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PRINCIPALS' MANAGEMENT OF DISRUPTIVE INNOVATIONS IN FIVE LOCAL GOVERNMENT AREAS OF KOGI STATE, NIGERIA

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Abstract:
This study investigated the principals' management of disruptive innovations for teaching in public secondary schools in five local government areas in Kogi state. Two research questions and two hypotheses were formulated to guide the study. The descriptive survey research design was adopted. The population was made up of 200 principals both junior and senior secondary schools in five local government areas of Kogi state. The multi-stage stratified random sampling technique through balloting was used to draw the sample size of 135 principals representing 67.50%. The questionnaire titled Principals' Management of Disruptive Innovations Questionnaire (PMDIQ). A reliability coefficient of 0.81 was obtained using Cronbach Alpha Statistics, mean and weighted mean were used to answer the research questions while z-test was used to test the hypotheses at 0.05 alpha level of significance. The study concluded that the role of the principal in managing innovation in public secondary schools in five local government areas in Kogi state is very vital such as being a content initiator, process initiator, mediator and a squashier. There should be provision of instructional materials, teachers with good skills, better classroom management and early inspection of lesson. Computer base examination, the use of CCTV and biometric are ways of managing disruptive innovations in public schools in Kogi state especially in the five local government areas. Finally, there is no significant difference between the mean rating of male and female principal on the principals' management of disruptive innovations for lesson planning. Also, there is no significant difference between the mean rating of male and female principal on the ways of managing disruptive innovations in the conduct of examinations in public secondary schools in the five local government areas on Kogi state.

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Keywords: principal, disruptive innovation, education, effective teaching, management.

1. Introduction

Innovations are used to describe the alteration or modifications in the structure or technology or institutions and in the way organization's personnel behave. Innovations can either be sustaining or disruptive. According to business dictionary, innovation is the process of translating an idea or invention into good or services that creates value or for which customers will pay or an application of better solutions that meet new requirements for existing market needs. In another words, the technologies that allowed a business improve incrementally its operations in a predictable timeframe. While disruptive innovation is a term in the field of business administration which refers to an innovation that creates a new market and value network and eventually disrupts an existing market and value network, displacing established market leading firms, products and alliances. For example, fuel injection for gasoline engines which displaced carburetors. Autonomous vehicles like automated cars and drones that could operate and self-drive in many situations using advanced sensors such as Lidar and other systems of communications from machines, and also the invention of 3D printing.

With constantly increasing performance expectations, the educational environment is undoubtedly experiencing unprecedented disruptive innovations that require strategic management. The role of principals in today's secondary school demands greater attention. In Kogi state of Nigeria, especially in these five local government area, people are becoming more conscious of their children education than it was in the past and this has generated different interests in the operations of the secondary school system. Parents and Guardians want to ensure the extent to which their wards' schools are achieving the aim and objectives for which they are established in the light of constant and continuous changes and innovations. Consequently, to deliver appreciable results and to remain relevant educationally in the light of changes and innovations; administrators (principals) are required to broaden their functionality to cover innovations management. This innovation management implies that the principals should at all times be adequately informed, prepared, decisive, assertive, tactful and dynamic to innovation and the needs of the society through the educational system.

According to Horn (2010), disruptive innovation is an innovation that transforms an existing sector or creates a new one by introducing simplicity, convenience and affordability where the product or service was complicated, expensive and inaccessible such as artificial intelligence that is exhibited by computers and other machines, medical innovations (vaccines that were not there before, DNA testing, cancer screening through protein biomarker analysis).

Disruption takes several forms and may not all be negative in nature. The introduction of a new technology can disrupt traditional means of getting a job done like advanced oil and exploration recovery, renewable electricity, renewable energy.

Also, students talking out of tone can disrupt the class, moving from the use of chalkboard to marker-board or projector, use of manual typewriter to the use of laptop computers is disruptive in nature. However, the disruptive factor stops progress and creates complications that someone must manage in order to get things moving in the right direction.

