IMPACT OF COLLABORATIVE INTERVENTION PROGRAMME ON PRE-PRIMARY AND PRIMARY SCHOOL TEACHERS' AWARENESS, ACQUISITION AND UTILISATION OF EDUCATIONAL RESEARCH FINDINGS IN OYO STATE, NIGERIA

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ABSTRACT

Research plays a significant role in the implementation of educational programmes and effective discharge of teaching responsibilities. However, studies show that Nigerian teachers do not utilise research information in the choice of effective teaching strategies, lesson planning, instructional material design and evaluation of pupils' learning. This has led to inadequate expert knowledge necessary for improving pupils' learning outcomes, hence, there is need for the development of communication network and links between researchers and classroom teachers. However, there is a dearth of empirical studies on the utilisation of educational research findings in Nigeria. This study, therefore, determined the impact of collaborative intervention programme on pre-primary and primary school teachers' awareness, acquisition and utilisation of educational research findings in Oyo State, Nigeria.

The study adopted one-group pretest-posttest preexperimental design. Sixty teachers of pre-primary (30) and primary (30) schools were purposively selected from Oyo South Senatorial District. Seven instruments were used: Educational Research Findings Package for Collaborative Intervention (r = 0.86), Teachers' Awareness of Educational Research Findings Questionnaire (r = 0.82), Teachers' Acquisition of Research Findings Questionnaire (r = 0.84), Teachers' Utilization of Research Findings Questionnaire (r = 0.83), Teachers' Classroom Observation Scale (r = 0.73), Teachers' Interview Guide and Focus Group Discussion Guide. Six sessions of Focus Group Discussion with teachers and six micro-teaching as well as a seminar were also used. The study lasted for twelve weeks. Five research questions were answered and four hypotheses tested at .05 level of significance. Data were analysed using descriptive statistics, paired t-test, independent samples' t-test and content analysis.

Teachers' level of awareness (pretest = 71.9%; posttest = 87.4%), acquisition (pretest = 63.8%; posttest = 68.5%), and utilisation (pretest = 81.5%; posttest = 88.3%) improved after the collaborative intervention. Their classroom practices reflected more educational research findings (65.2%) than the situation before intervention (45.8%). There were significant differences in the teachers' level of awareness ($t = 4.22$; $df = 59$; $p < .05$) and utilisation of research ($t = 2.38$; $df = 59$; $p < .05$) before and after intervention in favour of the post-intervention measures. There was no significant difference between teachers' acquisition of research before and after intervention. Interviews revealed that teachers earlier relied on sources of knowledge which are not research-based but after intervention, they requested for the dissemination of research findings directly from researchers. Reasons for non-utilisation of

research findings by the teachers include lack of proper understanding and skills for implementation of research findings.

The collaborative intervention programme impacted positively on the pre-primary and primary school teachers' awareness, acquisition and utilisation of educational research findings. Therefore, researchers need to adopt the collaborative approach for disseminating research findings. Research institutions should design and popularise research dissemination channels based on collaboration. Funding agencies should sponsor educational researchers in the organisation of seminars and workshops for disseminating new research findings.

Key words: Teacher-researcher collaboration, Educational research findings, awareness, acquisition and utilisation, Pre-primary and primary school teachers

Word count: 467

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This work is dedicated to the Bank-Oludare Ogunleyes – Bamikole Oludare Alani, Miracle Olamide Anike, Marvel Ayomide Ajoke, Mercy Ayotunde Arike, Martha Ayodamola Ajike and Matthias Oluwadamilare Alani.

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Now unto Him who holds the key of David that opens and no man shuts, who closes and no man opens, be all Glory, Honour and Majesty for ever and ever. Amen.

CERTIFICATION

I certify that this work was carried out by Yewande Oladunni OGUNLEYE in the Department of Teacher Education, Faculty of Education, University of Ibadan, Ibadan, under my supervision.

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CHAPTER 1

INTRODUCTION

1.1 Background to the Study

The need to ensure equitable educational opportunities emphasized since the Jomtien Conference on education for all in 1990 has led many developing nations, Nigeria inclusive, to make education compulsory at the basic level. In order to meet this basic need of the individual and the society, qualitative education should be provided to improve knowledge, work and productivity, social responsibility and for childhood enrichment (Ajayi, 2004). The provision of education to meet these needs is not possible without an effective implementation of the curriculum at the school level.

Effective teaching maximizes knowledge and demands taking deliberate actions by the teacher with the purpose of inducing learning (Santrock, 2007). It is the teacher who has the specialized skill of arranging the learning environment and engages in interactive behaviours with the learners in order to bring about desirable changes in them. Oluchukwu (1998) averred that no matter how grandiose the curriculum may be, without an efficient teacher, all efforts behind such a programme would be fruitless because it is the teacher that makes the realization of the planned educational outcomes possible. In addition to imparting the knowledge of the subject matter, the teacher helps in improving the students in the affective and psychomotor domains of learning, thereby promoting social and moral development that would allow them to successfully function in the society. Thus, the teacher can neither be dispensed with nor be relegated to the background in the education of children.

The teacher should be able to combine relevant inputs for the enhancement of the teaching and learning process in the school system towards achieving organizational goals (Akinyemi, 1993). A summary of the roles of teachers as enumerated by Okeke (2010) could help to understand how cumbersome they are. Such roles include:

- Teaching one or more approved national curriculum subjects and to cover a specified minimum number of time-table periods per week with about 30 to 50 or more learners in class.
- Planning and preparing the scheme of work and other teaching and learning resources.
- Writing lesson notes for various subjects taught.
- Administering, grading and providing feedback in class work, homework, tests and examinations as well as keeping record and reports on each learner.

Teachers also have to do other administrative work and are involved in co-curricular activities, meetings and seminars. In fact, Gallen, Kerlenzig and Tamney (1995) describe teaching as a "multi – track activity where the teacher has to carry out a number of roles". This shows that the pre-primary/primary school teacher has enormous challenges to grapple with in the course of discharging his duties.

One of the goals of Education for All (EFA) and Millennium Development Goal number 2 is that by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling. In pursuit of this, the Universal Basic Education programme (UBE) in Nigeria has it in plan to have the human resource base to manage and implement the UBE scheme (FRN, 2006). The planned strategic actions in the National Action Plan include:

> *Continued expansion of teacher training opportunities, continuous programme of enhanced status and professionalism for teachers through training and retraining, review of current remuneration packages and enhanced career opportunities (page 12).*

It also specifies programmes designed to address the capacity needs of schools and educational management, building the capacity of the inspectorate services to improve quality and engaging civil society partners in the roles of quality assurance, monitoring, evaluation and impact assessment work at all levels.

In the area of teacher quality, section 74 of the National Policy on Education (FGN, 2004) highlights the thrust of the ongoing reform in the Nigerian Education system to include:

> *production of highly motivated, conscientious and efficient classroom teachers for all levels of our educational system; encouragement of the spirit of inquiry and creativity in teachers; helping teachers to fit into the social life of the community and the society at large and enhance their commitment to national goals and enhancement of their commitment to the teaching profession and make them adapt to changing needs of society (page 25).*

For teachers in the pre-primary and primary schools to become as professionally fit as required by these policy thrusts, the acquisition of research and research utilization are paramount. Through research, the teacher needs to be proactive and intentional in incorporating and implementing innovative ideas and findings into teaching. To this end, Mardell and Abo-Zena (2010) propose that teachers can model interest and tolerance, provide information about images and practices that children encounter in their learning experiences and clarify misconceptions in learners' beliefs.

The National Report in Nigeria on the Development of Education (FME, 2008) presents a meta-analysis of the outcomes of pre-primary and primary schools learning activities in the last decade. The report's conclusion was that Nigerian learners were performing well below the 40% mean in English Language, Mathematics and life skills. It also reported that there were too many unqualified teachers in the pre-primary and primary school system, poor teachers' morale and motivation, inadequate teaching and learning environments and that private school learners were consistently outperforming their public school peers. In the report, funding of schools was found to be chronically poor (FME, 2008).This level of education, therefore, requires the attention of all stakeholders.

The qualitative reform of Nigerian education cannot be attained without highly qualified, competent and motivated teachers to actualize the vision and goals of education for individual, community and national development. Nigeria fully recognizes this crucial fact, as, in a number of states, certain incentives have been introduced over the last few years seeking to promote quality, motivation, supply and retention of teachers at all levels. They include attempts at regular payment of salaries and allowances, promotion, exposure to regular professional development programmes organized or facilitated by the State Universal Basic Education Boards (SUBEB); the Federal Ministry of Education (FME) and the National Teachers' Institute (NTI). NTI is also playing active role in Teacher Professional Development (TPD) by organizing in-service training programmes, seminars and workshops for teachers nationwide with the support of the Federal and State Governments.

The nationwide training of teachers under the capacity building and State sponsored programmes for teachers are few examples of professional training programmes (NTI, 2008). The Federal Teachers' Scheme (FTS) which is designed to recruit forty thousand holders of the Nigeria Certificate in Education (NCE) every year (FME, 2008) is also a major effort at improving the teaching workforce. The NTI has been actively engaged in the recruitment, training and status enhancement of teachers in the pre-primary and primary schools in Nigeria. Also, primary school teachers are continually exposed to seminars and workshops for enhancing teaching skills as required by the National Policy on Education and the Teachers' Registration Council of Nigeria Act. Above all, the crucial issue of motivation is being addressed through recent initiatives such as the National Health Insurance scheme, the Annual President's Teachers' and schools' Excellence Award and the Housing for All Teachers Scheme (FME, 2008). All these efforts have not yielded positive results as pupils' performance is yet to improve significantly (Ogunsanwo, 2003; Omosehin, 2004; Idogo, 2006; Iroegbu, 2007; Okoruwa, 2008; Amao, 2010). Again, not much effort has been made

by the government towards improving teachers' utilization of educational research in order to keep them abreast of information, innovation and new ideologies as well as more effective strategies of teaching.

According to the 2008 National Report of Nigeria on the Development of Education (FME, 2008), the priority areas requiring the support of the United Nations Educational, Scientific and Cultural Organisation (UNESCO) include Early Childhood Care Development and Education (ECCDE). The report also states that the country would promote full participation and prospects of meeting EFA goals and MDGs through the three UNESCO reform initiatives among which is the Teacher Training Initiative for Sub-Saharan Africa (TTISSA). Pre-primary/primary school teachers, according to Essa (2003) in addition to holding professional certificates or degrees must display interest in improving skills necessary for efficiency in other aspects of their work as they are also involved in supervision, training, administration and curriculum design and implementation. Of all these, planning and delivery of instruction takes the centre stage.

Specifically, Nzeribe (2004) asserts that for a teacher to choose appropriate teaching method, such a teacher must be conversant with current research on teaching/learning methods. She specifies that the teacher needs to seek means of improving his or her techniques of teaching which is only possible through utilization of research findings in the classroom. The principles of child development, an understanding of how children learn as well as understanding of the teaching-learning process in general, are necessary for designing pre-primary and primary education programmes for successful teaching in the pre-primary/primary schools. Maduewesi (1999) therefore states that the teacher who has insight into how children learn will be able to organize the teaching programme to suit their needs. All these no doubt require appropriate teaching experience and the use of tested knowledge through research to advance practice.

An analysis of the works of Oti (1986) and Maduewesi (1999) reveals that teacher competencies in pre-primary/primary school education include working with other experts as a team, engaging in continuing learning, acquiring more skills, knowledge of child development and child psychology, knowledge of available social and remedial services, knowledge of modern educational philosophy and knowledge of available diagnostic services. These competences, as desirable as they are, keep changing and teachers can only be current, vast and versatile through interaction with available resources and relevant research information from time to time.

Research is defined as a problem-solving activity which addresses a problem or tests an hypothesis (Kerlinger, 2004; Mbizvo and Khanna, 2006). In the educational setting, educational research is a disciplined attempt at solving a problem relating to the school system and provision of education at large (Best and Kahn, 1989; Akinsola and Ogunleye, 2005). Indeed, the primary purpose of research is to solve problems (Mbizvo and Khanna, 2006). In the past, teachers have limited sources of knowledge available to them (Minstrell, 1993). These days, there are a wide range of sources through which knowledge is made available to teachers.

According to Babarinde (2006), knowledge is transferred from one generation to another through various sources such as acquaintance, description, revelation, intuition, tenacity, reason, authority and empirical knowledge. Of these, knowledge by authority, an age-long type of knowledge, may be passed by parents, elders, experts, textbooks, scriptures and cultures to their respective recipients. This type of knowledge is assumed to be the most reliable (Babarinde, 2009) and research information is a typical example of authoritative knowledge based on its empirical nature.

Sources of research information available to teachers include general content journals such as Behavioural Science, Psychological Review, specialized journals including Journals of personality and social issues, professional and trade books on specific topics and Educational Resources Information Centre (ERIC), which are available especially through computer links and internet connectivity. Furthermore, Current Index to Journals in Education Research (CIJE), a compilation of articles published in journals can also be accessed. Teachers in pre-primary and primary schools can also consult local Journals such as those of Early Childhood Association of Nigeria (JECAN), African Journal of Educational Research, African Journal of Educational Management, Nigeria Journal of Computer Literacy, Journal of e-Learning and Journal of Science Teachers' Association of Nigeria among many others. This is in addition to conference proceedings of the various Professional Associations of Practitioners in the field. The problem is that the cost of purchasing these journals limits access to them apart from the fact that they are published in limited copies. These research findings are neither assessed nor used by teachers in classroom teaching. They, therefore, rely on their previous untested knowledge and personal experience in classroom teaching. No wonder, learners' performance in Nigeria pre-primary and primary schools is still poor.

Parents have generally been reported to express three main feelings of happiness, sadness and worry (Kreider, 2002). Their happiness, in this context, was often tied to their

child's excitement about school. According to the author, a parent's feelings also coloured the conceptions of his or her child as a learner, much of which developed through their early childhood experiences. In line with this, Ogunleye (2011) stated that parents feel happy seeing their children as smart, curious or able to interact well with other children. They therefore see the pre-primary and primary schools as opportunities for their children to flourish as learners. In Nigeria, current trends in parents' preferred choice of educational institutions for their children revealed a leaning towards privately run educational institutions, as opposed to public institutions. This was reported for primary, secondary and tertiary levels of education alike. It seems, therefore, that there is loss of confidence in public educational institutions (Okafor, 2011). This has led to a near collapse of the public school system leaving the education infrastructure in an appalling and dilapidated state.

A casual visit to any public school in Nigeria would reveal the enormity of problems confronting this category of educational institutions. Educational facilities and equipment are inadequate, schools require renovation of existing structures and new buildings to address the problem of over-crowded classrooms, the quantity and quality of manpower is inadequate, incessant strikes leading to instability in the academic calendar and very low teacher (staff) morale due to poor remuneration and working conditions. Given this situation, the attendant ineptitude on the part of teachers and lack of professionalism in the public schools, private educational institutions in Nigeria have really grown in profile in the last twenty years, such that they have gained acceptance and huge popularity among parents. Kelly (2011), enumerating conditions prevalent in public schools states that most of the subjects offered and much of what students learn is mandated by the government but private schools have much greater freedom in the education they provide and the curriculum standards they use. While public schools also have certain minimum requirements for teachers including certification and specific degrees, private schools have much greater flexibility. Teachers in private schools may not be required to have certifications or specific degrees to qualify for teaching. It is, therefore, necessary to investigate teacher awareness, acquisition and utilisation of educational research findings along the divides of public and private schools.

It is a common expression that experience is the best teacher. People have personal experience, make generalizations from their observations and turn memorable encounters into life truths (Santrock, 2007). Macmillan (2004) and Reynolds, Livingston and Wilson (2006) have, however, questioned the validity of these personal experience, generalizations and supposed life-truths based on their beliefs that they are all subjective, egoistic and self-esteem driven. The best practice for primary school teachers is to get information from experts,

authorities and researchers by reading their discoveries and findings especially through published avenues and Information Communication Technologies (Ezekiel, 2010). In fact, teachers need to sort facts from fancy by using particular strategies for obtaining information (Seikind, 2003; Wiertsma and Jurs, 2005; Gronlund, 2006). This is far from the reality among Nigerian pre-primary and primary school teachers.

Scientific research is objective, systematic, testable and is based on the scientific method, an approach which can be used to discover accurate information (Ogunleye, 2008). This approach involves conceptualization of the problem, collection of data, drawing conclusion and revision on conclusions and theory. Educational researchers adopt this approach both in the process of carrying out research and in reporting. This process is practicable and has yielded positive results in academic and research settings such as Universities, Research Institutes and Colleges of Education. In most instances, those who conduct the researches hold the Master or Ph.D degree in different areas of education from pre-primary to tertiary levels. They carry out researches and publish the results in conference proceedings and journals. On the other hand, the pre-primary and primary school teachers require only a minimum of NCE which is the minimum teaching qualification for this level in Nigeria (FME, 2004). This shows that a wide gap exists between the educational qualification of researchers and the teachers in the primary schools. The gap is also such that the 'producers' of knowledge (research findings) and the 'users' of the findings are remotely positioned. This is a limitation to the capability of the primary school teachers to maximally benefit from research findings.

According to Mbizvo, Kim and Foreit (2006), research utilization can be defined as the use of knowledge substantiated through research in addressing and solving problems. They state that this knowledge use can range from creating awareness (advocacy), to modifying existing policies or establishing new ones, to improving or developing specific service delivery, interventions and even remediation. Research utilization fosters movement from innovation into practice (Research Utilization Support and Help, RUSH, 2009) and the purpose of research is to be of use, to change current practice or confirm it. Revisiting the triple mandate of Faculties of Education, Obanya (2004) lists the mandate as: extending the frontiers of knowledge through research, dissemination of knowledge through teaching and involvement in research and contribution to the application of specialized knowledge to solve societal problems through public service. He claimed further, that the prestige of an institution, of a faculty or an academic department is dependent on the quality of their contributions to knowledge and team work as the approach to doing research. Also, building

bridges between researchers and the actual and potential users of the fruits of educational research is also identified as an important task of the university. This implies that Universities are Centres of Excellence in research activities both at the level of conduct of valid and reliable research as well as in dissemination efforts to improve practice through research utilisation.

In the Nigerian Universities, many studies have been carried out to improve existing practices in different aspects of pre-primary/primary school teaching and learning over the years. These studies include Bachelor of Education (B.Ed) and Master of Education (M.Ed) projects and Doctoral (Ph.D) theses. Of these, the Ph.D best typifies the ideal University research study judging by the critical procedures adopted and the quality control measures it involves. Starting from the proposal defence, field work, post field seminar examination to oral thesis defence, every stage is supervised and critiqued by lecturers assigned for the purpose. Taking the University of Ibadan as a case in point, Ph.D theses in pre-primary and primary education include Akinbote (1993) on instructional sequencing modes and feedback mechanism in Social Studies, Aremu (1998) on card and geoboard game-based instructional strategies in practical geometry, Banjoko (1998) on language of instruction in selected science concepts, Izerig (1998) on situation and policy analysis of basic education in Northern Sudan and Oduolowu (1998) on open classroom and conventional strategies in basic literacy and numeracy skills.

