenges facing principals' instructional supervision.

3.6.4 Sample of Principals

Simple random sampling technique was employed to select 29(10%) of the 285 principals for the study. The random sampling technique was adopted because it provided every member of the population an equal opportunity of being selected as the sample (Orodho, 2016; Trochim 2006). The principals were selected due to their unique position as the supervisors of instructions and learners progress in secondary schools. Given these facts, principals were more likely to provide the most information about the situation under study.

3.6.5 Sample of Teachers

Stratified sampling technique was used in sampling the teachers. The teachers were stratified based on seven local government areas (LGAs) in Bauchi South geopolitical zone. A sample size 384 was drawn from a population 3836, which was divided into seven strata. Kothari's (2013) method of proportional allocation was applied. Firstly, sampling fraction (f) was calculated thus: $f = 384/3836 = 0.1001$. Then the sub-populations from each category of the selected schools were multiplied by the sampling fraction (0.1001) to determine the individual stratified sampled teachers (Orodho et al. 2016).

Table: 3.4 Stratification of Teachers based on LGA

Strata	Sub-population	Stratified Samples
LGA 1	359 x 0.1001	36
LGA 2	1032 x 0.1001	103
LGA 3	493 x 0.1001	49
LGA 4	327 x 0.1001	33
LGA 5	156 x 0.1001	16
LGA 6	798 x 0.1001	80
LGA 7	671 x 0.1001	67
TOTAL	3836	384

The formula $n_i = n.P_i$ was used

Where n = The sample size

P_i = The proportion of population included in stratum i

(Kothari, 2013, Orodho, 2016)

Finally, lottery technique of simple random sampling was used to select the samples identified by proportionate allocations. For instance, in LGA 1 sub-population of teachers was 359 and 36 was drawn. "Yes" was written in 36 out of 359 pieces of paper of equal size and colour, folded and put in a bucket for each teacher to pick one. The 35 teachers who picked 'Yes' were included in the study. This technique was used in the seven strata, i.e. (LGAS) to select 384 teachers from public secondary schools as samples for the study.

3.6.6 Sample Size

The total sample size for this study was 420 respondents. The figure was obtained by adding 384 sampled teachers, 29 sampled principals, and seven sampled Area Education Officers. Table 3.3 shows the breakdown of the sample size.

Table 3.5: Sampling Matrix

Participants	Target Population	Sampling Technique	Sample	Percentage
Principals	285	Random Sampling	29	10
Teachers	3835	Stratified Sampling	384	10
AEOs	37	Random Sampling	7	19
Total	4157		420	

Table 3.5 shows 29 principals, 384 teachers and 7 Area Education Officers were randomly sampled for the study. According to Nwana (1992), Amedahe,(2002) and Mugenda and Mugenda (2003) a researcher can use 10-30% of the target population as a sample. Principals are the instructional leaders of their schools. Given this status, principals are well placed to provide vital information for this study. Hence, their inclusion in the study was considered necessary. Therefore, to gather information from all the 29 principals of the sampled schools, the census sampling technique was employed in selecting them (Table 3.5).

In view of the logistics available and time frame for the study, the researcher considered 384 teachers sampled as manageable. Nevertheless, the sample of 384 teachers suitably provided sufficient statistical power for the study (Kish, 2005). Moreover, stratified sampling technique was used in selecting the

teachers to ensure representativeness of the sample. Table 3.5 also depicts that 7 Area Education Officers were sampled for the study. The AEOs were selected for interviews on the challenges facing principals' instructional supervision in public secondary schools. The AEOs were included in the study due to their former positions as principals. Sampling only 7 AEOs suitably enabled the researcher to have in-depth interviews with each officer. According to Creswell, (2013) and Corbin and Strauss, (2015), a researcher can sample 5-8 participants for qualitative data.

3.7 Research Instruments

The study used questionnaires, Interview schedules, and Documents analysis guide for data collection. Use of several methods of data gathering provides the advantage of minimizing the limitations of a single instrument and, therefore increases the confidence in the results of the study (Kamindo 2008, Orodho et al., 2016).

3.7.1 Questionnaires for Principals and Teachers

The researcher developed two sets of the questionnaires for the study. One set of the questionnaires was for the teacher respondents and another one for the respondent principals.

3.7.2 Principals' Questionnaire (Appendix I)

The questionnaire for principals was named Teacher Supervision Questionnaire for Principals (TSQP). It was structured into four sections. Section A dealt with

demographic data; section **B** Supervisory practices; section **C** dealt with staff development, and section **D** Challenges facing supervision.

3.7.3 Teachers' Questionnaire (Appendix II)

The questionnaire for the teachers was named Principals' Supervisory Activities Questionnaires for Teachers (PSAQT). It was structured into five sections. Section **A** dealt with demographic data; section **B** the Principals' supervisory activities; section **C** dealt with staff development; section **E** the pedagogical practices of teachers. Finally, section **D** dealt with challenges hindering effective implementation of instructional supervision. Questionnaires were used because they enhance gathering of a large quantity of data in a reasonably quick space of time and can easily be subjected to statistical analysis (Cohen, Manion & Morrison 2011; Bryman, 2004; Orodho et al., 2016).

3.7.4 Interview Guide for Area Education Officers (Appendix III)

An interview involves asking questions in a face-to-face manner. Interviews avail respondents the ability to express their opinion in their own words and greater depth (Sherri, 2012). According to Assefa (2014), the purpose of the interview is to collect more supplementary opinion to complement the questionnaire response. With this view in mind, interviews were conducted with 7 Area Education Officers being stakeholders in the supervisory activities of public secondary schools education level. The interview schedule for AEOs contained six items. This process allowed the researcher to explore their in-depth opinions and experiences regarding challenges facing principals' supervision in public secondary schools. According to Best and Khan (1989),

validity is higher when the interview is based upon a carefully designed structure, and therefore, ensuring that the significant information is elicited. The interviews held with the area education officers have been presented based on the following five main themes: Funding school-based supervision, availability of supervision manuals in schools, teachers attitude towards instructional supervision, competent supervision skills of principals and time for supervision on the part of principals.

3.7.5 Document Analysis Checklist (Appendix IV)

Document analysis can be employed in a study either as the primary data collection method or as a complement to other methods (Glenn, 2009). This assertion suggests that document analysis can be used to gather additional research information. Moreover, securing and evaluating documents is generally more cost-effective and less time consuming (Robson, 2002). In this study document analysis checklist was employed to corroborate results obtained through the questionnaires. The primary data from the documents analyzed provided the study with principals' written comments, suggestions, and plans related to instructional supervisory activities in their schools. The researcher observed and evaluated such documents as a scheme of work, lesson plan, records of work, teachers' lesson notes, students' assessment records, arrangements for supervision, programmes for workshops and supervision handbook. This observation was done to get more insight into the extent of principals' implementation of supervisory activities in public secondary schools of Bauchi state.

3.8 Pilot Study

A pilot study is necessary to test the accuracy of research instruments and ascertain the language used (Mugenda and Mugenda, 1999; Backer, 1994). In this study pilot study of the research instruments were carried in two schools, involving two principals and ten teachers of these schools who were not included in the main study. Similarly, two Area Education Officers who did not take part in the main study were interviewed to pilot test the accuracy of the interview schedules. The population used for the pilot study was very similar to those involved in the main study; hence, their appropriateness for the test. The primary purpose of the pilot-testing the study instruments were to improve them in terms of clearness and validity. Therefore, as a result of the exercise, some questions that were found to be contradictory or ambiguous were corrected, and some dropped completely.

3.8.1 Validity

Creswell (2012) posits that content validity is the determining of whether the items to be used in the questionnaire are measuring the intended content area. Experts' review was employed as opined by Sherri (2012) and Orodho et al. (2016) to determine the content and face validity of the instruments for this study. Experts' review was sought from the supervisors guiding this study and two other experts in instructional supervision at the School of Education, Kenyatta University, to validate the questionnaires. Criticisms by the supervisors and other experts in the Faculty had enabled the researcher to modify some of the items that were found to be irrelevant. Anikwe (2009)

asserts that content and face validity of the study instrument is improved through experts' judgments.

3.8.2 Reliability Analysis

Reliability refers to the extent to which a test yields consistent results upon several testing (Ordho, 2016; Kombo and Tromp, 2006). To determine the reliability of the instruments for this study, after the pilot test, a reliability analysis was conducted. For reliability analysis, Cronbach's alpha was calculated using SPSS. Cronbach's alpha is the most common measure of internal consistency used with Likert scale questionnaires (Kimberlin & Winterstein 2009).

According to Orodho (2016) and Stemler (2004) reliability of about 0.70 and above should be considered high enough to judge the reliability of research instrument. A higher value shows a more reliable generated scale. Since the alpha coefficients were all greater than 0.8, it was concluded that the tools had an acceptable reliability coefficient and hence appropriate for the study.

The results in Table 3.6 show that the Cronbach's alpha results are **0.878 for principals' and 0.849 for teachers** indicating a high level of reliability of the construct.

Table 3.6 Cronbach's Reliability Statistics

Questionnaire	No. of Items	Cronbach's Alpha
Principals	27	.878
Teachers	35	.849

It can be seen that the overall reliability Cronbach's alpha is more than 0.8 for all the questions, which indicates a high level of internal consistency (Table 3.6).

3.9 Data Collection Procedures

The data collection process in this study was implemented in three major phases thus: Pre-field work phase, Fieldwork Phase and Post-fieldwork phase

3.9.1 Pre-field Phase

The first phase of data collection in this research was concern with acquisition of permission from relevant authorities. The researcher sought for and obtained an approval letter to conduct this study from the Board of Post-Graduate Studies, Kenyatta University. Subsequently, the researcher also acquired a research permit from the Ministry of Education Bauchi state through the Bauchi State Universal Basic Education Board. Thereafter, the researcher presented copies of the research permit to the principals of public junior secondary schools in the study locale to get their permission for data collection for the study. The researcher had prepared a budget and designed a work plan for the data collection.

In order to make the data collection process more effective, the researcher recruited two research assistants. It has been suggested that research assistants involved should be properly trained in order to ensure the quality of data collected by them (Orodho, 2016; Mugenda and Mugenda, 2003; Creswell, 2012). The research assistants in this study were a doctoral student and a holder of the Nigeria Certificate in Education respectively. They were adequately acquainted with the use of the research instruments, the study locale and the participants. A demonstration session of administering the instruments was held between the two researchers prior to actual data collection. The main tasks carried out by the assistants were administering the questionnaires, retrieving them and checking completed ones to ensure they were accurately filled. They carried out these tasks throughout the data collection exercise in the presence of the researcher.

3.9.2 Field-work Phase

The second phase of the data collection was characterized by reconnaissance visits, for familiarization and rapport and the actual data gathering. The researcher went round the schools for familiarization with the locality creation of rapport with the participants in the study. During the visits the researcher acquainted the participants with the objectives and importance of the research. Thereafter, the researcher made agreement with the principals and teachers on when the questionnaires should be administered. Also, the interview with Area Education Officers (AEOs) was scheduled. There was a cover letter attached to each questionnaire, explaining the nature and purpose of the study and thanking the participants for taking part in the study. Finally, the researcher and the

research assistants administered the questionnaires to principals and teachers. After this, the researcher then conducted interviews with the Area Education Officers.

3.9.3 Post-fieldwork phase

This was the concluding phase of the data collection process. It involved scrutinizing filled instruments and getting them ready for analysis. The researcher retrieved all the questionnaires. The research questions were edited to ensure completeness of the data. Finally, the filled questionnaires were numbered and arranged properly, ready for coding and analysis.

3.10 Method of Data Analysis

Descriptive statistics, inferential statistics and thematic analysis techniques were used for analysing data in this study. Frequency counts and percentages were used to analyze the quantitative data. Thematic and content analysis techniques were used in the analysis of the qualitative data. Descriptive statistics enables a researcher to summarize data meaningfully using graphs, figures or tables in order to provide simpler interpretation of the data. On the other hand, inferential statistics enables the researcher to make predictions (inferences) from the data (Laerd Statistics, 2013; Henk, 2019; Sutanapong and Louangrath, 2015). According to Evans, Rosenthal and Freeman (2004) descriptive statistics are used before formal inferences are made.

Inferential statistics is employed in a study mainly for either determining parameters or hypothesis testing (Laerd, 2013, Evans, et al., 2004). The p-value method can be employed to test hypothesis (Orodho et.al 2016). Using the p-value approach, simple linear regression analysis was employed to test the research hypotheses at $\alpha=.05$ level of significance. Regression analysis is an inferential statistical technique that can be used to determine the linear relationships between two or more variables. In addition to the description of relationships, regression can be used a step further from description to prediction (Gogtay, Despandy and Thatte, 2017).

This study aimed at investigating the extent to which principals' instructional supervision influence teachers' pedagogical practices. Hence, the analysis involved making predictions and causal inferences (Pallant, 2013). In this regard, regression analysis was suitable for this study because it enabled the researcher to determine the effect of principals' instructional supervision on teachers' pedagogical practices. Instructional supervision was examined based on principals' execution of checking teachers' professional records, monitoring students' progress, classroom observation and teacher development programmes.

Simple linear regression equation $Y=\alpha+\beta x_1$ was used to describe the coefficient obtained in the regression analysis. Where Y = the estimated value of the outcome variable; α = estimated value of the outcome variable if the predictor variable is zero; X_1 = value of the predictor variable (Field, 2009). Because the regression model had only one predictor variable, R^2 –squared value was used

instead of adjusted R- squared to determine how much variation was explained by the model. The R-square measures the degree to which the predictor variable explains the variation of dependent variable; while adjusted R- squared adjusts the statistics based on the number of the predictor variables in the model. Therefore, adjusted R- squared is used to estimate the goodness of the model if the linear regression is built on multiple variables (Ofer, 2009; Akossou, Arcadius and Palm, 2013). The hypotheses were tested at $\alpha=.05$ level of significance. The results of the analyses were shown in tables and text.

3.10.1 Mode of Statistical Analysis

Summary of Characteristics of the Respondents: The Demographic data of the respondents were analyzed using Frequency Count and Percentages. The completed analysis was presented in tables, figures, and in text.

Analysis of Objective One: To assess the influence of principals checking of teachers' professional records on teachers' pedagogical practices in public secondary schools of Bauchi state, Nigeria. Frequency Counts and Percentages were used to analyse the quantitative data. The H_0 1: Principals' checking of teachers' professional records does not significantly influence pedagogical practices of teachers in public secondary schools of Bauchi state Nigeria was tested using regression Analysis ($\alpha=.05$). Results of the analyses were presented in tables and text.

Analysis of Objective Two: To establish the influence of principals' monitoring of students' progress on teachers' pedagogical practices in public secondary schools of Bauchi state, Nigeria. Frequency Counts and Percentages

were used to analyse the quantitative data. The **H₀2**: Principals' monitoring of students' progress does not significantly influence pedagogical practices of teachers in public secondary school of Bauchi state Nigeria was analysed using simple regression analysis at .05 alpha level. Results of the analyses were presented in tables and text.

Analysis of Objective Three: To determine the influence of principals' classroom observation on teachers' pedagogical practices in public secondary schools of Bauchi state, Nigeria. Frequency Counts and Percentages were used to analyse the quantitative data. The **H₀3**: Principals' classroom observation does not significantly influence pedagogical practices of teachers in public secondary school of Bauchi state Nigeria tested was using simple regression analysis at .05 significance level. Results of the analyses were presented in tables and in the text.

Analysis of Objective Four: To find out the influence of professional development programmes principals implement on pedagogical practices of teachers in public secondary schools of Bauchi state, Nigeria. Frequency Counts and Percentages were used to analyse the quantitative data. **H₀4**: Professional development programmes that principals implement do not significantly influence pedagogical practices of teachers in public secondary school of Bauchi state, Nigeria was tested using simple regression analysis ($\alpha=.05$). The results of the analysis were presented in tables and text.

Analysis of Objective Five: To investigate the perspectives of Area Education Officers, Principals, and Teachers on the constraints on principals' supervisory activities in public secondary schools of Bauchi state. Frequency Counts and

Percentages were used to analyze the quantitative data. The analyzed data were presented in tables and text.

Analysis of Qualitative Data: Thematic analysis technique was used to analyze qualitative data gathered through the interviews and document checklist. After the data collection transcription was done, a coding system was generated, and then items were structured into themes aligned to the objectives for the study. Thereafter main issues covered were categorized according to the identified themes. Finally, themes that made a meaningful contribution to addressing the research objectives were summarized. The researcher then evaluated the information and reported them as findings from the analysis in narrative forms. Mugenda and Mugenda, (2003) opined that the coding system implies creating an objective code that should enable recognizing reality and a feeling from the texts. Table 3.7 presents the summary of the model of statistical analysis.

Table 3.7: Mode of Statistical Analysis Summary

Objectives/Hypothesis	Indicators	Statistical measurement
To assess influence of principals checking of teachers' professional records on teachers' pedagogical practices in public secondary schools in Bauchi state, Nigeria	-Lesson plan -Scheme of work -Records of work -Lesson notes	Descriptive analysis -Frequency -Percentages - Content analysis
Hypothesis test (H₀1)		Simple linear regression ($\alpha=.05$)
To establish influence of principals' monitoring of student progress on teachers' pedagogical practices in public secondary schools in Bauchi state, Nigeria	-Class work -Assessment records -Students' attendance -Talk with teachers	Descriptive analysis -Frequency -Percentages - Content analysis
Hypothesis (H₀2)		Simple linear regression ($\alpha=.05$)
To determine influence of principals' classroom observation on teachers' pedagogical practices of in public secondary schools in Bauchi state, Nigeria	-Pre-observation conference -Actual lesson observation -Post-observation conference -Walk-throughs	Descriptive analysis -Frequency -Percentages - Content analysis
Hypothesis (H₀3)		Simple linear regression ($\alpha=.05$)
To find out influence of professional development programmes principals implement on pedagogical practices of teachers in public secondary schools in Bauchi state, Nigeria	-Teacher orientation -School-level workshop -Peer mentoring -In-service education	Descriptive analysis - Frequency -Percentages -Content analysis
Hypothesis (H₀4)		Simple linear regression ($\alpha=.05$)
To investigate the perspectives of Area Education Officers, Principals, and Teachers on the constraints of principals' supervisory activities in public secondary schools of Bauchi state	-Funding principals' supervision -Supervision manual -Teachers' attitude - Time for supervision -Supervision skills	Descriptive analysis -Frequency -Percentages -
Interviews Document observation		Thematic technique

3.11 Logistical and Ethical Considerations

The opinion expressed by Creswell, (2008) strongly emphasized that issues related to ethical considerations in educational studies see to it that the anonymity and rights of respondents are well secured. In line with this recommendation, participants in the study were assured that their anonymity will remain absolutely confidential and that the information they provided will not be used for any other purpose than this research. The researcher had ensured that no forms of identity, such as names of the respondents were shown on the questionnaires. Furthermore, the researcher had made it categorically clear to respondents that they have the right to withdraw from the exercise at the beginning, the middle, or at the end. Specifically, the researcher ensured that the participants took part in the study voluntarily.

The researcher had also informed the respondents that they could request for the copy of the final document if they desire. On the other hand, the researcher had observed adequate safeguards against plagiarism. To ensure that plagiarism was avoided, the whole document was subjected to turn-it-in scrutiny. Furthermore, all other researchers' or authors' works cited in this study have been sufficiently acknowledged. The researcher had developed and sustained a cordial relationship with the participants throughout the data collection process.

CHAPTER FOUR

DATA PRESENTATION, INTERPRETATION, AND DISCUSSION

4.1 Introduction

This chapter presents the objectives of the study, research hypothesis, research question, questionnaire return rate, demographic characteristics, findings, interpretations and discussions.

The chapter is structured in two broad sections. The first section presents the objectives of the study, the questionnaire return rate, and demographic data of respondents. The second section deals with the findings, interpretations and discussions according to the objectives for the study and document analysis. The study investigated the effect of principal's instructional supervision on teachers' pedagogical practices in public secondary schools in the Bauchi state of Nigeria.

The specific objectives that guided the study were:

- (i) To assess the influence of principals checking of teachers' professional records on teachers' pedagogical practices in public secondary schools of Bauchi state, Nigeria
- (ii) To establish the influence of principals' monitoring of student progress on teachers' pedagogical practices in public secondary schools of Bauchi state, Nigeria.

(iii) To determine the influence of principals' classroom observation on teachers' pedagogical practices of in public secondary schools of Bauchi state, Nigeria.

(iv) To find out the influence of professional development programmes principals implement on pedagogical practices of teachers in public secondary schools of Bauchi state, Nigeria.

(v) To investigate the perspectives of Area Education Officers, Principals, and Teachers on the constraints on principals' supervisory activities in public secondary schools of Bauchi state.

The Null Hypotheses for the Study were:

(i) H_01 : Principals' checking of teachers' professional records does not significantly influence pedagogical practices of teachers in public secondary schools of Bauchi state, Nigeria.

(ii) H_02 : Principals' monitoring of students' progress does not significantly influence pedagogical practices of teachers in public secondary school of Bauchi state, Nigeria.

(iii) H_03 : Principals' classroom observation does not significantly influence pedagogical practices of teachers in public secondary school of Bauchi state, Nigeria.

(iv) H_04 : Professional development programmes that principals implement do not significantly influence pedagogical practices of teachers in public secondary school of Bauchi state, Nigeria.