Education can be defined as a process of socialization through which a willing individual is taught what is agreeable with the inherent values needed for survival in the society are passed on. In other words, Education is the process of facilitating learning or the acquisition of knowledge skills, values, beliefs and habits. According to Okeke et al in Okoroma (2007), Educational administration is the process of bringing man and materials together for effective and functional teaching and learning in school. Effective teaching is the teaching in which the students are able to accept, comprehend perfectly and utilize the information passed across by the teacher. For effective teaching to be carried out in the right order, instructional materials are necessary and these materials need to be innovative and disruptive ones like clips, charts, animations etc. because they tend to improve on existing thereby making learning effective and lasting achieving its aims.

Effective teaching is not only about the introduction of technology that may be disruptive but also good ability to manage these disruptive innovations in the right direction. In keeping with the innovations to effect lasting changes, the educational system is depended on those who manage the delivery process, who at the secondary school level is the principal. To guarantee their viability and capacity to deliver, the principals as manager need to assume the role of strategic partners with a central aim to generate support towards the achievement of the educational goals.

1.1. Statement of the Problem

The secondary education system in Kogi State has been characterized with too slow response to advances in technology resulting to urgent calls for the re-invention and subsequently management of a new teaching profession whose members are both male and female with experience and less experience in their field of endeavour found in both the rural and urban areas should be prepared to anticipate, accept and celebrate positive innovations in school management. The study investigates the principals' management of disruptive innovations for teaching in Kogi State public secondary schools with particular references to five local government areas. These local governments are Yagba West, East Yagba, Mopa-Amuro, Kabba-Bunu and Ijumu. The researcher was motivated to undertake this study due to:

a) Poor lesson planning and delivery, conduct of examinations etc.
b) Poor infrastructure,
c) Necessary managerial skills needed;
d) Slow response to technological advancements.

These problems mentioned above are anchored on the fact that in today's dynamic educational environment, innovations which can either be sustainable or

disruptive are constant issues which had placed tasks of managing the various integration and implementation processes on the principals as the manager.

1.2. Objectives of the Study

1. This is to identify and ascertain the ways of managing disruptive innovations for lesson planning.
2. Identify and manage the various disruptive innovations in the conduct of examination.

1.3. Research Questions and Hypotheses

Two research questions and two hypotheses were formulated to guide this study.

1.3.1. Research Questions

1. What are the ways of managing disruptive innovations for lesson planning in the secondary schools in five local government areas in Kogi State?
2. What are ways of managing disruptive innovations in the conduct of examinations in secondary schools in five local government areas in Kogi State?

1.3.2. Hypotheses

H_{01}: There is no significant difference between the mean rating of male and female secondary school principals on the management of disruptive innovations for lesson planning in public secondary schools in five local government areas in Kogi State.

H_{02}: There is no significant difference between the mean rating of the male and female principals on the ways of managing disruptive innovations in the conduct of examinations in public secondary schools in five local government areas in Kogi State.

1.4. Literature Review

According to Clayton Christensen's theory (1977), innovation can be grouped into two (2) categories- Sustained Innovation and Disruptive Innovation. Sustained innovations are those innovations that improve an established technology to meet the needs of its established customer base. Disruptive innovations are innovations that can cause transformation in an existing sector possibly creating a new sector through the introduction of new components which were not available beforehand (Horn, 2010).

1.4.1. Concept of Disruptive Innovation

The theory of disruptive innovation is the powerful way of thinking about innovation driven growth. Innovation can be referred to as radical changes in the thinking processes, products or institutions. It could be any effort intended to help and linked to performance and growth through improvement in efficiency, productivity, quality, competitive positioning towards the achievement of an organizational goal.

1.4.2. Benefits of Innovation

a) This leads to having more efficient and effective work processes.
b) Saves time and money.
c) Increases customer satisfaction.
d) Compliance with legislation and possible tax benefit.
e) It drives sales and results.

1.4.3. Concept of Effective Teaching

Effective teaching is more than just the successful transference of knowledge and skills. Effective teaching enables a clear enthusiastic and effective student learning. Effective teaching ensures that this surface approach to learning is replaced by deeper, student driven approaches to learning that analyses, develop, create and demonstrate understanding. Students need to initiate learning and maintain engagement during learning in their development as independent life-long learners.