Salawu (2001) worked on language of instruction in aspects of Social Studies, Odinko (2003) on home and school factors determining literacy skill development, Ogunsanwo (2003) on homework modes and parental involvement in homework in Mathematics, Akintunde (2004) on structured and unstructured group interaction patterns in teaching environmental education concepts, Omosehin (2004) on pre-service teachers training programme in cooperative learning in Social Studies and Onosode (2004) on instructional writing approach, locus of control and gender in English Language. Others include Oshodi (2006) on use of learning outcome specification in Primary Science, Iroegbu (2007) on modelling and picture-based instructional strategies in English Language, Okoruwa (2008) on conceptual change and enhanced explicit teaching strategies in Primary Science, Adewole (2008) on CoRT 1 thinking skills programme for creativity, Olatundun (2008) on outdoor educational activities on environmental knowledge, attitudes and practices and Amao (2010) on medium of instruction in two core primary school subjects. In another perspective, to date, studies still ascribe the current problems relating to poor performance of learners to poor instructional strategies (Oduolowu, 2004; Okoruwa, 2008; Ekine, 2010). The questions that

come to mind therefore are: to what extent do teachers adopt recommendations made by researchers based on findings obtained? Are the teachers aware of the findings in the first place? To what extent do they make use of research information? These are questions which need to be answered in order to move the theories and research findings to the level of practical application in schools.

Ogunleye (2005) investigated pre-primary and primary school teachers' level of involvement in research and access to research reports. The study reported teachers' non-involvement and lack of access to research findings. Similarly, Akintayo, Kolawole, Oduolowu, Ige, Adu, Ogunleye, Osokoya and Adepoju (n. d.) assessed the impact of Doctoral research findings on Senior Secondary School teachers' classroom practices in Southwestern Nigeria. Their findings showed that a few of the teachers are aware of the research findings; most teachers' source of awareness of the findings was College or University studentship and classroom teachers were not utilising modern methods of teaching. This study was on secondary schools generally and it did not venture into developing strategies to improve the situation. This necessitates the conceptualization of a study that would focus on improving pre-primary and primary education teachers' awareness, acquisition and utilization of research findings.

According to Hemsley – Brown and Sharp (2002), strategies for improving research impact in education include the development of communication network, links between researchers and practitioners, greater involvement of practitioners in the research process and approaches to the sharing of 'good practice'. Therefore, there is the need for researchers who conduct research to collaborate with the teachers who are the practitioners for the purpose of sharing ideas and identifying areas and ease of application of the findings in classroom teaching.

Knowledge utilization according to the United States' "Knowledge Utilization in Education Act of 2004" allows information generated by scientifically valid research to be available to, and usable by, educators in the classroom. It is essential to the effective application of research-based knowledge to policy and practice and brings together the professional wisdom of practitioners and best available empirical evidence obtained through research. In Nigeria, teachers do not make use of research information (Egbujuo, 2004; Ogunleye, 2005) as they continue with old practices in teaching. This could be responsible for learners' performance which has remained at the dismal level as reported by Akinbote (1993), Oduolowu (1998), Ogunsanwo (2003), Okoruwa (2008) and Ekine (2010).

To improve learners' performance, the need for credible, reliable and usable solutions is advocated by Costa, Marques and Kempa (2000). This implies that tested knowledge as reported in research need to be accessed, acquired and utilised by teachers. Teachers' acquisition and utilization of research have been traced to be residual in the teachers themselves or research-based or a combination of both. Teachers as individual personalities tend to use their time and efforts for whatever suit their interests. Walsh (1997) reports inaccessibility to research reports as a problem militating against acquisition and utilization of research. Moreover, access to research information (Hatcher and Tranmer, 1997; Adamsen, Larsen, Bjerregard and Madsen, 2003) was reported as being responsible for most of the use to which research is put by different practitioners including educators. To this end, Crane (1995) and Rastas (2000) suggest closer ties between academic and service institutions towards improvement of research dissemination and utilization.

Research shows that teachers are often disinclined to accept theories which emanate from academics working from a remote distance from the classroom (NASC, 2000). According to the results, they sometimes perceive resulting analyses and findings as perhaps arrogant and become skeptical about the use of such findings. Also, outsiders may be seen as uninformed and their research possibly fundamentally flawed as practice in schools is being investigated by those who are not practicing teachers. The underlying reason for generating research information is to assure that it is useful, appropriate and applicable in reaching decisions, making changes or taking other specific actions to improve learning outcomes. Literature (Mbizvo and Khanna, 2006; Mbizvo, Kim and Foreit, 2006) shows that knowledge acquisition and effective utilization of research require orientation toward the needs of the user, incorporating the types and levels of information needed in the organization and the forms and language preferred by the user. It also depends on the inclusion of information identified as important and needed by users and drawing upon existing resources, relationship and networks in the field of practice.

The predominance of personal experience as the basis of science teachers' professional knowledge was reported by Costa et al (2000) in support of van Driel, Verloop and de Vos (1998) who conclude that "science teachers' knowledge and beliefs are explicitly related to their classroom practice". Using a constructivist argument, they suggest that teachers' existing (practice- and beliefs-related) conceptions about the teaching and learning of science may prove to constitute a barrier to the innovation of science teaching, in view of the fact that these conceptions are relatively stable to change attempts.

Teachers themselves need to become more aware of the value of the professional knowledge that can be derived from research findings. Educational research findings have to be made more accessible to the practitioners than is currently the case. In order to achieve this, it is necessary to generate publications which communicate researches and research findings in a language that pre-primary and primary school teachers can understand. Although journals are excellent channels for researchers to communicate with one another, this is not the case with the potential 'user' of their findings. This calls for a collaborative effort on the parts of researchers and teachers (Costa, et al, 2000) towards improved awareness of teachers and their attitudes to educational research.

The role of research is not only to provide information but also to produce change. Research findings that are not shared with practitioners in ways that foster application are ineffective. The traditional models of research to practice assume that the transfer of knowledge takes a long time and in this direction: scholars conduct the research; publish findings in academic journals; academic articles form the basis for similar research and at the same time make their way into the syllabi of pre-service academic training for teachers, and slowly the knowledge makes its way into classroom practice (Barbara, Bingam, Coming, Rowe and Smith, 2001). The authors state that educational research has moved beyond that linear model. The relationship between researchers and practitioners is now recognized as important. For instance, researchers work with practitioners to develop research agendas; practitioners work with researchers in conducting research; researchers and practitioners engage together in deriving meaning from the research findings; and researchers and practitioners participate in the dissemination process (Barbara, et al, 2001). This justifies the present attempt to foster collaboration between researchers and teachers towards effective use of educational research findings.

Huberman (1992) reported in a study that "sustained interactivity" among researchers and practitioners is more likely to lead to research utilization than limited interaction. In sustained interactivity, practitioners are seen as partners or actors rather than targets. An implicit assumption of sustained interactivity is that the meaning and validity of the study are negotiated by practitioner and researcher. Researchers and potential users of the information therefore, need to interact to create awareness, improve attitude foster acquisition and utilization of research. According to Hendricks (2009), collaboration is one of the four approaches to Action Research. Others are critical, classroom and participatory approaches. Collaboration can take place between researchers and practitioners to increase the chances that research findings will be translated into practice.

According to Mertler (2009), action research is a process to improve education by incorporating change and involves educators working together to improve their own practice. It is persuasive and authoritative. It affords educators opportunities of working and talking together in empowering relationships, recognizing practitioners as integral, participating members of the process. It is also practical, relevant, allows educators direct access to research findings and develops critical reflection as well as open-mindedness (Ary, Jacobs and Sorensen, 2010). This kind of research is a planned, systematic and cyclic approach to understanding the learning process and to analyzing educational places of work. It could also be described as a process that requires testing of our ideas about education or a justification on one's teaching practices (Ary, et al, 2010). The authors also list three main characteristics of action research as: one that is situated in local context and focused on a local issue; conducted by and for the practitioner; and results in an action or a change implemented by the practitioner in the context.

A key benefit of action research is reducing the gap between theory and practice. There are several reasons for this acknowledged gap. Research may be written in ways that make it inaccessible to practitioners (that is the use of jargon or focus not relevant to practice) or difficult to translate to local practices. Also, ways that research findings are provided to practitioners may not be sensitive to the time demands of practice. Johnson (2008) also references the "Moses effect**"** in which case "researchers hand down research edicts from on high with the expectation that teachers will be passive receivers of these edicts" without valuing teachers' views or recognizing their concerns. According to the author, this kind of communication of research information to would-be users is a contributor to the gap between researchers and practitioners. The action research approach to the solution of the problem of non-utilization of research among pre-primary and primary school teachers is therefore appropriate.

1.2 Statement of the Problem

Research plays significant roles in the effective implementation of educational programmes generally and in the effective discharge of teachers' duties specifically. Teacher effectiveness in teaching has been in doubt with reports of poor learners' performance especially in Nigerian pre-primary and primary schools. Many studies have been carried out in Nigerian Universities towards improvement of learners' performance in pre-primary schools. Studies have reported that teachers do not use such research to any appreciable extent in planning and delivery of instruction. This situation could lead to teachers' lack of

the required knowledge, skills and classroom practices necessary to achieve the required improvement in learners' learning outcomes. Other studies showed that the non-utilisation of research by teachers has been attributed to the gap between the teachers and researchers, relevance of research findings to classroom situation and teachers' inability to access, understand and apply such research findings in classroom teaching. This study therefore, mounted a collaborative intervention programme on educational research findings for teachers in pre-primary and primary schools in Oyo State, Nigeria within an action research setting. It also determined the impact of the programme and the influence of school type on the teachers' awareness, acquisition and utilization of educational research findings in classroom teaching.

1.3 Research Questions

Answers were provided to the following research questions in the course of this investigation.

1. What are pre-primary and primary school teachers'
   a. level of awareness about educational research findings;
   b. level of acquisition of educational research findings and
   c. level of utilization of educational research findings
   before and after collaborative intervention activities?
2. To what extent do the pre-primary and primary school teachers perceive the need for implementing educational research findings and recommendations in their classroom teaching?
3. Why would the pre-primary and primary school teachers use or not use educational research findings in their teaching?
4. What were the suggestions made by the pre-primary and primary school teachers on how educational research findings could be made available to them?
5. To what extent do the classroom practices of selected pre-primary and primary school teachers reflect educational research findings before and after the collaborative intervention activities?

1.4 Hypotheses

The following null hypotheses were tested in the study at 0.05 level of significance.

Ho1. There is no significant difference in the teachers' level of awareness of educational research findings before and after the collaborative intervention activities.

Ho2. There is no significant difference in the teachers' acquisition of educational research findings before and after the collaborative intervention activities.

Ho3. There is no significant difference in the teachers' utilization of research before and after the collaborative intervention activities.

Ho4. There is no significant difference in public and private school teachers' post collaborative intervention:

(a) awareness of research findings

(b) acquisition of research findings

(c) utilisation of research findings.

1.5 Scope of the Study

This study covered sixty pre-primary and primary school teachers from three public and three private primary schools with the pre-primary section in Oyo South senatorial district in Oyo State of Nigeria. The study designed and implemented a collaborative intervention programme among the teachers and determined its impact on their levels of awareness and acquisition of educational research findings as well as their utilization of the research results.

1.6 Significance of the study

This study would provide an intervention into the problem of non-utilization of educational research by pre-primary and primary school teachers. It would impact on the level of awareness, acquisition and attitudes of the teachers in research utilization towards creating the culture of use of tested knowledge for the improvement of classroom practice. To this end, the teachers would have ample opportunity to collaborate with the researcher in sharing experience, expertise, discussion and working out together a set of acceptable, workable and relevant approaches to research utilization right in their schools.

The study is considered useful to educational researchers who would become aware of the problems teachers face in the utilization of research findings and therefore would begin to pay attention to issues and models of effective dissemination strategies and utilization of their research findings. Again, this study would be an eye-opener to researchers towards involving the teachers not only at the end of their research studies and after publication of results but even in planning, conducting, analysing and reporting of educational research.

To the learners, this study would open doors of opportunity to them as classroom teaching and learning activities would change towards innovative, modern and more effective

teaching approaches obtained from the research findings made available to their teachers. The teachers' improved knowledge, awareness and attitudes towards educational research would also impact positively on the learners' learning and their performance would witness a turnaround for the better.

Similarly, the entire educational enterprise in Nigeria and the Nigerian nation as a whole would feel the impact of translating expert knowledge into field application thus bridging the gap between theory and practice. This would no doubt change the current trend of most sectors in Nigeria not responding to established theories and verified knowledge due to the disconnect between the producers of knowledge and potential or actual users of the knowledge. This would help the country towards the realization of the vision 20:2020 which is only possible in a knowledge-driven society.

1.7 Definition of Terms

The following constructs considered critical to the understanding of this study were defined as follows:

Acquisition of Research Findings: This refers to the extent to which teachers seek, purchase, consult, browse and read research information and reports either from published or unpublished sources.

Action Research: Action research is practitioners' research, involving in this case, pre-primary and primary school teachers to solve problems encountered or related to classroom teaching and working together in practical ways to solve the problems through direct access to research findings for change to be implemented by themselves in the context of the school setting.

Awareness of Educational Research Findings: This is the level of pre-primary and primary school teachers' knowledge of the existence of relevant educational research findings in tertiary institutions especially Universities where such researches were carried out as well as in journals and conference proceedings.

Collaborative Intervention Programme: This refers to a set of activities put together to afford Pre-Primary and Primary school teachers opportunities to share ideas, knowledge and expertise with the researcher, research assistants and selected authors of Ph.D theses for the purpose of taking necessary decisions towards the use of the research findings. The programme involves Focus Group Discussion with the teachers, micro-teaching and seminar.

Educational Research Findings Package: This is the manual for the implementation of the collaborative intervention activities for impacting teachers' awareness, acquisition, attitude

and utilization of educational research findings. It makes use of abstracts of ten Ph.D theses in the area of Pre-Primary and Primary Education carried out in the University of Ibadan.

School Type: This connotes the public-private dichotomy among pre-primary and primary schools. Public schools are owned and run by the government while private schools are owned by individual proprietors or proprietress, corporate groups and religious organisations.

Utilization of Research Findings: This means the application of educational research findings and recommendations by pre-primary and primary school teachers in the classroom teaching for the purpose of improving the teaching-learning activities in pre-primary and primary schools.

CHAPTER 2
LITERATURE REVIEW

This chapter presents information reviewed from past studies relevant to the present research endeavour. The review is outlined based on the underpinning theories as well as empirical literature surveyed.

2.1 Theoretical Framework

2.1.1 The Social Constructivist Learning Theory

Knowledge utilization which is central to this study is based on the theory of learning known as Constructivism. According to the Constructivist's theory, knowledge is not a "thing" or a static, inert object to be sent and received. Rather, knowledge is a fluid set of understandings shaped both by those who originate it and by those who use it. This casts the user as an active problem-solver and a constructor of his or her own knowledge, rather than as a mere passive receiver of information and expertise (Hutchinson and Huberman, 1993).

The Lev Vygotsky's Social Learning Constructivist theory provides a theoretical basis for this study**.** According to Kim (2003), this theory is based on specific assumptions about reality, knowledge and learning.

Reality: Social constructivists believe that reality is constructed through human activity. Members of a society together invent the properties of the world. For the social constructivist, reality cannot be discovered: it does not exist prior to its social invention.

Knowledge: To social constructivists, knowledge is also a human product, and is socially and culturally constructed. Individuals create meaning through their interactions with each other and with the environment they live in.

Learning: Social constructivists view learning as a social process. It does not take place only within an individual, nor is it a passive development of behaviours that are shaped by external forces. Meaningful learning occurs when individuals are engaged in social activities.

The theory's epistemology with specific application elements has it that social interaction is necessary and precedes the development of cognition. It also states that social learning precedes development and that in this context of interaction, the More Knowledgeable Other (MKO) shares his knowledge and experience with other stakeholders. The distance between the actual development level as determined by the independent problem solving and level of potential development as determined through problem solving under the MKO therefore becomes closed. The theory also presumes that meaningful learning is permanent even when the MKO is removed. This is referred to as the fading stage. Above all, social interaction leads to increased knowledge.

This theory is relevant to this study as the pre-primary and primary school teachers who are the end-users of research information have to interact with researchers and share ideas with them. This will then determine whether the research will be utilized and the extent of such utilization of research findings.

2.1.2 Communication Theory/Diffusion of Innovations

The Communication or diffusion theory was propounded by Everett M. Rogers in 1996. According to Rogers and Singhal (1996), diffusion refers to "the process by which an innovation is communicated through certain channels over time among the members of a social system. An Innovation is an idea, practice or object perceived as new by an individual or other unit of adoption. The diffusion of innovations involves both mass media and interpersonal communication channels". That is, by sharing communication channels such as interpersonal communication or mass communication people can get information of an innovation and perceive its innovation as useful. Lasswell (1948) presented a well-known model of communication that is analyzed as five parts, S-M-C-R-E (e.g., sender-message-channel-receiver-effect). Rogers (1995) mentioned, "the S-M-C-R-E communication model

corresponds closely to the elements of diffusion". Specifically, (1) sender can be inventors or opinion leaders, (2) message can be a new idea or product, (3) channels can be interpersonal or mass communication, (4) receivers can be members of a social system, and finally (5) the effects can be individual's adoption or social change.

The S-M-C-R-E model based on the communication theory is germane in this study in the sense that the Sender (the researcher) has roles to play in knowledge utilization. This implies that the researcher's credibility, authority and expertise must be above board. Also, the Message (the research report), its language of presentation, technical style and the use of special terminologies are all relevant in the determination of the level of utilization it could enjoy among stakeholders. The Channels in this study refer to the avenues through which teachers access research reports ranging from journals, libraries and interpersonal discussions to the internet. The Receivers are essentially the pre-primary and primary school teachers who ultimately acquire and utilize the research innovations based on their personal idiosyncrasies which could be venturesome, respectable, deliberate, sceptical or traditional. Finally, the Effect is likened to the usefulness and change of current classroom practices resulting from actual utilization of research innovations. This has implications for how relevant the research studies are and the extent to which findings appeal to existing problems and needs of the teachers, pupils and the school system in general.

Some researchers in the field of knowledge utilization and management such as Dixon (2000) and NCDDR (2001) described the appropriate choice of knowledge transfer activity to be critically linked to the leveraging of knowledge from one group to another. Some examples and descriptions of knowledge transfer models are:

1. Serial knowledge transfer model – In this model, transfer is leveraged from one work "team" to a very similar work team in another similar work setting. Knowledge is transferred from individual members of the team, to the team as a whole, i.e., integrated into a commonly–held perception of what worked. This constitutes the basis of what can then be transferred to another similar team member or group.
2. Best practice knowledge transfer model – In this model, transfer of knowledge occurs from a team with commonly—held knowledge to all elements of the organization within which the team exists. This transfer model is usually inspired within a competitive organization that aspires to increase its "edge" on the competition. Knowledge that is transferred is generally accepted as "best practices" within the organization, thus, encouraging utilization.