The Alternative Hypothesis

(i) **H_{a1}**: Principals' checking of teachers' records significantly influences pedagogical practices of teachers in public secondary schools in Bauchi state

(ii) **H_{a2}**: Principals' monitoring of students' progress significantly influences pedagogical practices of teachers in public secondary schools of Bauchi state

(iii) **H_{a3}**: Principals' classroom observation significantly influences pedagogical practices of teachers in public secondary schools in Bauchi state

(iv) **H_{a4}**: Professional development programmes that principals implement significantly influence pedagogical practices of teachers in public secondary schools in Bauchi state

Research Question

- (i) What are the perspectives of Area Education Officers, Principals, and Teachers on the critical challenges of principals' supervisory activities in public secondary schools of Bauchi state?

Questionnaires Return Rate

The questionnaires filled and returned were computed to determine the degree of response in the study. Results of the analysis presented in Table 4.1.

Table 4.1: Summary of Questionnaire Return Rate

Population	Administered questionnaires	Returned questionnaires	Rate of return
Principals	29	29	100%
Teachers	384	375	97.7%
Total	413	404	97.8%

Table 4.1 shows the rate of questionnaire return for the study. Questionnaire named Teacher Supervision Questionnaire for Principals (TSQP) was administered to 29 respondents; while the questionnaire named Principals' Supervisory Activities Questionnaire for Teachers (PSAQT) were administered to 384 respondents from the 29 sampled public secondary schools. Additionally, the researcher conducted interviews with 7 Area Education Officers and document analysis. All principals returned their questionnaires (100%), whereas 375 out of 384 teachers (97.7%) returned the questionnaires. Altogether, for both principals and teachers, a total of 413 questionnaires were administered, and 404(98%) were returned. In the view of Mugenda and Mugenda (1999), a response rate of 70 percent is very good. Therefore, this return rate was highly satisfactory, and the data collected was considered adequate for the study.

4.2 Demographic and General Information of Respondents

The demographic and general information presented in this section comprise of gender, age, subject specialization, work experience, number of students taught by a teacher, number of years principals served as class teachers, whether or principals had attended supervision courses or not while in the University or College, principals' teaching workload, delegation of principals' supervisory responsibilities, and teachers' preferred supervision supervisors. The findings are depicted in tables and in the text.

4.2.1 Analysis of Principals and Teachers by Gender

The study analyzed the gender of Principals and Teachers. Results are presented in figure 4.1

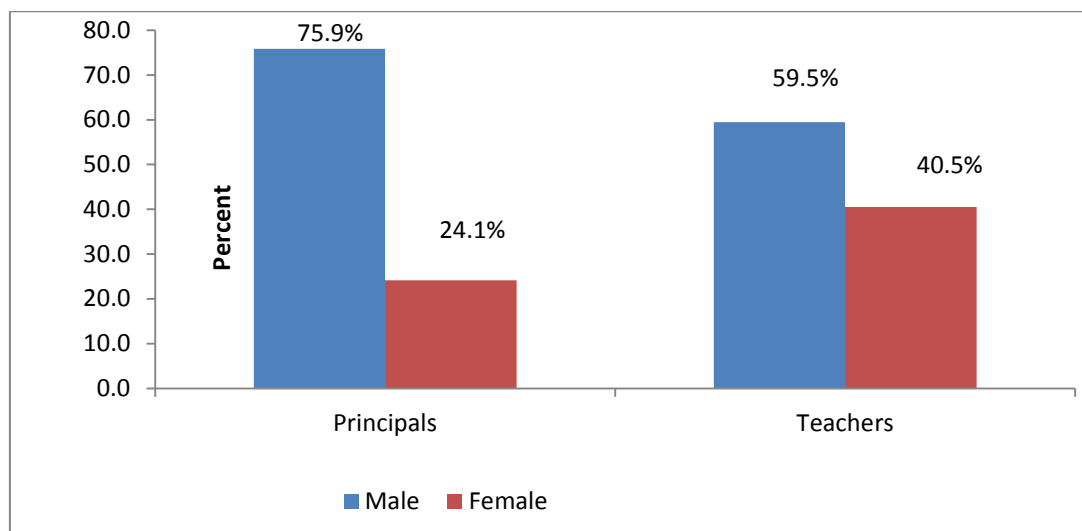


Figure 4.1: Distribution of Principals and Teachers by Gender

Figure 4.1 results revealed that majority, 22 out of 29(75.9%) of the principals and 223 out of 375(59.5%) of the teachers who participated in the study were males compared to 7 out of 29 (24.1%) and 152 out of 375 (40.5%) of their female counterparts. Blasé and Blasé (2008) contend that the achievement of educational goals needs the support of professional males and females, especially in the positions of leadership. However, this result reveals that there were more male principals and teachers than females in the public secondary schools of Bauchi state.

4.2.2 Distribution of Principals and Teachers by Age

The study sought data on principals and teachers age brackets. The data obtained are presented in Table 4.2

Table 4.2: Classification of Principals and by Teachers Age

	Principal		Teachers	
	F	%	F	%
21-30 years	5	17.24	131	34.93
31-40 years	7	24.14	148	39.47
41-50 years	13	44.83	59	15.73
51 years and above	4	13.79	37	9.87
Total	29	100	375	100

In Table 4.2, the data reveals that 13 out of 29, (44.83%) of the principals in public secondary schools in Bauchi state were aged between 41-50 years; about 7 out of 29 (24.14%) were aged between 31-40 years; while 5 out of 29(17.24%) were between the age bracket of 21-30 years. The results show that very few 4 out of 29(13.79%) were aged between above 51 years old. The result indicates that principals in public secondary schools in Bauchi were in their middle age. On the part of teachers, the results reveal that 148 out of 375 (39.47%) and 131 out of 375(34.93%) of the teachers were aged between 31-40 and 25-30 years, respectively. These results show that the majority of the teachers in public secondary schools in Bauchi state were youths.

4.2.3 Qualification of Principals and Teachers

The study sought to examine the academic qualifications of the respondents.

Table 4. 3 presented the data on the qualifications of principals and teachers.

Table 4.3: Principals' and Teachers' Academic Qualifications

Qualification	Principals		Teachers	
	F	%	F	%
Master's degree	4	13.8	3	0.8
B. Ed degree	13	44.8	129	34.4
NCE	10	34.5	208	55.5
Diploma in Education	2	6.9	35	9.3
Total	29	100	375	100

The data in figure 4.2 shows that majority of the principals had Bachelors' degree. On the part of the teachers, majority of them were holders of Nigeria Certificate in Education. Fernandez et al. (2007) and Baker and Cooper (2005) contend that the educational background of principals and teachers significantly influence the quality of teaching and students' learning.

4.2.4 Teaching Experience of Principals and Teachers

The study sought to know the respondent principals and teachers years of teaching experience.' The responses were analyzed and presented in table 4.4

Table 4.4: Work Experiences of Principals and Teachers

Work experience	Principals		Teachers	
	F	%	F	%
1-5 years	5	17.2	2	0.5
6-10 years	8	27.6	91	24.7
11-15 years	4	13.8	236	64.1
Above 15 years	12	41.4	39	10.6
Total	29	100	368	100

The analysis in Table 4.4 shows that majority of the principals have worked for over 15 years. The statistics further showed that majority of teachers had worked for 11-15 years. Going by these results, it can be noted that both principals and teachers had put in a reasonable number of years in teaching, sufficient for them to have acquired better teaching experience. With regard to this study, teachers working experience symbolize their capacity to organize pedagogical practices effectively to foster learners' achievement.

On the part of principals, the experience is likely to enhance their capacity to provide teachers with effective personal and professional guidance towards the improvement of teaching. This focus was supported by findings that principals and teachers degree of experience significantly determines the quality of instructions and academic achievements of learners (Clark, Martorell & Rockoff 2009; Johnson et al. 2007; Goldhaber 2004; Fernandez et al. 2007). Confirming the assumptions further, Sass (2007) and Ladd (2008) observed that veteran teachers apply more qualitative pedagogical practices than novice teachers. Teacher development was one of the focal point of the present study. The implication of this finding for the current study is that, the idea may guide the principals in organising peer mentoring in their schools. It has been stressed that peer mentoring programme is prominent mechanism for improving novice teachers through organized and non-evaluative tutoring veteran colleagues (Zhang, 2008; Feiman-Nemser and Parker, 1994; Ingersoll and Kralik, 2004; Salleh, 2013; Sullivan and Glanze, 2013; Murray and Mazur, 2009)

4.2.5 Principals' Training on Instructional Supervision

The study sought to find out if principals had done a course on instructional supervision while schooling; and whether they have attended specific training on instructional supervision in their present capacity. The results are presented in Table 4.5

Table 4.5: Principals' Experiences in Instructional Supervision

	Course on supervision while in school		In-service course on supervision as principal	
	F	%	F	%
Yes	20	69.0	4	13.8
No	9	31.0	25	86.2
	29	100.	29	100.

Table 4.5 shows that majority of the principals had done a course on instructional supervision when they were in college or university. However, the result reveals that majority of the principals have never attended specific training on instructional supervision in their capacity as principals. These results indicate that the majority of the principals were not trained in instructional supervision in their present position. This finding implied that most principals were operating based on pre-service (theoretical) knowledge of instructional supervision. There was a need for capacity building to equip principals in public secondary schools with modern techniques of instructional supervision.

4.2.6 Personnel Delegated by Principals for Supervision

This study sought to find out those staff the principals delegate to assist them in supervisory activities. The results are presented in Table 4.6.

Table 4.6: Personnel that Assist Principals in Supervision

Principals	Delegated personnel	%
22	Vice-principal	75.9
7	Both vice principal and senior master	24.1
29		100

Table 4.6 shows that a vast majority of the principals delegate work to their vice principals to assist them in supervising teachers. The analysis indicated that only a few engage both vice-principals and senior masters to assist them in the supervision of instructions in their schools. This finding reveals that most principals in public secondary schools in Bauchi state did not engage Senior Masters in supervisory activities. It is noted that when principals share activities like checking students' classwork, attendance and teachers' records, work becomes less tedious (Lambert, 2002). Further, Lambert asserts that "the days of the principal as the lone instructional leader are over".

Additionally, delegation of responsibilities enhances organizational capacity and collective commitment based on trust (Kouzes and Posner, 2010; Lambert, 2002). In this direction, Leithwood (1994) observes that principals that practice transformational leadership share responsibilities and involve subordinates in governance functions. In support of the foregoing, Leithwood and Jantzi (2008) study found that sharing the leadership role in schools motivates progress in teachers and the students learning. The implication of this is that principals should expand delegation of supervisory activities effectively to improve monitoring of teaching and learning in their schools.

4.2.7 Teachers' Preferred Type of Supervision

The study sought to find out respondent teachers' preferred type of supervision.

The results are presented in Table 4.7

Table 4.7: Preferred Type of Supervision by Teachers

Types of Supervision	Teachers	%
Internal supervision (Principal or Vice-principal)	215	57.3
External supervision (Ministry of Education)	89	23.7
Both internal and external supervision	71	19.0
Total	375	100

According to the analysis depicted in table 4.8, majority 215 out of 375 (57.3%) of teachers prefer internal supervision. That means most of the public secondary school teachers would prefer to be supervised by a principal, vice-principal, or senior masters in their schools (i.e., School-Based Supervision). These findings agree with the study findings by Osaе, (2012), who revealed that the majority of teachers in secondary schools preferred school-based supervision. Investigating teachers' preferred supervision was relevant in this study because of the study focus on principals' supervision, which is school-based. This result suggests that more attention should be given to the improvement of school-based supervision as teachers showed more preference to it.

4.2.8 Demographic Characteristics of the Area Education Officers

The demographic data related to the Area Education Officers are presented in Table 4.8

Table 4.8: Demographic Information of Area Education Officers

Variables	Categories	F %
Age	35-44 years	2 (28.6%)
	45-55 years	4 (57.1%)
	56-65 years	1 (14.3%)
Total		7 (100%)
Gender	Male	6 (85.7%)
	Female	1(14.3%)
		7 (100%)
Qualification	M. Ed	-
	B.Ed	5 (71.4%)
	NCE	2 (28.6%)
Total		7 (100%)
Work Experience	10-15 years	1 (14.3%)
	16-21 years	2 (28.6%)
	22-27 years	3 (42.9%)
	28-33 years	1 (14.3%)
Total		7 (100%)

The data on table 4.9 shows that majority 4 out of 7 (57.1%) of the area education officers were aged 45-55years; also, the majority of the 6 out of 7(85.7%) were males. The figures further indicate that majority 5 out of 7 (71.4%) of the area education officers have Bachelors' degree, while 2 out of 7 (28.6) have Nigeria Certificate in Education. Concerning working experience, data revealed that majority 3 out of 7 (42.5%) of the area education officers have work experience between 22-27 years. Area Education Officers were responsible for overseeing the supervisory activities of designated supervisors and principals. These results indicated that the AEOs had accumulated

experience of teaching and educational supervision. Hence, they can be used as resource persons to facilitate workshops for teachers and principals.

4.3 Pedagogical Practices in Public Secondary Schools

The study sought the opinion of teachers on performance of their pedagogical responsibilities in public secondary. The results are presented in table 13

Table 4.9: Teachers’ response on Performance of Pedagogical Practices

As a teacher, I...	Rarely		Sometimes		Always	
	F	%	F	%	F	%
Make lesson plan for any topic I teach	17	4.5	64	17.1	294	78.4
Write scheme of work every term	9	2.4	25	6.7	340	90.9
Make notes for every subject I teach	12	3.2	327	87.2	36	9.6
Mark students exercise books daily	104	27.8	141	37.7	129	34.5
My students do monthly assessment	50	13.4	80	21.4	244	65.2
Give students homework weekly	53	14.1	207	55.2	115	30.7
Vary teaching methods for lessons	23	6.1	81	21.7	270	72.2
Improvise teaching aids for instructions	32	8.6	108	29.0	233	62.5
Put students to work in small groups	80	21.4	120	32.1	174	46.5

Results of the analysis in Table 4.9 show that most of the identified pedagogical practices were always carried out by more than two-third of the teachers. However, the results show that some practices were neglected by many teachers. For instance, writing lesson notes was not practiced by most of the teachers as the results reveals that only 36 out of 375 write notes for each lesson. Also, only about 115 out of 375 (30.7%) of the teachers give students homework weekly. The result further reveals that 129 out of 375 (34.5%) of the teachers indicated they marked students’ exercise books daily. Furthermore, the result shows that 174 out of 375 (46.5%) of the teachers put students to work in

groups. Another pedagogical practice with low percentage, 174 out of 375 (46.5%) of teachers that always perform it. The findings suggest that assessment of students' daily classroom activities, writing lesson note, weekly assignments and group work were not effectively carried out by many teachers in public secondary schools.

4.4 Checking Teachers' Records and its Influence on Pedagogical Practices

Objective one of this research sought to examine the extent to which principals' inspection of teachers' records influences their pedagogical practices in public Junior Secondary Schools in Bauchi state.

The following principals' supervisory activities were measured: checking scheme of work, checking lesson plans, checking records of work covered, and checking teachers' lesson notes (Appendix 1). The respondents were asked to rate the level of performance of these activities in their schools. The results are presented in Tables 4.10 – 4.13

Table 4.10: Principals and Teachers Response to Checking Teachers' Professional Records

Supervisory Activities		Disagree		Neutral		Agree	
		F	%	F	%	F	%
The Principal...	Respondents						
Checks scheme of work	Principals	2	6.9	0	0.0	27	93.1
at beginning of the term	Teachers	35	9.3	28	7.5	312	83.2
Checks teachers' lesson	Principals	0	0.0	3	10.3	26	89.7
plans on a weekly	Teachers	42	11.2	29	7.7	304	81.1
Checks records of work	Principals	3	10.3	2	6.9	24	82.8
covered every week	Teacher	52	13.9	36	9.6	287	76.7
Checks teachers' lesson	Principals	22	75.9	2	6.9	5	17.2
notes weekly	Teachers	253	67.8	48	12.9	74	19.7

Checking Scheme of Work

The data on table 4.10 indicate that 27 out of 29 (93.1%) of the principals verified teachers' scheme of work, every beginning of the term. On the hand, majority 312 out of 375 (83.2%) of the teachers also agreed that principals checked their scheme of work every beginning of the term. Very few, 35 out of 375 (9.3%) of the teachers disagreed, and 28 out of 375 (7.5%) were neutral. With the majority of principals and teachers in agreement, the result established that principals check teachers' scheme of work termly in public secondary schools in Bauchi state. This finding implies that principals have attached importance to the review of the scheme of work. In line with these findings, studies by Malunda et al., (2016) and Kieleko, Kanori and Mugambi (2017) reported that principals checked scheme of work regularly in their schools. The results also concurred with that of a study carried out by Sekunda (2013), who found that the majority of teachers agreed that principals checked scheme of work regularly in public secondary schools.

Checking Lesson Plans

The data on table 4.10 show that 26 out of 29 (89.7%) of the principals said they checked teachers' lesson plans weekly. Whereas 304 out of 375 (81.1%) of the teachers also said that principals checked their lesson plans weekly. Given these results, the study verifies that principals execute supervisory activities of checking lesson plans regularly in public secondary schools. However, about 42 out of 375 (11.2 %) of teachers disagreed that principals checked their lesson plans regularly, whereas very few 29 out of 375 (7.7%) of them were neutral. From these results, it could be deduced that principals executed the checking of teachers' lesson plans regularly in public secondary schools, Bauchi. The results showed agreement with that of a study conducted by Aseka (2014), which revealed the majority of teachers agreed that principals checked their lesson plans weekly. The findings suggest that principals are aware that checking teachers' lesson plan improves the teachers' instructions. In support of this assertion, a study by Sule et al. (2015) revealed reviewing lesson plans develops teachers, instructions.

Checking Teachers' Records of Work

The data on table 4.10 reveals that 287 out of 375(76.7%) of the teachers agreed that principals checked teachers' records of work weekly. Also, majority 24 out of 29 (82.8%) of the principals said they carry out their supervision of checking teachers records of work regularly. The result shows the majority of teachers and confirmed that principals performed checking teachers' records of work weekly. Reviewing records work accomplished will enable the principals to monitor the progress of students. These conclusions were supported by those

of similar research by Jeptarus (2014), and Paul et al. (2016) which reported that the majority of teachers confirmed that principals checked teachers' records of work regularly in their schools. Similarly, according to Oyedeji (2012), as cited by Njideka and Chika, (2016), practical functions of school supervisors include, among others undertaking to review teachers' records and watching their attendance closely.

Checking Teachers' Teachings Notes

Concerning checking teachers' lesson notes, the data in table 4.10 shows that 22 out of 29 (75.9%) of the principals indicated that they did not perform it regularly. This was confirmed by 253 out of 375 (67.8 %) of the teachers who also disagreed that principals checked teachers' lesson notes on a weekly basis. This result reveals there was negligence on the part of some principals in checking teachers' lesson notes. The finding was similar to studies conducted by Hussen (2015), Paul et al., (2016) and Mohammed (2015). All of them found that the majority of teachers confirmed that principals did not check their lesson notes regularly. On the other hand, Buregeya (2011) study found that the majority of teachers indicated that principals checked their lesson notes regularly in their schools. This difference was likely due the level of commitment of the principals towards their duties. Going by the findings of this study in Table 4.10, it may be concluded that many principals did not perform the supervision activities of checking teachers' lesson notes regularly in public secondary schools of Bauchi state, Nigeria.

Principals and teachers responses on supervisory activities of checking teachers' records were further summarized to establish the extent to which principals performed these activities. The findings indicated that checking scheme of work was highly implemented. This was confirmed by 27 out of 29 of principals and 312 out of 375 of teachers (93.1% and 83.2% respectively). It was followed by checking of lesson plans with majority 26 out of 29 of principals and 304 out of 375 of teachers, (89.7% and 81.1% respectively) indicating that principals checked lesson plans weekly. Furthermore, the findings showed the majority, 24 out of 29 of principals and 287 out of 375 of teachers, (82.8% and 76.7% respectively) agreed that principals perform checking records of work weekly.

On the contrary, concerning checking lesson notes 22 out of 29 of principals representing (75.9%) and 253 out of 375(67.8%) of teachers disagreed that principals performed checking of teachers' lesson notes regularly in their schools. The study findings suggest that some principals highly performed supervisory activities of checking teachers' records in public secondary schools in Bauchi state. However, checking teachers' lesson notes was neglected by the majority of the principals. Checking teachers' lesson notes is essential because it enables the principal to ascertain whether the teacher provides the student with the relevant information on the topic taught (Enyuiche, 2017)

Findings from observation of scheme of work, lesson plans, record of work and lesson notes in this study revealed that principals merely signed many records without making constructive remarks. Furthermore, some of the lesson plans, lessons notes and records of work were not endorsed by the principals. These

results seemed to suggest that some principals and teachers did not appreciate the concept and essence of supervision of teachers' professional records. It appeared that both principals and teachers regarded the mere signing of the teachers' records as supervision. This supervision lacked thoroughness, and therefore, it was not likely to enhance instructions. While according to Doolittle (1994) supervision of teachers' records should be able to facilitate the enhancement of instructions. The implication was that principals might not know the teachers' commitment in terms of adequate preparation for instructions. Consequently, effective teaching and students learning may not be realized in such situations.

4.4.1 Regression Analysis of Principals' Checking of Teachers' Records and Pedagogical Practices of Teachers

The researcher hypothesised that:

H₀1: Principals' checking of teachers' professional records does not significantly influence pedagogical practices of teachers in public secondary schools of Bauchi state, Nigeria

H_a1: Principals' checking of teachers' professional records significantly influences pedagogical practices of teachers in public secondary schools in Bauchi state

Simple linear regression analysis was used to test the hypothesis at 0.05 alpha levels. Before carrying out linear regression analysis, the researcher first checked the assumption (Appendix XII) of this data and found that they were not violated. Tables 4.11, 4.12, and 4.13 depicted the results of the analysis.