1.4.4. Concept of Management

The management work can be divided into four basic functions of management-planning, organizing, directing and controlling.

Planning is the determination of objectives and formulation of plans, strategies, programs, policies, procedures and standards needed to achieve the desired organization objectives. To implement the plans, there must be some organizational structure. Organizing is the process of developing a structure among people, functions, and physical facilities to execute the plans and achieve stated objectives. The function of a manager is that of directing, stimulating and motivating people in the organization to undertake willingly the desired actions as per predetermined plans and objectives. Motivation is an integral part of direction to assure directed result. Controlling is to assure directed actions as per plans and objectives. Controlling incorporates the establishment standard measurement and comparison of actual results against the standard and necessary corrective action to remove deviations from the plan.

Disruptive innovations in teaching and learning: disruptive innovation most commonly describes how certain new technologies have caused radical changes in behaviour in the society. They don't support the current way of doing things rather create a new niche by challenging the status quo and the assumptions supporting it. Sustaining innovations on the other hand, helps us to do things better within the existing intellectual and behavioural frameworks, they tend to provide incremental improvements to the way we do things- the higher resolution camera versus the smart phone that allows instant sharing of photos, events and recordings.

In the word of Lennox (2009), current trends in education require a shift from the teacher's accountability for student learning to a more collaborative participative teacher/ student's relationship for learning achievement. Even the classroom environment in the 21st century demands resemblance of an active workshop with

various activities and levels of sound depending on the kind of work being done and no longer the passively silent Classroom.

1.4.5. Principal as an Innovation Agent

The innovation agent brings about the effectiveness of communication among the individuals and groups involved in the innovation envisioned. He or she links members of an organization to some larger organization or some source of ideas and materials. He/She could be an individual or people who catalyse and take up the responsibilities for managing innovations. Mackey in Okorie (2012) respectively identified the different stance and functions of a change (innovation) agent as a catalyst; a solution-giver; a resource linker or a process helper as adaptive functions. However, Cole (2002) observed that, management of fellow human is one of the complex and crucial duties within an organization. This is because the people to be managed are thinking beings with diverse interests, views, ideas and intentions. Thus, the principal has the greater tasks of making sure that he thinks ahead of his staff and students.

As an innovation agent, the principal major tasks are first, the achievement of goal and secondly, the maintenance of the organization through the co-ordination of both human and material resources. This goal attainment task requires that the principal engage in various types of managerial activities such as rational decision making, planning, coordinating, and evaluating programs and activities. While organizational maintenance activities include functions and processes relating to staff and student morale, satisfaction, discipline, allocation of materials and facilities etc.

The principal is tasked with the responsibility of keeping up with continuous organizational innovations initiatives to maintain relevance. The change (innovation) agent role of the principals as identified by Okorie (2002) includes the following:

a) The principal as a content initiator: The principals' role as a content initiator is to be able to bring about the existence of a new practice or introduction of a new idea.
b) The principal as a process initiator to serve as a stimulator, facilitator and a planner.
c) The principal as a Mediator playing a political role by becoming a public relations officer between teachers, students, parents and government.
d) The principal as a squasher to deal with the prevention of negative things that could affect the school system.

1.4.6. Managing Disruptive Innovations for Lesson Planning

Good lesson planning is paramount to the process of teaching and learning. This is because a lesson plan is the instructor's compass to what the students need from a lesson and how it will be done effectively during the time allocated. Ossat (2009) opined that lesson plan in the classroom situation should not be underrated for the following reasons:

a) Lesson plan ensures a systematic presentation and logical summary of the lesson.
b) A good lesson plan provides an ideal teaching and learning environment that enhances self-confidence and promotes subject mastery.
c) A good lesson plan helps the teacher to select and applied the best method through a careful reasoning
d) A good lesson plan is a good evaluator of the lesson in terms of its objectives.
e) A good lesson plan to a large extent promotes effective coverage of the scheme of work.
f) Lesson plan helps the teacher to achieve effective guidance and delivery.