3. Exemplary knowledge transfer model – In this model, the knowledge transfer is from the organizational level, and the transfer is intended to impact other organizations that may or may not be similar in scope and function. In this case, what an organization has done well is the "knowledge" subject to transfer, and generally, competitive secrets are not given away in the process.
4. Strategy–based knowledge transfer model – In this model, the knowledge encompasses an overall strategy or approach in addressing a specific and often non–routine problem. Transfer is based on other entities that may recognize a similar problem and be in need of developing a responsive and effective strategy.
5. Expert knowledge transfer model – In this model, individuals that may have been known to have experienced and overcome similar problems, are viewed as experts. This expertise becomes known and valued and is called upon when "problems" generally related to the original "problem" occur.

These examples of knowledge transfer models provide the conceptual framework upon which the dissemination and utilization of research results can be based. Some of these knowledge transfer models can be accomplished best through face-to-face contact. Others, however, do lend themselves to the use of electronic network and Web-based information sharing techniques. Clearly, the skilful connection of knowledge transfer efforts with targeted utilization plans produces a well-conceived, integrated approach to moving research into practice.

This study adopted the Expert knowledge transfer model as researchers who engage in the identification of educational problems and attempt to solve the problems through carefully planned and well-executed investigations which have been reported in publication outlets are considered as ‘experts’. On the other hand, the pre-primary and primary school teachers who encounter ‘problems’ in the classroom teaching and learning require research findings from the ‘experts’. Any transfer of knowledge from the experts to the teachers is therefore an attempt to enhance research awareness, acquisition and utilisation among the latter. The conceptual framework based on the combination of Lev Vgotsky’s Social Learning theory, Communication theory and Expert Knowledge Transfer Model is represented in Figure 2.1.

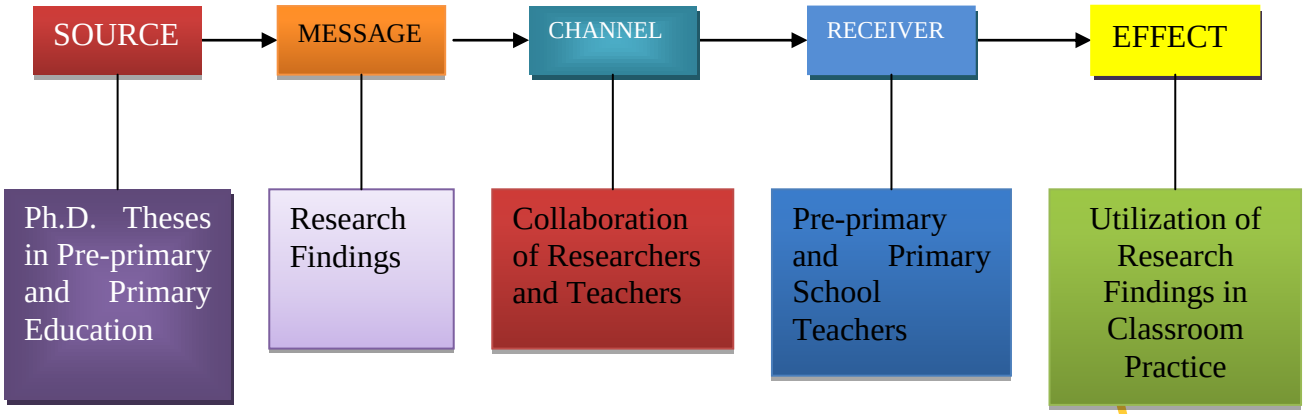

Figure 2.1: Conceptual Framework for the Study

Source: Researcher (Based on the works of Laswell,1948; Rogers, 1995; Rogers and Singhal, 1996).

2.2.1 Importance of Pre-Primary and Primary Education

Pre-primary education is essential for toddlers because it is the building block of children's elementary education. It helps in laying a solid foundation for the all-round development of the child. It is necessary to provide children with good pre-primary education for them to be prepared for future education. Reasons given for pre-primary education include preparation for primary and indeed all future education, allowing the child to expose his inner skills so that the child develops his personality, opportunity for children to give vent to their inner desires and talents in positive ways and pre-primary education exposes the creativity of the child, thus allowing the child to develop his personality in a natural way (Little Millennium, 2005).

Furthermore, according to Little Millennium (2005), the child learns to adjust with his peers, learns to interact with outsiders, learns to find a life outside the home and develops an independent personality outside of the home. Becoming independent is the first stage of growth and besides learning to eat independently, sleep independently, the child learns to exist independently. Pre-primary education is essential to the growth of the child such that by the age of 3, they start showing signs of independence. Good Pre-primary education teaches a child not only social skills and develop their ability to adjust in the social environment but also teaches them how to deal with bullies. Pre-primary schools are also responsible for teaching social etiquettes.

The group activities that pre-primary schools conduct are what develop the complete personality of the child. The children may be taken on field trips, where they are taught the importance of discipline. The children also learn to eat independently and many are also potty

trained by this age, so they know how to handle themselves to an extent. Pre-primary education is one more step in the growth of children. For a child to grow into a healthy, socially well-adjusted individual, therefore, pre-primary education is very essential (Little Millennium, 2005).

Pre- primary education has become a popular strategy for the protection of children from drop-out from formal education all over the world. It has a strong and positive impact on further learning during the primary level and beyond (Haque, Nasrin, Yesmin and Biswas, 2013). Pre-primary education is very important for the development of young children before they enter formal school (Kaul, 2002). It helps in the cognitive development of children at the early grades of primary education and it has strong bearing on attendance and participation of children once they enter primary school. Development of a child begins within the family and mostly depends on the parents. Educated parents are able to prepare their child for the smooth entry into formal education. As many parents are uneducated, they are unable to prepare their children adequately for school. The lack of school readiness makes it difficult for children to adapt themselves to school and have a tendency to drop out (Government of the People's Republic of Bangladesh Ministry of Primary and Mass Education Operational Framework for Pre-Primary Education, 2008).

Pre-primary education is considered to be very important for the child as it is the first step towards entering the world of knowledge as well as a healthy and purposeful life. This education system helps children become more independent and confident and as well promote the all-round development of the children (Ramchandran, Jandhyala and Saihjee, 2003). Children who have been to pre-primary schools tend to learn more rapidly through an organized curriculum, learning aids and by interacting with other children. The main purpose of pre-primary education is to prepare children physically, emotionally, socially and mentally for formal schooling and to prevent poor performance and early drop out. It also helps older children particularly girls, to attend their schools making them free from responsibility of sibling care (Bandyopadhyay and Behera, 2010). Therefore, early childhood education including pre-primary education is regarded as a necessary area of intervention for the success of primary education.

Pre-primary education enhances children's development potential before their stepping into the primary school. It provides all the necessary care and education to young children that helps their development through physical, cognitive, language, social and emotional growth and change with due attention to children of disadvantaged groups, children with special needs and children of ethnic minorities. It also supports language

development of children through active interaction among with children and creating opportunities for using the skills (Ramchandran, Jandhyala and Saihjee, 2003).

Supporting parents and other caregivers by providing knowledge and skills necessary to meet children's developmental needs and creating a congenial and child friendly atmosphere at home, community and places of learning so that children benefit fully from care and learning activities are some of the other importance of pre-primary education. The guide to the Pre-primary curriculum (Education Bureau: The Government of the Hong Kong Special Administrative Region, 2006) emphasises that early childhood education lays the foundation for life-long learning and whole person development. The core value of early childhood education lies in "child-centredness". Pre-primary institutions were to formulate their curriculum according to the basic principles of "children's development" and "children's learning". Children's learning interest, needs and abilities should also be taken into consideration. A diversified learning environment that provides sufficient learning opportunities will facilitate children to develop their multiple intelligences. Through play, meaningful life experiences as well as sensory, exploratory and interesting activities, children's holistic development can be fostered.

There are four developmental objectives in the curriculum framework for early childhood development, namely "Physical Development", "Cognitive and Language Development", "Affective and Social Development" and "Aesthetic Development". These objectives can be achieved through six learning areas, which are "Physical Fitness and Health", "Language", "Early Mathematics", "Science and Technology", "Self and Society" and "Arts". Special emphases should be placed in developing children's basic skills, building up basic concepts and helping the development of positive values and attitudes. Indeed, all kinds of learning include the three key elements, namely "knowledge", "skills" and "attitudes", so as to nurture a balanced development of children in ethical, intellectual, physical, social and aesthetic aspects. By these means, children will be well prepared for life and life-long learning (Education Bureau: The Government of the Hong Kong Special Administrative Region, 2006).

Berlinski, Galiani and Gertle (2006) in a meta-analysis of research in neuroscience, psychology and cognition has established that learning is easier in early childhood than later in life, and that nutrition and cognitive stimulation early in life are critical for long-term skill development (Shonkoff and Phillips, 2000). Using data from the Early Childhood Longitudinal Study, Magnuson, Ruhm and Waldfogel (2005) found that pre-primary education is associated with higher reading and mathematics skills at primary school entry,

but that these correlations disappeared by the end of first grade. They also found that when preschools are not located in public schools, pre-primary education is associated with higher levels of behavioural problems. According to Ministerio de Educación (1993), pre-primary education was intended to achieve two goals:

1. Enhancement of educational achievements accomplished at home and development of new age-appropriate competences.
2. Early access to knowledge and skills that improve performance in the first years of primary education.

In order to achieve these goals, the curriculum was explicitly designed to develop: a) communication skills, b) personal autonomy and behavioural skills, c) social skills, d) logical and mathematical skills and e) emotional skills (Ministerio de Educación, 1994). The ministry averred that expanding pre-primary education is an effective instrument to improve long-term academic performance.

Pre-primary education plays a very pivotal role in a toddler's life. Preschool education offers an enriched environment, academic simulation and many socialization opportunities for children who are of the same age group. Early schooling in India plays an important role in preparing children emotionally, mentally, socially and physically for higher education and proper understanding of different subjects (Sharma, n. d). Good primary education inspires both parents and students to enrol for pre-primary and higher level at the later stages of higher studies. India follows a systematic process of preschool education to impart knowledge in the best possible way for better understanding of the young children. By following an easy and interesting curriculum, teachers strive hard to make the entire learning process enjoyable for the children.

Pre-primary education lays a solid foundation for children and helps them to grasp knowledge easily in the later stages of school and college life. Sharma (n. d) prescribed that every preschool must respect each child's path of learning and growth and give them the liberty to choose the activities they are interested in. Teachers must give equal attention to the children and motivate them to take part in different activities that will make pre schooling interesting and help them learn new things in life. Special educational facilities must be made available to the children to make sure that no child is neglected. Pre-primary education in India provides a culturally sound environment for the children and instils the right values to help them grow both mentally and physically. Pre schooling facilitates efforts at grooming young minds and provides dynamic and complete development of children. By creating a

formal learning environment for children, pre-primary school education helps them to understand the importance of learning and discipline.

Pre-schools in India provide the appropriate environment and opportunities to cultivate young minds and encourage them to realize their true potential. Other than the regular curriculum, kindergarten education also includes different activities such as drawing, colouring, clay work, craft work, singing, dancing and more to make school life interesting for younger children. Teachers must understand the importance of pre-primary schooling and do its best to impart necessary knowledge to the children. Kindergarten and preschools in India focus on the key skills: emotional, cognitive, social and mental growth of kids (Sharma, n. d). According to him, these schools organize tiny toddlers for formal schools and life, making them confident and curious learners through their interesting pre-schools programs. Preschool education in India can help foster creative thinking, but it is important as a parent to encourage similar methods of learning once the child is home.

Children play different games and indulge in varied activities that make them cheerful and happy. Rhymes, storytelling sessions and movement activities help them to learn basic skills. Nursery schools through pleasurable childhood activities and games guide kids to learn simple skills of reading, writing and numbers that will be beneficial for tiny tots to cope with the pre-primary level of learning. These schools build a very colourful and engaging learning atmosphere for kids with theme-based classrooms and different activity areas. In schools children explore new world that channel them, booming their school-age learning (Sharma, n. d). He enumerated some important factors which every parent should look at while enrolling a child into a kindergarten. A large portion of the teaching materials must be produced at the school by the teachers so that they customize their teaching aids to suit the interests and knowledge levels of the children. Attention must be given to the health and nutrition of the children to ensure that they have the physical energy and natural attention span needed for learning. Nutritional and medical supplements are provided to under-nourished children from low income families. Children learn spontaneously when their interest and curiosity are awakened. ‘Teaching’ is confined to brief periods according to the natural attention span of each child, which is normally 15-30 minutes daily during the first two years. The learner-teacher ratio is kept very low to enable the teacher to work with small groups of 4-5 children at a time while the others are absorbed in learning games or recreational play. The most effective ratio is five learners per teacher during pre-school, lower and higher kindergarten classes and twenty learners per teacher during standards 1 to 5. Story telling must be used to make learning fun and to communicate basic values of goodness, beauty, harmony,

responsibility and right conduct. Information on people and other living things, places, history, geography, and other cultures should be presented to the child in the form of stories, pictorial information and explanations combined together to present facts in a living, integrated context rather than as a series of separate divorced subjects.

On pre-primary education, Nigeria has committed her national interest to this level of education by its official recognition as enshrined in the National Policy on Education (FGN, 2004). The policy, in section 2, made provision for pre-primary education and stated the objectives and measures to be taken by Nigerian Government to facilitate the implementation in sub-section 13a-h. These include making provision of adequate care and supervision for the children while their parents are at work (on the farms, in the markets, offices, etc) and teaching the rudiments of numbers, letters, colours, shapes, forms, etc, through play, among others.

It is stated in sub-section 14 of the policy (FGN, 2004) that Government shall establish pre-primary sections in existing public schools and encourage both community and private efforts in the provision of pre-primary education. Provisions for teacher education programmes for specialization in Early Childhood Education and for ensuring that the main method of teaching at this level is through play were also made in the policy document. The policy goes further to specify that the teacher education curriculum should be oriented to achieve the purpose of pre-primary education programme while government made a commitment to set and monitor minimum standard for early childcare centres in the country. Also, Amali (2010) stated that pre-primary education has become a common education phenomenon for children from many homes and societies not only in Nigeria but across the globe. This has been attributed to the effect of modernization, industrialization and global economic growth which creates the condition that facilitates parents sending their children to pre-school institutions. This type of education has been referred to in several ways. Some referred it as Early Childhood Education, Nursery Education, Kindergarten or Pre-primary Education. Above all, Ejieh (2009) considered Pre-primary education as beneficial to societies and individuals in the educational development of their young children.

The National Policy on Education in Section 4 sub-section 17 describes primary education as the education given to children aged 6 - 11 plus and as key to the success or failure of the whole educational system as it is the foundation upon which the entire education system is built (FGN, 2004). The goals of primary education, according to sub-section 18 a-g include:

- Development of permanent literacy, numeracy and ability to communicate effectively;
- Laying a sound basis for scientific and reflective thinking;
- Provision of citizenship education as a basis for effective participation in and contribution to the life of the society;
- Moulding the character and developing sound attitude and morals in the child;
- Developing in the child the ability to adapt to changing environment;
- Giving the child opportunities for developing manipulative skills to function effectively in the society; and
- Provision of the basic tools for educational advancement, including preparation for trades and crafts of the locality.

In pursuance of the objectives of primary education, the Nigerian government, in sub-section 19a of the policy, makes primary education tuition free, universal and compulsory (FGN, 2004). The policy further specified in sub-section 19d that teaching at this level of education should be practical, exploratory and experimental. Other items in sub-section 19 stipulates that the medium of instruction in the primary school should be the language of environment for the first three years in monolingual communities. English language was also listed as a separate subject. From the fourth year, English language becomes the medium of instruction and the language of immediate environment and French and Arabic languages shall also be taught. Specialist teachers, according to the policy provision, shall be employed to teach particular subjects such as Mathematics, Basic Science and Technology, Physical Education, Language Arts (in relation to English, Arabic, French, Sign Language and Nigerian Languages), Music, Fine Art and Home Economics. All these impose great responsibility on the primary school teachers who have to implement this policy. It, therefore, implies that teachers have to be abreast of both content and pedagogical knowledge as well as empirical information from research findings.

The UN's Gap Task Force issues reports and assessments on Millennium Development Goal number 8 (2005) described a completed primary education as a basic human right and necessary for enjoying many other rights. Primary education is transformative and empowering, and a means for accessing broad economic, social, political and cultural benefits. It is also a powerful driver for realizing all of the MDGs and for sustainable development more generally. MDG2 – providing a full course of primary schooling for everyone in every country, although may not be achieved everywhere by the

target date of 2015, significant achievements in expanding access to schooling have been made in many countries during the past decade (The UN's Gap Task Force issues reports and assessments on MDG8 (2005). For instance, it was documented in the report that enrolments in sub-Saharan Africa (SSA) increased by 51 per cent between 1999 and 2007 and the net enrolment rate in South and West Asia (SWA) had reached 84 per cent by 2007.

An overview of the necessity for primary education by the South American Council for Social Development (2012) also revealed the following:

Motivation towards education: In today's immensely competitive world, one will survive simply if he/she has earned a customary qualification which comes with step by step education. Primary education motivates a kid towards studies and therefore improves his/her interest to firmly proceed.

Child mental development: A toddler has to be accountable to himself and his family. Primary education offers such avenue, other than any such ladder that may lead him there suddenly. Psychological development will inculcate an accounting perspective towards his family. Primary education happens to be the resource that may bring this mental development.

Overcoming the language barrier: Primary education often leads to the development of proper communication of children's desire through their words. They develop proper communication skills to commune with everybody. When expressing their thoughts, they are also equipped with the confidence to express such views freely.

Developing imaginative power: Primary education may be a key aspect for developing intellectual ability. Together with communication skills, primary education helps in improving verbal skills, nonverbal skills, monitoring ability, plan generating capability, concentration power and the majority of necessary, memory power. These would be the long term resources that ought to be built along at this level of education.

Social responsibility: Primary education shows infants correct methods to execute their willingness in the direction of the society. Being a social being, kids ought to take cognizance of the responsibilities these normally require. The behaviour of a toddler reflects his personal development. Different social activities like dealing with an aged person, nature of cooperation or sharing perspective, responsibility towards nature and plenty of additional attributes are inculcated.

Emotional improvement: The importance of primary education lies also within the objective of emotional improvement. Primary education leads the pupils towards building

emotional strength. The inner power is directed towards enlightening their capability, rather than just becoming demolishing perspective.

Development of humanity: A pupil's mind could be moulded into any form. Proper primary education is needed to firmly mildew them into creative beings, full of love, passion, patience, respect, hope, perseverance and trust. It happens to be one of the responsibilities of primary education to firmly unlock these valuable treasures in his or her kids.

In summary, the overall development of a child can be real with the right primary education. Proper primary education leads pupils within the direction of achieving their goals.

Yusuf, Ajidagba and Olumorin (2010) noted that the quest for eradication of illiteracy in modern societies in the world lies in the provision of education for citizens. This is because education is one of the vital indices used in the categorization of nations as developed or developing. According to Gene (2005), lack of primary education is a silent killer of a large number of poor children in the developing world. Education is an important key for the development of society. In fact, education is the instrument which a society can use to solve her problems. Obiageli (2006) noted that primary education alone, if well planned and delivered, is capable of strengthening democracy and engender economic growth. Thus, primary education is an essential phenomenon through which human and natural resources are harnessed for the common good of humanity. UNESCO (2001) asserted that all nations should ensure that education is a right for all their citizens. Nigeria is a signatory to the Jomtiem declaration on Education For All (EFA) in September, 1990. The declaration observed that learning begins at birth and primary education is an essential component of basic education. Probably, that is why the Federal Government Nigeria introduced Universal Basic Education (UBE) programme in 1999 to actualize the Jomtiem declaration for the purpose of sustainable development.