Table 4.11: Regression Model Summary for Records Checking and Pedagogical Practices

Model Summary				
Model	R	R Squared	Adjusted R Squared	p-value
1	.311	.097	.095	.000

a. Predictors: (Constant), Checking teachers records
b. Dependent Variable: Teachers pedagogical practices

Note: $p < 0.05$

Table 4.11, shows the r value, ($r = .311$); depicts that there was a moderate positive correlation between principals' checking of teachers records and teachers pedagogical practices. The R- Square ($R^2 = .097$) indicates proportion of variation in teachers pedagogical practices accounted for by principals' checking of teachers professional records. The adjusted R-squared value is used to judge goodness of the model in multivariate regression. Given that there was only one input variable in this model, the study used R^2 value. The R- Squared value ($R^2 = .097$), revealed that principals' checking of teachers records explained only 9.7% variation in pedagogical practices (multiplying .097 by 100). The remaining 90.3% of variance was explained by other factors not included in this model. The R- Squared (R^2) also indicated a small effect size of .097, (Cohen, 1994). This effect size suggested that principals' checking of teachers' professional records in public secondary schools of Bauchi state, Nigeria had minimal effect on teachers' pedagogical practices. Further, an Analysis of Variance was employed to test the significance of the model, as shown in the ANOVA Table 4.12.

Table 4.12: ANOVA Test for Records Checking and Pedagogical Practices

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2052.523	1	2052.523	40.075	.000
	Residual	19104.02	373	51.217		
	Total	21156.54	374			

a. Dependent Variable: Teachers pedagogical practices

b. Predictors: (Constant), Checking teachers records

NOTE: $p < 0.05$

Table 4.12 discloses whether or not the model (which includes checking teachers' records as a predictor variable) is a significant predictor of change in teachers' pedagogical practices. The analysis in Table 4.12 shows ANOVA results of $F=40.075$ with 1 and 373 degrees of freedom and F being significant at $p < .05$. Given this result, it can be presumed that the regression model significantly predicts the extent to which principals' checking of teachers' records affect pedagogical practices of teachers. The regression equation establish from this output may be stated as $F(1,373) = 40.08, p = .000 < .05$. Furthermore, Regression Coefficient (Table 4.13) reveals how (Checking teachers records) the predictor variable contribute to the model.

Table 4.13: Regression Coefficient for Records Checking and Pedagogical Practices

Model	Coefficients			t	Sig.
	Unstandardized	Standardized			
	Coefficients	Coefficients			
	B	Std. Error	Beta		
1 Constant	48.70	1.807		26.946	.000
Records Checking	.72	.114	.311	6.330	.000

a. Dependent Variable: Teachers pedagogical practices

NOTE: $p < 0.05$

Table 4.13 shows the results of the regression coefficient. It is the equation that provides information about the change in the value of the dependent variable (teachers' pedagogical practices) corresponding to one unit change in the independent variable (principals' instructional supervision). The data on Table 4.13 indicates the constant (48.70) represent the y-intercept with a slope of 0.722. Given regression equation $Y = \alpha + \beta x_1$, this output could be shown as:

Teachers pedagogical practices (Y) = 48.704 + .722 Principals supervision of teachers' records (X). Where Y is the estimated value of the dependent variable, and X is the value of the independent variable. From the foregoing, results of the regression coefficient reveal that a unit (1) increase in principal' supervision of teachers' professional records leads to increase in pedagogical practices of teachers by a .722 units, ($b=0.722$, $t(26.95)=6.33$, $p<.05$).

4.4.2 Findings of Regression Analysis on the Influence of Records Checking on Pedagogical Practices

Simple linear regression was carried out to test the hypothesis that principals' checking of teachers' records does not significantly influence pedagogical practices of teachers at ($\alpha=.05$). The findings of the regression indicated that principals' checking of teachers' records explained significant proportion of variation in teachers' pedagogical practices, $R^2 = .097$, $F(1,373) = 40.08$, $p < .05$). Also, principals' checking of teachers' records significantly predicted improvement of teachers' pedagogical practices, $\beta = .722$, $t(26.95) = 6.330$, $p < .05$. Based on this evidence, the null hypothesis (H_0) that principals' checking of teachers' professional records does not significantly influence pedagogical practices of teachers in public secondary schools of Bauchi state, Nigeria was rejected ($p = .000 < .05$). The alternative hypothesis (H_a) that

principals' checking of teachers' professional records significantly influence pedagogical practices of teachers in public secondary schools of Bauchi state was therefore accepted.

The implication for teaching and learning is that, when there is an increase in principals' supervision of teachers' professional records, there is an improvement in teachers' pedagogical practices. And, consequently, students' academic performance is likely to be enhanced. In line with these findings, Sule et al. (2015) found that useful and regular checking of teachers' professional records improves teachers' instructions. They further noted that checking teachers' professional records properly has a positive impact on the academic performance of students in addition to teacher improvement.

Similarly, Malunda et al., (2016) study revealed that the relationship between principals' reviewing of teachers' records and teachers' pedagogical practices was statistically significant. This finding connotes that active checking of teachers records will lead to the improvement of teaching and students learning. In the same vein, Njideka and Chika (2016) assert that supervision of teachers' records has a high impact on teacher effectiveness. Because of these benefits, principals should improve and intensify the valid checking of teachers' records.

4.5 Monitoring Students' Progress and its Influence on Pedagogical Practices of Teachers

Objective 2 of this research sought to establish influence of principals' monitoring of student progress on teachers' pedagogical practices in public secondary schools of Bauchi state, Nigeria. Under this objective, the following

principals' supervisory activities were measured: Checking students' classwork, Checking students' records of attendance, Checking students' assessment records and Discussions with teachers on students' progress. The results are presented in Tables 4.14 – 4.17.

Table 4.14: Principals' and Teachers' Response on Monitoring Students' Progress

Activities		Disagree		Neutral		Agree	
		F	%	F	%	F	%
The Principal...	Respondents						
Checks students' exercise books	Principals	17	58.6	5	17.2	7	24.1
regularly to verify progress	Teachers	215	57.8	37	10	120	33.3
Checks students' records of	Principals	4	13.8	3	10.3	22	75.9
attendance weekly	Teachers	60	16.1	50	13.4	263	70.5
Discusses with individual teacher	Principals	15	51.7	5	17.2	9	31.0
students' progress	Teachers	275	73.9	45	12.1	52	14.0
Checks students' assessment	Principals	17	58.6	4	13.8	8	27.6
records monthly	Teachers	265	70.7	48	12.8	62	16.5

Checking Students' Exercise Books

The data on table 4.14 shows that 17 out of 29 (58.6%) of the principals indicated that they do not check students' exercise books regularly to verify students' progress. Also, more than half 215 out of 372(57.8%) of the teachers disagreed that their principals checked students' exercise books regularly. This agreement indicates that both principals and teachers were not satisfied with the way and manner the activity was conducted in their schools. It is important that principals and teachers have a standard view for supervision to succeed. Expressing related view, Zepeda (2012) warns that unless principals and teachers work collaboratively, monitoring of instructions cannot be successful.

This result, therefore, reveals that some principals in public secondary schools have neglected the checking of students' classwork to verify how teaching was progressing. Principals need to do more on the area of monitoring students' classwork.

The findings of this study were in line with the results of the study conducted by Paul et al. (2016) in Uganda. Results of their research revealed that the majority of secondary schools teachers said that principals in their schools do not often check students' exercise books. On the contrary, some studies deviated from this result. For instance, Joseph (2014) study in Nandi County, Kenya, revealed that the majority of principals checked students' notebooks to monitor progress made in terms of syllabus coverage. This deviation may be explained by the differences in levels of commitment and competences of the principals.

The finding of this study suggests that some principals in public secondary schools in Bauchi did not frequently review students' exercise books. Checking students' class notes is critical in promoting instructions and learning (Halverson, 2010). The supervision of students classwork will enable the principals to ascertain whether teaching is going in line with the syllabus and if lessons planned were implemented accordingly (Omogbehin, 2013). In the same vein, Wanzare (2012) reported a teacher as saying '*principals looked at our scheme of work, teaching notes and lesson plans.*' *They also examined students' notebook*'. That was a testimony on the importance of checking students' notes.

Checking Students' Attendance

The data on Table 4.14 also depicts the results of monitoring students' academic progress through checking their records of attendance. In this study respondents were asked to indicate the rate of checking students' attendance records in their schools. The data on Table 4.14 shows that 263 out of 373 (70.5%) of teachers agreed that principals checked students' attendance usually every week. Also, majority 22 out of 29(75.9%) of the principals indicated that they checked students' attendance records in their schools every week. This finding was supported by the research findings of Joseph, 2014; Sekunda, 2013; Mbuso, 2015 and Aseka, 2016. The findings of the current study, revealed that majority of respondents confirmed that students' records of attendance were monitored well in their schools. This finding implied that principals in public secondary schools in Bauchi state checked students' attendance regularly in order to monitor teaching and learning progress. Relating the importance of monitoring progress in schools, Grauwe (2007) observed that undertaking monitoring students' progress in schools had spurred much of the major reorganization of education in England, New Zealand, and Australia.

Talking to Individual Teachers about Students' Progress

On the extent to which principals hold discussions with individual teachers about students' progress, the data on Table 4.14 shows that majority 15 out of 29(51.7) of the principals indicated that they do not hold formal discussions with individual teachers about the progress of their students. On the other hand, also majority 275 out of 372 (73.9%) of teachers said that principals do not talk to individual teachers about the progress of their students, whereas very few, 45 (12.1%) of the teachers were non-committal. This result deviates from

that of Al-Hosani (2015), whose study found the majority of teachers indicating that principals discussed the academic progress of students with relevant teachers in their schools.

Through talking with teachers about students' progress, the principals will be able to acquire first-hand information on students' performance in the school. On the other hand, teachers will view the principals as being open and approachable. This approach may likely help in enhancing teaching and students' learning. Supporting this assertion, Leithwood, Seashore, Anderson, and Wahlstrom (2004), observe that in secondary schools with outstanding academic performance, their principals usually talk with individual teachers about the students' progress.

Furthermore, it is observed that the principal is in charge of not only promoting pedagogical practices of teachers but also for promoting good working relationships in the school by talking with the teachers. (Al- Hosani, 2015). Similarly, Glickman et al. (2010) assert that the interpersonal relationship is a prerequisite condition for effective instructional supervision in schools. It was further observed that effective communication is key to developing a healthy interpersonal relationship in the learning environment (Simbano, 2015).

In the same vein, Blaisé (2000) study on best principals' supervisory roles found that principals' effective communication with teachers emerged as one of these roles. Also, Bays (2001) asserts that in order to assure positive learning outcomes for students, principals should be talking to individual teachers about

their students' progress. These assertions by experts confirm that effective monitoring of students' academic progress entails collaboration and dialogue.

Findings of this study revealed that principals' having formal discussions with teachers on their student progress was least performed in public secondary schools in Bauchi state. Neglecting this vital role of the principals -talking with the teachers about the progress of their students- may have a negative impact on students learning. Therefore, principals should make deliberate efforts to improve upon having discussions with teachers on students' progress.

Checking Students' Assessment Records

The data on table 4.14 indicate that 17 out of 29 (58.6%) of the principals do not normally check of students assessment records. This result was supported by 265 out of 375 (70.7%) of the teachers, who also said that their principals do not check students' assessment records regularly. Only about one-quarter, 62 out of 375 (16.5%) of teachers said their principals usually demand to see students' assessment records. The result implies that some principals have neglected the supervisory role of examining how students were progressing academically in public secondary schools of Bauchi state. Supporting these findings, a study by Wanzare (2012) revealed that principals in public secondary schools always seemed busy with administrative work to the detriment of the students' progress. Similarly Hussen (2015) study found that monitoring students' progress by principals of secondary schools was irregular and rarely organized. Moreover, Simbano (2013) study also reported that teachers rated principals' supervision of students' progress as inferior in public secondary schools.

However, the findings of this study were not in agreement with some reviews. It has been reported that the majority of teachers said principals checked their records of marks on student's tests (Paul et al. 2016; Sekunda, 2013). These variations may be justified in terms of commitment and competence of principals, and the education laws peculiar to a given country or system. Monitoring students' progress records are very vital in that students' assessment data may be used to determine the school's academic achievement in general (Boudett, Murnane, City & Moody 2005). In the same vein, Bambrick-Santayo (2010) asserts that in well-organized schools, principals and teachers always make use of students' progress information to determine the school development.

The results from the data on Table 4.14 were summarized to determine the extent to which principals perform supervisory activities of monitoring students' progress. In this regard, the results of the analysis on Table 4.14 revealed that supervision of students' records of attendance was highly accomplished in public secondary schools. This finding was confirmed when 22 out of 29 (75.9%) and 263 out of 375(70.5%) of principals and teachers respectively agreed that principals checked students' records of attendance weekly. On the other hand, the results from data in Table 4.18 indicated that many principals do not check students' exercise books. About this result, 17 out of 29(58.6%) of the principals and 215 out of 372(57.8%) of the teachers indicated that checking of students' exercise books was not practiced in their schools. These results imply that not many principals in public secondary schools checked students' exercise books regularly.

Furthermore, according to the data on Table 4.14, about 17 out of 29(58.6%) of the principals and 265 out of 375 of the teachers indicated that principals do generally not check students' assessment records to ascertain their academic progress. Additionally, the data on Table 4.14 shows that very few 9 out of 27(31.0%) of the principals and 52 out of 372(13.9%) of the teachers respectively agreed that principals discuss students' progress with the individual teacher in their schools. This finding reveals that the majority of principals did not find out about students' progress through discussions with class teachers. The study findings, therefore, revealed that principals' supervision activities of checking of students' exercise books, reviewing students' assessment records and having discussions with the individual teachers on students' progress were least performed by many principals.

Findings from document analysis of this study were in agreement with these results of the data on Table 4.14. The document observation checklist found very scanty evidence on planned activities of monitoring students' progress in the sampled schools (Table 4.27). In the majority of the schools visited by the researcher, there were no written documents showing planned programmes for monitoring students' progress. Therefore, the study concludes that principals' supervisory activities of monitoring students' progress were not effectively carried out in public secondary schools in Bauchi state. In conclusion, the findings of the study suggest that principals' supervision activities in terms of monitoring students' progress were least performed by the majority of principals in public secondary schools of Bauchi state.

4.5.1 Regression Analysis between Principals' Monitoring of Students' Progress and Teachers' Pedagogical Practices

The null hypothesis states

H₀ 2: Principals' monitoring of students' progress does not significantly influence pedagogical practices of teachers in public secondary schools of Bauchi state, Nigeria.

H_a 2: Principals' monitoring of students' progress significantly influences pedagogical practices of teachers in public secondary schools of Bauchi state

The hypothesis was stated to establish the extent to which principals' monitoring of students' progress influence pedagogical practices of teachers in public secondary schools in Bauchi state. Simple linear regression analysis was used to test the hypothesis at 0.05 alpha levels. Before carrying out linear regression analysis, the researcher first checked the assumption of this data and found that they were not violated (Appendix XII). Tables 4.15, 4.16, and 4.17 showed the information from the analysis.

Table 4.15: Regression Model Summary of Monitoring Progress and Pedagogical Practices

Model	R	R-Squared	Adjusted R Squared	p-value
1	.315	.099	.097	.000

a. Predictors: (Constant), Monitoring of students' progress
b. Dependent Variable: Teachers pedagogical practices

The results of the model summary in Table 4.15 show the value of R ($r = 0.315$). This result indicates there was a moderate correlation between principals' monitoring of students' progress and teachers pedagogical practices.

The coefficient of determination given by R- Square, ($R^2 = .099$), indicates the amount of variation in teachers pedagogical practices that can be accounted for by principals' activities of monitoring students' progress. The adjusted R-squared value is used to judge goodness of the model in multivariate regression. Since this model had only one input variable, the study used R^2 estimate. It can be seen the results in Table 4.15 reveals that only 9.9% (.099 multiplied by 100) variation in teachers' pedagogical practices was explained by principals' activities of monitoring students' progress. This result indicated that the remaining 90.1% of variance in teachers' pedagogic practices was attributed to other factors not included in this model. The R- Squared (R^2) also indicated a small effect size of .099, (Cohen, 1994). This effect size suggested that checking teachers' professional records in public secondary schools in Bauchi state of Nigeria had very little impact on teachers' pedagogical practices. An Analysis of Variance (ANOVA) was used for testing the significance of the model. The results are presented in Table 4.16.

Table 4.16: ANOVA Test for Monitoring Students' Progress and Pedagogical Practices

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2095.428	1	2095.428	40.005	.000
	Residual	19061.12	373	51.102		
	Total	21156.54	374			

a. Dependent Variable: Teachers pedagogical practices

b. Predictors: (Constant), monitoring students' progress

Table 4.16 tells whether or not the model (with monitoring students' progress as the independent variable) was a significant predictor of teachers' pedagogical practices. Table 4.16 shows ANOVA results of $F=40.005$ with 1 and 373

degrees of freedom and, F being significant at less than .05 level. Since the significance value is less than $p = .000 < .05$, it suggests that the regression model can significantly predict teachers' pedagogical practices. The regression equation established from this output may be stated as $F(1,373) = 40.005$, $p = .000 < .05$). The result revealed that the model was significant. Further, the coefficient of determination (Table 4.17) tells us how (monitoring students' progress) the predictor variable contributed to the model.

Table 4.17: Regression Coefficient for Monitoring Students Progress and Pedagogical Practices

		Coefficients				
Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.	
		B	Std. Error	Beta		
1	(Constant)	49.257	1.703		28.920	.000
	Monitoring progress	.748	.117	.315	6.403	.000

a. Dependent Variable: Teachers pedagogical practices

Table 4.17, the regression coefficient is the equation that provides information about the change in the value of the dependent variable corresponding to the unit change in the independent variable. The constant (49.26) represent the y-intercept with a slope of 0.75. The regression equation found from this table could be stated as:

Teachers pedagogical practices (Y) = 49.26 + 0.75 Principals' monitoring students' progress (X).

Where Y is the estimated value of the dependent variable, and X is the value of the independent variable.

The results of the regression coefficient indicate that a unit (1) increase in principals' monitoring of students' progress would increase teachers' pedagogical practices by 0.75. This result revealed that principals' monitoring of students' progress significantly predicted transformation in teachers' pedagogical practices ($b=.75, t=6.40, p>.05$).

4.5.2 Regression Analysis Findings for Influence of Monitoring Students' Progress on Teachers' Pedagogical Practices

Simple linear regression was carried out to test the null hypothesis that principals' monitoring of students' progress does not significantly influence pedagogical practices of teachers in public secondary school of Bauchi state, Nigeria at ($\alpha=.05$). The result showed a coefficient correlation $r =.315$, indicating a moderate relationship exists between monitoring students' progress and teachers' pedagogical practices. Also, a significant regression equation was found, $F (1,373) =40.005, p = .000 <.05$), with an R^2 of 0.099. This result indicates that principals' checking of teachers' records explained significant proportion of variation in teachers' pedagogical practices.

Furthermore, the beta coefficient was also significant ($b=.75, t=6.40, p>.05$). The result reveals that value of teachers' pedagogical practices will increase by .75 units with the increase a unit in the value of principals' monitoring of students' progress. The statistics shows both results are highly significant ($p <.05$). The findings concluded that principals' monitoring of students' progress significantly and positively improved the teachers' pedagogical practices. Based

on this findings, the study rejected the null hypothesis (H_0), that principals' monitoring of students' progress does not influence teachers' pedagogical practices ($p=.000<.05$). The alternate hypothesis (H_a), that principals' monitoring of students' progress significantly influences pedagogical practices of teachers in public secondary schools was accepted

The findings of this study were in congruence with those of studies by Al-Hosani (2015) conducted in United Arab Emirate and Paul et al. (2016) done in Uganda. Both studies revealed that the relationship between principals' supervisory activities of monitoring students' progress and teachers' pedagogical practices in public secondary schools was positive and statistically significant. It was also observed that active monitoring of students' progress would help to ensure improvement in teaching and learning (Tesfaw and Hofman, 2014; Omogbehin, 2013; Halverson, 2010 and Bambrick-Santoyo, 2010). In other words, the study findings of these scholars imply that the more students' progress is monitored, the more teachers' pedagogical practices were enhanced. Specifically, the study findings point to the fact that consistent principals' monitoring of students' progress may enhance the teachers' performance. This is also likely to assist in addressing the problem of poor results that bedeviled Bauchi state.

4.6 Principals' Classroom Visitation and its Influence on Pedagogical Practices of Teachers

Objective three of this research sought to determine the extent to which principals' classroom visitation influence pedagogical practices of teachers in public secondary schools in Bauchi state. To achieve this objective, the following (Appendix I) principals' supervisory activities were measured: Pre-observation conference, Lesson observation; Post-observation conference and Unscheduled visit (walk-throughs). The respondents were requested to relate their views on the performance of these activities in their schools. The results are presented in tables 4.18 – 4.21.