However, it is of a great benefit to understand that it is only a good lesson plan for effective teaching in a well-controlled classroom that can make the learning out-come possible and this can't only be done just by maintaining a laid down rule or status quo but also by variety. Lesson planning has experienced different innovations which have altered the traditional method of lesson planning (teacher-centered) to the student centered as opined by Ossat (2013).

1.4.7. Empirical Review

Nzekwe (2010) investigated the Administrative Behaviour of Principals and Teachers' Commitment to the delivery of quality education in Orlu Local Government in lmo State. A sample size of 200 teachers was used from the total population of 420 teachers (principals inclusive) from Orlu Local Government Area of Imo State. This is a descriptive research design. The data obtained were analyzed using the Pearson's product moment correlation coefficient, while mean and standard deviation were used to answer the research questions. The statistical difference was set at $P<0.05$ level of significance which was also used to test the hypotheses. The result obtained revealed that there is significant relationship between the Principals' Level of Democratic Approach to Management and Teachers' Commitment to the Delivery of Quality Education in Orlu Local Government Area of Imo State. Based on the findings, the researcher recommended that democratic leadership style/behaviour be adopted by the principals in all the schools in Orlu Local Government Area of lmo State. And the government through the ministry of Education should drum it into the ears of all the appointed Principals in the school system and if any Principal flouts the order, he or she should be sanctioned. Inspectors of education should be sent to schools for effective supervision to ascertain the level of teachers commitments to their work, where they are not committed adequate motivation should be used to rekindle their interest in order to ensure efficiency.

2. Method

2.1. Research Design

A descriptive survey research design was adopted for this study.

2.2. Population of the Study

The population was made up of 200 principals of both senior and junior secondary schools in five local government areas in Kogi State.

2.3. Sample and Sampling Techniques

The sample size for the study was made up of 135 principals, representing 67.05% of the total population. The multi-stage stratified random sampling technique through balloting was used to draw the sample, reflecting a proportional representation of male and female; urban and rural; experienced and less experienced principals in five local government areas in Kogi State public secondary schools.

2.4. Instrument for Data Collection

The primary instrument used to collect data for this study is a structured questionnaire titled 'Principals' Management of Disruptive Innovations Questionnaire, (PMDIQ). It is made up of items designed to generate information relevant to the problem under investigation.

The questionnaire was divided into two sections – A and B. Section a sought demographic data such as sex, years of experience and location. Section B contains a list of items divided into four sections – A, B, C and D that elicited answers relating to the management of disruptive innovations for teaching.

2.5. Reliability of Instrument

In order to obtain reliability index of the instrument, the researcher administered the instrument to twenty (20) principals who were not part of the sample. From the result of the administration, inter-item reliability was determined using Cronbach Alpha. A reliability index of 0.81 was established.

2.6. Method of Data Analysis

The data arising from the instrument was analysed using the mean and weighted mean to answer the research questions. The criterion mean was determined thus;

Strongly Agree	(SA)	--	4 points
Agree	(A)	--	3 points
Disagree	(D)	--	2 points
Strongly Disagree	(SD)	--	1 point

That is: $\frac{4+3+2+1}{4} = \frac{10}{4} = 2.5$

Any mean of 2.5 and above was accepted (agreed) while those below 2.5 were regarded as negative (not agreed). The respondents will be required to thick against the items as they perceive them. z- test statistics was used to test the hypotheses at 0.05 alpha level.

3. Result

3.1. Research Question 1

What are the ways of managing disruptive innovations for lesson planning in the Secondary school level in five local government areas of Kogi State?