Meanwhile, section 18 of the 1999 Nigeria Constitution, dealing with fundamental principles of state policy reflected Nigeria's commitment to Education for all and specifies that:

> *Government shall strive to eradicate illiteracy; and to this end Government shall as and when practicable provide, free, compulsory and universal primary education, free secondary education; free university education; and free adult literacy programme (page 29).*

It is noteworthy that primary education is meant to be free and compulsory for all children. Indeed, Nigeria has since independence, given some attention to universalization of access to basic education in various forms (Osokoya, 2010). The free Universal Primary Education (UPE) programme in the old Western Region of Nigeria is well documented (Taiwo, 1981; Fafunwa, 1991; Osokoya, 1999; 2006). There were adaptations of the programme in various parts of Nigeria before the Universal Primary Education of the Federal Government in September 1976. On 30th September 1999, the Universal Basic Education (U.B.E) was launched by the Federal Government of Nigeria in Sokoto. Among the goals and objectives of the Universal Basic Education scheme is to universalize access to primary education by providing free compulsory primary education to every Nigerian child of school age.

The Universal Basic Education (UBE) in Nigeria is much wider in scope and objectives (perhaps, much more ambitious) than the former Universal Primary Education (UPE). In the Nigerian formal education sub-sector, primary education is an essential component of basic education (FME, 2000). Primary education is an organized, multisectoral, community-based education, which consists of the acquisition of the skills of reading, writing and numeracy, as well as functional knowledge and generative skills determined by the environment and it is the kind of education offered to meet the learning needs of groups of people of all ages in Nigeria (Amosun, 2010).

According to Federal Ministry of Education's (2000) blueprint on basic education, Basic Education is expected to equip an individual with knowledge, skills and attitudes which would enable them to live a meaningful and fulfilling life, contribute to the development of the society, derive maximum social economic and cultural benefits and discharge civic obligations completely, among others. Traditionally basic education means the type of education both in quality and concept that is given in the first level of education. The concept of first level of education varies from country to country. In some countries of the world, the level of education covers 8 or 9 years of schooling. A relentless search for the real meaning of basic education continued worldwide until the famous Jomtien World Conference on Education for All, held from 5th to 9th March, 1990. There, it was recommended that basic education should not be considered as a static term, but as a process to be determined by every nation according to its evolutionary development need (Osokoya, 2008). Thus in 1992 the scope of basic education in Nigeria, covering 9 years, was expanded to include pre-primary, primary and the first three years of secondary education (i. e. junior secondary school), mass literacy for adolescents, adults and women's education. Of these, primary

education is widely adjudged as the most critical as it determines the success or failure of all other subsequent levels of education.

Osokoya (2010) observed that Primary education in Nigeria as in other developing and developed countries of the world is usually regarded as the bedrock for the formal education system. It is the fundamental foundation upon which the rest of the educational system is built. The National Policy on Education (FGN, 2004) refers to this level of education as the key to the success or failure of the whole system of education in Nigeria. Primary education in Nigeria is elementary schooling. It is also described as popular education and it is the first level of public education in Nigeria which the majority of citizens obtain (Osokoya, 2010). Primary education is universally regarded as the first and most important level of education, not only to the individual but also to the entire human race (Babalola, 2001). This assertion is based on the fact that primary education is usually the first and the last level of education for most people in different parts of the world. Primary education is made available everywhere, in both urban and rural areas, in both the developed and the developing countries, in both the rich and the poor nations catering for children of official school age, which lasts for six years in Nigeria (Nwagu, 1978; Akinbote, Oduolowu and Lawal, 2001).

The primary school is a place where the child acquires the fundamental knowledge, skills, thoughts, feeling and actions, which are considered necessary for all citizens regardless of social status, vocation or gender (Orukotan and Oladipo, 1994). According to Babalola (2001), the primary school is a place where the child develops the capacity to learn, write, do some calculations and read to acquire information. This level of education does not only serve as the bedrock for subsequent levels of education, it is also regarded as the gateway to all higher levels of education that produce scientists, teachers, doctors and other highly skilled professionals that every country, no matter how small, rich or poor requires (O'Connel and Birdsall, 2001).

Furthermore, Barbara, Alain and Ramahatra (2003) mentioned what a nation stands to gain when it gives attention to primary education especially to its access, enrolment, retention, quality, universality and completion. According to them,

(a) Primary education is one of the most powerful instruments known for reduction of poverty and inequality and for laying the basis for faster and sustained economic growth, sound governance and effective institutions.

(b) Primary education plays a catalytic role and this is referred to as "the people's asset". For those individuals in society who are most likely to be poor: girls, ethnic

minorities, orphans, people with disabilities and people living in rural areas, extending adequate and quality primary education to them ensures their economic growth.

(c) Primary education for girls is one of the strongest drivers of improvement in fertility, health of the infants and children, immunization rates, family nutrition and the next generation's schooling attainment and this level of education may be the single most effective preventive weapon against HIV/AIDS especially in Africa.

(d) Primary education develops the capacity to learn, to read and use Mathematics to acquire information and to think critically about that information. It is the gateway to all higher levels education that trains the scientists, teachers, doctors and other highly skilled professional that every country, no matter how small or poor requires.

(e) The expansion of educational opportunities through primary education is one of the most powerful tools in the hands of the government for simultaneously promoting income equality and growth -a win-win strategy that in most societies is far easier to implement than the redistribution of other assets such as land capital.

(f) Primary education provides people with "human capabilities" – the essential and individual powers to reflect, make better choices, seek a voice in society and enjoy a better life.

(g) When a large share of children do not complete primary education, the productivity of the labour force, the potential for knowledge-driven development and the reservoir of human potential from which the society and the economy can draw are all fundamentally constrained.

(h) Primary education also promotes achievement of all the other Millennium Development Goals such as poverty reduction, gender equity, child health, maternal health, HIV/AIDS reduction, prevention of other communicable diseases and environmental sustainability.

In realization of the importance of primary education to national development and the tremendous opportunities which it could bestow on its products and the society at large, the Nigerian government, like other countries, has introduced some programmes aimed at making primary education available and accessible to all citizens. Such programmes include the Universal Primary Education (UPE) Programme of 1976, Nomadic Education, Adult-Mass Literacy Programme and the current Universal Basic Education (UBE) programme which became operational in 2004. In educating the young ones, the competence of teachers is very important. In the study by Heyneman and Loxley (1983) it was concluded that the

predominant influence on learning is the quality of the schools and teachers. Indeed, what constitutes competence in teaching is intimately connected to the type of teacher education provided to primary school teachers (Akinbote, 2007).

2.2.2 Teachers' Role in the Overall Growth and Development of the Nation

Education stands out as a tool for human development everywhere in the world, especially for people who desire to have reliable and sustainable socio-economic life. The quality of education being received depends largely on the quality of the teachers. The National Policy on Education (FGN, 2004) unequivocally states that no education system can rise above the quality of its teachers. This expression sets a standard for the education system of the country, irrespective of levels. It may not be true to state that this sincere and honest declaration has been followed by the various stakeholders, especially those who are at the helm of affairs in the administration of the education system in Nigeria. This is perhaps based on the low level of efforts put into improving the quality of teachers in the country.

Teaching is quite a complex concept (Akinpelu, 1981). According to him, teaching can be defined as an occupation or as a profession; as the normal activity of a teacher in classroom or school situation; or as the actual teaching exercise using what grammarians refer to as 'to teach'. In other words, teaching can refer to the occupation or profession, the enterprise or the very act of teaching. As an occupation, teaching is like any other occupation. In this sense, it is simply that at which one works and by means of which people earn their living. The idea of a profession, however, goes deeper and involves a greater care and a deeper sense of commitment, a greater sense of value, and presupposes a greater preparation. A profession needs a fairly long period of preparation during which knowledge and skill of the job are obtained. A formal induction and acceptance by the existing members of the profession, a standard of performance or competence to be attained, observance of a code of ethics or practice so as to preserve the honour and prestige of the profession, and attachment or commitment to the profession with a willingness to advance its growth and effectiveness, a bond of association between those who are in the same profession and a regulated scheme of payment and reward for service rendered are some of the basic features of any profession.

Akinpelu (1981) asserted that the teacher's main role is 'teaching' but there are many of his activities which are strictly speaking, not teaching. These are: marking registers, opening the windows for ventilation, checking noise and maintaining 'discipline', filling the record book, and so on. This connotes that teaching is an enterprise – a cluster of activities that have the teaching act itself as the centre, which facilitate or promote the teaching act and

contribute toward the total education of children in the care of the teacher. The concept of teaching, as the act or the teaching exercise itself, involves so many activities, so many movements of body and parts of the body, beyond what people describe as 'talking and chalking'. The teacher uses his eye with his countenance to correct children, goes round the students' seats marking their papers and indicating on the papers the correct procedure for solving the problem. He may be listening to students' reading, watching students carrying out their group-project or reinforcing children's action. So complex is the teaching situation. The cluster of minimum but importance criteria by which a teacher can know if what he is doing is teaching include:

(a) consciously and deliberately doing the teaching;

(b) presence of another person or oneself who is being taught;

(c) availability of content or material, information, knowledge and so on, that is being imparted; and

(d) an intention on the part of the person doing the act that makes the recipient to learn

The process of inducing the learning must be such as is morally acceptable and must be pedagogically sound (Akinpelu, 1981).

Teaching at the pre-primary level is obviously a more demanding task than at any other level of education. Teaching is the art and science of using various strategies or methods in any situation, making learners learn and facilitating learning. Moronkola, Adegbile and Adio-Moses (2004) present teaching as "an attempt to help someone's skills, attitude, knowledge, idea or appreciation". A teacher is one who engages in the activity of bringing about learning in a pupil (Osuji, 1996). Teachers are those holding trump cards to proper education and those entrusted to develop the head, heart and the hands of others (Okolie, 1991). A teacher is one at the centre of the success of any educational programme no matter the quality of learning activities blueprints, learning materials and available prevailing physical facilities.

The work of teachers in the school is more than teaching, educating, assessing, counselling and innovation. Certain skills, techniques and attitudes can be defined as part of the training received in institutions preparing teachers. Others are communication and continuing consensual work in a school community. A teacher's work must be seen as part of social activities and democratic participation in every society (Moronkola et al, 2004). The obligation of teachers in this regard is certainly localised in their professional responsibilities. As Abolade (2009) asserted, the success of any course of action depends on social factors, the most important being the teacher who is the main figure in the teaching and learning process.

In performing this role, he or she sets the tone of the learning experience. At the heart of this is education which equips the teacher to perform his role and functions in the implementation of the policy.

Fafunwa (1991) observed that the failure or success of education depends on the programme objectives designed for the purpose. Teachers are at times referred to as persons who must impact knowledge through interaction with the learners. The process of interaction should effect a change in the learners and the change must affect the welfare of the society. Awoyemi (1986) noted that the task for identifying effective teachers is important for effective policy implementation, for any educational goal to succeed as professional qualification for teachers was found to have better effect in the utilization of available instructional material essential for teachers' use. Teachers' functional obligation should be the enforcement of such changes in the learner and consequently upon the welfare of the society. Based on this professional calling as noted by Jekayinfa (2007), the teacher should know what to teach, whom to teach, how to teach and what type of instrumental materials to use. Therefore, he or she bases his technical and learning selection on purposes that have relevance to the learners and societal needs.

In order to function responsively and responsibly in meeting the objectives of pre-primary and primary education, teachers need effective use of resources and materials in the teaching of the pupils. The teachers' resource for teaching the learner should include all the materials from the learners' immediate environment. Teaching as a functional approach should be based on methods that could produce a highly motivated, conscious and effective teaching and learning at this level of education. These should be ingredients that further encourage the spirit of inquiry and creativity in teachers as well as in the learners. This should help them fit into the social life of the community and the society at large, which should in turn facilitate their commitment to national goals. Perceptively, the teacher could apply instructional materials to develop the cognitive, psychomotor and affective domains of the learning objectives in pre-primary and primary schools in Nigeria.

Adeyinka (1995) classified the teacher's role and responsibility into two: as the educator and as the subject specialist. As the educator, the teacher should be conversant with the skill of teaching and making abundant but relevant use of instructional materials. The teacher, as the subject specialist, should have genuine professional interest in teaching and learning. The teacher plays a multi-dimensional role as a man who combines 'love' of knowledge with the ability to 'impregnate' others with his knowledge. He combines disciplinary role with surrogate role. The good teacher instils confidence and makes learning

a fascinating challenge. The teacher teaches human beings not the subjects. So his interest should be more on the people he teaches and not the subject he teaches. People are called into teaching because they love children and youth, or because, they love being with them, watching them open up and grow and become more able, more competent, more powerful in the world as a gift of oneself to others. Despite these multi-dimensional responsibilities of the teacher, which inform his call and training, the present day teacher is still faced with enormous challenges globally (Amali, 2010).

As the classroom manager, the teacher is expected to guide the actions and thoughts of the learners. He manages the resources made available to him. The teacher sets objectives (instructional and behavioural) to achieve in daily classroom lessons. He motivates directs, coordinates and controls learning and learner's activities. The teacher keeps adequate records of the individual earner to assess his or her performance. He also maintains class and school discipline. The teacher as administrative officer and professional in the school participates in taking decisions, initiating actions and organizing resources available for judicious and effective utilization. He helps to manage the physical facilities of the school and participates in curriculum development and implementation.

The teacher as the welfare officer has the responsibility of addressing and satisfying the genuine needs and interests of needs and interests of the children in the class and school. As the public or personal relation officer the teacher relates with all members in the school community and maintains high cordial relationship between himself and the learner's parents thereby maintaining healthy relationship between the school and the society. The teacher also has ability and competence to observe and study children, identify their talents and problems, discourage undesirable character and encourage desirable ones among them. Also, the teacher's role in imparting quality skills in the people is vital. Amale (2010) listed the skills imparted by teachers as effective communication in oral and written forms; ability to think ahead of time, event and people; critical and creative thinking about value issues; capacity to move from mere awareness to knowledge in action; working co-operatively with others; sound knowledge, spirit of inquiry, sustainable action, sound judgment and imaginative thinking, among others and above all, the development of unquestionable character.

Osokoya (2010) commented that an understanding of the nature of the role to be performed is helpful in learning how to do the job and in subsequently doing the job well. The areas of competence required of the teacher were considered to include classroom control, establishment of classroom behaviour standards, preventing misbehaviour, fostering self- discipline and handling behaviour problems. Obanya (2004) listed some of the major

challenges of the teacher to include the changing role of the teacher worldwide; the need to ensure respect for the teaching profession; the fact that persons with degrees in education may find themselves working in other sectors; and increased sophistication in the wider society. These show that the teacher plays a vital role as an agent of national development and as noted by Aggarwal (2008), it is the task of the teacher to educate for change in moulding and shaping the attitudes, habits, manners, characters and personality of the learners. The teacher is also a facilitator of learning, role model, parent substitute, friend, guidance counsellor and resource person to learners.

The teacher also as a detective must identify the age, ability and aptitude of the learner. All learners are gifted in one area of capability or the other. The teacher must organize learning experiences to provide for variety (interest and ability), mastery and retention (practice and perfection), progression (learning from simple to complex), transfer and application (application of learning to real life situation) and evaluation (pre-course, formative and summative). All these will help to develop the hand, head and heart of the learner and promote creative thinking and decision making (Aggrawal, 2008). The teacher, according to Aggrawal (2008), is a member of the society who must be a promoter and sustainer of desirable attitudes, norms and values of the society by being moral educator, role model and group and community leader. He must be able to draw and apply material from his environment to make learning meaningful, relevant and applicable thus helping to sustain the needs of the present and helping to meet the needs of future generations.

The teacher, according to Abdulakreem (1994), is a person who imparts knowledge and transmits societal virtues. The teacher is a socializer, a model, presenter, innovator, manager of learning, instructor and an evaluator. From the foregoing, the teacher is a very important stakeholder not only in the education of the citizens but in the overall development of a nation. This forms the basis for the purposes of teacher education as stated in the National Policy on Education (FGN, 2004) which are:

(a) *to produce highly motivated conscientious and efficient teachers for all levels of our educational system*

(b) *to develop the spirit of enquiring and creativity in teacher*

(c) *to help teachers to fit into society life of the community and the society at large and enhance their commitment to national objectives*

(d) *to produce teachers with the intellectual and professional background adequate for their assignment and make then adaptable to any*

changing situation not only in the life of their country but in the wider world

(e) *to enhance teacher commitment to the teaching profession (pg 38).*

In the same vein, Isikuemen (1992) identified the broader aims of teacher education as promotion of professional growth, provision of methods of improving pedagogical skills and contribution to curriculum development and orientation. Also, the objects of teacher education according to Bell-Gam (2003) include educating teachers who will be positively oriented towards teaching profession, production of effective classroom teachers who are highly motivated, conscious of the important role they are expected to play in the development of education, teachers who possess sufficient knowledge in the theory and practice of education which they can in turn teach as well as equipping learners with sufficient knowledge and skills in classroom and school management.

Agu (1988) asserted that good teaching is the focus of good schools. According to him, as the school is, so is the society. The quality of any education, therefore, depends largely on the quality of the teachers. In fact, it is the most important school-related factor influencing achievement (Darling-Hammond, 2000). The teacher stands out as the key to realizing the high standards that are increasingly emphasized in schools and school systems across Nigeria. The teacher, therefore, is the most important factor affecting effectiveness and efficiency in the education enterprise. The goals of teacher education as stated in the National Policy on Education (FGN, 2004) aptly describe the significance of teacher education (Sofoluwe, 2000; Asaaju, 2010). In another sense, the roles of teacher education to national building as enumerated by Ipem, Ajagbe and Okpanachi (2010) include provision of the school system with opportunities of retaining the services of trained and qualified teachers, improvement of job performance to enhance national development, equipment of teachers with new trends, techniques, concepts, procedures and programmes for the overall general improvement of the society, correction of deficiencies in poorly prepared professional teachers and preparation of flexible curriculum for meaningful education of pupils in the societies in which they live.

At all levels of the educational system, the quality of the products is determined by the quality of teachers. The reason for poor quality graduates at all levels of the educational system is not far-fetched. Effective teachers achieve objectives of teaching which in turn facilitates learning. The reverse results in a devastating blow on the quality of education and the contribution of school product to national development (Asaaju, 2010). Yusuf, et al. (2010) stated that the teaching profession has been generally viewed as the backbone of

Nigerian education. Based on this view, much is expected of the teacher who is believed to hold the key to the door of the nation's educational development. Apart from the professional role of teaching, Daughterly and Woods (1996) added that teachers are responsible for the safety, health and welfare of learners in their care. They are also expected to be sensitive to their responsibilities and devise procedures that would prevent or at least reduce the frequency of accidents.