Table 4.18: Principals' and Teachers' Response on Classroom Visitation

		Disagree		Neutral		Agree	
		F	%	F	%	F	%
The Principal...							
Arranges with teachers on when to observation their lessons	Principals	23	79.3	2	6.9	4	13.8
	Teachers	316	84.3	27	7.2	32	8.5
Records notes during a lesson observation	Principals	15	51.7	1	3.4	13	44.8
	Teachers	199	53.1	64	17.1	112	29.9
Provides the teacher with feedback after observation	Principals	16	55.2	4	13.8	9	31.0
	Teachers	279	74.6	20	5.3	75	20.1
Pay unscheduled visits to observe teachers in class	Principals	4	13.8	2	6.9	23	79.3
	Teachers	92	24.5	56	14.9	227	60.6

Pre-observation Conference

The data on Table 4.18 shows the analysis that majority, 23 out of 375 (79.3%) of principals indicated that they did not discuss with their teachers to make arrangements prior to classroom observation. The teachers' response also indicates that majority, 316 out of 375 (84.3%) of the teachers said principals do

not hold a conference with them to make arrangements before observing their lessons. However, very few, 32 out of 375 (8.9%) of the teachers agreed that principals implement-observation conference with teachers in their schools, whereas, 27(7%) of the teacher respondents were noncommittal. This result was in congruence with some studies (Kedir, 2011; Sultan; 2017; Simbano, 2013).

On the contrary, however, the results of this study deviated from those of studies conducted by Benedict (2013) and Sekunda (2013) on classroom visitation. Their studies revealed that the majority of the principals discussed with teachers individually and in groups prior to their lessons observation. These deviations were an indication that some principals have a better appreciation of the importance of holding a pre-observation conference and so were implementing it with their teachers. The researcher may also think of two possible reasons, such as the level of commitment and techniques that work for the principals. However, Nolan and Hoover (2011) emphasized that pre-observation conferences are required to establish cordial relation and trust between principal and the supervisee.

Talking with the teacher before the observation is very important to acquaint the teacher with the objectives of the exercise (Nolan and Hoover, 2011) Also, it will assist in developing a good relationship which is required for the supervision to succeed. Glickman et al. (2014) assert that human relation skill is a prerequisite requirement for successful instructional supervision. Accordingly, in support, Zepeda (2010) stressed that supervisors' classroom observations could only positively influence teachers' job performance when a good relationship exists

between teachers and supervisors. Given the results in this study; it can be presumed that many principals in public secondary schools in Bauchi do not hold pre-observation conferences with their teachers. This situation may likely lead to teachers developing a negative attitude to principals' supervision; also, their performance may be affected. Therefore, about the preceding views, this study opines that instruction supervision that fails to incorporate collegiality in the process is unlikely to succeed.

Actual Lesson Observation

Further, on the real lesson observation, the data on Table 4.18 reveals that more than half, 15 out of 29 (51.7%) of the principals did not record notes during lesson observation. This observation was endorsed by more than half, 199 out of 375 (53.1%) of the teachers that disagreed with the statement that principals record notes on teachers' and students' activities during lesson observation. These results imply that principals in public secondary schools were not at par in terms of taking records of events during lesson observation; hence, much needed to be done to improve this. Similar findings were reported in several reviewed studies (Kimbal and Odden 2006; Simbano 2013; Hussein 2015; Mohammed 2015; Abebe 2014; Sultan 2017).

The fact that classroom observation is conducted for the sole purpose of improving instructions, it is essential to document teacher's and students' activities during lesson observation. The notes written when the teacher was performing the actual teaching provide first-hand information on how the teacher fared in the instructions (Zepeda, 2010). Emphasizing the importance

of the process, Oyedeji (2016) viewed undertaking formal classroom visit as an important function of the principals that entails data collection, feedback, and the consequent improvement of instructions.

Furthermore, it has been argued that formal classroom visit involves interaction prior to the visit and data taking during the presentation of the lesson and feedback immediately after the instruction (Glickman, Gordon, & Ross-Gordon, 2014). Glickman et al. further stressed that the data gathered is used as a guide to determine areas that need to be improved in the teacher's performance. If data is not recorded, useful feedback cannot be ascertained, and consequently, the purpose of the whole exercise is defeated. However, the findings of this study revealed that many principals least performed the practice of collecting data during lesson observation in public secondary schools in Bauchi state. Sultan, (2017) opines that neglect of data collection at lesson observation could affect the process of feedback.

Post-observation Conference

The data on Table 4.18 depicts the response to the statement that principals hold discussions with teachers after lesson observation. The result indicates that the majority, 16 out of 29 (55.2%) of the principals, did not hold a post-observation conference with teachers. The data on Table 4.18 also indicated that majority of 279 out of 375 (74.6%) of the teachers disagreed that principals provide them with detailed feedback after lesson observation. Therefore these results show that a majority of principals do not hold post-observation conferences with their teachers. The findings of this study suggest that many principals least

performed the post-observation conference in public secondary schools in Bauchi state. In other word, principals do not provide teachers with feedback on supervision conducted. This finding was in agreement with those of studies carried out by Malunda et al., (2016) in Uganda and Kedir (2011) in Ethiopia. Both studies found that the majority of teachers in public secondary schools disagreed that principals provide them with feedback after lesson observation. Principals should endeavour to give the teachers the input of class observation as it will show areas that need improvement. This view is supported by Sultan (2017) when he asserts that the effect of feedback from lesson observation had a positive, significant impact on teachers' work performance.

Unscheduled Classroom Visits

The data shown in Table 4.18 reveals that majority, 23 out of 29 (79.3%) of the principals conducted walk-throughs visits to observe teachers at work. On their part, majority 227 out of 375 (60%) of the teachers also agreed that principals preferred making unscheduled visits (walk-throughs) to classrooms to observe teachers' lessons. These results indicate that many principals in public secondary school would instead take teachers by surprise to see them at work than making formal arrangements. In congruence to these results, Buregeya (2011) study findings revealed that principals in public secondary school Wakiso, Uganda preferred unscheduled visits to classrooms. In this direction, it was further found that principals usually pass by or enter the class for five minutes to observe instructions (Al-Hosani, 2015). However, the findings of this study deviate from that of the survey conducted by Muthoni (2017).

Muthoni found that the majority of principals arranged regular visits to observe teachers' lessons in their classes in Meru and Tharaka-Nithi in Kenya.

Nevertheless, judging from the results of statistics, many principals in public secondary schools in Bauchi state did not endeavor to make formal arrangements with teachers for classrooms visits. This result revealed that many principals prefer to pay surprise visits to classes when lessons were going on. This practice was a negation of procedural supervision process, which is democratic and found to be effective in improving teachers' stand (Defaru and Asrat 2015; Goldhammer 1969 and Glickman et al. 2013). Supporting this view further, it is asserted the clinical supervision, which is procedural, and appears to have been enhancing students' learning process (Nahed, (2012). Furthermore, it was observed that the much educational system widely uses the procedural supervision characterized by the formal visit as a viable means to enhance the supervision process (Benigno, 2016). In line with the preceding arguments, Sailesh, Marohaini, and Sathiamoorthy (2011) opined that the process of instructional supervision should be continuous. They also opined that teachers should be involved in the process from the pre-observation conference, through the observation to the post-observation conference. Similarly, Zepeda (2007) suggested that supervision of instructions by walk-throughs should be carried out in such a way that it is collaborative and collegial to improve the standing of the teachers.

Results from the data on Table 4.18 were further summarized to determine the extent to which principals implement classroom visitation in public secondary

schools. The findings of the study show that many principals preferred classroom observation by unscheduled visits (walk-throughs). This finding implies that principals neglected formal supervision. Another supervisory activity that seemed to be least performed was principals' taking data when observing teaching. Conducting pre-observation and post-observation conferences were also least performed by many principals in public secondary schools in Bauchi state. Therefore, about these findings, the study discovered that the majority of principals in public secondary schools in Bauchi state do not undertake formal classroom visits. Also, they do not involve their teachers in planning and implementing classroom observation. It has been noted that for the improvement of the teachers, instructional supervision usually consists of several stages, such as the pre-observation conference by the supervisor, and post-observation interactions (Tesfaw and Hofman, 2012). Expressing a view on teacher supervision, Zepeda, (2010) opines that failure to engage teachers before and after lesson observation could create a communication gap between teachers and principals.

On the other hand, the document analysis in this study (Table 4.27) revealed that there were no records of planned supervisory activities in most public secondary schools in Bauchi state. In line with this, Wanzare (2012) asserts that instructional supervision activities in public secondary schools were marked by inconsistency. From the preceding, findings of the current study conclude that principals' instructional supervision of classroom visitation lacked proper organization and implementation in many public secondary schools of Bauchi state. In line with this assertion, Minnear-Peplinski (2009), found that many

principals conduct classroom observation devoid of teachers' participation in all stages.

4.6.1 Regression Analysis between Principals' Classroom Observation and Teachers' Pedagogical Practices

The hypothesis for objective four states that:

H₀3: Principals' classroom observation does not significantly influence pedagogical practices of teachers in public secondary school of Bauchi state, Nigeria.

H_a3: Principals' classroom observation significantly influences pedagogical practices of teachers in public secondary schools of Bauchi state, Nigeria

The hypotheses were stated to determine the extent to which principals classroom visitation influences pedagogical practices of teachers in public secondary schools of Bauchi state, Nigeria. Simple linear regression analysis was used to test the hypothesis. Before carrying out linear regression analysis the researcher first checked the assumption of this data and found that they were not violated. (Appendix XIII). Tables 4.19, 4.20 and 4.21 depict the information from the analysis.

Table 4.19: The Regression Model Summary on Classroom Visit and Pedagogical Practices

Model Summary				
Model	R	R Square	R- Squared Adjusted	p-value
1	.371	.138	.136	.000

a. Predictors: (Constant), Classroom observation
b. Dependent Variable: Teachers pedagogical practices

Table 4.19, shows the value in R, ($r = .37$), indicating there was a medium positive relationship between the two variables- principals' classroom observation and teachers' pedagogical practices. The coefficient of determination indicated R-Square, ($R^2 = .138$), reveals the amount variability in teachers' pedagogical practices that can be explained by principals' classroom visitation. The adjusted R-squared value is used to adjudge goodness multivariate regression model. For the fact that this model was built on a single variable, the study used R^2 value in determining the proportion of pedagogic practices that can be accounted for by classroom observation. In this case, the value of R square reveals that 13.8% (multiplying .138 by 100) variability in teachers' pedagogical practices can be explained by principals' activities of classroom observation. The analysis indicates that 86.2% unexplained variation can be attributed to other factors not included in this model. The R- Squared (R^2) also indicated a small effect size of .138. This effect size suggested that principals' activities of classroom observation in public secondary schools in Bauchi state of Nigeria had a negligible effect on teachers' pedagogical practices. Moreover, an Analysis of Variance was used to test the significance of the relationship between classroom observation and pedagogical practices. Table 4.20 presents the ANOVA results.

Table 4.20: ANOVA Test for Classroom Visitation and Pedagogical Practices

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2918.62	1	2918.92	59.691	.000
	Residual	18237.93	373	48.895		
	Total	21156.54	374			

a. Dependent Variable: Teachers pedagogical practices

b. Predictors: (Constant), classroom visitation

Table 4.20 depicts the results of the analysis of variance used to test the significance of the model. The result tells whether or not our model (with classroom visitation independent variable) was a significant predictor of teachers' pedagogical practices. The table shows ANOVA results of $F=59.691$ with 1 and 373 degrees of freedom and F being significant at less than .05 level of significance. Since the significance value is $p = .000 < 0.05$, it indicates that classroom observation significantly predicts improvement in teachers' pedagogical practices. Base on this result, it can be deduced that the regression model significantly predicts the extent to which principals' classroom observation transform pedagogical practices of teachers. The regression equation established from this output may be stated as $F(1,373) = 59.691, p = .000 < .05$. This equation confirms the significance of the model. In addition, regression coefficient (Table 4.21) explains how (classroom observation) the predictor variable contributes to the model (the beta weight).

Table 4.21: Regression Coefficient for Classroom Observation and Pedagogical Practices

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	47.429	1.807		28.67	.000
a. Classroom observation	.896	.116	.371	7.726	.000

Table 4.21, the regression coefficient equation provides information about the change in the value of the dependent variable (pedagogical practices) corresponding to the unit change in the independent variable (classroom observation). The constant (47.429) represents the y-intercept with a slope of 0.896. The regression equation established from this output could be presented as: Teachers' pedagogical practices (Y) = 47.429 + 0.896 Classroom visitation (X). Where Y is the estimated value of the dependent variable and X is the value of the independent variable. The results of the regression coefficient revealed that a unit (1) increase in principal' classroom observation would enhance teachers' pedagogical practices by 0.896; and that there was a positive, statistically significant ($p < .05$) relationship between teachers pedagogical practices and principals, classroom visitation 0.896. This result revealed that the beta coefficient was significant ($b = .896, t(28.67) = 7.726, p = < .05$).

4.6.2 Regression Analysis Findings for Influence of Classroom Observation on Teachers' Pedagogical Practices

Simple linear regression was carried out to test the hypothesis that principals' classroom observation does not significantly influence pedagogical practices of

teachers at .05 alpha level. The analysis result showed that principals' classroom observation explained statistically significant proportion of variation in teachers' pedagogical practices, $R^2=.138$, $F(1,373) = 59.691$, $p < .05$). Also, a significant beta coefficient was found ($\beta=.896$, $t(28.67) = 7.726$, $p < .05$). The result indicated that classroom observation had a significant impact on teachers' pedagogical practices, $b=.722$, $t(26.95)=6.330$, $p < .05$. These findings suggest that the regression was significant ($p < .05$). In regard to this evidence, the null hypothesis (H_0) that principals' classroom observation does not significantly influence teachers' pedagogical practices in public secondary schools of Bauchi state, Nigeria was rejected ($p=.000 < .05$). The alternative hypothesis (H_a) that principals' classroom observation significantly influences teachers' pedagogical practices in public secondary schools of Bauchi state, Nigeria was accepted.

In line with the findings of this study, similar studies undertaken by Sekunda, (2013) and Al-Hosani (2015) found the relationship between principals' supervisory activities of classroom visitation and teachers' pedagogical practices were positive and statistically significant. This confirms that effective classroom visitation would improve instructions. A study by Usman (2015) also indicated that regular supervision of instruction has significant influence on teachers' pedagogical practices and learners' achievement. The implication for teaching and learning was that improvements in classroom observation by principals may significantly improve teachers' pedagogical practices and students' achievement in public secondary schools in Bauchi state. With the application of effective pedagogical practices by teachers, the persistent dismal performance of students in national examinations may be remedied in the state.

4.7 Professional Development and its Influence on Pedagogical Practices of Teachers

Objective four of this study sought to find out the extent to which professional development programmes that principals implement influence pedagogical practices of teachers in public secondary schools of Bauchi state. To achieve this objective, the following principals' supervisory activities (Appendix I) were measured: Orientation programme, School-level workshop, In-service programmes for teachers and Peer mentoring. The results are presented in Tables 4.22 – 4.25.

Table 4.22: Principals and Teachers Response on Adequacy of Professional Development Programmes

Activities		Disagree		Neutral		Agree	
Principal organizes...	Respondents	F	%	F	%	F	%
Orientation for new teachers	Principals	5	17.2	3	10.3	21	72.4
	Teachers	112	29.9	25	6.7	238	63.5
School-level workshops	Principals	25	86.2	1	3.4	3	10.3
	Teachers	265	70.7	32	8.5	81	21.6
In-service programme for teachers	Principals	5	17.9	4	14.3	19	67.9
	Teachers	91	24.6	36	9.7	243	65.7
Peer mentoring for novice teachers	Principals	19	65.5	3	10.4	7	24.1
	Teachers	314	83.7	21	5.6	40	10.7

Orientation Programmes for Teachers

The data on Table 4.22 indicates that majority, 21 out of 29 (72.4%) of the principals said they conduct orientation programmes for their new teachers. The data shows also majority, 238 out of 375 (63.5%) of teachers agreed with the statement that orientation programmes for new teachers were carried out in their schools. This result confirmed principals' response which indicated that over 70% of the principals organize orientation programmes for new teachers in their

schools. The finding was in line with Jeptarus, (2014) study findings who revealed that majority of the teachers sampled confirmed that orientation programmes were regularly organized for new teachers in their schools. Also, a study by Benedict (2013) found that induction of new teachers was regularly practiced by many principals in their schools.

Some of the benefits of orientation programmes include enabling the newly posted teachers to acquire knowledge of their new working environment. Through orientation the teacher becomes acquainted with rules and regulations of the school, the facilities available in the school and how to access them (Dawo, 2011 and Simatwa, 2010). Additionally, the National Open University of Nigeria- NOUN, (2006) observes that induction programmes serve for adjustment and retention of teachers. The results of this study indicated that majority of both principals and teachers agreed that orientation programmes were regularly organized in their schools. Therefore, finding of this study suggest orientation programmes for new teachers were implemented by the majority of public secondary schools principals in Bauchi state of Nigeria. It was a good development. However, principals could improve it by giving more attention to documentation of its organisation and implementation.

Workshop Programmes for Teachers

The analysis in Table 4.22 indicates that 25 out of 29 (86.2%) of the principals said they do not organize workshops for their teachers. Also the majority 265 out of 375 (70.7%) of teachers disagreed with the statement that workshop

programmes were organized by their school principals. These results confirmed that school-level workshops were not implemented by many principals. In line with the finding of this study, a study by Kedir (2011) revealed that majority of the teacher respondents indicated that their principals never organized workshops for the teachers. Similarly, a research by Netsanet, (2014) also found that workshops and training by supervisory personnel at school level were rarely organized. In the case of present study findings, the results suggest that majority of principals in public secondary schools in Bauchi state do not organize school-level workshops for their teachers. This situation may affect teachers' performance because workshops are meant to provide teachers with continuous training that will improve their instructional techniques, classroom management skills and ability to adjust to student needs (Wanzare and Da Costa, 2000; Nyamwamu, 2010; Sergiovanni and Starratt, 2007). In view of the immense contribution workshop makes to teachers' improvement, principals should prioritize it.

In-Service Education Programmes

The data on Table 4.22 pertaining to the issue of in-service, more than half 17 out of 29 (58.6%) of the principals said that they facilitate in-service education programmes for their teachers to obtain higher qualifications. On the other hand, majority 243 out of 370(65.7%) of the teachers confirmed that principals facilitate in-service education programmes in their schools. However, about 91 (24.6%) disagree with the statement; while very few of the teachers, 36 (9.5%) decided to remain neutral. This study finding was in agreement with that of some related studies found in reviewed literature. For instance, Aseka (2016)

and Benedict (2013) reported that the majority of teachers sampled in their studies agreed that their principal facilitated in-service programmes in their schools to enable teachers acquire higher qualifications (Aseka, 2016 and Benedict, 2013). On the contrary, Tyagi, (2010) study observed that in-service of teachers in public secondary schools was lacking.

The analysis on Table 4.22 indicates that majority of respondents agreed that some form of in-service education programmes exists in their schools. Given this result, the findings of this study suggest that many principals in public secondary schools in Bauchi facilitate some form of in-service education programmes to enable teachers obtain higher qualifications in order to foster their pedagogical practices. It is hoped that principals would sustain this trend to enable teachers remain up to date and keep advancing professionally. It has been emphasized that teachers must be up to date in order to align with the dynamism of the contemporary society (Fullan, 2001; Nolan and Hoover, 2011; nnabuo, 2011). Regarding the need for in-service training, Fullan (2001) further contends that teachers need to do substantially more learning at work, or parallel with it, where they can always try out, refine, and get input on their performance. These suggestions by Fullan point out the need for principals to develop a proactive approach in designing and implementing in-service programmes for their teachers.

Peer Mentoring Programmes

The data on table 4.22 related to peer mentoring in schools shows majority 19 out of 29 (65.5%) of the principals said that they do not organize peer

mentoring in their schools. The principals' response was confirmed by majority 314 out of 375 (83.7%) of the teacher who said that principals never organized peer mentoring programmes in their schools. In congruence with these results, some studies revealed that majority of teachers said their principals did not organize peer mentoring in their schools (Joseph 2014; Hussein, 2015 and Assefa, 2014).

In recent times peer mentoring has been widely accepted as a fast means of improving novice teachers' instruction and interactions among teachers (Zhang, 2008). To this end, Washburn-Moses, (2010) contends that peer mentoring serves to enhance teaching quality and retention outcomes among both novice and experienced teachers. Similarly, Sullivan and Glanz (2000), and Nemser and Parker, (1992) observe that through peer mentoring programmes novice teachers receive professional help and guide from more experience colleague. On their part, Murray and Mazur (2009) argue that in mentoring novice teachers are assisted on one-to-one correspondence by veteran teachers. Salleh (2013) observed that mentoring procedure covers all parts of instructions.

From the foregoing, it can be seen that peer mentoring is a vital process of guiding, supporting and assisting the teachers to improve upon their pedagogical practices. The Federal Republic of Nigeria-National Policy on Education (2013) recommends that newly qualified teachers shall serve a period of one-year internship. The findings of this study, however, revealed that many principals in public secondary schools in Bauchi state do not organize peer mentoring in their schools. It is advisable that principals become proactive in

designing and sustaining peer mentoring in their schools. They should make peer mentoring programmes a permanent feature of their schools' organization.

The results on Table 4.22 were summarized to determine the extent to which principals implement teacher development programmes. The study findings reveal that orientation for new teachers was highly performed in public secondary schools. On whether principals organize school-level workshop, the findings reveal that the majority of principals in public secondary schools in Bauchi state do not implement school-level workshops for their teachers. However, it was found that principals implement in-service education programmes in their schools. This finding suggests that principals' efforts in facilitating in-service education for teachers were remarkable.

Nevertheless, this study reveals that many principals do not implement peer mentoring programmes in their schools. The study found that for certain reasons workshops for teachers and peer mentoring were least implemented by many principals in public secondary schools of Bauchi state. These findings were supported by Gaziel, (2007) study report that many principals neglect their responsibility of teacher development. The document analysis by this study revealed that very few schools had documents showing a designed plan for facilitating teachers' growth in public secondary schools of Bauchi state. In view of these findings, the study concludes that there was need for capacity building for the principals to enable them carry out fully their roles of teachers' professional development.