Table 1: Opinions of principals on the ways of managing disruptive innovations for lesson planning

S/N	Items	Male principals N= 85 $\bar{x}1$	Female principals N=50 $\bar{x}2$	Weighted mean N=135 $\bar{x}1\bar{x}2$	Remarks
1	Early inspection of lesson plan by the principal before lesson delivery to check incorporation of disruptive innovations will enhance teaching and learning.	3.55	3.52	3.54	Agreed
2	Constant guidance and support of the designed materials like (chats, flip, animations and clip art) is necessary for teaching and learning.	3.59	3.62	3.59	Agreed
3	Encouraging Online Learning Environment as an innovation has made lesson plan more capturing aiding effective teaching.	3.51	3.54	3.52	Agreed
4	Ensuring the inclusion of the learning styles in the preparation of lesson plan aids in achieving teaching and learning objectives.	3.64	3.64	3.64	Agreed
5	Provision of good online instructional materials which are a kind of disruptive innovations aid in the preparation of good lesson plan.	3.69	3.80	3.75	Agreed
6	Implementation of the incorporation of instructional design guidelines in the preparation of lesson plan aid teaching and learning.	3.60	3.64	3.62	Agreed
7	Regulation of media elements in lesson plan enables easier transition from Conventional method to Teaching Knowledge Test (TKT) method of lesson plan.	3.64	3.60	3.62	Agreed
8	Adequate provision of instructional materials for the teachers aid teaching.	3.58	3.58	3.58	Agreed
9	Provision of equable instructional material aids lesson teaching and learning.	3.56	3.66	3.61	Agreed
10	Veteran knowledge of instructional materials abets teaching and learning.	3.61	3.60	3.61	Agreed
	Aggregate mean	3.60	3.62		High

From the data in Table 1, the items 1-10 had their weighted mean scores above the criterion mean of 2.5. This shows that the male and female principals both agree that

early inspection of lesson plan, constant guidance and support of the designed materials, encouraging online learning, ensuring the inclusion of the learning styles, provision of good online instructional materials, provision of equitable and veteran knowledge of instructional materials were strategies of managing disruptive innovations for lesson planning in public secondary schools in five local government areas of Kogi State.

Table 2: Opinions of principals on the ways of managing disruptive innovations for lesson planning

	Male Principals =85						Female Principals =50						$\bar{x}1\bar{x}2$
	SA	A	D	SD	$\bar{x}$	SD	SA	A	D	SD	$\bar{x}$	SD	2
1	52	28	5	0	3.55	0.60	31	15	3	1	3.52	0.70	3.54
2	50	35	0	0	3.59	0.49	30	20	0	0	3.60	0.49	3.59
3	44	40	1	0	3.51	0.52	27	23	0	0	3.54	0.50	3.52
4	55	29	1	0	3.64	0.50	32	18	0	0	3.64	0.48	3.64
5	59	26	0	0	3.69	0.46	40	10	0	0	3.80	0.4	3.75
6	56	23	6	0	3.60	0.62	32	18	0	0	3.64	0.48	3.62
7	56	27	2	0	3.64	0.53	30	20	0	0	3.60	0.49	3.62
8	51	32	2	0	3.58	0.54	29	21	0	0	3.58	0.49	3.58
9	50	33	2	0	3.56	0.54	33	17	0	0	3.66	0.47	3.61
10	54	29	2	0	3.61	0.53	30	20	0	0	3.60	0.49	3.61
					3.60	0.52					3.62	0.51	

Test for Hypothesis H01: There is no significant difference between the mean rating of male and female secondary school principals on the management of disruptive innovations for lesson planning in public secondary schools in five local government areas in Kogi State.

Table 3. z-test difference between male and female principals on the management of disruptive innovations for lesson planning

Variables	N	$\bar{x}$	SD	Df	z-calc	z-crit	Decision
Male principal	85	3.60	0.62	133	0.22	1.96	Not significant
Female principals	50	3.62	0.51				

Zcal = 0.22

The z-calculated value of 0.22 is less than the z critical value of 1.96 at a degree of freedom of 198 at 0.05 level of significance. Hence, the null hypothesis is accepted, indicating that there is no significant difference between the mean ratings of male and female principals on the principals in the management of disruptive innovations for lesson planning.

3.2. Research Question 2

What are ways of managing disruptive innovations in the conduct of examinations in secondary schools in five local government areas in Kogi state?