The teacher's role in the dissemination of science among children is to help pupils to understand their environment and to develop their scientific abilities, knowledge and attitudes (Daughterly and Woods, 1996). Teachers have the right materials, knowledge of where the children are being led into for exploration of nature and using the right sorts of question to lead the children. Teachers also develop effective instructional materials and they need to be familiar with Piaget's theory of development of children so that science activities can be planned to match the cognitive level of the child and the logical order of science. The teacher is a critical factor in any human development project. No sustainable development can be realized without human development. Based on the obvious relevance of the teacher in societal development, there are two perspectives in discussing the concept of "teacher". "A teacher" and "the teacher". The following definitions given by two different erudite scholars would provide the framework of the author's analysis. Saylor and Alexander (1974) used the concept teacher or teachers in its general term to include all educational personnel who work with teachers: teachers, administrators and such varied specialists as counsellors, librarians, audio-visual co-ordinators, curriculum and instruction consultants, activity directors and others.

It is true that the scope of the teacher's responsibility extends to the various areas which the authors expressed above, such definition makes teaching an all-comer affair. Anybody who has the opportunity of interacting with the leaner at whatever capacity even without due process is a teacher. This concept is not only misleading but also damaging to educational development and cannot lead to sustainable development. The other concept which suits the author's perspective is "the teacher" as described by Mkpa (1987):

> *that person underwent and completed, in a formal teacher training institution, a planned programme of training, among other areas, in the principles and practice of education, and was exposed to an observed period of internship either after or as part of the period of training(page 344).*

The teacher, according to Uche and Onyemerekaya (1988), by virtue of his professional and specialized training, is best suited to be involved at every phase of curriculum work, at the international, national, state local or school levels. The teacher has the 'head', the 'heart' and the 'body'. In other words, he is intellectually, morally and physically balanced to serve humanity. Anybody can be "teacher", as we have them today in most private and public schools across the levels, but anybody cannot be "the teacher". It is only the teacher that can guarantee the multi-faceted responsibility associated with the teaching profession.

The teacher places the learner at the centre of the programme. On the basis of his knowledge of the learner, the teacher decides the appropriate programme for them and the point at which they should begin. The learner's interest, intelligence is always taken into consideration when such decisions are made. The teacher is also a resource person and is in a position to answer learners' questions, which if left unanswered, could hinder learning. The teacher foresees the impending difficulties and not only gives the clue that could help the learner to overcome the difficulties, but also leads them to think divergently. The teacher is an evaluator as he is able to determine the learner's progress. A satisfactory progress leads the teacher to prescribe advanced work and where the learner fails to make satisfactory progress, it is the teacher who determines the kind of remediation for each child.

Teacher Education is the process of training teachers so that they become well equipped and reedy to vary out the duties expected of them. According to Ogundare (2009), teacher education is the component of any educational system charged with the education training of teachers to equip the competences and skills of teaching for the improvement in the quality of teachers for the school system. Oyedeji (2006) asserted that Teacher Education is an amalgamation of institutionalized procedure that are aimed at purposeful, organized preparation or further education of persons who are engaged directly or indirectly in educational activity.

Teacher Education whether at the primary, secondary or tertiary level are required to have high academic qualifications, research experience and continued aptitude for and interest in further training and intellectual pursuits. The education of teachers beyond secondary level, necessarily takes place at colleges of education, polytechnic, National Teacher Institute (NTI) and Universities. At the colleges of education, teachers are trained to obtain the Nigeria Certificate in Education (NCE) after three years of academic and pedagogical training. This qualifies them to teach in the primary school. The product of University faculties and institutes of education obtain the Bachelor of Education (B.Ed)

which qualifies them to teach in the post primary institutions, including universities (Adeyinka, 1994).

Teacher education is, therefore, of great importance in our education system, which manifests depreciating standards (Abdulkareem, 1994). Trained and qualified teachers are essential for effective discharge of their duties. Teachers are expected to possess high quality of education, high sense of responsibility, initiative, intelligence, knowledge, skills, loyalty, humility, integrity, self-confidence, physical and mental alertness, fluency in speech and power of expression, just, creative and emotional stability. The curriculum of teacher education features many courses to the taste of its candidates e.g. Education, general studies, teaching practice while one or two teaching subjects in the cognate subject areas are taken by students depending on the design and structure of the programme.

The National Policy on Education in section 9 promises to regularly expose teachers to innovation in their professions (FGN, 2004). In doing this, it was suggested that in service education of teachers will continue to fill the gaps of any inadequacies of the pre-service training. Apart from this, another area which creates problems for production and retention of teachers at this period is the issue of further professional development and growth. To really expose teachers to innovations in the profession, continuous training is quite necessary and could be costly too. It is a necessity for high performance and productivity. Continuing professional development therefore need to be emphasized especially in exposure of teachers to research findings to improve classroom practice. In addition, teaching like any other professional practice, is dynamic and to keep abreast of time and techniques, it is invariably imperative to expose our teachers to new techniques as they emerge. Though costly, this is one of the prices which government would have to pay to improve teachers on the job if the future of youths is of any serious concern. Therefore, as the difficult economic period may not permit full sponsorship, it would pay the employers of teacher to make available partial sponsorship.

The non-professionalisation of teaching in Nigeria is one of the problems facing the retention of teachers especially at this period of economic crisis. Presently in Nigeria, teaching is a free zone where anybody with a certificate could enter and leave at random and will. Without the required professional recognition, "teachers" would continue to see teaching as a "spring board" to other forms of job and system, nay, the nation at large, will be the worse for it (Ajayi, 2004). According to him, teacher education programmes are the organized curriculum contents, which provide professional education and specialized training for pre-service teachers in order to educate members of the society.

Education remains a formidable tool for nation building and those charged with the task of educating its citizens should be accorded quality education that can help them cope effectively with teaching. It is an incontrovertible assertion that the educational system of any nation is the bedrock, heartbeat and manufacturer of its manpower. The quality of education transmitted by teachers is a true reflection of the quality of education they received and this can either be of good or poor quality.

2.2.3 Role of Research in Education

Research utilization is intended to maximize the effectiveness of strategies for moving research to practice. The process of dissemination is intended to produce an effect i.e. utilization of information on the part of the recipient. The purpose of research is to be of use, to change current practice or to confirm it. Yet the process of moving new understandings and new products from research to practice usually takes years, decades or even generations. Although there are good reasons for moving carefully as new research needs to be evaluated, replicated and refined, too often the pace of change is set, not by a rigorous process of review and refinement, but by the gap between the research community and the world of practice.

Research on dissemination, or knowledge utilization as it is sometimes called, has yielded a wealth of information about what works and what does not work. Due to the gap between the producers of knowledge and the potential users of such knowledge, those understandings for the most part have not moved from the research community i.e. those who study the process of knowledge use, to the practice community i.e. those responsible for adopting and applying research outcomes. As a result, most dissemination practices are still based on a mechanistic, linear conception of dissemination as a process of "getting the word out." As a number of experts pointed out, most research "is not used as a can opener is used" (Huberman, 1987). Many research outcomes have implications for the ways in which programmes are run, services are provided, money is allocated, information is interpreted, or materials are used. In cases where change is conceptually complex, and in cases where substantive change is demanded in individual or organizational beliefs or behaviours, the process of knowledge use is vastly more complicated.

Researchers are not addressing utilization goals in sufficient detail to overcome these complexities. For instance, the actual quality of a research design is less important, in terms of its likelihood of being adopted and used, than the extent to which it fits with users' established beliefs and experience. Another problem is the source producing research outcomes is more important than the quality of the research design. People tend to trust

sources with whom they have established relationships and/or for whom they have high levels of respect. Also, the degree of credibility of information sources is related to two factors: perceived expertise and perceived trustworthiness. The more intensely people are involved with an issue, the more likely they are to question both the expertise and the trustworthiness of those whose information contradicts their own current understandings.

When research outcomes do get used in real-world settings, the resulting practices, programmes or products are often quite different from the researcher's original conception. While researchers often produce new information, they do not routinely provide demonstrations or other utilization assistance to interpret how it "fits" into real-world environments. Additionally, utilization requires that some adaptations be made to apply new models into existing contexts. Again, the extent to which the intended beneficiaries of particular research are involved in the research process, the more likely a researcher will have stories, examples and general information couched from the "user" perspective. This information is often critical in promoting utilization.

The characteristics of potential users of new knowledge or products are no more vague. This attention to the user represents one of the major shifts in understanding about effective dissemination and utilization. Traditionally, dissemination and utilisation theories and strategies have focused primarily on the message, or content, to be disseminated (the specific "innovation," in terms of new research findings, programmes or devices) or on the medium of dissemination (the channels used to get the message out including news releases, electronic networks, webcasts, or interactive video). Traditional approaches acknowledge that utilization is affected by characteristics of the dissemination source (including intermediary information sources, called linking agents). But the primary determinants of utilization are the "users" themselves. They are the most critical element in the dissemination and utilisation process. The effectiveness of any "utilization model" rests upon the degree to which it "fits" a particular potential user group. The higher the degree of diversity and wide-ranging characteristics of an intended user group, the greater is the necessity for having a range of "utilization models" to accommodate those differences. Experts now perceive knowledge use as a cognitive function or, in other words, as a learning activity. Research on utilization and social cognition has converged to provide deeper understandings about how people process new information as well as what is required for utilization to occur.

2.2.4 Sources of Knowledge Available to Teachers

Sources means avenues of knowledge teachers are exposed to. In the past, teachers had limited sources of knowledge available to them (Minstrell, 1993). This limitation may be due to the rigour, relevance and utilization of research reports and lack of teachers' access to them. Today there are ways of accessing and linking up with research information. These sources include a directory of resources for the research. This is an exhaustive list of academic resources in management, economics, various information and links about the research in education and other aspects of life. Teachers can source for knowledge in directories like educational journals, conference proceedings such as science teachers association of Nigeria conference proceedings, institutional libraries such as university libraries and books of reading which may directly or indirectly deal with research (ESG, 2002).

Documentation - another knowledge source is the documentation of events in which records are kept of various events or phenomena (Banjamin, 2001). Today there is an extensive documentation of data that are easily accessible through the use of the Computer Technology. Another source of research knowledge to individual teacher may be international database of teaching resources (ESG, 2002). Numerous teaching resources such as online courses, case studies or advices about the use of information technology in teaching are freely accessible on the internet. Online platform is one of the most and best sources of accessing information and knowledge of research by teachers. According to Aire (2001), information can be sought through virtual library on a planetary scale. The internet constitutes the largest library in the world. In order to improve the work of the teacher, research information on the libraries shelves of Universities and their catalogues, directories of books, reports, theses, research review and articles are very essential.

A teacher may opt for further studies which leads to the award of a certificate, diploma or degree in a university as presented by Patton (1978) during which he or she will have to visit libraries for related and non-related information for both present and future use. In partial fulfilment of such further study, as stipulated in the National Policy on Education (FGN, 2004) and as earlier recommended by the 1943 Asquith and Elliot commissions that research should be a significant part of university life, it is statutory to carry out a research work. Teachers may also source for information or become knowledgeable in research in a bid to solve specific problems confronting the school (Dave, 1979). This investigation may be carried out in conjunction with others who may be co-teachers or researchers and published in a learned journal. A teacher may also gain knowledge of research work if he or

she helps researchers in administering questionnaires, assist researchers to administer teaching treatments during their experiments, assist researchers in carrying out classroom observations and conclusively, they may source information, if after the research exercise, the researcher communicates back the research reports to the teacher (Dave, 1979).

Much of the systematic knowledge we have about Educational Psychology has resulted from the application of scientific methods to the study of certain events. A major goal of scientific study is to explain, predict and/or control events. A teacher can learn or source knowledge from it. It is also true that although scientific study has contributed greatly to understanding ourselves and others, knowledge is obtained from many different sources apart from those discussed above. These are:

Authority: Individuals in a position of higher status or authority have provided people or societies with the so-called truth or information (Babarinde, 2006; 2009). One prominent example was the belief that the earth is flat. Scholars and map markers proclaimed this fact with absolute confidence (Campbell and Stanley, 1963). As one can see, this type of knowledge can lead to trouble if the authority is wrong. The information conveyed to others will, therefore, be in error. Of course, authority may not be correct in all cases, that is why research-generated knowledge is necessary.

Tradition: Knowledge is also obtained from tradition. In the past, most children started school at the age of six because traditionally this was the appropriate age to begin formal schooling (Patton, 1978). Such a rationale is no longer relevant but tradition has prevailed. Knowledge based on tradition can also be inaccurate because it may convey to others erroneous information.

Expert opinion and personal experience is another influential source of knowledge that comes from the opinion of experts according to ESG (2002). Certain individuals may take positions that dramatically influence people's beliefs. Human beings gain a considerable amount of knowledge from personal experience, though not all of it is accurate, because in many instances, we change our beliefs through knowledge from conflicting sources. The limitations of personal experience are that certain evidence may be omitted and that we may be too subjective in our experiences and beliefs. Louis (1996) argued that current models in research sources are inadequate for explaining dissemination and knowledge utilization in education. She also claimed that all knowledge is political and political contexts are critical to understanding knowledge use, particularly in the context of education. She concluded that the main barriers to sources of knowledge in the public sector are not at the level of individual resistance but lie in an institutionalized culture that does not foster learning.

2.2.5 Teachers' Acquisition of Research Findings through Interaction with Researchers

Good teachers have been described as those teachers who reflect on their practice and are responsive to changes which might improve their skills and the quality of learning they are able to provide for those they teach. Teachers are busy people, who would not just follow other people's ideas (Ogunleye, 2005). They are often disinclined to accept theories which emanate from academics that are at a remote distance from the classroom (Norwich Area School Consortium, 2000). Teachers' involvement in research takes several forms. Most often, their role has been essentially passive, simply because they represent a kind of link between the government or other providers of education and the recipients of formal education. The role of teachers has been to cooperate with researchers, theoreticians, administrators or policy makers, in such activities as observing, noting, testing and implementing externally derived initiatives.

Often too, the teacher is an object of research, rather than a researcher. Sometimes, the resulting conclusions and recommendations are perceived by teachers as one-sided and perhaps arrogant, arousing a certain scepticism that may sometimes be justified. Outsiders may be seen as uninformed and their research perhaps fundamentally flawed as praxis is being investigated by those who are not practitioners and who lack some of those commitments, insight and practical understanding that may be fleeting and hard to articulate but which none the less make up an essential stand of praxis (ESG, 2002). Again, the teachers might not even possess the requisite capability to understand the language used to report research findings by the researchers whose mindset was to write for journal managers to accept their papers for publication rather than for the purpose of reaching the classroom to drive change in classroom practice.

The Scottish Council for Research in Education (1993) observed that it seems likely that increasing professionalization of the teaching force has brought with it an increase in small-scale research activities by individually teachers, often as part of gaining higher formal qualification. Such studies encourage and often involve professional reflection and evaluative scrutiny. They may take any form, and focus upon any aspect of the 'educational process. This common feature is that they will be locally generated and implemented and thereby address issues of concern to the researchers rather than those of the teachers who are the potential implementers of the findings.

Research by teachers focuses on school teachers, pupils and the school environment of the teachers who are engaged in research. This still leaves a wide variety of activities that these teachers can be engaged in. For example, many teachers as part of advanced degree programmes are engaged in research for their thesis. The teacher researcher deals with action research which is an inquiry into their teaching in their classrooms. Because this research focused on the work of the researchers, it is developmental in nature and has two main purposes. The more immediate of the two is the improvement of their teaching activities. The second purpose is to seek an improved understanding of the educational situations in which they teach (Minstrell, 1993). In Nigeria, teachers are not involved in research nor do they carry out research to any appreciable extent (Ogunleye, 2005).

Subject Centre for Geography, Earth and environmental sciences (GEES) was reported to have emphasised that 'if you don't research it, you can't teach it' (Norwich Area School Consortium, NASC, 2000). This suggests that students' learning is much better in all research active areas. It is evident that the two processes are very remote to one another and unless research active departments start to realize that there is no de-facto link between research, teacher classroom practice and ultimately pupils' learning, there will continue to be piles of studies without the much desired utilization of such research findings (NASC, 2000).

Managers frequently claim that their personal experience is more meaningful than the results of research (Shkedi, 1998), but personal experience can be misleading (Davies and Nutley, 1999). In addition, for many researchers, it is important that the knowledge they create is utilised and has some impact on practice (Tranfield and Starkey, 1998). One of the goals of research is to generate new knowledge and establish an evidence-base within the profession. While research may not be able to solve problems or make decisions, it can provide information for use in reducing risks involved in the decision-making process (Oulton, 1995).

2.2.6 Pre-Primary and Primary School Teachers' Research Utilization in Classroom Teaching

"Research utilization" is at a turning point. Despite an accumulation of replicable findings, robust constructs, even a "soft technology" for bridging the gap between theory and practice, there is still largely the situation of distance between social problems of conflict or inequality and the ability of social science to provide credible, reliable and usable solutions. According to Costa, Marques and Kempa (2000), research utilization by teachers has repeatedly been raised in the literature for some years now. Education research has been a

major activity for a long time now, often for the purpose of generating a data and information base upon which practitioners could draw in order to make teaching and learning more effective. Yet, the extent to which the findings from education research have found application in actual teaching has been rather limited. Teachers, as practitioners need an adequate awareness and appreciation of research findings towards the utilization of educational research in classroom practice.

The conceptualization and operationalization of utilization of knowledge is still going through the process of development (Landry, Lamari and Amara, 2001). According to Weiss (1980), instrumental use was rare and when observed, it would tend to be more frequent in private than in public organizations (Caplan, 1975; Dunn, 1980). In the second design, respondents were asked to identify how the knowledge produced across all the stages of the research process influences all the spectrum of the stages of the decision-making process of the users (Lomas, 1997; Landry, Amara and Lamari, 2000).

There is not yet a body of systematic empirical evidence regarding the particular categories of factors that explain the utilization of knowledge in a statistically significant manner (Dunn, Holzner and Zaltman, 1985). In the absence of a dominant explanatory model, the independent variables proposed in the literature look more like checklists of variables assumed to explain utilization rather than formal heuristic devices (Lester, 1993). Historically, the pioneering studies in knowledge utilization paid most of their attention to variables related to the characteristics of the research products (Knorr, 1977; Brodie, 1981; Conner, 1981: Larsen and Werner, 1981; Pelz and Horsley, 1981; Weiss, 1981). Then, in the second stage, a number of scholars began to stress the importance of policy contextual factors (Lee and Staffedt, 1977; Sabatier, 1978; Webber, 1984; 1987; Whiteman, 1985; Lester and Wilds, 1990; Lester, 1993). More recently, another group of scholars has begun to stress the importance of other explanatory factors such as dissemination and linkage and exchanges between researchers and users of research (Huberman and Thurler, 1991; Huberman, 1994; 1999; Lomas, 1997; 2000; Landry, Amara and Lamari, 2000).