4.7.1 Regression Analysis between Professional Development Programmes Implemented by Principals and Teachers' Pedagogical Practices

The hypothesis for objective five states:

H₀4: Professional development programmes that principals implement do not significantly influence pedagogical practices of teachers' in public secondary schools of Bauchi state, Nigeria.

H_a4: Professional development programmes that principals implement significantly influence pedagogical practices of teachers' in public secondary schools of Bauchi state, Nigeria.

The hypothesis was stated to find out whether professional development programmes that principals implement have significantly impact on pedagogical practices of teachers in public secondary schools of Bauchi state. Simple linear regression analysis was used to test the hypothesis at 0.05significance level. Before carrying out linear regression analysis the researcher first checked the assumption of this data and found that they were not violated (Appendix XII). The analysis are presented in Tables 4.23, 4.24 and 4.25.

Table 4.23: The Regression Model Summary for Professional Development and Teachers' Pedagogical Practices

Model Summary				
Model	R	R- Square	Adjusted R- Square	p-value
1	.244	.060	.057	.000

a. Predictors: (Constant), Professional development programmes
 b. Dependent Variable: Teachers' pedagogical practices

Table 4.23 shows the R value, ($r = .244$), this indicates a weak but positive correlation between principals' professional development programmes and teachers pedagogical practices. The R-Square value, ($R^2 = .060$), reveals the

amount of variance in teachers pedagogical practices that could be explained by the principals' professional development programmes. The adjusted R-squared value is used to determine the goodness of the model in multivariate regression. Given that there was only one predictor variable in this model, the study used R^2 value. This result indicates that only 6.0% (.060 multiplied by 100) of the variation in teachers' pedagogical practices can be explained by the principals' professional development programmes. The result also suggested that the remaining 94.0% of variability in teachers' pedagogical practices was explained by other factors not included in this model. The R- Squared (R^2) value also reveals a small effect size of .060 (Cohen et al., 2011; Pallant, 2013). This effect size shows that principals' professional development programmes in public secondary schools of Bauchi state of Nigeria had a very negligible impact on teachers' pedagogical practices. To test the significance of the model, an Analysis of Variance was carried out as shown in the ANOVA Table 4.24.

Table 4.24: ANOVA Test for Professional Development and Pedagogical Practices

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1261.495	1	1261.495	23.651	.000
Residual	19895.05	373	53.338		
Total	21156.54	374			

a. Dependent Variable: Teachers pedagogical practices

b. Predictors: (Constant), Professional development programmes

NOTE: $p < .05$

The analysis on Table 4.24 determines if this model (which includes professional development programmes as predictor variable) was a significant predictor of the teachers' pedagogical practices. The ANOVA Table 4.24 shows

the results of $F=23.651$ with 1 and 373 degrees of freedom and F being significant at less than 0.05 level of significance. This result provides the evidence that the regression model significantly predicts the effect of professional development programmes on pedagogical practices of teachers. The regression equation established from this output may be stated as $F(1,373) = 23.651, p < .05$. The equation signifies that the model was significant. Furthermore, regression coefficient (Table 4.25) provides results on the contribution of the predictor variable (professional development programmes) to the model.

Table 4.25: Regression Coefficient for Professional Development and Pedagogical Practices

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	53.88	1.294		41.65	.000
a. Professional development	.342	.070	.244	4.86	.000

NOTE: $p < 0.05$

On Table 4.25, the regression coefficient provides information about the change in the value of the dependent variable (teachers' pedagogical practices) corresponding to the unit change in the independent variable (professional development programme). The constant (58.88) represent the y-intercept with a slope of 0.342. The regression equation established from this output could be depicted as: Teachers pedagogical practices (Y) = 58.9 + 0.34 professional

development programme (X). Where Y is the estimated value of the dependent variable and X is the value of the independent variable.

The results of the regression coefficient revealed that a unit (1) increase in principal' professional development programmes would lead to an increase in teachers' pedagogical practices by a .342 units. The regression demonstrated that the beta coefficient was significant ($b = .342, t(41.65) = 4.860, p < .05$).

4.7.2 Regression Analysis Findings for Influence of Teacher Development Programmes on Teachers' Pedagogical Practices

Simple linear regression was carried out to test whether teacher development programmes principals implement significantly influence pedagogical practices of teachers at $\alpha = .05$. The analysis result revealed that a statistically significant proportion of teachers' pedagogical practices was accounted for by principals' professional development programmes ($R^2 = .060, F(1,373) = 23.65, p < .05$). The study also found out that teacher development programmes that principals implement significantly predicts change in teachers' pedagogical practices ($\beta = .722, t(26.95) = 6.330, p < .05$). Findings of the study revealed that the effect of professional development programmes on teachers' pedagogical practices was statistically significant ($p < .05$). Based these results, the null hypothesis, (**H₀**) that professional development programmes principals implement do not significantly influence pedagogical practices of teachers in public secondary school of Bauchi state, Nigeria was rejected ($p = .000 < .05$). The alternate hypothesis, (**H_a**) that professional development programmes principals implement significantly influence pedagogical practices of teachers in public secondary school of Bauchi state, Nigeria was accepted.

The findings of this study revealed that principals' professional development programmes significantly determine improvement of teachers' pedagogical practices in public secondary schools. These findings concur with those of studies undertaken by various scholars. It has been found that, there was a positive and statistically significant relationship between professional development programmes that principals implement and teachers' pedagogical practices (Aseka, 2016; Tesfaw and Hofman, 2014; Esia-Donkoh and Ofosu-Dwamena, 2014). The implication of these findings for practice were that when principals endeavour to implement more professional development programmes in their schools, they will likely assist in fostering of teachers' pedagogical practices and consequently improve the students' academic achievement. Even though professional development programmes are not directly connected to teachers' instructions, they may equip teachers with relevant instructional skills. Teachers may be motivated through programmes like workshops and conferences to develop confidence in their work and therefore try to excel. In view of these benefits, it is pertinent for principals to facilitate programmes that foster pedagogical practices of teachers in public secondary schools.

4.8 Constraints Facing Principals' Instructional Supervision in Public Secondary Schools

This section presents data related to challenges facing principals' instructional supervision activities. To identify the major constraints facing principals' supervisory activities in public secondary schools, the following factors were measured in the study: Absence of supervision manuals in schools, Inadequate funding for supervisory activities, Insufficient time on the part of the principals,

Teachers' lack of backing for supervision in schools and Principals' poor instructional supervision skills. A synthesis of information acquired from the exhaustive review of several relevant studies revealed these factors were the common challenges facing implementation of principals' instructional supervision.

Based on the above mentioned factors, the study investigated the opinions of principals, teachers and area education officers to determine the major constraints affecting principals' instructional supervision in public secondary schools in Bauchi state. The data are presented in table 4.26.

Table 4.26: Principals' and Teachers' Response on Challenges facing principals' Instructional Supervision

Challenges	Respondents	Disagree		Neutral		Agree	
		F	%	F	%	F	%
Inadequate funding for supervisory activities	Principals	1	3.4	1	3.4	27	93.1
	Teachers	86	23.1	48	12.9	238	64.0
Non- availability of guidelines for supervision	Principals	8	27.6	1	3.4	20	69.0
	Teachers	114	30.6	49	13.2	209	56.2
Insufficient time on the part of the principals	Principals	5	17.2	3	10.4	21	72.4
	Teachers	126	33.8	55	14.7	192	51.5
Teachers do not support instructional supervision	Principals	9	31.0	3	10.3	17	58.6
	Teachers	117	31.4	56	15.0	200	53.6
Principals lack competent supervision skills	Principals	12	41.4	2	6.9	15	51.7
	Teachers	80	21.4	26	7.0	267	71.6

Inadequate Funding for Principals' Supervisory Activities

The data on table 4.26 indicates that majority of the respondent principals and teachers, 27 out of 29 and 238 out of 372 representing 93.1% and 64.0%

respectively agreed that inadequate funding for supervisory activities constitutes a hindrance to the effective implementation of principals' instructional supervision in public secondary schools. Combined percentages of teachers' and principals' response, indicates that majority of the total respondents agreed that inadequate funding was a critical challenge to principals' effective supervision in schools.

The findings of this study, therefore, suggest that inadequate funding for principals' supervisory activities negatively influenced principals' supervision and then consequently pedagogical practices of teachers were also influenced. This finding was in congruence with that of previous studies that found out inadequate funding was a major constraint to the effective implementation of principals' instructional supervision (Akinloye et al., 2014; Obiweluzo, 2013; Ekundayo et al., 2013; Berhane, 2014). The process of developing teachers requires not only the presence of the teachers to be trained but also some logistics that will enhance the training. When the principals are equipped financially, they will be able to organise workshops and sponsor teachers for conferences (Obiweluzo, 2013).

The interview schedule sought to find out the views of the Area Education Officers on the extent to which lack of funding was a challenge to implementation of principals' instructional supervision in public secondary schools. Six out of the seven respondents were harmonious on lack of funding for supervisory activities as the most unfavorable challenge confronting school-based supervision undertaken by principals.

One Area Education Officer from LGA1 echoed the common responses of the AEOs on the critical need to provide budgets for principals' instructional supervision activities in order for school-based instructional supervision process to succeed in improving teachers' pedagogical practices.

He said:

In conducting orientation programmes and school-level workshops for teachers, extra hours and working materials would be required. For teachers to attend such programmes they may be asked to remain in school after closing. Writing materials and or software will be required; sometimes an outsider resource person may be needed. Without funds, these cannot happen.

In a separate interview similar comment by another Area Education Officer from LGA 5 was noted. The Area Education Officer expressed his feelings strongly.

He commented thus:

Principals cannot send their teachers for conferences and workshops outside of the school without financial assistance. But the Ministry (referring to the Ministry of Education) does not recognize this, and so there was no budget.

In consistency with the foregoing arguments, Obiweluozo et al. (2013) assert that principals will not be able to organize orientation or in-service training for teachers without adequate funding. Similarly, a study on principals' supervision by Kedir (2011) also revealed that a lack of budget for school supervision has put a limit to its effectiveness in public secondary schools.

Lack of Guidelines for Supervision in Schools

The data on table 4.26 shows majority, 20 out of 29 (69.0%) of the principals and above half, 209 out of 372 (56.2%) of the teachers agreed that non-availability of guidelines, (handbook) for instructional supervision in schools has contributed to the problems hindering effective principals' supervision of instructional. The results show that majority of the whole respondent teachers and principals put together agreed that lack of instructional supervision handbook was affecting the effectiveness of principals' supervision.

Given this large percentage of principal and teacher respondents in affirmation, the study established that lack of instructional supervision handbook was hampering principals' effective supervision in public secondary schools in Bauchi state. In line with this result, Ahmed et al. (2013) discovered that as a result of lack of supervision handbook principals' instructional supervision was haphazard and inconsistent. Similarly, it has been observed non-availability of supervision handbook for principals had frustrated the process of teacher supervision in public secondary schools (Abebe, 2014 and Kieleko, 2017). Further, Netsanet (2014) and Kedir (2011) lamented that principals' instructional supervision lacked effective procedures due to absence of official guidelines.

The second interview question was focused on the instructional supervision guidelines (Supervision Handbook) to assist principals in conduction supervision. Responses from the participants seemed to suggest that principals in public secondary schools did not have specific supervision guidelines in their schools. A number of Area Education Officers emphasized the need for provision of well-structured guidelines (Handbooks) which have standardized

checklists for principals' instructional supervision in schools. A respondent from LGA 2 echoed the common view of the AEOs thus:

I know for past years principals have not been using any official Handbook as a guide for supervision. ...the Ministry did not provide them. My personal experience was that I arranged with the vice principals and other senior teachers how we can supervise teachers in our school. This I think has been the experience of most principals.

Insufficient Time on the part of Principals

The data on table 4.26 concerning whether inadequate time affected principals' effectiveness in supervising teachers, 21 out of 29(72.4%) of respondent principals agreed that principals lacked time for effective supervision. Also about 192 out of 373 (51.5%) of the teachers agreed that principals could not supervise instructions effectively due to inadequate time. However, a sizeable number, 126 out of 373 (37.8%) of the teachers disagreed with this. Given the results that majority of the teachers and principals agreed that principals lacked time for effective supervision, the study assumes that principals were overloaded with responsibilities. This assumption was confirmed by Mbuso (2015) whose study found that some principals performed full-time class teaching in addition to their administrative and supervisory functions. In the same vein, Bush and Middlewood (2013) and Kedir (2011) also observed that principals in secondary schools spent more time on administrative activities and much less on supervision of teaching and learning. Furthermore, studies by Obiweluozor (2013) and Defaru and Asrat (2015) revealed that principals in public secondary schools were overwhelmed with administrative and teaching load so much that they lacked time for supervision activities. The findings of present study therefore, reveals that inadequate time on the part of the principals

was hindering effective implementation of principals' instructional supervision in public secondary schools in Bauchi state.

The question whether principals have sufficient time to effectively supervise teachers or not was raised to the interviewee. All the seven respondents unanimously express the view that principals were overwhelmed by numerous responsibilities, including sometimes class teaching. The respondents felt for these reasons principals lacked time for effective supervision. Regarding the principals' workload, one of the respondents stated thus:

In some public secondary schools, principals work as full-time class teachers in addition to their management responsibilities. Principals in such situations.... And they are many; certainly, they will not have sufficient time to supervise teachers' instructions

In support of the interviewee assertion, that principals were overloaded with subjects to teach, the descriptive findings of this study revealed that principals in public secondary schools in Bauchi teach between 2-3 lessons per week (See table 4.8). These would likely affect the time for principals that have had to maintain a regular and effective check on the teachers and students activities in the school by monitoring teaching and learning in addition to the administrative functions they have to execute. The interviewees' assertion was in line with study findings by Issah (2012) and Kieleko (2017) who found that principals in public secondary schools were overloaded with lessons to teach.

The conclusion that can be drawn from the analysis of respondents' views were that majority of the respondents believed that inadequate funding and incompetent supervision skills of principals were the most critical challenges hindering effective implementation of school-based supervision. These results

concurred with findings of a study by Kedir (2011) and Obiweluzo (2013) who revealed that lack of budget for school-based supervision has frustrated principals' efforts at improving teachers' instructions in public secondary schools.

On the other hand, findings from the interview largely suggested that principals' incompetent supervision skills have seriously constrained the implementation of supervisory activities in public secondary schools, Bauchi. These results agree with those of study findings by Abebe (2014), Netsanet (2014) and Ige (2012); their studies revealed that principals' incompetent supervisory skills were a major the factors inhibiting effective instructional supervision in secondary schools.

Negative Attitude of Teachers for Supervision

The data on table 4.26 shows that 17 out of 29 (58.6%) of the principals felt that teachers do not support instructional supervision in schools. On the part of teachers also 200 out of 373 (53.6%) agreed that the negative attitude of teachers towards supervision constitute a serious challenge for principals' supervision. The results show that both respondent principals and teachers agreed that teachers' have a negative attitude towards instructional supervision. The study findings therefore revealed that teachers' negative attitude forms a constraint to effective implementation of principals' instructional supervision in publicsecondary schools in Bauchi state.

Considering the interactive and collaborative nature of instructional supervision, the tendency for it to succeed in a hostile environment is at best very minimal

(Zepeda, 2012). This assertion was confirmed by Tesfaw and Hofman (2014) when they argue that the strongest predictors of professional development are teachers' attitude towards supervisory activities in schools. In addition, Zepeda (2010) maintains that principals' instructional supervision can only influence teachers' pedagogical practices positively if good relationships exist between principals and teachers. Furthermore, Oliver (1976) asserts that the way teachers behave toward principals' instructional supervision in schools is an important element in determining the success or otherwise of the entire process. In line with the finding of this study, several other studies revealed teachers generally have negative perceptions about instructional supervision (Simbano, 2015; Ige, 2012; Buregeya, 2011; Mito and Simatwa, 2012; and Kedir, 2011; Wanzare, 2012).

Area education officers were sought to comment on the attitude of teachers towards principals' instructional supervision in public secondary schools. Five of the respondents indicated that it was a very serious challenge for principals' supervision.

A respondent from LGA 7 emphatically commented thus:

We must understand that attitude can always change. I believe the attitude of teachers towards principals' supervision will depend on the way the principals portray themselves. Principals should be accommodating, treat teachers as colleagues and practice effective communication

In this direction, Zepeda (2010) argues that with a good relationship in existence, instructional supervision can influence teachers positively. On the

same question related to teachers' attitude towards supervision, another Area Education Officer had this to say:

I believe teachers are vigilant, the moment they discover that the principal does not have the necessary skills to improve their instructions...supervision becomes another issue. They see the exercise as meaningless.

In support of the preceding assertion, it has been argued, lack of meaningful feedback, emphasis on error detection and failure of principals to engage teachers in the supervision process are commonly reported by teachers about principals' supervision in public secondary schools (Sultan, 2017).

Furthermore, commenting on teachers' attitude towards supervision of instruction, a respondent from LGA 2 narrated personal experience thus:

Personally, I have come across several teachers that were afraid of being supervised. They simply do not like to be monitored. What I came to understand with such teachers, they were poorly prepared and, so they view supervision as a fault finding exercise.

The assertion above that teachers do not like being supervised was consistent with previous research that revealed that teachers perceive supervision as fault finding activities by principals (Mbuso, 2015). Additionally, Kiamba (2011) research revealed that for fear of being penalized many teachers prepare their records hastily on hearing they will be supervised; that such teachers hardly refer to these professional records after the supervision.

Poor Supervision Skills of Principals

The data on table 4.26 related to supervision skills shows that 15 out of 29 (51.7%) of the principals agreed that principals' lack of competent supervision skills poses a challenge for effective instructional supervision. On the part of the

teachers, 267 out of 373 (71.6%) of them also agreed that principals' lack of competent skills of instructional supervision was a constraint to effective principals' supervision. This results show that majority of the total respondents believe that principals' incompetent supervision skills had negatively affected the implementation of instructional supervision in public secondary schools in Bauchi state.

The perceived ineffectiveness of teachers' pedagogical practices and the attendant dismal performance of students in national examinations in a public secondary school of Bauchi state might not be unconnected with poor principals' supervision (Aminu, 2014). Studies revealed about 60% of personnel supervising instructions in parts of Nigerian secondary schools were incompetent (Ogununu, 2000). More concern on this issue, Nwakpa (n.d. p8) decried ...“it is quite unbelievable that in the 21st century, Nigeria is still operating school inspection with non-professionals; which is staff without a degree in Educational Supervision.” The incompetence of principals at instructional supervision had negatively influence teachers' pedagogical practices in public secondary schools (Kamal, Yunus and Salomawati, 2012; Assefa, 2014; Benedict, 2013).

The study sought to explore the views of Area Education Officers on the principals' competence in implementing instructional supervision activities. The seven Area Education Officers seemed to share a common view that principals' poor supervisory skills critically hampered effectiveness of school-based supervision. One of the interviewee from LGA 3 echoed.

She expressed her opinion thus:

It is absolutely necessary that principals know very well how to handle teachers and the teaching-learning situation. I mean they should have the knowledge of what instructional supervision is all about. Supervision is conducted to assist teachers to improve instructions. This must be your focus as a principal. Many principals cannot supervise their teachers well...they need training.

Another Area Education Officers form LGAs appeared to stress the preceding comments in a different way and added that some form of supervision training should be required as prerequisite for appointment as a principal. The respondent emphasized that competent supervisory skills were critical for effective principals' supervision of instructions. Their common view was represented by one of the AEOs who stated:

Any person to be appointed as principal, he or she must be made to attend some form of instructional supervision training as a prerequisite qualification for the appointment. It is important because his primary responsibility is to supervise teachers and ensure students are taught properly. ...Lack of competent supervision is affecting the quality of teaching in our schools these days.

In support of the respondents' views on the necessity of principals' supervisory skills, Glickman (2010) contends that for any supervisory process to succeed in improving instruction, the supervisor must acquire conceptual skills, interpersonal skills, and technical skills as the prerequisite condition.

The conclusion that can be drawn from the analysis of respondents' views were that majority of the respondents believed that inadequate funding and incompetent supervision skills of principals were the most critical challenges hindering effective implementation of school-based supervision. These results concurred with findings of a study by Kedir (2011) and Obiweluozo (2013)

who revealed that lack of budget for school-based supervision has frustrated principals' efforts at improving teachers' instructions in public secondary schools.

On the other hand, findings from the interview largely suggested that principals' incompetent supervision skills have seriously constrained the implementation of supervisory activities in public secondary schools in Bauchi state. These results agree with those of study findings by Abebe (2014), Netsanet (2014) and Ige (2012); whose studies revealed that principals' incompetent supervisory skills was a major factors inhibiting effective instructional supervision in secondary schools.

Finding from the study also featured the issue of supervision Handbook prominently. Majority of the respondents agreed that supervision handbook provides an important guide for supervisory personnel. They, therefore, believe that its absence was a setback for effective principals' instructional supervision.

Concerning the attitude of teachers towards supervision, the conclusion that can be drawn from results of the interview was that teachers have a negative attitude in terms of supporting supervision in schools. Comparing the results quantitative findings, more than half, 17 out of 29 (58.6%) of the principals and more than half, 200 out of 373 (53.6%) of the teachers agreed that teachers' negative attitude has hampered instructional supervision process in public secondary schools in Bauchi state.

Another theme that emerged from the analysis of the interview was funding instructional supervision in public secondary schools. In regard to this, six out of the seven respondents were in harmony that inadequate funding was a very serious challenge to principals' instructional supervision in public secondary schools. Similarly, quantitative analysis of the data (see table 4.30) on principals' and teachers' responses revealed 238 out of 372(64%) of the teachers and a 27 out of 29 (93.1%) of the principals viewed inadequate funding for supervision as the most serious challenge.