Table 4: Opinions of principals on the ways of managing disruptive innovations for conduct of examinations

S/N	Managing Disruptive Innovation for Examination Conduct	Male principals N= 85 $\bar{x}1$	Female principals N= 50 $\bar{x}2$	Weighted mean N=135 $\bar{x}1$ $\bar{x}2$	Remarks
11	Biometrics, a disruptive innovation as a means of identification of individuals has reduced the height of impersonation in examinations.	3.61	3.58	3.60	Agreed
12	CCTV Cameras as a disruptive innovation have a good way of monitoring examination to reduce malpractices.	3.80	3.62	3.71	Agreed
13	Human (a conventional method) and (CCTV a disruptive innovation) should be used simultaneously.	2.99	3.54	3.76	Agreed
14	Count down timers' disruptive innovation is best for time consciousness in examination conduct.	3.49	3.42	3.46	Agreed
15	Different Paper types like A, B, C of a particular subject (disruptive innovations) have aided independency of candidates as against the conventional method of the same paper type questions for all candidates.	3.55	3.54	3.55	Agreed
16	Paper types have aided genuineness of examination questions.	3.60	3.60	3.60	Agreed
17	Use of CCTV has heightened students' concentration and independence.	3.80	3.61	3.71	Agreed
18	Use of disruptive innovation like Paper type and the Computer Base Examinations etc. have made examination testing more authentic.	3.48	3.56	3.52	Agreed
19	Computer Based Examinations a disruptive innovation as against Paper and Pencil Based Examination has curbed examination excesses.	3.50	3.54	3.52	Agreed
	Aggregate mean	3.57	3.54		High

Table 4 analyses of data shows that items 11-19 had all weighted mean scores above 2.5. This means that the use of biometrics, close circuit television (CCTV) cameras, count-down timers, different paper types like A, B, C and computer based examination were some of the strategies used in the management of disruptive innovations in the conduct of examinations in public secondary schools in five local government areas in Kogi State.

Table 5: Opinions of principals on the ways of managing disruptive innovations for conduct of examinations

	Male Principals N = 85						Female Principals N = 50						$\frac{\bar{x}1\bar{x}2}{2}$
	SA	A	D	SD	$\bar{x}$	SD	SA	A	D	SD	$\bar{x}$	SD	
11	54	29	2	0	3.61	0.53	29	21	0	0	3.58	0.49	3.60
12	68	17	0	0	3.80	0.4	31	19	0	0	3.62	0.49	3.71
13	33	52	0	0	3.99	0.49	27	23	0	0	3.54	0.50	3.46
14	42	43	0	0	3.49	0.50	24	23	3	0	3.42	0.60	3.76
15	47	38	0	0	3.55	0.50	27	23	0	0	3.54	0.50	3.55
16	56	23	6	0	3.60	0.62	30	20	0	0	3.60	0.49	3.60
17	69	15	1	0	3.80	0.43	31	18	1	0	3.61	0.53	3.71
18	42	42	1	0	3.48	0.52	30	18	2	0	3.56	0.57	3.52
19	49	30	6		3.50	0.63	31	15	4	0	3.54	0.64	3.52
20	47	34	4	0	3.50	0.59	28	19	3	0	3.50	0.6131	3.50
					3.57	0.48					3.54	0.52	

Test for Hypothesis H02: There is no significant difference between the mean rating of the male and female principals on the ways of managing disruptive innovations in the conduct of examinations in public secondary schools in five local government areas in Kogi State.

Table 6: z-test difference between male and female principals on the management of disruptive innovations for conduct of examinations

Variables	N	$\bar{x}$	SD	Df	z-calc	z-crit	Decision
Male principal	85	3.57	0.48	133	0.33	1.96	Not significant
Female principals	50	3.54	0.52				

Zcal = 0.33

The z-calculated value of 0.33 is less than the z critical value of 1.96 at a degree of freedom of 198 at 0.05 level of significance. Hence, the null hypothesis is accepted, indicating that there is no significant difference between the mean ratings of male and female principals on the principals in the management of disruptive innovations for lesson planning

The items 1-20 had all weighted mean scores above 2.5. This means that the respondents agreed to all the research questions.