The production and update of research follow a linear sequence to the definition of a service and specifications of production, and the application of instrumental findings that conforms to the specifications defined by research that has resulted into scientific publications. Prior studies have considered many dimensions of research findings influencing utilization:

1) content attributes, notably, compatibility, complexity, observability, triability, validity, reliability, divisibility, applicability, radicalness (Weiss and Bucuvalas, 1980; Edwards, 1991; Lomas, 1993; Dearing and Meyer, 1994); and
2) types of research: basic-theoretical/applied, general/abstract (Machlup, 1980); quantitative/qualitative (Huberman and Thurler, 1991); particular/concrete (Rich, 1997); research domains and disciplines (Oh, 1997; Rich, 1997; Landry, Amara and Lamari, 2000).

Revisiting the triple mandate of faculties of education, Obanya (2004) commented that the mandate is the same as that of universities worldwide. According to him, extending the frontiers of knowledge through research, dissemination of knowledge through teaching and involvement in and contribution to the application of specialized knowledge to the solution of societal problems through public service are central. The quality of the other two parts of the triple mandate depends largely on the research capacity and research orientation of stakeholder. Issues which lend themselves to the consideration of teachers and teacher educators include burning educational issues and problems begging to be researched into; the prestige of an institution, of a faculty or an academic department, being dependent on the quality of their contributions to knowledge; Nigerian academics being left behind by new developments in educational thinking and research because of the political isolation, which the nation suffered during the 1990s, severe under-funding of higher institutions, the brain-drain phenomenon, and the nation's pitiable communication system; continuing research training for academic staff since Ph. D. research training is usually insufficient for career-long research productivity; a strong emphasis on long-term research programmes; team work as the approach to doing research and building bridges between researchers and the actual and potential users of the fruits of educational research.

The world has become a global village through the evolution of the internet, other Information and Communication Technologies and Techno-Scientific advancements. The cross-cultural engagements have created more challenges to the political, social, moral, spiritual and academic spheres of man and his society. These world realities have posed more responsibilities and challenges to the teacher who is the midwife between the man and his society. The fact remains that every society, be it ancient or modern, requires a kind of education which would produce the kind of man it wants for the present and the future generation. Indeed, effective teaching is characterized by identifiable behaviour e.g. lesson clarity, instructional variety, task orientation and engagement in the learning process, praising appropriately and reflection. All these cannot come into being if the teacher is not aware of

his obligation to teach effectively making use of diverse methods and strategies known for the betterment of the teaching learning process. More importantly, teachers must be aware of the existing research literature so as to gain from existing knowledge, present knowledge and deduce what may likely be in action 'tomorrow' (Aire, 2001).

The teacher should see the reason for searching into learners' educational problems which may be historical, descriptive, correlation, comparative or experimental through the research techniques used today which include experiments, surveys, interviews, observations, cross-sectional and longitudinal studies. Costa, Marques and Kempa (2000) stated that it is a matter of considerable regret for all concerned with education that teachers' knowledge and awareness of the findings of educational research is still very limited, despite the fact that education research has been a thriving activity for more than thirty years now. In their view, the present data confirm that the gap between education research and the practice of education remains very wide. Indeed, it can be argued that since there is a steady increase in research based knowledge, without this knowledge reaching the teachers and impacting on professional practice, the gap in actually widening. Responsibility for this state of affairs, which is obviously undesirable, must be attributed to both researcher and teachers, including teacher educators (Aire, 2000). For example, researchers frequently fail to develop the implications of the findings to an extent in which clear guidelines or recommendations for education practice are articulated; even when their research topics can be said to be 'practice-related (Costa, et al, 2001). Similarly, teachers even if they are aware of instances of education research often tend to look for simple rules and guidelines upon which to focus in their teaching, without appreciating that research activities in the educational field seldom lead to such rules. Their concern is that teachers themselves need to become more aware of the value of professional knowledge that can be derived from research and research findings. Guidance, however limited to the nature of education research given in the context of in-service teacher training courses, may help in this respect, provided that it leads future and present teachers to recognise that education research results may not always endorse views and opinions about teaching and learning already held but also to be aware and make use of generated publications which communicate researches and research findings (Costa, et al, 2000).

Teacher involvement in research is another issue in pre-primary and primary schools in Nigeria as teachers are not knowledgeable on the research process (Taiwo, 1981; Ogunleye, 2005; Akinbote and Ogunleye, 2011). The general objectives of the NCE programme stipulate that by the end of the programme teachers should be able to discuss

intelligently the main ideas that have affected and still affect the development and practice of education generally and in Nigeria in particular, study learners appropriately as to determine the most effective way of relating to them to ensure their maximum achievement, select and effectively use of appropriate teaching strategies and methods for maximum learner-achievement, and select and make effective use approximate instructional resources for maximum learner-achievement among others (NCCE Minimum Standards, 2009). These objectives seem not being achieved as evident in teachers' poor level of involvement in research and low level of access to research findings (Ogunleye, 2005).

2.2.7 Some Factors Affecting Teachers' Utilization of University Research

The greater the difficulties to read and understand the theoretical and quantitative research reports, the less likely the use of research (Oh and Rich, 1996). The organizational and social explanations lay the stress on organizational and social factors that are likely to hamper or facilitate the use of research. Literature on knowledge utilization focuses mostly on three such types of explanations: the organizational interest explanation, the two communities' explanation and the interaction explanation. The organizational interests explanation assumes that organizational structures, size of agencies, types of policy domains, positions (professionals or managers) and needs of organizations induce professionals and managers to under-utilize university research. With respect to organizational needs, the organizational interest explanation hypothesizes that the use of knowledge in increased when researchers focus their projects on the needs of the users rather than on the advancement of scholarly knowledge (Orlandi, 1996; Silverside, 1997). Prior empirical studies regarding the organizational content of the research works point to the following results: use of knowledge increases as users consider research pertinent; as research coincides with their needs; as users' attitudes give credibility to research and as results reach user at the right time (Landry, Amara and Lamari, 2000).

The two communities' explanation assumes that a difference between the culture of professionals and managers in government agencies and the culture of the university researchers leads to a lack of communication between them and consequently, to low levels of knowledge utilization (Frenk, 1992; Oh and Rich, 1996). These explanations suggest that professionals and managers in government agencies are reluctant to use university research because they do not share the norms and values of the researchers and they prefer research focused on users' needs to research focused on the advancement of scholarly knowledge.

Likewise, professionals and managers in government agencies do not use the language of the researchers: they prefer research findings in readable language to technical scientific papers (Rich and Oh, 1993; Webber, 1997). Specifically, these explanations predict knowledge utilization with recourse to two determinants: theses explanations predict knowledge dissemination effort. In many cases, the products of research never get widely disseminated and thus have little significant impact (MacLean, 1996). Furthermore, the one-way flow of information and "traditional" dissemination approaches have not proven to be effective in encouraging the adoption and implementation of new research results. Scholarly journals are inconvenient since they neglect to adapt to content, calendar, form, and mode of diffusion to meet the particularity of the user (Oh and Rich, 1996; Lomas, 1997).

On credibility of research, results of a study by Moorman, Deshpande and Zaltman (1993) indicated that the interpersonal factors are the most predictive of trust. Among these factors, perceived researcher integrity, willingness to reduce research uncertainty, confidentiality, expertise, tactfulness, sincerity, congeniality and timeliness are most strongly associated with trust. Among the remaining factors, the formalization of the user's organization, the culture of the researcher's department or organization, the research organization's or department's power, and the extent to which the research is customized also affect trust as well as the users' decision to use or not to use such research findings. Based on assumptions about evidence based practice in medicine, there is much discussion and enthusiasm among research policy makers for the idea that research should have a greater impact on teaching and learning. Policy makers in most countries tend to believe that with proper "sticks and carrots", teachers can be encouraged or required to become better consumers of research results.

Asking teachers to use research findings is not a simple matter, even where good practice is shared among colleagues (Wikeley, 1998). Dissemination activities carried out in this study were intended to stimulate discussion about effectiveness, so that teachers in other departments could select, amend and apply those features that appeared relevant to them. Instead to engaging with this process, the author found clear evidence of defensive behaviour among staff. Colleagues from high performing departments were perceived to have an unwanted status as 'experts'. Teachers thought that the intention was to impose a particular style or model on them by offering practical training in how to be a 'good' teacher. Louis (1996) argued that teachers challenge the validity of the research and claim that their unique situations invalidated the application of its findings. When presented with evidence from research, even when it was carried out by other teachers, teachers frequently argued that their

own situations are different. They were reluctant to acknowledge that the findings might be relevant in their own circumstances, and cited the social content, the size of the school etc, as significant factors which would invalidate the findings.

Good links established prior to and during a research study contribute to a more energetic approach to dissemination of the findings later on. Huberman (1990) found that there is a relationship between the type and amount of contact made during a research study and the strength of the relationship between researchers and practitioners eighteen months afterwards. Huberman argued that contact made during the research process contributed towards dissemination because the close relationship helped researchers to take into account the local context and predict the way in which the findings would be implemented. For example, interim reports and personal contact between researchers and practitioners can create a better climate for dissemination, which help both parties to focus on the meaning and implications of the findings in a local context. With links between practitioners and researchers at every stage of the research process, the impact of research could be strengthened. Louis (1996) argued that although there has been a trend to involve practitioners in setting some research agendas, involving users will not necessarily make the research more usable except among those who have been directly involved.

2.2.8 Collaborative Action Research and Research Utilization

In his work on research utilization, Huberman (1985) explored the impact of sustained interactivity on the researchers and practitioners. Not surprisingly, virtually all of the researchers said that their interaction with practitioners improved their conceptual mastery of the field they were studying. Huberman, therefore, suggested that researchers benefited from engaging in dialogue over time with practitioners who have experience with the phenomena in which the researcher is interested. Huberman encouraged educational researchers to consider interactive dissemination as a powerful way in which to empower or refine the conceptual tools with which researchers work.

An important finding in Huberman's research is that not only is sustained interactivity useful in ensuring that research is translated into practice but the role of the researcher in that interactivity is paramount. "What researchers do or don't do, along with the investment they make, counts more than do the features of the practitioner environment they engage with" (Huberman, 1985). More than the packaging of the findings, the engagement of the researcher in disseminating findings has an impact on whether those findings are acknowledged and considered for use by potential users (Huberman, 1992; Kaestle, 1993).

Although action research has gained considerable attention in the field of education, the concepts are not new. Kurt Lewin, considered the father of action research, is credited with coining the term in the 1940s, primarily associated with social change efforts. In education, some trace the conceptual roots to the progressive views of John Dewey. Today, action research has gained popularity in the United States and elsewhere and is seen as important in the work of improving schools. In this study, focus is on the practical application of action research in school rather than the philosophical roots of the approach.

Some of the many benefits of encouraging action research in educational settings include professionalizing the work of educators and promoting professional development, empowering teachers and giving educators a voice in the field, developing knowledge directly related to practice and focusing on improving practice, promoting reflection and use of information for better decision making, fostering an openness to new ideas and encouraging creativity, encouraging collaboration and the development of learning communities, encouraging rethinking about how teachers' and students' work is evaluated. Other benefits include providing rich sources of data that can be used for school improvement, revitalizing professional lives, making work interesting and rewarding, allowing articulation of choices made and methods used and increasing understanding and respect among teachers, students, parents and administrators.

Within action research, there are four approaches that differ in their purposes and goals. Hendricks (2009) summarized these four approaches to action research. Table 2.1 is based on her descriptions.

Table 2.1: Approaches to Action Research

Approach	Who is Involved	Purpose/Goal
Collaborative action research	Involves multiple researchers. In education, this may include school and university personnel or teachers and school administrators.	To share expertise and foster dialogues among stakeholders
Critical action research	Involves wide collaboration. In education, this may include university researchers, school administrators, teachers, and community members.	To evaluate social issues and use the results for social change
Classroom action research	Involves teachers in their classrooms; can involve groups of teachers examining common issues.	To improve classroom practice or to improve practices in the school
Participatory action research	Involves collaboration among stakeholders in a social process.	To explore practices within social structures (emancipatory); to challenge power differences and unproductive ways of working (critical); and to change theory and practice (transformational)

Source: Hendricks (2008).

From these approaches, the collaborative action research offers a vital tool for the intervention proposed for creating awareness, acquisition, attitude and utilization of research in line with the Constructivist principles through which the teachers would be involved in the intervention activities and at the same time, enabling the working together of the teachers with the researcher.

2.2.9 Empirical Studies on Teachers' Acquisition and Utilisation of Research

Research results suggested that although medicine and all other discipline have not achieved the best of research utilization, practitioners in the teaching profession are less

likely to source and use research compared with physicians, surgeons or related disciplines. Factors affecting the sources of research in education as reported by Aire (2001) are:

- Lack of time
- Lack of trust in the existing findings
- Failure to understand the language or the statistics
- Limited access to literature
- Reliance on other sources of information
- Lack of incentive
- Perception of research as irrelevant, unhelpful and too theoretical.

To facilitate teachers' acquisition of research, the following should be considered according to Louis (1996):

- Good links between researchers and practitioners
- Knowledge should be school-focused
- Participation in postgraduate study will enhance utilization and have a positive impact in sourcing for research information
- Stakeholders need to be involved in the research process
- Alternative ways of sourcing and dissemination should be based on a philosophy of sharing good practice
- Increased networking among schools especially during periods of change; and
- Teachers should be given more time and resources to become active researchers.

According to Hemsley - Brown and Sharp (2002), the strategies which need to be examined to improve teachers' sources of research information in education include the development of communication networks, links between researchers and practitioners, greater involvement of practitioners in the research process and development of more approaches to the sharing of 'good practice'.

The best source of information is scientific research, which is the systematic, controlled, empirical and critical investigation of hypothetical propositions about the presumed relations among natural phemomena (Kerlinger, 2004; Ogunleye, 2008). This means that it is an orderly endeavour that one can have confidence in its outcomes because it is carried out under controlled conditions. One of the most important sources of knowledge about human behaviour is scientific research. It answers questions about the effectiveness of educational practices and has been subjected to many and valid influences. It follows series of steps for identifying, clarifying, implementing, evaluating and interpreting procedures.

With procedures, findings and conclusions available, other reviewers of a study may propose rival hypotheses or different interpretations of the data from those drawn by the original researchers (Huck and Sandler, 1979).

Akinbote and Ogunleye (2011) investigated pre-primary and primary school teachers' involvement in research and access to research reports in Ibadan, Nigeria. This is based on the presumption that teachers' capability to use appropriate and effective teaching strategies depends on their familiarity with existing research findings. They found that the teachers rarely got involved in research and showed apathy to research information. Even when teachers acquire research information, such mere reception of knowledge by a potential user does not imply its "use". Huberman and Thurler (1991) have developed indicators of adaptations of research products for users. Adaptation includes efforts to make reports more readable and easier to understand, to make conclusions and recommendations more specific and more operational, to focus on variables amenable to interventions by users and to make reports more appealing. When researchers invest resources in the adaptation of their products so as to facilitate their appropriation by users, it increases the use of research. In terms of transaction cost economics, it means that the higher the costs incurred by researchers to adapt their products, the lower the costs incurred by the users and as a consequence, the higher the use of research. Acquisition efforts are made when users engage resources into the acquisition of research knowledge, more precisely, when they have meetings to discuss the subject and scope of research projects with researchers, to discuss results with researchers and to acquire knowledge of results from researchers. One may, therefore, deduce that the more resources researchers engage in dissemination activities, the higher the research use.

The lack of interaction between researchers and their potential audiences has been identified as the main problem in the under-utilization of research findings (Huberman, 1987; Leung, 1992; Oh and Rich, 1996; Lomas, 1997). This has given rise to the interaction explanations by various scholars (Dunn, 1980; Yin and Moore, 1988; Huberman and Thurler, 1991; Nyden and Wiewell, 1992; Oh, 1997; Landry, Amara and Lamari 2000). The studies suggest that knowledge utilization depends on various disorderly interactions occurring between researchers and users rather than on linear sequences beginning with the needs of the researchers or the needs of the users. These different but related explanations predict that the more sustained and intense the interaction between researchers and users, the more likely there will be utilization.

There is evidence that those in the medical profession are using research finding effectively to arrive at decisions and how this compare with the way those in teaching

profession use research (Hemsley - Brown and Sharp, 2002). Hergreanes (1996) prompted considerable debate in a keynote address at the Teachers' Training Agency Annual Conference by claiming that teaching is not a research-based profession. Hergreanes argued that in medicine, professional decisions such as which treatment to proscribe for a particular condition are based on the best available research evidence. In contrast, teachers rarely utilize research in their decision about what is best for their pupils. The way forward, Hergreanes (1996) argued was to make researchers more accountable to teachers through a more co-ordinated approach to research so that it is targeted on what really counts so that its findings can be more effectively disseminated.

To improve research utilization in education, the National Leadership Office for Knowledge Utilization in Education was established which is in the Department of Education, United Kingdom. The duty of the office was to promote the use of scientifically valid research in education practice and innovation and also to provide leadership to the nation in developing and promoting policies, practices and investments that result in the provision of instruction supported by scientifically valid research to elementary and secondary school students. The third duty this establishment was to render is to inform the public about the significance of using valid research in education and to encourage the use of new technologies in appropriate knowledge utilization efforts (National Leadership Office for Knowledge Utilization in Education, 1999). The office also has the responsibility of supporting effective coordination of current federally supported knowledge utilization programmes, including regional laboratories, research and development centers, technical assistance centers and consortia, national clearing houses and other entities involved in research development, dissemination, technical assistance and evaluation. All these efforts are yet to be initiated in Nigeria towards a more effective research process, dissemination and utilisation, especially in the area of Pre-primary and primary education.

Three research publications, Cousins and Leithwood (1993), Saha and Harriman, (1995) and Biddle and Saha (2000) examined the awareness and use of research findings by school head teachers. Saha, Biddle and Anderson (1995) cited in Biddle and Saha (2000) surveyed attitudes towards educational research among American and Australian primary and secondary school head teachers and principals. The key issues addressed in the research were whether principals and head teachers believed that research had any value in their day-to-day decision and which factors might explain their attitudes to the values of educational research knowledge. The findings showed that head teachers from the United States of America (USA) and Australia considered themselves to be regular, thoughtful users of research

knowledge (Saha, et al, 1995). The authors also found that head teachers held a generally positive view of research and tended to use research in their decision making. They described the 'typical' head teacher in the study as judging research knowledge to be valuable. The typical head teacher also argued that although research knowledge may be flawed, they believed it to be relevant. Nevertheless, the studies suggested that although principals' and head teachers' levels of research knowledge were broad, they were shallow. They concluded that postgraduate training contributed towards raising a head teacher's regard for educational research knowledge even though he or she might consider such research to be problematic. A study by Cousins and Leithwood (1993) also investigated the use of research information for school improvement. It was found in the study that the perceived sophistication (how finely tuned it was to match local needs), values relevance and timeliness of the information had positive impacts on its use. Social marketing was, therefore, advocated by the authors towards encouraging school improvement on the basis that dissemination should meet the need of users.

Research results also showed that head teachers are more likely to use research when the findings meet their information needs (Cousins and Leithwood, 1993). Research findings that are pertinent to current school management or teaching and learning issues, are more likely to be used. The authors also pointed out that there is a requirement to create the need for information associated with school improvement, through awareness raising activities. School improvement is an organizational change process, schools are social systems and knowledge is socially constructed, therefore, social learning needs to take place. Head teachers and practitioners should, therefore, be involved in the design, delivery and follow-up activities associated with school improvement. The authors argued that dissemination to encourage the use of research on school improvement should not aim at merely prompting practitioners to replicate the work of others but should also focus on the utilization of relevant findings in their classroom practice.