Inadequate time on the part of principals to conduct supervision was seen as a challenge where 192 out of 373 (51.5%) agreed that principals lack time for supervision. Interviews results have also indicated that principals lacked time for supervision because they were overloaded with administrative and teaching responsibilities.

Finally, the study revealed that inadequate funding for in-school supervision was a major problem hampering effective implementation of principals' instructional supervision in public secondary schools in Bauchi state. This problem was closely followed by principals' lack of competent skills in instructional supervision due to inadequate capacity building. Another problem was the absence of instructional supervision guidelines that will provide principals with standard checklist for conducting lessons observation. Furthermore, teachers' negative attitude towards supervision and inadequacy of time on the part of the principals were also constraints to principals' supervision. Other constraints pointed out by the participants during the

interviews included corruption, poor teachers' condition of service and quality of the teachers.

4.9 Document Analysis

This section presents information related to the documents observed in this study in the 29 sampled public secondary schools in Bauchi state of Nigeria. Three each of scheme of work, records of work lesson plan, and teachers' notes of lessons were targeted for observation from each of the sampled school. In addition, the study sought to observe documented planning for monitoring of students' progress, teacher development programmes and supervision of instructions.

Table 4.27: Summary of Document Analysis

S/N	Documents	Targeted documents	Available	Percent	Signed	Percent	Valuable comments	Percent
1	Scheme of work	87	87	100	84	96.6	18	20.7
2	Lesson plan	87	79	90.8	65	74.7	15	17.2
3	Records of work	87	73	83.9	51	69.9	9	17.6
4	Lesson notes	87	45	51.7	7	15.6	0	
5	Monitoring of students' progress	29	7	24.1				
6	Teacher development programme	29	5	17.2				
7	Planned supervision	29	6	20.7				

Table 4.27 analysis showed that all 87 targeted scheme of work were available. Also, it was found that majority, 84 out of 87 (96.6%) of the scheme of work observed were endorsed by the principals; but very few, 18 out of 84 (20.7%) contained constructive comments of the principals. The result shows that 79 out of 87(90.8%) of lesson plans were available. It also indicates that majority, 65

out of 79(74.7%) of the lesson plans observed, were signed by the principals. However, very few, 15(17.2%) of the documents had constructive comments of the principals. Out of the 87 records of work targeted, 73(83.9%) were available; and 51 out of 73(69.9) were signed by the principals. Similarly, it was found that only 9 out of 51(17.7%) had valuable comments made by principals. Concerning lesson notes, the analysis on table 4.27 shows that 45 out of 87(51.7%) were available; out of which 7(15.6%) only were endorsed by the principals and none had any comments of the principals. Furthermore, the data reveals that 7 out of 29(24.1%) of the school had documented plan for monitoring students' progress; 5 out of 29(17.2%) had written programme for teacher development; while only 6 out of 29(20.7%) had written design for supervision of instructions.

The study findings revealed that most principals in public secondary schools in Bauchi state signed teachers' records without making constructive comments. It was also found out that some of the records were not endorsed by the principals. Furthermore, the study revealed that very few schools had documented planned activities for supervision of instructions, monitoring students' progress, and teacher development. The results indicated that checking teachers' lesson notes was least performed by plurality of principals. These findings imply that internal supervision of instructions in public secondary schools of Bauchi state lacked effective organisation. The findings of this study concurred with those of studies by Paul, et al. (2016) and Wanzare, (2012) who found out that instructional supervision in public secondary schools lacked consistency.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

This chapter presents, in summary, the structure of the study, the main findings, conclusion, and recommendations of the study. The purpose of this study was to investigate the extent principals implement instructional supervision and its influence on teachers' pedagogical practices in public secondary schools in the Bauchi state of Nigeria.

The specific objectives of the study include the assessment of the extent to which principals' checking of teachers' professional records influences pedagogical practices of teachers in public secondary schools. This study also aimed at the establishment of the influence of principals' monitoring of students' progress on pedagogical practices of teachers in public secondary school. Thirdly, the study examined the influence of principals' classroom observation on pedagogical practices of teachers in public secondary schools. The study also sought to find out whether professional development programmes that principals implement influence pedagogical practices of teachers in public secondary schools. Finally, the survey identifies the main challenges hindering effective implementation of principals' instructional supervision in public junior secondary schools, Bauchi state.

Leithwood's (1994) Theoretical Model for principals' supervision role guided the study. The study adopted a descriptive survey. A sample of 420 respondents comprised of 29 principals purposively selected; 384 teachers and seven area

education officers chosen by simple random sampling technique participated in the main study. Questionnaires, interview schedules, and document checklist were used to collect data. Descriptive and inferential statistics were used to analyze the quantitative data using SPSS, while the qualitative data were analyzed by thematic analysis and presented by narrations and direct quotes.

5.2 Summary of the Study Findings

5.2.1 Demographic Information

Findings on characteristics of respondents revealed that there were more male than female principals. On the other hand, the number of male teachers was just slightly above that of female teachers in public secondary schools of Bauchi state. The study found that the majority of the teachers were within the age range of thirty years old. Principals were within forty years and above, while the majority of the area education officers were between 40 to 50 years old.

On qualifications, the findings reveal that the majority of the principals were not degree holders. But the majority of the Area Education Officers had Bachelor's Degree; whereas the majority of teachers had Nigeria Certificate in Education (Diploma equivalent). According to the study findings, the majority of teachers had about five years of working experience.

The findings also revealed that the majority of principals had more than ten years of working experience. Furthermore, the majority of the principals said they had taken a course in supervision while in college. However, almost all of them indicated they have never had in-service training on instructional

supervision in their capacity as principals. In terms of preference for supervision, the results indicated that teachers' preferred school-based supervision slightly higher than external supervision

5.2.2 Supervision of Teachers' Professional Records Teachers' Pedagogical Practices

Objective One of this study sought to assess the extent to which principals' checking of teachers' professional records influences pedagogical practices of teachers in public secondary schools. The findings revealed that the majority of principals merely signed teachers' documents like lesson plans, records of work, and scheme of work without making constructive comments. This lack of thoroughness implies that principals in public secondary schools in Bauchi state do not critique teachers' professional records. Principals append their signatures merely as a routine. Documents analysis results revealed that principals did not endorse some teachers' lesson notes, records of work, and lesson plans. The findings suggest that many principals did not effectively implement supervision activities of checking teachers' professional records in public secondary schools in Bauchi state.

The results of the regression analysis revealed that there was a positive and statistically significant relationship between pedagogical practices of teachers and principals' review of teachers' professional records. Furthermore, the study found that a unit increase in principals' supervisory activities of checking teachers' records would increase the pedagogical practices of teachers. The study further revealed that principals' checking of teachers' records explained a statistically significant proportion of variation in pedagogical practices of

teachers. Given these findings, the study rejected the null hypothesis, which states that the principals' checking of teachers' records does not significantly influence teachers' pedagogical practices. The alternate hypothesis which states that principals' checking of teachers' records significantly influence teachers' pedagogical practices was accepted

5.2.3 Monitoring Students' Progress and Teachers' Pedagogical Practices

Objective two of this study sought to establish the influence of principals' monitoring of students' progress on pedagogical practices of teachers in public secondary schools. Findings of the study revealed that many principals did not check students' exercise books and assessment records regularly. Also, the majority of principals did not discuss students' progress with the individual public secondary schools in Bauchi state. The study, however, found that many principals checked students' records of attendance frequently in public secondary schools. This finding indicates that monitoring students' academic progress was not keenly implemented by many principals in public secondary schools in Bauchi state. The implication is that when principals do not closely monitor learners' performance, both teachers and students are likely to relax academic activities.

Regression analysis revealed that there was a positive and statistically significant relationship between teachers' pedagogical practices and principals' monitoring of students' progress. Additionally, the findings indicated that principals' monitoring of students' progress explained a significant proportion of variation in pedagogical practices of teachers in public secondary schools. The

study also established that an increase in principals' monitoring of students' progress would lead to increase in teachers' pedagogical practices. These results show clearly that principals monitoring of students' progress significantly influences teachers' pedagogical practices. Therefore, findings of the study confirm the rejection of the null hypothesis that principals' monitoring of students' progress does not significantly influence teachers' pedagogical practices. The alternative hypothesis that principals' monitoring of students' progress significantly influence teachers' pedagogical practices was accepted.

5.2.4 Classroom Visitation and Teachers' Pedagogical Practices

Objective three of this study sought to examine the influence of principals' classroom visitation on pedagogical practices of teachers in public secondary schools in Bauchi state. The study findings revealed that principals conduct lesson observation more often by unscheduled visits (walk-throughs) than by formal arrangements. The findings further revealed that pre-observation and post-observation conferences were least performed by many principals in public secondary schools in Bauchi state. Therefore, study findings suggest that many principals do not organize procedural classroom observation in which the teachers were incorporated into the planning and execution of the exercise. The study indicated that classroom observation was manipulated by principals.

Regression analysis was used to determine the influence of principals' classroom visitation on pedagogical practices of the teacher. The results revealed that there was a positive and statistically significant relationship between teachers' pedagogical practices and principals' classroom observation.

Furthermore, the findings indicated that a significant proportion of variability in pedagogical practices of teachers in public secondary schools was explained by principals' classroom observation. The study also showed that increase in principals' activities of classroom observation would lead to an increase of teachers' pedagogical practices. The findings suggest that effective classroom visitation by principals is likely to enhance teachers' pedagogical practices. Based on these results, the null hypothesis, which says that principals' classroom observation does not significantly influence teachers' pedagogical practices, was rejected. The alternative hypothesis, which says that principals' classroom observation significantly influence teachers' pedagogical practices, was accepted.

5.2.5 Influence of Professional Development programmes implemented by Principals on Teachers' Pedagogical Practices

Objective four of this study sought to find out whether professional development programmes that principals implement influence pedagogical practices of teachers in public secondary schools. The descriptive findings of the survey reveal that many principals in public secondary schools in Bauchi state do not organize workshops and peer mentoring for teachers in their schools. The document analysis also revealed that in many schools, there were no records of planned or implemented teacher development programmes. The findings of this study, therefore, suggest that many principals did not adequately implemented teacher development programmes in public secondary schools in Bauchi state.

Regression analysis was used to determine the influence of professional development programmes on pedagogical practices of teachers. The results showed that the relationship between pedagogical practices of teachers and teacher professional development programmes that principals implement was weak, but positive and statistically significant. The results further revealed that when principals increase activities of professional development by the pedagogical practices of teachers would also increase. Additionally, the study findings showed that teacher professional development programmes explained a significant dimension of variation in pedagogical practices of teachers. These results confirm that professional development programmes significantly influence transformation of teachers' pedagogical practices. Based on this analysis, the null hypothesis which says that professional development programmes principals implement do not significantly influence teachers' pedagogical practices, was rejected. The alternative hypothesis which says that professional development programmes principals implement significantly influence teachers' pedagogical practices was accepted.

5.2.6 Challenges Affecting Principals' Instructional Supervision

Objective five of this study aimed to investigate the main challenges hindering effective implementation of principals' instructional supervision in public secondary schools, in Bauchi state. Both descriptive and qualitative analysis results indicated that inadequate funding was a significant hindrance to effective implementation of teacher development programmes by principals in public secondary schools. The study further revealed that many principals did not train in instructional supervision. Lack of instructional supervision handbook was

another constraint the study showed. Also factors identified as constraints to adequate supervision are the teachers' negative attitude towards supervision and short time on the part of the principals. Other obstacles highlighted by participants include corruption, poor teachers' condition of service, and quality of pre-service training of teachers.

5.3 Conclusions

Based on the findings, this study resulted in the following main conclusions:

1. Many principals did not effectively implement the checking of teachers' professional records in public secondary schools in Bauchi. The principals' checking of teachers' professional records had a minimal, but statistically significantly influence on pedagogical practices of teachers in public secondary schools. These pieces of evidence suggest that when principals intensify activities of reviewing teachers' professional records, pedagogical practices of the teachers would improve. The study, therefore, rejects the null hypothesis that principals' supervision of teachers' professional records does not influence teachers' pedagogical practices. The alternative hypothesis that principals' checking of teachers' records significantly influence pedagogical practices of teachers in public secondary schools was accepted.

2. Principals' monitoring of students' academic progress was not consistent in most public secondary schools in Bauchi state. The study findings revealed that regular principals' monitoring of students' progress would produce significant effect on teachers' pedagogical practices. Further, it was found that a statistically significant proportion of variation in pedagogical practices of

teachers in public secondary schools was explained by principals' monitoring of students' progress. These findings infer that when principals expand supervision activities of monitoring students' progress, pedagogical practices of teachers will be enhanced. Based on the foregoing evidence, the study rejected the null hypothesis that principals' monitoring of students' progress does not influence teachers' pedagogical practices. Therefore, the alternate hypothesis that principals' monitoring of students' progress has a significant effect on pedagogical practices of teachers in public secondary schools was accepted.

3. Principals' supervisory activities of classroom visitation in public secondary schools lacked collaboration between teachers and principals. The teachers who are supposed to benefit from the exercise were not involved in the process. However, the study indicated that relationship between teachers' pedagogical practices and principals' classroom visitation was positive and statistically significant. The study also found that principals' classroom visitation statistically explained a considerable proportion of variance in pedagogical practices of teachers in public secondary schools. Thus the findings of the study signify principals' classroom visitation predicted the variability in teachers' pedagogical practices. There was evidence that as classroom visitation improves, teachers' pedagogical practices also augmented. Because of this evidence, the null hypothesis that principals' classroom visitation does not influence teachers' pedagogical practices was rejected. The alternate hypothesis that principals' classroom observation significantly influences pedagogical practices of teachers in public secondary schools was therefore accepted.

4. Most principals did not effectively implement the school-level workshops and peer mentoring programmes in public secondary schools. The study revealed that the relationship between professional development programmes that principals facilitate and pedagogical practices of teachers was positive and statistically significant. Additionally, it discovered that considerable proportion of variation in pedagogical practices of teachers in public secondary schools was defined by teacher professional development programmes implemented by principals. These findings imply that, as principals' professional development activities increased, pedagogical practices of teacher improved. Based on these findings, the study rejected the null hypothesis that professional development programmes that principals facilitate do not influence teachers' pedagogical practices. Hence, the alternate hypothesis that professional development programmes implemented by principals significantly influence pedagogical practices of teachers in public secondary schools was accepted.

5. Inadequate funding for school-based teacher development programmes such as workshops and principals' lack of competent supervision skills were significant challenges hampering effective implementation of principals' instructional supervision in public secondary schools in Bauchi state. Other constraints revealed by the study include the negative attitude of teachers towards supervision and lack of supervision guidelines (Handbook) in schools.

5.4 Recommendations

The discoveries of this study have implications for policy as well practice. Based on the study findings, the researcher recommended the following for improvement of the processes of principals' instructional supervision:

1. The study findings revealed that many principals signed teachers' records without reading the contents. Because of this, the study recommended that when supervising teachers' professional records, principals should endeavour to peruse the contents and make constructive comments before they append signatures. By doing that principals may spot disparity between planned lessons and scheme of work. Where poorly prepared lessons are detected, the teacher should improve it before teaching the students. This strategy would make it clearer to the teachers that the principal was always aware of what they teach students. Consequently, the strategy may likely lead to the enhancement of teachers' pedagogical practices and improved students' academic performance.
2. Principals should intensify supervisory activities of monitoring students' progress in terms of reviewing students' exercise books to compare with the scheme of work and lesson plans. Principals should also check students' assessment records to determine their performance concerning teachers' instructions. Furthermore, principals should endeavour to discuss with individual teachers about the progress of their students. These interactions will enable the principals to obtain in-depth information about the students' learning. Above all, for monitoring students' progress to be more successful, principals should organize it as a collaborative activity involving teachers, parents, and the principals themselves. The vice-principals and senior masters could be engaged

to assist the principals in undertaking the tasks of checking students' assessment records and exercise books.

3. The study revealed that most principals did not involve teachers at any stage of their lesson observation process. Based on this finding, the researcher recommended that principals should collaborate with the teachers to develop a comprehensive plan for classroom visitation in their schools. The arrangements should indicate the procedures, instructional technology requirements, and objectives of the exercise. This process will assist in addressing the problem of inconsistent nature of principals' classroom visitation in which teachers were not involved in all stages. Besides, principals should ensure that every classroom observation conducted was accompanied by immediate feedback to the teacher. Essentially, for effective lesson observation, principals should adhere to the principles of clinical supervision – characterized by pre-observation conference; note-taking during observation and holding a post-observation conference. Principals should make the process of organizing instructional supervision more collaborative and participatory to accommodate teachers' views.

4. Findings of the study revealed that many principals in public secondary schools in Bauchi state did not organize workshops and peer mentoring for teachers in their schools. The study also found that most schools had no records of teacher development programmes. Concerning teacher professional development, principals should look inward for resources and localized the programme. For instance, qualified and experienced teachers could be engaged to facilitate school-level workshops at little or no cost. In other words, principals should endeavour to utilize their veteran teachers and highly qualified

staff as resource persons. Teaching demonstrations to improve novice teachers or illustrations of new teaching methods can be handled by the principals or other experienced teachers in the school. Concerning peer mentoring, the study recommends that principals should use veteran teachers to develop inexperienced ones through the well-organized pairing of mentor and mentee. Ideally, principals should make teacher mentoring a prominent feature of their schools. Furthermore, principals should carefully design teacher development programmes sessionally. They should ensure that all records of implemented teacher development activities are secured for future reference.

5. On the hand, the study found that inadequate funding was limiting the implementation of some supervisory roles of the principals. Given this, the study recommends that principals' supervisory activities, particularly the teacher development programmes should be adequately funded by the Ministry of Education. Findings of the study also revealed that Instructional Supervision Manuals were not available in most public secondary schools of Bauchi state. The researcher recommends that the Ministry of Education Bauchi state should provide principals with copies of the National Policy on Education and National Education Quality Assurance Handbook. The study also recommends that the Ministry of Education should make it a policy that teacher mentoring programmes exist in all public secondary schools of Bauchi state. Finally, the researcher recommends that capacity building should be provided for principals to improve their instructional supervision skills.

5.4.1 Recommendations for Further Research

- i.** The topic should be researched using the qualitative method for further insight into the influence of principals' instructional supervision on teachers' pedagogical practices in public secondary schools
- ii.** The study should be replicated in other states of Nigeria to establish a broader generalization of the study findings
- iii.** Further research should be undertaken to determine the impact of adequate funding on the effectiveness of principals' instructional supervision in public secondary schools.

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APPENDICES

APPENDIX I: QUESTIONNAIRE FOR PRINCIPALS

Kenyatta University School of Education
Department of Educational Management, Policy and
Curriculum Studies

INSTRUCTIONAL SUPERVISION QUESTIONNAIRE

The primary purpose of this questionnaire is to collect relevant data to assess the current practices of instructional supervision in public junior secondary schools of Bauchi state. The researcher is a Ph.D. student from Kenyatta University, Nairobi. It is anticipated that the findings of the study will be used to improve supervisory practices in Junior Secondary Schools based on the needs and expectations of the Teachers, Principals, and Supervisors. An honest and accurate response to the questions is highly appreciated as it will go a long way in enhancing the successful accomplishment of this research. All responses will be considered confidential and will be used for the purpose of this study only.

Thank you so much for your anticipated cooperation.

SECTION A: General Information

INSTRUCTION

- a. Do not indicate any name on the questionnaire.
- b. Write your response briefly to the open-ended questionnaire.
- c. Mark 'X' in the bracket for your response and write a short answer in the blank space where applicable

(i) Gender: a. Male [] b. Female []

(ii) Highest Qualification:

(iii) Age: **a.** 21–30 years [] **b.** 31 – 40 years [] **c.** 41 – 50 years []
d. 51 years and above []

(iv) Work experience in your present post: **a.** 1 – 5yrs [] **b.** 6 – 10yrs []
c. 11 – 15yrs [] **d.** above15 years. []

(v) Have you attended specific training on instructional supervision as a principal? **a.** Yes [] **b.** No []

(vi) How many lessons do you teach per week? **a.** 1-2 [] **b.** 2-3 [] **c.** 3-4 [] **d.** None []

(vii) Who do you normally delegate to assist you in supervising teachers?.....

SECTION B: The following are statements related to **Instructional**

Supervision practices in schools. Please read through each statement carefully and respond appropriately.

Instruction: Use ‘X’ in the box to indicate your response

Strongly Disagree [SD] 1, Disagree [D] 2, Neutral [N] 3, Agree [A] 4, Strongly Agree [SA] 5

Instructional Supervision		SCALE				
		1	2	3	4	5
N		SD	D	N	A	SA
	Reviewing Teachers’ Records					
1	I check teachers’ scheme of work every beginning of the term					
2	I check teachers' lesson plans weekly					
3	I check teachers’ records of work every week					
4	I review teachers’ notes of lessons weekly					
	Monitoring Students’ Progress					
5	I check students’ exercise books weekly					
6	I check students' attendance records every week					
7	I discuss students’ progress with the individual teacher weekly					
8	I review students’ assessment records monthly					
	Classroom Visitation					
9	I normally discuss with teachers prior to their lesson observation					
10	I normally gather data during lesson observation					
11	I often discuss the data collected during lesson observation with the teacher concerned					
12	I often undertake unscheduled visits to observe teachers at work					

SECTION C: The following are statements related to the **Professional Development of Teachers** in schools. Please go through each statement carefully and respond appropriately.