4. Discussion

4.1. Ways of Managing Disruptive Innovation for Lesson Planning

In as much as a good lesson plan is very essential before lesson delivery, so proper management of it is most essential by the principals. The following are some of the ways the principals manage disruptive innovations in lesson planning:

- When the principal inspects the lesson plan early, it will give room for any necessary correction and filling of missing links.

- The principal should ensure the inculcation of the learning styles in the preparation of the lesson plan.
- The principal should ensure that he and the teachers have mastery knowledge of the instruction materials; this is done through regular seminars, workshop and exhibition of this materials.
- Constant guidance and support of the designed materials is necessary.
- The principal should ensure the implementation of the instructional design guidelines in the preparation of the lesson plan.
- The principal should encourage the teachers to make use of learning environment where media element like text, images, videos, audio clips and animations can be appropriated.

According to Onuma (2016), supervision of instructional lesson plans is needed in schools for teachers to be more effective and efficient in class. Daggett (2010) stated that technological innovations provide teachers the opportunity to find a better lesson plan which will lead to instructional teaching and learning.

4.2. Managing Disruptive Innovations for Examinations Conduct

Examinations play a vital and central role in the entire schools programme especially in the secondary schools in the words of Ireson (2000). Examinations could be oral, written or both. Schools need to conduct examinations as yardstick for assessment. This is because it is the major tool in testing the level of understanding of the students in the lesson taught and the assimilation of the expected learning goals thereby insisting on the proper ways by which examinations are conducted. In this regard, managing innovations in examination conduct can be achieved in the following ways:

1. Amanze *et al* (2016) suggested Closed Circuit Television (CCTV) as equipment used as surveillance to manage the actions, activities and behaviours of the students during examinations to avoid malpractice or cheating thereby revealing the true understanding of the lessons taught by the teacher and the assimilation by the students.
2. Installation of cameras in classrooms is a new innovation to monitor and conduct examinations.
3. Biometrics, fingerprints, cryptography, e-learning, electronic examinations are also used to ensure security and result integrity according to Adebayo and Abdulhamid (n.d). This will reduce the problems of human interference, impersonation, bribe taking, examination leakage.
4. The use of computer based examination.

4.3 Findings

Early inspection of lesson plan, support of the designed materials, encouraging online learning, ensuring the inclusion of the learning styles, and provision of good online instructional materials, provision of equitable and good knowledge of instructional

materials were strategies of managing disruptive innovations for lesson planning in public secondary schools in five local government areas in Kogi State.

Use of biometrics, close circuit television (CCTV) cameras, count-down timers, different paper types like A, B, C and computer based examination were some of the strategies used in the management of disruptive innovations in the conduct of examinations in public secondary schools in five local government areas in Kogi State.

There is no significant difference between the mean ratings of male and female principals on the principals' management of disruptive innovations for lesson planning.

There is no significant difference between the mean ratings of male and female principals on the principals' management of disruptive innovations for conduct of examination in public secondary schools in five local government areas in Kogi State.

5. Conclusion

Innovations are inevitable to any developing sector. Therefore, their introduction is not all about them but ability to be able to manage them to achieve maximum result is the uttermost importance that is why the role of the principal in managing disruptive innovation in the public secondary schools is very vital as being a content initiator, process initiator, mediator and a squasher. There is no significant difference between the mean rating of male and female secondary school principals on the management of disruptive innovations for lesson planning in public secondary schools in five local government areas in Kogi State.

There is no significant difference between the mean rating of the male and female principals on the ways of managing disruptive innovations in the conduct of examinations in public secondary schools in five local government areas in Kogi State.

5.1 Recommendation

Based on the findings:

1. Principals should be flexible in response to the disruptive innovations that confront the management of the schooling system.
2. Principal should align disruptive innovation with the right level of students due to difference in the IQ level of the students.
3. Kogi state should allocate provisions to the conduct of training through seminars, conference for the usage of disruptive innovations.
4. Kogi state government should ensure adequate provision of these disruptive innovations like CCTV cameras, computers and countdown timers in various schools.

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