Four empirical studies were identified on teacher awareness and understanding of research literature (Zeuli and Tiezzi, 1993; Zeuli, 1994; Shkedi, 1998; Hannan and Harriman, 2000). A qualitative study of teachers by Shkedi (1998) using face-to-face interviews, explored attitudes to research literature in order to discover how teachers used research findings and identified barriers to the use of research. Findings suggested that very few teachers turned to research literature to expand professional knowledge, solve problems or to meet the requirement of their job.

Teachers tend not to read professional literature but when they do, they give preference to practical educational literature that can be applied directly to their teaching rather than research findings (Shkedi, 1998). The research revealed that most teachers using research literature and reports were doing so in the context of academic study, rather than to support their teaching. Teachers also claimed that research reports were not available in their immediate surroundings and perceived educational research to be too quantitative in nature. Above all, the teachers were largely unaware of the potential of qualitative research.

Teachers are likely to use research findings when they are given examples of cases similar to their own teaching context (Zeuli, 1994). He reported that teachers responded positively to credible concrete cases or examples and needed sustained opportunities to link their understanding of research to their knowledge of teaching. The study specifically concentrated on the way teachers use research findings. The study was carried out in limited states with a convenience sample of 13 primary, middle and secondary school teachers and aimed at finding out how teachers read and responded to educational research. The researcher provided a summary of teachers' self-descriptions of how they read research and the measure of their belief in the influence of research knowledge on their teaching. Results showed that teachers only found research credible when it matched their personal experience. Some teachers believed that research should exclusively identify strategies and techniques that could have a direct impact on their teaching and these teachers judged the study's merits on the basis of whether the findings can be translated into procedures that work in classrooms. There are teachers who believed that research could have an indirect impact on their teaching and had the potential to expand their understanding of teaching. These teachers were more concerned with the concepts and the claim the author proposed as well as the study's conclusions which were supported by evidence.

Educators made little use of professional literature compared with general practitioners and surgeons (Hannan and Harriman, 2000). This is so because they (educators) claim that they had no incentive to develop their skills in using research and said they found it difficult to access literature. Then, from the comparison, the author found out that educators argued that the contents of education literature and research reports did not justify the time and effort taken to access them. Teachers' concern about the effectiveness of their methods, and experimentation with different instructional techniques has been conjectured to be linked to their level of research awareness and exposure to latest research (Scroufe, 1999). He also added that the methods that are appropriate for use and which makes the teacher to become

increasingly more skilful in their classroom instruction can only be obtained through educational research findings.

2.2.10 Empirical Studies on Collaborative Intervention Programme

Kelemen and Bansal (2002) suggested that research fails to communicate with practitioners and may not reach sufficiently wide audiences. Others have claimed that actions by decision-makers are insufficiently informed by research and dissemination is viewed as problematic (Hillage, Pearson, Anderson and Tamkin, 1998). It has also been suggested that insufficient value is placed on research evidence owing to concerns about the relevance, accessibility and the timeliness of research outputs (Hemsley-Brown and Sharp, 2003) and that frequently organisational settings fail to support a culture which values and supports the use of research. Some have argued that there is no simple, direct line between knowledge production and utilization (Louis, 1992; 1996) and highlighted "the inadequacies of conceiving the relationship between research and practice as a linear relationship" but presented the relationships as a "multi-layered, unpredictable, interactive process of engagement" between the researcher and the user (DETYA, 2000).

In the education sector, authors have suggested that lack of trust between researchers and users can be a barrier to research utilisation (Slavin, 1990; Boostrom, Hansen and Jackson, 1993) and research have shown that users often lacked the statistical skills to understand the findings (Shkedi, 1998). Slavin (1990), in his study, recommended that a more rigorous evaluation of research was needed and a wider range of research approaches should be supported. Walter, Nutley and Davies (2003b) included papers which studied research impact on populations of practitioners, service managers, policy-makers (at different levels) and clients or service users. They concluded that 'credibility' is important and impact is enhanced where there is strong evidence, endorsement from opinion leaders and a high level of commitment from researchers and potential users. For example, evidence from the review suggests that provision of targeted materials can raise awareness of research findings and that seminar and workshops involving researchers and users can encourage more direct use of research evidence.

Findings from Walter, et al. (2003b) suggested that in order to support and maintain research impact, activities need to be integrated within organizational systems and all key stakeholders need to be involved. A number of authors suggested that organisations therefore needed to: first, value research, in order to sustain a culture of evidence-based practice (Davies and Nutley, 2002; Davies, Nutley, Walter and Wilkinson, 2002; Nutley, Walter and

Davies, 2002a); second, increase the critical mass of research-aware staff (Wilson, Hemsley-Brown, Easton and Sharp, 2003) and finally, learn to recognise research use as part of the organisation's knowledge creation process (Mahajan and Wind, 1999). Regarding the nature of research, its role and the opportunities and constraints affecting dissemination, in education, there seemed to be a tension between users of research and researchers and this has been attributed to differences in their professional goals (DETYA, 2000). Users were identified as seeking new solutions to operational matters while researchers were characterised as seeking new knowledge (DETYA, 2000). Deshpande and Zaltman, (1982) concluded that "researchers were from a basically different culture or community than the consumers or users of knowledge". Managers in the private sector seemed to be concerned with the usefulness of research findings for their organisations while researchers seemed be more concerned with methodological issues of research.

Research in education has focused on the gap between researchers and users (Kirst, 2000). For example, Huberman's (1990) Education et Vie Active (EVA) research programme with the Swiss National Research Council, studied the interaction between researchers and users on a national vocational education research programme to establish, how and whether this interaction impacted on the effective dissemination of research findings. Huberman (1990) used maps and charts to explain that good links, in type and amount, prior to a research study and during a study, contributed towards more energetic approaches to dissemination of the findings. He focused on the role of reciprocal relationships in the process of knowledge utilization. He claimed that the weakest linkage (hello-goodbye) was characterised by there being no contact with target publics before the study is completed, brief contact during the research and no contact after the research. The strongest linkage (synergy), he claimed, was characterised by well-established processes such as discussion, interim reports, presentations by researchers, meetings to discuss ultimate findings and plans for dissemination. Huberman's research, therefore, provided some empirical evidence to support the notion that the impact of research can be increased through the strengthening of links between researchers and users at every stage of the research process.

The need to develop management strategies to facilitate research use has been put forward by a number of authors (Hemsley-Brown, Wison and Easton, 2002; Walter, Nutley and Davies, 2003a; Wilson, et al., 2003). There was little empirical research evidence to indicate which strategies were effective in increasing research use by managers, or practitioners. The conclusions from a cross sector review indicated that "current knowledge on what makes for effective research impact is imperfect in nature and extent" (Walter, et al.,

2003b). The key themes to emerge from the current review were that research use seems to be facilitated through: provision of support and training; collaboration, partnership and links; dissemination strategies; communication networks; and leadership. Each of these factors is examined more closely in the study of Walter, et al. (2003b) which concluded that support for managers and practitioners to "try out" research findings and to conduct their own research especially with the support of "both peer and expert opinion leaders" improved research impact. Wilson, et al. (2003) on the other hand, found that successful strategies for facilitating access to research findings for managers and practitioners in education included: "organising conferences, inviting national speakers"; providing training; and creating opportunities for sharing research.

Ibidapo-Obe (2014) while speaking on the key reasons why research collaboration is important asserted that no one sector is a repository of all knowledge and skills. He claimed that modern research is increasingly complex and demands a wide range of expertise and experience. Thus, it is necessary to form research collaboration across the knowledge production and utilisation sectors. He emphasized that the academia do not have the necessary financial muscle to fund high impact research efforts alone. The rising financial costs of conducting high quality research suggest the need to pool resources across sectors. This, therefore, calls for partnerships between the academia and both government and industry. Such collaborative efforts would help in increasing the number, frequency and diversity of research endeavours to cater for the various segments of the society. In Nigeria today, the link between university research and industry is at a generally low level, and policies are hardly derived from the results of research conducted in the universities. Ibidapo-Obe (2014) called for collaborative efforts that could address the complex questions that matter most to the country.

Researchers' best collaboration partners, in the words of Wagers (2013), are almost by definition the early adopters for the study's novel approach, new technology or new hypothesis. One can also think about it as the best way to foster paradigm shift. It all begins with a dedicated group of core believers in the research process or to impress investors and funding agencies that what one is doing is accepted by a group of practitioners in the field. Each and every one of these is a reason why one should invest in collaboration. Most collaboration efforts would deliver a multitude of benefits and then use them as guideposts for how to increase operational efficiency and maximize benefit. Indeed, collaboration is a proactive investment that pays enormous dividends. Wagers (2013) opined that the

mathematics is simple, collaborate less effectively and the dividends will be less. Optimize collaborations and the returns will far outstrip investment.

Furthermore, the foundation for growth is innovation (Nordion Research and Development, n.d.). Collaboration was defined as creative and productive alliances between diverse constituencies in the pursuit of a shared goal and is the genesis for medical innovation, providing the fuel that enables people to achieve extraordinary results. Innovation and unique partnership opportunities are pursued through the personnel, academia, private and public institutions, licensing and acquisitions. This approach provides remarkable benefits including accelerated development cycles and decreased discovery and testing costs. In addition, tighter interdisciplinary collaboration provides an efficient approach to identifying and fast-tracking new ideas and concepts - all in the name of a faster commercialization process that brings beneficial and personalized medicine to the patients who need them most. This is the situation in the medical field.

Even in the medical profession, Dufault (2004) reported that while millions of dollars were being spent developing the seeds of research to improve the care given to patients, significant barriers to using empirical evidence by health care professionals and policymakers still exist. The gap between what is known from research and what is used in practice is at the heart of Dufault's (2004) translation research problem in which the intervention, called the Collaborative Research Utilization model, was developed and tested in four clinical studies over a period of 18 years. The findings revealed the effectiveness of the intervention towards utilization of research findings.

The rhetorical gap between clinical practice and academia was also tested by the development of a special programme grant to facilitate use of research by staff nurses. It was conducted by Umlaut and Sherman (1992). The grant capitalized on an established collaborative relationship between a university school of nursing and a community hospital. The merger of education and practice demonstrated the principles of inter-institutional collaboration in action. Resources of the grant included a doctorally-prepared nurse, a clinical librarian to provide research utilization classes for staff nurses and an academic credit course to address reality-based practice problems for nurse managers. This study is a confirmation of the extent to which collaboration could foster research utilization. For researchers, it is important that the knowledge they create is utilised and has some impact on practice (Hemsley-Brown, 2004). Sustainable competitive advantage depends less on those who have the information and increasingly on those who are able to make the best use of that information. According to him, research use can be facilitated through: support and training;

collaboration and partnership; dissemination strategies; networks; and strong, visible leadership.

The Technology Strategy Board (2014) encourages businesses and researchers to work together on innovative projects in strategically important areas of science, engineering and technology – from which successful new products, processes and services can emerge, contributing to business and economic growth. Hansen, Biros, Delaney and Schug (1999) also examined perceptions of nurse-physician collaboration and research utilization in a large, county medical center with an emergency medicine (EM) residency program, assessed differences among 115 nurses, 33 EM residents, and 18 attending physicians and explored the relationship between collaboration and research utilization. It was concluded that interdisciplinary collaboration showed some significance in promoting research use especially for physicians.

Research collaborations foster joint production of knowledge which benefits humanity and national development (Ibidapo-Obe, 2014). He explained that the evidence for this sweeping statement is all around us and if one considers the 20th century advances that have made the world a better place, they grew primarily out of scientific research, much of which were conducted through collaboration between universities and industries. There is still the need to do more, hence, the call for the enhancement of research collaboration between these great bodies that have served humanity well. For Nigeria, enhancing these collaborative partnerships and understanding will push the level of the country's competitiveness in the global technological innovation to a more acceptable and deserving level than is the case now.

Authors in the field of education have frequently speculated that collaborative approaches, partnerships or links, and involving users in research are the keys to greater research utilisation in the public sector (Hagger and Mcintyre, 2000; Hannan, Enright and Ballard, 2000; Mortimore, 2000; Wenger, Mcdermott and Snyder, 2002). Evidence also suggests that greater involvement of practitioners in the research process have emerged as strategies for improving research impact (Hemsley-Brown and Sharp, 2003). Based on the results of Wilson, et al. (2003), "partnership working" such as "seeking opportunities for professional researchers to work with users", was one approach that could be adopted successfully. Mechanisms such as collaborative approaches, the greater involvement of users and strong links between managers and researchers tended to facilitate mutual trust. Mutual trust allowed researchers to develop personal rapport with users and to feel a greater stake in

the manager's performance in the business sector (Zaltman and Moorman, 1988; Hanjoon and Chankon, 1994).

Louis (1996) has challenged some of the traditional theories of knowledge-use and argued that knowledge was not usable until it had been socially processed through collective discussion and agreement on its validity and applicability. Her paper argued that current models are inadequate as a way of explaining dissemination and knowledge utilisation in education, despite the call for greater involvement of users and demands for researchers to disseminate their findings more effectively. Louis noted the recent move to involve practitioners in setting some research agenda. She contradicted Huberman (1990) by claiming that research evidence showed that involving users did not necessarily make the research more useable – except among those who had been directly involved. She argued that extensive involvement of practitioners as researchers should occur for its own direct benefits, and not because it improved the possibility of wider dissemination and utilization. The main barriers to knowledge use in the public sector, she concluded, were not at the level of individual resistance but lay in an institutionalised organisational culture that did not facilitate learning through the use of research. In common with Walter, et al. (2003b) she suggested that effective dissemination of ideas can be facilitated through the identification and use of opinion leaders, who were accepted as such by their peers.

Poor dissemination was often cited as the reason why research was not consumed by practitioners (Willmott, 1994). There has been much discussion about approaches to be adopted for the dissemination of research findings in management and other fields. Rogers (1995) presented a comprehensive analysis of the way new ideas are disseminated and adopted by users, based on research carried out in the USA. Rogers's diffusion of innovations model has been widely acknowledged as making a significant contribution to understanding of the dissemination of new ideas and has attracted considerable interest recently in the context of research utilisation (Nutley and Davies, 2000; Kanefsky, 2001). Nutley, et al. (2002b), however, examined Roger's (1995) diffusion of innovations model and concluded that there was a paucity of recent research evidence on effectiveness of diffusion strategies in the context of dissemination of research knowledge. Also, Bero, Grilli, Grimshaw, Harvey, Oxman and Thomson (1998) reported that passive dissemination of information such as articles in professional journals or the mailing of materials were generally ineffective and only resulted in small changes in practice. Nutley, et al. (2002a) also commented that many of the activities surrounding evidence-based practice were not in themselves evidence-based. Strategies for more effective dissemination, therefore, are frequently discussed in the context

of social marketing (Rogers, 1995). This has been advocated by the authors on the basis that dissemination should meet the needs of the users and there is a need to create a demand for information (Cousins and Leithwood, 1993; Hemsley-Brown and Sharp, 2003).

A number of studies in the use of research in education and healthcare concluded that networks for increasing communication between researchers and users would turn out to be effective approaches to facilitate research use (Wenger, 1998; Wenger, et al., 2002; Hemsley-Brown and Sharp, 2003; Wilson, et al., 2003). An empirical study of "good practice" in research use by managers in education conducted in the UK (Wilson et al., 2003) found that there was a great deal of networking and sharing of expertise and a number of successful projects were based on encouraging the sharing of information. They recommended strategies for "building a critical mass of practitioners" who had experience of using research (Wilson, et al., 2003). These findings support Wenger et al. (2002) who also argued that the building of networks led to communities of practice – that is "groups of people who shared a concern, a set of problems and who share their knowledge" (Wenger, et al., 2002). They indicated that communities of practice cannot be cultivated in the same way as developing traditional organizational structures and claimed that design and development was more about "fostering collaboration and participation, than about planning, directing and organizing activities" (Wenger, et al., 2002).

2.3 Appraisal of Literature

Literature revealed that authors and researchers have extensively worked in the area of pre-primary and primary education, goals of the levels education, the invaluable role it plays in the education of the child and the overall development of the nation. A good number of government policy documents viz: National Policy on education, blueprints on education, reports on the development of education, Universal Basic Education Implementation Strategy-all chronicle the concerted efforts being made from time to time on the search for improvement and quality assurance of the implementation of pre-primary and primary education programmes in Nigeria.

Literature is replete with information on the special status, role and importance of the teacher in the effective implementation of education programmes. The tasks, specialized knowledge, challenges, expectations, capabilities and training requirements associated with the pre-primary and primary education teacher in the course of the delivery of instruction among other duties they carry out have been extensively documented. The problem of lack of acquisition and utilization of research on pre-primary and primary education by the teachers

has been widely reported although most of such literature is on studies carried out in foreign countries. Even in foreign countries, more studies on research utilization were in medicine and nursing with a fewer number in education and on teachers.

Literature has also x-rayed a wide range of factors which could determine utilization of research generally without attempting to provide solution to the problems especially in the form of an intervention for pre-primary and primary school teachers. More importantly, the need for collaboration between researchers and teachers were merely theoretical in most of the works reviewed. In other works which were empirical, they bother mostly on Nursing, Medicine and education administrators other than classroom teachers especially pre-primary and primary school teachers. This study, therefore, has become necessary as it would fill the gap created by non-utilisation of research by pre-primary and primary school teachers with the adoption of the collaborative intervention programme.

CHAPTER 3

METHODOLOGY

This chapter presents the methodology of this study with respect to research design, variables in the study, population, sampling technique and sample, instruments and their validation processes, procedure for the study and method of data analysis.

3.1 Research Design

The study adopted the collaborative action research proposed by Hendricks (2009). This involve the working together of the researcher and pre-primary and primary school teachers with the goal of sharing expertise, fostering dialogue and enhancing teachers' awareness, acquisition and utilization of educational research by incorporating findings and recommendations in their classroom teaching. Specifically, the study attempted to provide solution to the problem of non-utilization of educational research findings in classroom teaching among pre-primary and primary school teachers in Oyo State. It adopted the collaborative approach through which educational research findings collated by the researcher were made available to the teachers in an action research setting. According to Sagor (2000), action research is a disciplined process of inquiry conducted by and for those taking the action. The primary reason for engaging in action research is to assist the 'actors' in improving and refining their actions. There is therefore, no basis for comparison with any other group.

In order to compare the baseline status of the teachers with their performance after intervention activities using the paired samples t-test, the study also adopted the one group pretest-posttest design which is a type of preexperimental research design that provides little or no control of extraneous variables. This is because the study is basically an action research in which a problem is identified within a social group and solution is proffered in the group. The design is schematically represented as:

O_1 X O_2

Where O_1 is pretest observation

X is the collaborative intervention (Use of Educational Research Findings Package in an action research setting)

O_2 is posttest observation

In this study, the pretest was administered to measure the dependent variables which are: awareness, acquisition and teachers' utilization of research. The collaborative intervention activities i.e. focus group discussion, clarifications of issues where necessary,

micro teaching and seminar, were carried out in collaboration with the participants after which the posttest was administered to measure the dependent variables. In addition, school type was taken into consideration so as to find out its influence on the dependent measures. This variable was, therefore, built into the study as the moderating variable.