INSTRUCTION: Use ‘X’ in the box under your response

Strongly Disagree [SD] 1, Disagree [D] 2, Neutral [N] 3, Agree [A] 4, Strongly Agree [SA]

		SCALE				
		1	2	3	4	5
		SD	D	N	A	SA
	Professional Development of Teachers					
1	I always conduct an orientation for newly posted teachers in your school					
2	I organize a workshop at regular intervals to enhance teachers’ instructional skills					
3	I facilitate in-service education programme for my teachers to obtain higher qualification					
4	I organize Peer Mentoring by which colleagues assist one another to improve their instructional skills					

SECTION D: The following are statements related to **Challenges Facing**

Instructional Supervision in schools.

INSTRUCTION: Use ‘X’ in the box for your response to indicate the level of your agreement/ disagreement/ indecision as regards your opinion on challenges facing instruction supervision

Strongly Disagree [SD]= 1, Disagree [D]= 2, Neutral [N]= 3, Agree [A]= 4, Strongly Agree [SA]= 5

Challenges Facing Principals' Instructional Supervision		SCALE				
		1	2	3	4	5
Challenges of Principals' Instructional Supervision		SD	D	N	A	SA
1	Inadequate funding for principals' supervision					
2	Lack of supervision manuals in schools					
3	Insufficient time on the part of the principals					
4	Lack of co-operation from teachers					
5	Lack of capacity building for principals to improve skills of instructional supervision					

Any further comment?

.....

.....

.....

APPENDIX II: QUESTIONNAIRE FOR TEACHERS

Kenyatta University School of Education Department of Educational Management, Policy and Curriculum Studies

INSTRUCTIONAL SUPERVISION QUESTIONNAIRE

The main purpose of these questionnaires is to collect relevant data to assess the current practices and challenges of Instructional Supervision in public junior secondary schools of Bauchi state. The researcher is a Ph.D. Student from Kenyatta University, Nairobi. It is hoped that the findings of the study will be used to improve supervisory practices in secondary schools based on the needs and expectations of the teachers, principals, and supervisors. An accurate and honest response to the questions is highly appreciated as it will go a long way in enhancing the successful accomplishment of this research. Please, be assured that your response will remain as confidential and will utilize only for this research.

Thanks a lot for your anticipated cooperation.

INSTRUCTION:

- a.** Do not indicate names on the questionnaire, please.
- b.** Write your response briefly for the open-ended questions.
- c.** Use 'X' in the bracket for your response

SECTION A: DEMOGRAPHIC INFORMATION

- (i)** Gender: **a.** Male { } **b.** Female { }
- (ii)** Age bracket in years **a.** 21-30 { } **b.** 31-40 { } **c.** 41-50 { } **d.** 51 and above { }
- (iii)** Work Experience in years: **a.** 1 – 5 { } **b.** 6 – 10 { } **c.** 11 – 15 { }
d. above 15 { }

(iv) Qualification: **a.** National Diploma { } **b.** Nigeria Certificate in Education { } **d.** Bachelor's Degree { } **g.** Master's Degree { }
e. Others, specify

(v) Approximately, numbers of students I teach per class are about: **a.**
30-40{ } **b.** 41-50{ } **c.** 51-60 { } **d.** 61-70{ }

(vi) I would normally prefer to be supervised by

a. Internal Supervisor (Principal or Deputy Principal) { }

b. External Supervisor (Designated Supervisors) { }

c. Both **a** & **b** equally { }

SECTION D: The following are statements related to **Pedagogical Practices of Teachers** in schools. Please go through each of the statements carefully and follow the instruction to indicate your opinion.

INSTRUCTION: in the box for your response to indicate the level of your agreement/disagreement/ indecision as regards your opinion.

Strongly Disagree [SD] 1, Disagree [D] 2, Neutral [N] 3, Agree [A] 4, Strongly Agree [SA] 5

SECTION B: The following are statements related to **Instructional Supervision Practices** in schools. Please go through each of the statements carefully and follow the instruction to indicate your opinion.

INSTRUCTION: Use 'X' to indicate the level of your agreement/disagreement/ indecision as regards your experience.

Strongly Disagree [SD] 1, Disagree [D] 2, Neutral [N] 3, Agree [A] 4, Strongly Agree [SA] 5

Instructional Supervision Practices		SCALE				
		1 SD	2 D	3 N	4 A	5 SA
N						
1	The principal check my scheme of work every term					
2	My principal check students' exercise book regularly					
3	The principal check students' attendance every week					
4	The principal talks typically to me personally about the progress of my students.					
5	My principal often demand to see my students' assessment records monthly					
6	My principal check lesson plans weekly					
7	The principal often comes into my class unexpectedly during lesson					
8	The principal always discusses with prior to my lesson observation, so we plan together.					
9	At the end of lesson observation, the principal provides me with feedback about my teaching					
10	My principal records information during lesson observation					
11	My principal checks records of work weekly					
12	Principal checks teachers' lesson notes weekly					

SECTION C: The following are statements related to **Professional Development of teachers**

INSTRUCTION: Use 'X' to indicate the level of your agreement/disagreement/ indecision as regards your opinion.

Strongly Disagree [SD] 1, Disagree [D] 2, Neutral [N] 3, Agree [A] 4, Strongly Agree [SA] 5

Professional Development of Teachers		SCALE				
		1 SD	2 D	3 N	4 A	5 SA
1	When I came newly, I received an orientation in this school					
2	In this school, the principal organize a workshop for the teachers on regular basis					
3	Principal assist teachers to go for in-service programme to obtain higher qualifications					
4	The principal organize peer mentoring among teachers in this school					

SECTION D: The following are statements related to **Challenges of Instructional Supervision** in schools.

INSTRUCTION: Use ‘X’ in the box for your response to indicate the level of your agreement/disagreement/ indecision as regards your opinion.

Strongly Disagree [SD] 1, Disagree [D] 2, Neutral [N] 3, Agree [A] 4, Strongly Agree [SA] 5

		SCALE				
		1	2	3	4	5
Challenges hindering principals’ Instructional Supervision		SD	D	N	A	SA
1	Inadequate funding for supervisory activities					
2	Lack of standard guidelines for supervision					
3	Principal has numerous administrative tasks					
4	Teachers do not appreciate the rationale for supervision					
5	Lack competent skills of instructional supervision					

SECTION E: The following are statements related to **pedagogical practices of teachers** in schools. Please go through each of the statements carefully and follow the instruction to indicate your response.

INSTRUCTION: Use ‘X’ to indicate your choice

Rarely [1] Sometimes [2] Always [3]

Pedagogical Practices of Teachers		SCALE		
		Rarely	Sometimes	Always
Item	Statement			
1	I write lesson plan for every lesson I teach			
2	I write termly scheme of work for all my subjects			
3	I write lesson notes for every subject I teach			
4	I mark students exercise books daily			
5	I give students test monthly in all subjects			
6	I improvise teaching aids for my lesson			
7	I give students home work on weekly basis			
8	I use different teaching methods in my teaching			
9	I put my students to work in small groups			

APPENDIX III: INTERVIEW SCHEDULE FOR AREA EDUCATION OFFICERS

Kenyatta University, School of Education

Department of Educational Management, Policy and Curriculum Studies

Questions related to Challenges facing principals' instructional supervision

Generally, studies have shown that factors posing challenges to supervision of instruction in schools include: teachers' negative attitude, principals' lack of time and poor supervision skills, absence of standard guidelines for supervision and inadequate funding for supervisory activities.

1. From your experience as a former principal, can you prioritize these challenges?
2. What can you say concerning availability of supervision manuals in public secondary schools?
3. How would you comment regarding availability of capacity building to improve principals' competence for effective supervision in school?
4. What would say about the attitude of teachers towards principals' instructional supervision in public secondary school?
5. From experience, how would you describe the availability of time for principals to implement instructional supervision activities?
6. What other challenges do you think principals face in implementing instructional supervision in public secondary school?

APPENDIX IV: DOCUMENT ANALYSIS GUIDE

Kenyatta University, School of Education

Department of Educational Management, Policy and Curriculum Studies

The Documents Analysis Checklist

N	Documents	Details focused	No	Yes
1	Scheme of work	i. Available ii. Signed by supervisor iii. Constructive Evaluation		
2	Lesson plan	i. Available ii. Signed by supervisor iii. Constructive Evaluation		
3	Records of work	i. Available ii. Signed by supervisor iii. Constructive Evaluation		
4	Teachers' notes of lesson	i. Available ii. Signed by supervisor iii. Constructive Evaluation		
5	Supervision Handbook	Available		
6	Records on monitoring students' progress in the school	Available		
7	Records on workshop for teachers	Available		

APPENDIX V: BUDGET ESTIMATE FOR THE PROGRAMME

Tasks	Amount in NGN
Proposal Writing	100000
Piloting Study Instrument	29000
Data Collection Activities	230000
Activities of data analysis	110000
Thesis writing and secretarial services	200000
Airfare to Nigeria for data collection	400000
Research allowance for research assistants	190000
Submission of thesis proposal for examination	40000
Stationary (Tape recorders, A4 sheets, Cassettes, etc.)	40000
Incidentals	15000
Total	1489000

APPENDIX: VI TIME FRAME FOR THE STUDY

DATE	ACTIVITY/SESSION	RESPONSIBILITIES
24 th May-08 th July 2016	Development of Concept Paper	Student
09 th July-16 th July 2016	An oral defense of Concept Paper in Class	Student and Supervisor
6 th July-16 th August 2016	Correction and Final Submission of Concept Paper	Student
15 th Oct. 2016-12 th Feb. 2017	Development of Proposal	Student
8 th March-16 th April 2017	Submission of Proposal for Assessment To the Department	Student and Supervisors
17 th April -31 st May 2017	Approval of Proposal by Graduate School Board	Chair and Dean of Graduate School
14 th June-28 th June 2017	Obtaining Relevant Research Permits	Student
7 th July- 28 th July 2017	Piloting of Research Instruments	Student
6 th August-8 th Nov. 2017	Data Collection	Student
15 th Nov. -14 th Dec. 2017	Data Analysis	Student
6 th Jan. -21 st April 2018	Thesis Writing	Student
28 th April. 2 nd June 2018	Submission of Summary, Conclusions, and Recommendations for Vetting	Department
3 rd June-, 28 July 2018	Forwarding of thesis for final review	Department
28 th July -8 th August 2018	Forwarding of the thesis External Examination	Graduate School
9 th August- 30 th August 2018	Making of presentation at the Graduate School	Student
3 rd - 27 th Sept, 2018	Submitting a Ph.D. Thesis finally	Student, Supervisors, Chair & Dean, School of Education

APPENDIX: VI TIME FRAME FOR THE STUDY

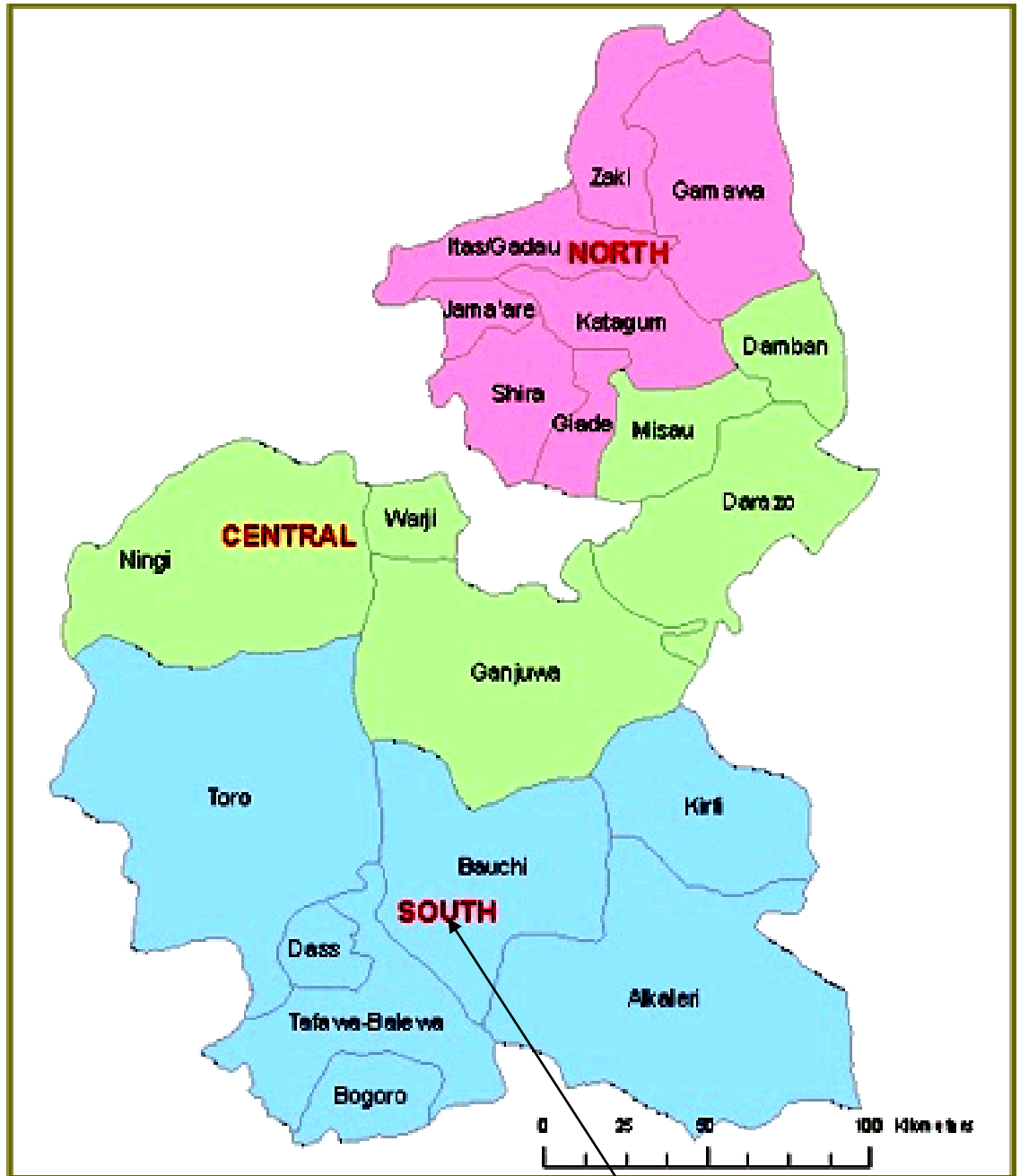
DATE	ACTIVITY/SESSION	RESPONSIBILITIES
24 th May-08 th July 2016	Development of Concept Paper	Student
09 th July-16 th July 2016	An oral defense of Concept Paper in Class	Student and Supervisor
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9 th August- 30 th August 2018	Making of presentation at the Graduate School	Student
3 rd - 27 th Sept, 2018	Submitting Ph.D. Thesis finally	Student, Supervisors, Chair & Dean, School of Education

APPENDIX VII: MAP OF NIGERIA SHOWING BAUCHI STATE



Bauchi State

APPENDIX VIII: MAP OF THE STUDY LOCATION



Map of Bauchi state showing the study area, Bauchi South comprising Alkaleri LGA, Bauchi LGA, Bogoro LGA, Dass LGA, Kirfi LGA, Tafawabalewa LGA, and Toro LGA

**APPENDIX IX: RESEARCH AUTHORIZATION FROM GRADUATE
SCHOOL, KENYATTA UNIVERSITY**



KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke

Website: www.ku.ac.ke

OUR REF: E83F/CTY/28755/14

The Honourable Commissioner,
Bauchi State
Ministry of Education, Kobi Street
BAUCHI

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 57530

Date: 16th February, 2018

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR MR. GARBA SALEH REG. NO E83F/CTY/28755/14

I write to introduce **Mr. Saleh** who is a Postgraduate Student of this University. He is registered for Ph.D. Degree programme in the Department of Educational Management policy & Curriculum Studies in the School of Education.

Mr. Saleh intends to conduct research for a Ph.D. thesis entitled, "Principal's Instructional Supervision and Its Influence on Pedagogical Practices of Teachers in Public Junior Secondary Schools in Bauchi State, Nigeria"

Any assistance given will be highly appreciated.

Yours faithfully,

A circular purple ink stamp from Kenyatta University Graduate School. The outer ring contains the text "KENYATTA UNIVERSITY" at the top and "GRADUATE SCHOOL" at the bottom. The center of the stamp contains the date "16 FEB 2018" and a signature. The signature is written in blue ink and appears to be "MRS. LUCY N. MBAABU".

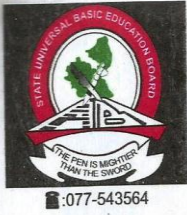
MRS. LUCY N. MBAABU
FOR: DEAN, GRADUATE SCHOOL

HI/cao


**APPENDIX X: DATA COLLECTION PERMISSION FROM STATE
UNIVERSAL BASIC EDUCATION BOARD, BAUCHI**

SECRET

**BAUCHI STATE OF NIGERIA
STATE UNIVERSAL BASIC EDUCATION BOARD, BAUCHI**



☎ :077-543564



OFFICE:
Ran Road,
Near Awalah Round-About,
P.M.B. 0109, Bauchi
E-mail: basubeb2007@yahoo.com
website: www.basubeb.com

Our Ref: REF: NO BA/SUBEB/ADM/400/T.I

Your Ref: _____

Date: 20th March, 2018.

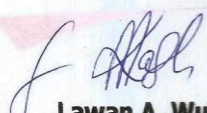
District Education Officers,
J SS Principal and Teachers.

RESEARCH AUTHORIZATION FOR SALEH GARBA E83F/CTY/28755/2014

I write to introduce Mr. Saleh Garba who is a PhD candidate from Kenyatta University, Nairobi.

Mr. Saleh Garba intends to conduct a study for PhD thesis entitled 'Principal's Instructional Supervision and Its Influence on Pedagogical Practices of Teachers in Public Junior Secondary Schools in Bauchi State, Nigeria.' He has been granted permission to collect data in the study area.

Give him the necessary co-operation. Please.



Lawan A. Wunti
For: Executive Chairman

SECRET

APPENDIX XI: DATA ASSUMPTION FOR PROFESSIONAL RECORDS AND TEACHERS' PEDAGOGICAL PRACTICES

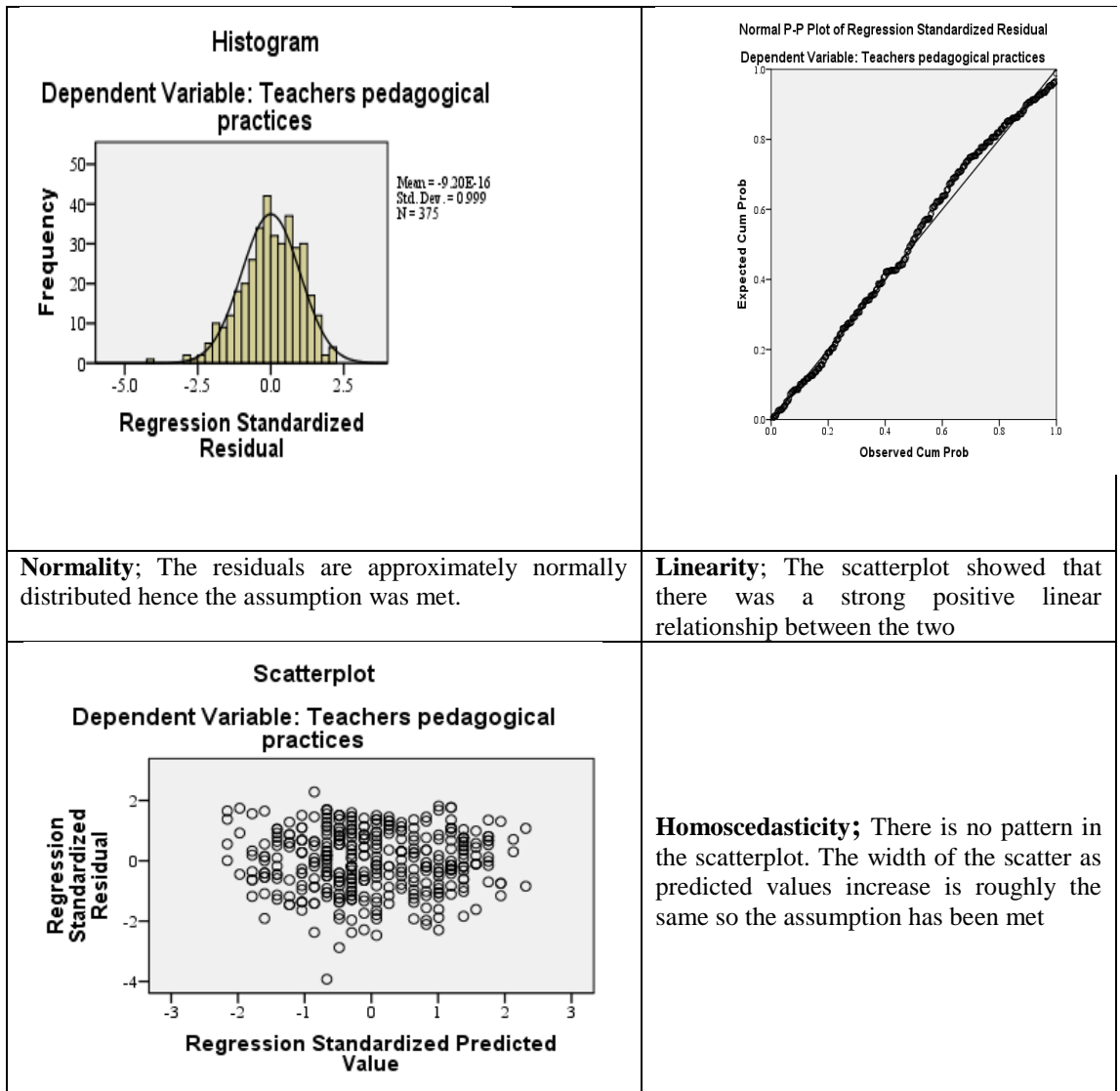
Tests for Independence/Auto-correlation

One of the assumptions of regression is that the observations are independent. If observations are made over time, it is likely that successive observations are related. If there is no autocorrelation (where subsequent observations are related), the Durbin-Watson statistic should be between 1.5 and 2.5. Since the Durbin-Watson statistic is 2.03 which are between 1.5 and 2.5 we conclude that the data is not auto-correlated.

Test for multicollinearity

Multicollinearity is an unacceptably high level of inter-correlation among the independents, such that the effects of the independents cannot be separated. Under multicollinearity estimates were unbiased but assessments of the relative strength of the explanatory variables and their joint effect were unreliable. Since the variance inflation factor ($VIF=1.0 < 5.0$) then we conclude that multicollinearity was not a problem.

Test for normality, Linearity, and Homoscedasticity is shown in the figure below



APPENDIX XII: DATA ASSUMPTION FOR MONITORING STUDENTS' PROGRESS AND TEACHERS' PEDAGOGICAL PRACTICES

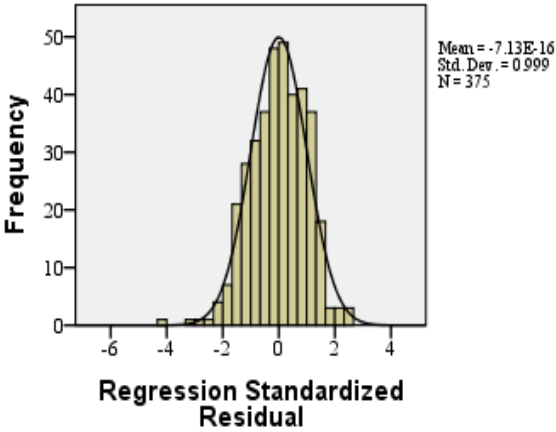
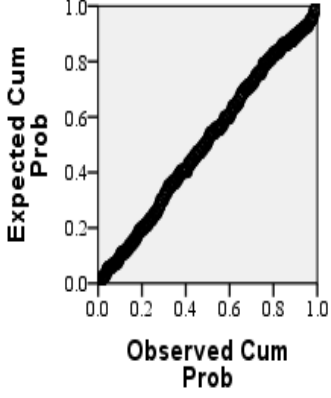
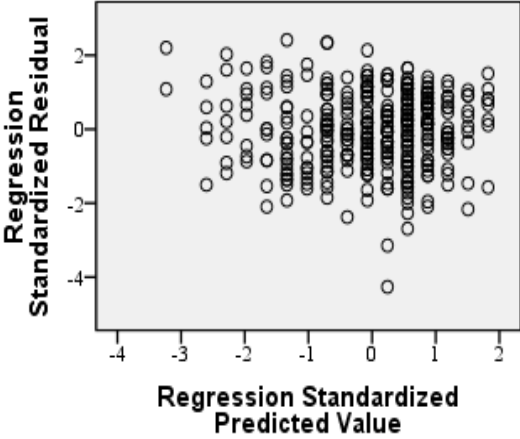
Tests for independence/auto-correlation

One of the assumptions of regression is that the observations are independent. If observations are made over time, it is likely that successive observations are related. If there is no autocorrelation (where subsequent observations are related), the Durbin-Watson statistic should be between 1.5 and 2.5. Since the Durbin-Watson statistic is 2.00 which are between 1.5 and 2.5 we conclude that the data is not auto-correlated.

Test for multicollinearity

Multicollinearity is an unacceptably high level of inter-correlation among the independents, such that the effects of the independents cannot be separated. Under multicollinearity estimates were unbiased but assessments of the relative strength of the explanatory variables and their joint effect were unreliable. Since the variance inflation factor ($VIF=1.0 < 5.0$) then we conclude that multicollinearity was not a problem.

Test for normality, Linearity, and homoscedasticity

<p style="text-align: center;">Histogram</p> <p style="text-align: center;">Dependent Variable: Teachers pedagogical practices</p>  <p style="text-align: center;">Regression Standardized Residual</p>	<p style="text-align: center;">Normal P-P Plot of Regression Standardized Residual</p> <p style="text-align: center;">Dependent Variable: Teachers pedagogical practices</p> 
<p>Normality; The residuals are approximately normally distributed hence the assumption was met.</p>	<p>Linearity; The scatterplot showed that there was a strong positive linear relationship between the two</p>
<p style="text-align: center;">Scatterplot</p> <p style="text-align: center;">Dependent Variable: Teachers pedagogical practices</p>  <p style="text-align: center;">Regression Standardized Residual</p> <p style="text-align: center;">Regression Standardized Predicted Value</p>	<p>Homoscedasticity; There is no pattern in the scatterplot. The width of the scatter as predicted values increase is roughly the same so the assumption has been met</p>

APPENDIX XIII: DATA ASSUMPTION TEST FOR CLASSROOM OBSERVATION AND TEACHERS' PEDAGOGICAL PRACTICES

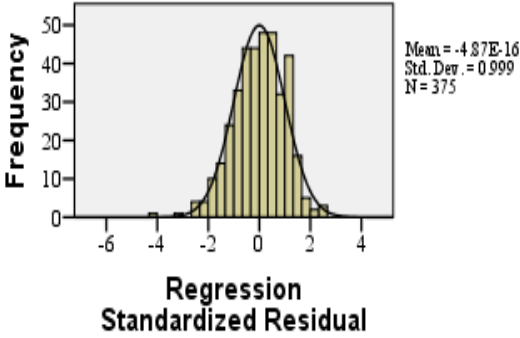
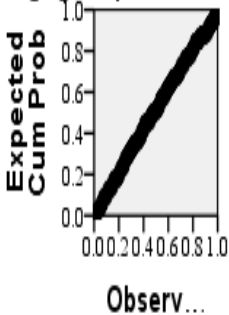
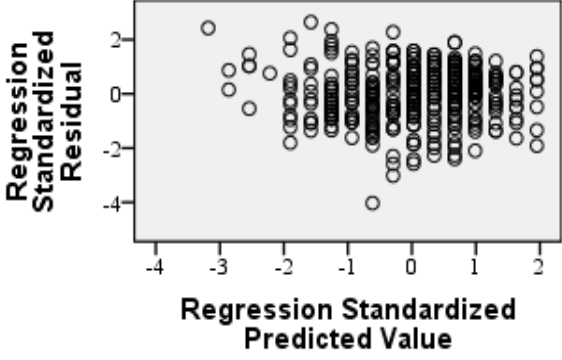
Tests for independence/auto-correlation

One of the assumptions of regression is that the observations are independent. If observations are made over time, it is likely that successive observations are related. If there is no autocorrelation (where subsequent observations are related), the Durbin-Watson statistic should be between 1.5 and 2.5. Since the Durbin-Watson statistic is 2.01 which is between 1.5 and 2.5 we conclude that the data is not auto-correlated.

Test for multicollinearity

Multicollinearity is an unacceptably high level of inter-correlation among the independents, such that the effects of the independents cannot be separated. Under multicollinearity estimates were unbiased but assessments of the relative strength of the explanatory variables and their joint effect were unreliable. Since the variance inflation factor ($VIF=1.0 < 5.0$) then we conclude that multicollinearity was not a problem.

Test for Normality, Linearity, and Homoscedasticity

<p style="text-align: center;">Histogram</p> <p style="text-align: center;">Dependent Variable: Teachers pedagogical practices</p>  <p style="text-align: center;">Regression Standardized Residual</p>	<p style="text-align: center;">Normal P-P Plot of Regression Standardized Residual</p> <p style="text-align: center;">Dependent Variable: Teachers pedagogical practices</p> 
<p>Normality; The residuals are approximately normally distributed hence the assumption was met.</p>	<p>Linearity; The scatterplot showed that there was a strong positive linear relationship between the two</p>
<p style="text-align: center;">Scatterplot</p> <p style="text-align: center;">Dependent Variable: Teachers pedagogical practices</p>  <p style="text-align: center;">Regression Standardized Residual</p> <p style="text-align: center;">Regression Standardized Predicted Value</p>	<p>Homoscedasticity; There is no pattern in the scatterplot. The width of the scatter as predicted values increase is roughly the same so the assumption has been met</p>

APPENDIX XIV: DATA ASSUMPTION FOR

PROFESSIONAL DEVELOPMENT AND TEACHERS' PEDAGOGICAL PRACTICES

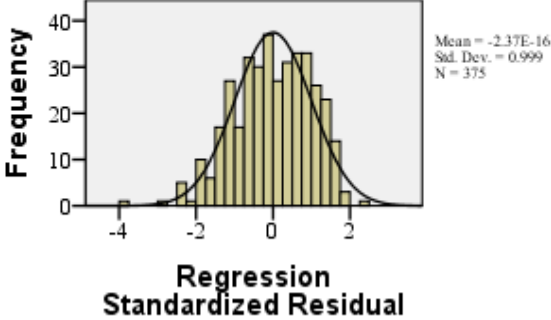
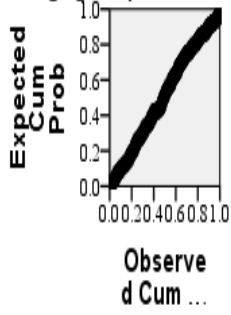
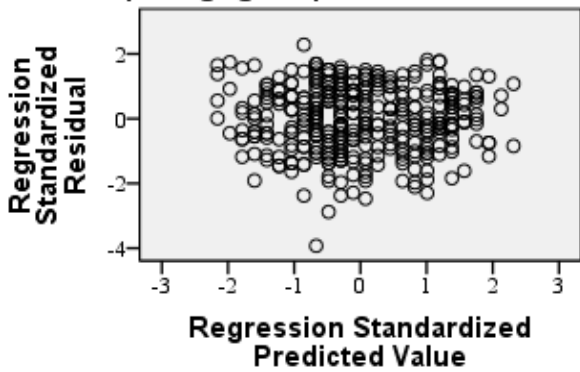
Tests for independence/auto-correlation

One of the assumptions of regression is that the observations are independent. If observations are made over time, it is likely that successive observations are related. If there is no autocorrelation (where subsequent observations are related), the Durbin-Watson statistic should be between 1.5 and 2.5. Since the Durbin-Watson statistic is 2.03 which is between 1.5 and 2.5 we conclude that the data is not auto-correlated.

Test for multicollinearity

Multicollinearity is an unacceptably high level of inter-correlation among the independents, such that the effects of the independents cannot be separated. Under multicollinearity estimates were unbiased but assessments of the relative strength of the explanatory variables and their joint effect were unreliable. Since the variance inflation factor ($VIF=1.0 < 5.0$) then we conclude that multicollinearity was not a problem.

Test for normality, Linearity, and Homoscedasticity

<p style="text-align: center;">Histogram</p> <p style="text-align: center;">Dependent Variable: Teachers pedagogical practices</p>  <p style="text-align: right; font-size: small;">Mean = -2.37E-16 Std. Dev. = 0.999 N = 375</p>	<p style="text-align: center;">Normal P-P Plot of Regression Standardized Residual</p> <p style="text-align: center;">Dependent Variable: Teachers pedagogical practices</p> 
<p>Normality; The residuals are approximately normally distributed hence the assumption was met.</p>	<p>Linearity; The scatterplot showed that there was a strong positive linear relationship between the two</p>
<p style="text-align: center;">Scatterplot</p> <p style="text-align: center;">Dependent Variable: Teachers pedagogical practices</p> 	<p>Homoscedasticity; There is no pattern in the scatterplot. The width of the scatter as predicted values increase is roughly the same so the assumption has been met</p>

APPENDIX XV: DOCUMENT OBSERVATION IN THE SAMPLED SCHOOLS

Schools	Observation	Scheme of work (3)	Lesson plan (3)	Records of work (3)	Lesson notes (3)	Supervision manual	monitoring students	Teacher development	Supervision programme
School 1	Available	3	3	3	2	0	0	0	+
	Signed	3	3	2	0	0	-	-	-
	Remarked	1	2	0	0	0	-	-	-
School 2	Available	3	3	3	2	0	+	0	0
	Signed	3	2	2	0	0	-	-	-
	Remarked	0	0	0	0	0	-	-	-
School 3	Available	3	3	3	3	0	0	0	+
	Signed	3	3	2	2	0	-	-	-
	Remarked	0	1	1	0	0	-	-	-
School 4	Available	3	3	3	2	0	+	0	0
	Signed	3	2	2	0	0	-	-	-
	Remarked	2	0	0	0	0	-	-	-
School 5	Available	3	3	3	1	0	0	0	0
	Signed	3	3	1	0	0	-	-	-
	Remarked	1	1	0		0	-	-	-
School 6	Available	3	3	3	1	0	0	0	0
	Signed	3	2	2	0	0	-	-	-
	Remarked	0	0	1	0	0	-	-	-
School 7	Available	3	3	2	2	0	0	0	0
	Signed	3	3	1	0	0	-	-	-
	Remarked	1	1	0	0	0	-	-	-
School 8	Available	3	2	2	1	0	+	0	0
	Signed	3	2	1	0	-	-	-	-

	Remarked	2	0	0	0	-	-	-	-
School 9	Available	3	3	3	1	0	+	0	0
	Signed	3	3	2	0	-	-	-	-
	Remarked	0	2	0	0	-	-	-	-
School 10	Available	3	3	2	1	0	+	0	+
	Signed	3	3	2	0	-	-	-	-
	Remarked	0	1	0	0	-	-	-	-
School 11	Available	3	3	3	1	0	0	0	0
	Signed	3	3	3	0	-	-	-	-
	Remarked	0	0	2	0	-	-	-	-
School 12	Available	3	3	3	1	+	0	0	0
	Signed	3	3	2	0	-	-	-	-
	Remarked	0	1	0	0	-	-	-	-
School 13	Available	3	3	2	2	0	0	0	+
	Signed	2	2	1	0	-	-	-	-
	Remarked	1	0	0	0	-	-	-	-
School 14	Available	3	3	2	2	0	0	0	0
	Signed	3	1	2	0	-	-	-	-
	Remarked	0	0	0	0	-	-	-	-
School 15	Available	3	3	2	3	0	0	0	0
	Signed	3	3	2	1	-	-	-	-
	Remarked	0	0	0	0	-	-	-	-
School 16	Available	3	3	3	1	0	0	0	0
	Signed	3	3	3	0	-	-	-	-
	Remarked	2	1	0	0	-	-	-	-
School 17	Available	3	3	2	1	+	0	0	0
	Signed	3	2	2	0	-	-	-	-

	Remarkd	0	0	0	0	-	-	-	-
School 18	Available	3	3	3	1	0	0	0	+
	Signed	2	3	3	0	-	-	-	-
	Remarkd	0	0	0	0	-	-	-	-
School 19	Available	3	3	2	1	0	0	0	0
	Signed	3	3	2	0	-	-	-	-
	Remarkd	1	1	0	0	-	-	-	-
School 20	Available	3	3	3	2	0	0	0	0
	Signed	3	3	1	2	-	-	-	-
	Remarkd	1	1	0	0	0	-	-	-
School 21	Available	3	1	3	1	0	0	0	0
	Signed	3	0	0	0	-	-	-	-
	Remarkd	0	0	0	0	-	-	-	-
School 22	Available	3	3	3	2	0	+	+	0
	Signed	2	3	3	2	-	-	-	-
	Remarkd	0	1	2	0	-	-	-	-
School 23	Available	3	3	2	2	+	0	0	0
	Signed	3	2	2	0	-	-	-	-
	Remarkd	2	0	0	0	-	-	-	-
School 24	Available	3	3	2	2	+	+	+	0
	Signed	3	2	2	-	-	-	-	-
	Remarkd	0	0	0	0	-	-	-	-
School 25	Available	3	1	2	2	+	0	+	0
	Signed	3	1	2	0	-	-	-	-
	Remarkd	1	0	0	0	-	-	-	-
School 26	Available	3	2	3	2	+	0	0	0
	Signed	3	2	0	0	-	-	-	-

	Remarked	1	1	0	0	-	-	-	-
School 27	Available	3	2	2	1	0	0	0	+
	Signed	3	2	0	0	-	-	-	-
	Remarked	0	0	0	0	-	-	-	-
School 28	Available	3	3	2	1	+	+	+	0
	Signed	3	1	2	0	-	-	-	-
	Remarked	0	0	1	0	-	-	-	-
School 29	Available	3	2	2	1	0	0	0	0
	Signed	3	0	2	0	-	-	-	-
	Remarked	2	0	2	0	-	-	-	-

The study observed availability of teachers' records and principals' endorsement and comments in records of work, lesson plans, scheme of work, and lesson notes. The study targeted three each (amounting to 87) of the above mentioned records from the 29 public secondary schools that participated in the study. On the other hand, the research sought to examine the availability of supervision manual, documents on monitoring of students' progress, teacher development and supervision of instructions programmes.

APPENDIX XVI: SAMPLING SCHOOLS AND TEACHERS

Since schools were unevenly spread in the 7 Local Government Areas in the study locale, Stratified Sampling Techniques was used to ensure that schools and teachers in each LGA were represented in the study sample in the proportion to their numbers in the study population. In this case schools were stratified based on 7 local government areas in Bauchi South geopolitical Zone. Table below shows the strata with the population of schools and teachers in each stratum.

Table 1: The strata, Population of Schools and Teachers in each Stratum

s/n	Stratum (LGA)	No. of Schools	No. of Teachers
1	Alkaleri	38	359
2	Bauchi	60	1031
3	Bogoro	36	493
4	Dass	18	327
5	Kirfi	17	156
6	Tafawabalewa	62	798
7	Toro	54	671
Total		285	3836

Population of schools: 285; determined sample size: 29(10%) of 285 public secondary schools.

Population of teachers: 3836; determined sample size: 384(10%) of 3836 teachers

Since it was found that the population of schools in the study locale is 285 and a sample size of 29 was required across the seven strata, the sampling fraction (f) should be calculated first. The sampling fraction makes possible the likelihood

that any member of the population could be selected as a sample (Orodho et al., 2016)

For schools, the sampling fraction is described by the equation:

$$f = 29/285 = 0.1017$$

Similarly, for teachers given their population as 3836, and determined sample size 384, the sampling fraction is thus: $f = 384/3836 = 0.1001$

Therefore, the subpopulation of schools and teachers in each stratum (LGA) is multiplied by the sampling fraction to determine the proportionate sample schools and teachers for the study (Orodho, 2016;)

Table 3.3: Stratification of Schools

Strata	Sub-population	Stratified Sample
LEA 1 $n_1 = n.p_1 =$	29(38/285)	4
LEA 2 $n_2 = n.p_2 =$	29(60/285)	6
LEA 3 $n_3 = n.p_3 =$	29(36/285)	4
LEA 4 $n_4 = n.p_4 =$	29(18/285)	2
LEA 5 $n_5 = n.p_5 =$	29(17/ 285)	2
LEA 6 $n_6 = n.p_6 =$	29(62/ 285)	6
LEA 7 $n_7 = n.p_7 =$	29(54/ 285)	5
TOTAL	285x 0.1017	29

Table 2: Sampled Schools and Teachers from Sampling Fraction

S/N	LGA	Schools	Sample	Teachers	Sample
1	Alkaleri	38 x 0.1017	4	359 x 0.1001	36
2	Bauchi	60 x 0.1017	6	1031x 0.1001	103
3	Bogoro	36 x 0.1017	4	493 x 0.1001	49
4	Dass	18 x 0.1017	2	327 x 0.1001	33
5	Kirfi	17 x 0.1017	2	156 x 0.1001	16
6	T/Balewa	62 x 0.1017	6	798 x 0.1001	80
7	Toro	54 x 0.1017	5	671 x 0.1001	67
Total			29		384

Simple random sampling, (lottery technique) was utilized in selecting schools to represent each stratum in the study

Thereafter, equal allocation method of stratified sampling was employed to determine the number of teachers to be selected from each school in a given stratum (LGA). The table below depicts the selected schools, population of their teachers and sampled teachers.

Table 3: Equal Allocation of Teachers in Selected Schools

S/N	LGA & JSS	Teachers in each selected school	Sampled
I	Alkaleri:		
1.	JSS A	13	9
2.	JSS B	11	9
3.	JSS C	17	9
4.	JSS D	14	9
TOTAL			36
II	Bauchi LGA	No of Teachers	Sampled
1.	JSS A	25	17

2.	JSS B	23	17
3.	JSS C	25	17
4.	JSS D	22	17
5.	JSS E	46	18
6.	JSS F	29	17
TOTOL			103
III	Bogoro LGA	No of Teachers	Sampled
1.	JSS A	18	12
2.	JSS B	25	13
3.	JSS C	17	12
4.	JSS D	15	12
TOTOL			49
IV	Dass LGA	No of Teachers	Sampled
1	JSS A	25	16
2	JSS B	28	17
TOTOL			33
V	KIRFI LGA	No of Teachers	Sampled
1	JSS A	17	8
2	JSS B	12	8
TOTOL			16
VI	TAFAWA BALEWA LGA	No of Teachers	Sampled
1	JSS A	17	13
2	JSS B	20	13
3	JSS C	18	13
4	JSS D	32	14
5	JSS E	22	14
6	JSS F	16	13

TOTOL		80	
VII	TORO LGA	No of Teachers	Sampled
1	JSS A	52	15
2	JSS B	24	13
3	JSS C	24	13
4	JSS D	22	13
5	JSS E	16	13
TOTOL		67	

Finally, simple random sampling, (lottery technique) was utilized in each school to sample teachers for the study.