The study is, therefore, a fully mixed design of the qualitative and quantitative approaches in an interactive way throughout the study. This is the case for the process of data collection, experimental activities, data analysis interpretation and inferences (Ary, Jacobs and Sorensen, 2010). The weighting priority in this study is *QUAL + quan* implying that the qualitative approach is dominant based on Morse (1991) notation systems used in mixed methods designs. For instance, the study made use of qualitative research methods such as document analysis, classroom observation, action research, Focus group discussion (FGD), interviews, collaborative intervention as well as qualitative methods of data analysis in addition to the quantitative design and the statistical data analytical tools.

3.2 Variables in the Study

The variables in this study are:

1. Independent Variable

The collaborative intervention programme based on educational research findings within an action research setting.

2. Moderator Variable

This is school type at two levels: Public and Private

3. Dependent Variables

These are the three outcome measures:

(i) Teachers' level of awareness of educational research;

(ii) Teachers' acquisition of educational research;

(iii) Teachers' utilization of educational research.

3.3 Sample and Sampling Techniques

Participants were drawn from pre-primary and primary schools in Oyo South senatorial district of Oyo State. First, Oyo state was stratified along the three senatorial districts: Oyo Central, Oyo South and Oyo North. From the three senatorial districts, one was randomly selected through balloting method. The list of all primary schools in the senatorial district was then collected and subjected to investigation as to availability of the pre-primary section. The list of primary schools with the pre-primary component was then generated.

From these, six schools (three public and three private) whose locations are close to one another were then purposively selected based on the consent of the heads of the schools. This also eased the organization of seminars which was done centrally for teachers from all the schools. The workshop location is the school hall of Immanuel College Secondary School in which premises the Immanuel College Primary School, University of Ibadan is situated. All the teachers with a minimum of NCE in all the classes in the selected pre-primary and primary schools and who were willing to participate in the study were enumerated. Ten teachers were then randomly selected from each of the schools to give sixty teachers in all (See Appendix I for the List of Schools). Table 3.1 represents the scheme of selection of the schools and teachers across the three Local Government Areas.

Table 3.1: Selection of Schools and Teachers by Local Government Area and School Type

Local Govt Area	Public Schools	Private Schools	Total Selected	No of Teachers per School	Total No of Teachers
Ibadan North	1	1	2	10	20
Ibadan North East	1	1	2	10	20
Ibadan North West	1	1	2	10	20
Total	**3**	**3**	**6**	**10**	**60**

3.4 Research Instruments

Seven research instruments were employed in the course of this study. They are:

1. Educational Research Findings Package for Collaborative Intervention (ERPACI).
2. Teachers' Awareness of Educational Research Findings Questionnaire (TAEREQ).
3. Teachers' Acquisition of Research Findings Questionnaire (TARFIQ).
4. Teachers' Utilization of Research Findings Questionnaire (TURFQ).
5. Teachers' Classroom Observation Scale (TECOS).
6. Teachers' Interview Guide (TIGU).
7. Focus Group Discussion Guide (FGDG).

3.4.1 Educational Research Findings Package for Collaborative Intervention (ERPACI)

This package was developed by the researcher to guide the collaborative intervention activities meant for disseminating educational research findings to the pre-primary and primary school teachers and make the teachers to utilize such findings. The package was based on ten Ph.D theses in the Department of Teacher Education and the Institute of Education, University of Ibadan. In developing the package, twenty-four Ph.D theses written in the University of Ibadan in the area of Pre-Primary and Primary Education between years 2000 and 2010 were reviewed (see Appendix IX). Based on the criteria which include: focus on teaching strategies, classroom interaction, focus on specific school subject and feasibility of implementation within the current classroom and school setting in Oyo State, the list was pruned down to ten theses which were purposively included in this package. Document analysis was then used to extract necessary information such as abstract, statement of the problem, summary of findings and recommendations. The researcher modified the original abstracts by simplifying their language of presentation, removing the sophisticated statistical aspects and replacing them with easily comprehensible words. These abstracts were used to prepare the package which features the following steps implemented for 5 weeks:

1. Focus Group Discussion on problems and recommendations in the Theses.
2. Researcher's clarification of grey areas on issues discussed (2 per week).
3. Collaborative activities on recommendations in thesis 1 for the week.
4. Collaborative activities on recommendations in thesis 2 for the week.
5. Micro-teaching on the implementation of effective strategies recommended in the theses for the week (See Appendix II for this package).

Validation of ERPACI

The guide was subjected to scrutiny for face and content validity. This was done by giving copies to four educational researchers and lecturers in Early Childhood Education in the University of Ibadan. They were asked to review the draft copies for content relevance, consistency in the activities, steps prescribed for the different sessions and relevance of the research findings to contemporary problems in the Nigeria school setting, their criticisms, suggestions and advice were then used to revise the package leading to its present format. The ratings allotted to the instrument by the reviewers ranged from 1 to 5 where 1, 2, 3, 4 and 5 represent Very Poor, Poor, Average, Good and Very Good respectively. These scores were

used to compute the reliability index with Cronbach method. An alpha value of 0.83 was obtained.

3.4.2 Teachers' Awareness of Educational Research Findings Questionnaire (TAEREQ)

This instrument was developed by the researcher to measure the level of awareness of the teachers on educational research. It has two sections. While section A is on demographic information, section B presents twenty information items from research findings in the ten selected theses. The questionnaire format has a Yes/No response schedule. This is because awareness is a construct that someone can have or may not have. A 'No' response indicates that the teacher is not aware of the research finding while 'Yes' indicates that a teacher is aware. 1 point was awarded to a 'Yes' response while Zero was given for 'No' (See Appendix III for TAEREQ).

Validation of TAEREQ

For the purpose of validity, copies of TAEREQ were given to four colleagues of the researcher on the Ph.D programme as well as four experts involved in educational research endeavours. These experts are lecturers in the area of Early Childhood Education, Statistical Research Methods and Educational Evaluation. The face, construct and content validity were ensured by asking them to read through each of the question items to see if they are quite relevant to the construct being measured and whether the items covered the research findings of the ten theses selected. This process revealed a number of errors which were corrected to produce the final draft of the questionnaire. After this, the questionnaire was administered to fifty pre-primary and primary school teachers outside the scope of the study. The Cronbach alpha method was used to analyse the reliability and item – total consistency of the instrument. An alpha value of 0.82, indicating that the instrument is reliable, was obtained.

3.4.3 Teachers' Acquisition of Research Findings Questionnaire (TARFIQ)

This instrument was developed by the researcher to investigate teachers' acquisition of research. It is made up of two sections. While section A probes into the name of school and teachers' gender, section B presents twenty items on a 4-point Likert scale of Always, Sometimes, Rarely and Never. This format is relevant because the Likert-type scale has the capacity to reveal the frequency of the teachers' activities as they relate to acquisition of research information. The items also focus on the extent to which teachers carry out specific

activities relating to acquisition of research information. The scoring of the items which are all positively-worded was done by awarding 4, 3, 2 and 1 point to Always, Sometimes, Rarely and Never respectively. This is in line with the fact that the frequency of activities carried out always is higher than those which are sometimes carried out, rarely carried out or never carried out at all, in that order (See Appendix IV).

Validation of TARFIQ

Draft copies of this questionnaire were subjected to content validation by four University lecturers in the Faculty of Education, University of Ibadan. They critiqued the questionnaire items using the list of the various avenues of acquisition of research available to teachers from literature to see whether the items exhausted all the possible avenues of acquiring research information. Four colleagues of the researcher on the Ph.D programme in Early Childhood Education as well as four Lecturers in the Unit helped to critique the construction of the items in the questionnaire. This ensured face and construct validity as editorial issues, corrections and revision suggested were effected to improve the draft questionnaire. Thereafter, the new version of the questionnaire was administered to fifty pre-primary and primary school teachers, who would not be involved in the study, for the reliability estimate using Cronbach method. This process yielded reliability co-efficient of 0.84 which indicate that the instrument is reliable.

3.4.4 Teachers' Utilization of Research Findings Questionnaire (TURFQ)

This questionnaire was intended to measure pre-primary and primary school teachers' utilization of research. It was developed by the researcher to include Sections A and B. Section A covers socio-demographic information while Section B presents twenty items running from the stem "I utilize information from research". This made all the items to be positively-worded. Items included adoption of novel teaching strategies, improvement or enrichment of school curricula, enhancement of learners' interest in schooling, evaluation techniques and lesson planning, among others. The extent of using research information for these various aspects of quality and effectiveness of classroom teaching were to be rated by the teachers as Always, Sometimes, Rarely and Never by the teachers. These attracted 4, 3, 2 and 1 respectively for all the items based on the extent to which the individual teachers utilise research for each of the listed teaching activities (See Appendix V).

Validation of TURFQ

The first draft of TURFQ was subjected to review and revision by four colleagues of the researcher on the Ph.D programme as well as four experts in Early Childhood Education to make the instrument face and construct valid. Here, the items were checked by the colleagues and experts for relevance to the construct being measured as well as adequacy of the twenty items for the measurement of research utilisation. The language of presentation of the items was also checked by four experts in language education in the University of Ibadan. Suggestions, criticisms, a few grammatical errors and additional aspects pointed out by the reviewers were used to improve the quality of the questionnaire. The instrument was subjected to reliability test using Cronbach method after it has been administered to fifty pre-primary and primary school teachers from schools in Abeokuta, Ogun State, which would not be part of the main study. The Cronbach alpha value of 0.83, indicating that the instrument was reliable, was obtained.

3.4.5 Teachers' Classroom Observation Scale (TECOS)

This observation scale was prepared by the researcher based on the innovative practices reported as effective in the educational research studies (ten theses) used for this study. The instrument was used by research assistants to observe and rate teachers on relevant classroom practices along specific features such as introduction, teaching/learning enhancements, teachers' knowledge and skills, adoption of teaching strategies, classroom interaction, learners' individual differences and homework. In all, twenty-five items were developed to be rated by the research assistants. The scale ranged from 0, which means absence of such feature or practice in the observed classroom teaching to 5, which denotes excellent feature of such activity in the classroom setting (See Appendix VI).

Validation of TECOS

TECOS benefited from the advice, scrutiny, comments and reviews done by four Ph.D students and four lecturers in Early Childhood Education unit, University of Ibadan. They were asked to consider the items listed in the questionnaire for conformity to those identified in the theses involved in this study. This critique led to the inclusion of a few additional items while some seeming duplication of items were harmonised. For reliability, three trained observers used the instrument to rate the same teacher during a particular teaching session in a primary school in Abeokuta, Ogun State, Nigeria. These ratings were

done independently and their respective ratings were subjected to inter-rater reliability using the Scott's method. The reliability index (Scott's π) of 0.78 was obtained and this was considered good enough.

3.4.6 Teachers' Interview Guide (TIGU)

This interview guide, constructed by the researcher, is a structured one in which nine open-ended questions were listed. The interviewers posed the questions one after the other to probe into qualitative aspects of teachers' utilization of research (See Appendix VII). It was shown to colleagues and lecturers in the Faculty of Education, University of Ibadan, who helped with the reconstruction of some of the questions and the addition of a few other questions considered relevant to the utilization of research by teachers.

3.4.7 Focus Group Discussion Guide (FGDG)

The Focus Group Discussion Guide was developed by the researcher to guide the discussion of the teachers and researcher/research assistants at the commencement of each of the ten collaborative action research sessions in the 5-week intervention activities. It is made up of three themes (See Appendix VIII). Discussions were based on the three themes which dovetailed into the presentation of research findings based on the ten theses. The three themes were revised based on the advice and suggestions of experienced researchers in qualitative research methods to arrive at their present forms.

3.5 Procedure for the Study

Preliminary Activities

First, the researcher collected letters of introduction from the Head of Department introducing her as well as the research study to the various schools involved in the study. This was presented to the Head teachers of the schools for permission to make use of their schools for the study. The cooperation of the teachers was also sought for the successful execution of the programme.

Training of Research Assistants

Six research assistants drawn from the Masters class of the Early Childhood Education Unit, University of Ibadan were involved in the implementation of the study. These are students who have completed their 2- semester course work and working on their

research project at the time of this study. Initially, ten of them were exposed to training on the various aspects of the study such as: procedure for classroom observation, conduct of the interview and note-taking, mode of operation and conduct in delivering the intervention activities and strategy for the administration of the questionnaires. Essentially, they became familiarised with the research instruments especially the package for the intervention so as to be able to guide the process of the collaborative activities. The training was done in the Science Laboratory, Faculty of Education, University of Ibadan. It lasted for three days after which six of the ten trained research assistants were selected based on their display of greater interest and enthusiasm and mastery of the procedure more than the remaining four trainees, which were dropped.

Pretest

At the onset of the field work, a survey was carried out on all selected teachers' to capture their levels of awareness, acquisition and utilization of educational research findings. This was carried out across the six selected schools using TAEREQ, TARFIQ and TURRQ. These are the pretest measures. First, the TAEREQ was administered followed by the administration of TARFIQ the following day while the TURFIQ was administered the third day simultaneously across the selected schools.

Pre-Intervention Classroom Observation and Interviews

The pretest was followed by observation of teachers' classroom practice to find out the extent of teachers' reflection of key research findings obtained from recent studies in their classroom teaching. Here, all the participating teachers were observed during a full teaching period by the trained research assistants. In all, sixty observations were carried out during which the research assistants scored every class observed based on the Teachers' Classroom Observation Scale. The teachers were interviewed, also by the research assistants, to air their views on prevailing practices and experiences as they relate to utilization of educational research findings, why they need research and possible reasons they did not access or utilise research. The observation took one week while the interviews took another week. During the interview sessions carried out with the use of TIGU, the research assistants were busy writing down the verbal responses given and information provided by the teachers on each question asked. The documented responses returned by the research assistants were then studied by the researcher, who collated and sorted them into those that agree and those that contradict themselves. These were used to re-organise the responses to provide answers to the research questions 2, 3 and 4 which bothers on teachers' perception of the need for classroom

implementation of research findings, reasons for teachers' non-utilisation of research in classroom teaching and their expectation of how research findings should be made available to them.

Intervention

The collaborative intervention activities featured focus group discussion in each of the five meetings where innovative strategies and tested research information in the ten selected theses were made available with the use of the Educational Research Findings Package for Collaborative Intervention. The steps involved in the collaborative intervention activities for each meeting which featured two theses are:

Step 1: This step featured Focus Group Discussion with teachers on problems and recommendations from the theses. Here, the research assistants asked the teachers to mention the kinds of problems they encounter in their day-to-day classroom teaching. All the problems mentioned were listed and at the end, from the list made, the research assistant isolated the problems which the two theses for the day's activity addressed. This was to show the teachers that the problems addressed by the theses were not alien to their situation, problems and needs in the classroom.

Step 2: The Researcher/Research Assistants' clarified grey areas in the issues discussed. Here, the research assistant went further to expose the gravity of the problems in the classroom setting, implications for learning and possible effects on learners' achievement. Teachers also asked questions on cloudy areas connected with the problems at hand and these were trashed by discussion of such among participants and the research assistant. The research assistant ensured that this session ended in perfect coincidence with the problem situations addressed in the two theses for discussion.

Step 3: Collaborative activities came up on recommendations in the first thesis. Here, the modified abstract was studied by shared reading aloud, in which case, participants take turns to read one or two sentences from the abstract while others listened. The abstracts were discussed around the four segments of:

1. Introduction and statement of the problem.
2. Methodology.
3. Findings.
4. Conclusion and recommendations.

After each segment has been read, the research assistant elaborated on the segment, or teachers asked questions, raised comments, described how this related to or negated their classroom experience. They also sought clarification of issues cloudy to them in the abstract.

The research assistant, who had the benefit of having read the major aspects of the main thesis such as the background to the study, statement of the problem, research questions and hypotheses, research design, variables, instruments, results, discussion and recommendations, provided answers to the questions, comments and clarifications sought by the teachers. In this process, the teachers were also making contributions about the best ways to ensure the implementation of the findings and recommendations in classroom practice.

Step 4: Collaborative activities on recommendations in the second thesis for the day were carried out here. The same set of activities carried out in Step 3 was repeated in respect of the second thesis for the day.

Step 5: Micro-teaching was organised on the implementation of effective strategies recommended in the two theses. This was delivered by one or two of the teachers while all the participating teachers in the school acted as the students being taught. The intervention lasted two hours per meeting during which the two thesis for them week were discussed. It was ensured that all the teachers at one meeting or the other acted the role of the teacher during micro-teaching. This was to equip them with the skills and competencies required to deliver instruction with the use of the strategies investigated in the theses.

Seminar

At the end of the 5-week collaborative intervention, a seminar was organized on a Saturday at Immanuel College Senior Secondary School which has a large School Hall. The choice of the secondary school was because all the pre-primary and primary schools used in this study do not have School Halls. The resource persons invited were four of the ten authors of the Ph.D theses used for this study. Three of the authors originally pencilled down were present while one other author, who was among the four other authors put on stand-by in case of the absence of any author, was also present. One resource person was in each of the areas of English language, Mathematics, Science and Social Studies. The seminar started at exactly 10.00am with the attendance of participants in the study, who were registered as they arrived the venue between 9.00-9.30am. The participants were the pre-primary and primary school teachers, the research assistants, the four authors of the Ph.D theses invited and a Senior Research Fellow/Senior Lecturer in Early Childhood Education Evaluation from the International Centre for Educational Evaluation, also known as the Institute of Education, University of Ibadan. The latter served as the Moderator of the question and discussion sessions of the programme.

Opening: The seminar started with the presentation of 'the programme in perspective' by the researcher. This included background information on the basis for the study, a synopsis of the

six-week intervention activities which had been concluded and the essence of organising the seminar. This was to create awareness in the teachers concerning research findings and the need for research utilisation for classroom teaching. She also seized the opportunity to welcome all and to introduce the resource persons and the moderator.

Presentation by the Resource Persons: The Resource Person in English Language presented an abridged version of her thesis for twenty minutes as did the three others. The first was on effect of medium of instruction on learners' participation and achievement. The second resource person presented hers on Homework mode, parental involvement and learners' learning outcomes in Mathematics. The third presentation was on conceptual change and enhanced explicit teaching strategies and learning outcomes in Primary Science. The last speaker presented on Impact of Outdoor Educational Activities on Learners' Environmental Knowledge and Attitudes.

Discussion, Comments, Questions and Answers: This afforded participants opportunity to raise their questions, make comments and answers and discussion were provided in an interactive way among all present at the seminar. It was a very interesting session as the participants demonstrated great enthusiasm towards the effort at disseminating research findings to them right at their door-steps in the schools. They expressed concern at the possibility of making this a large-scale venture with the support of the government at the State and Local Government levels. The resource persons also took turns to present talks on the benefits of educational research to the pre-primary and primary school teachers using the findings in their theses as cases in point.

Closing Remarks: This was done by the Moderator who chaired the seminar. She expressed optimism at the teachers' conscious efforts towards acquisition and utilisation of research findings having been part of this worthwhile attempt at improving their research awareness. She equally commended the researcher for her thoughtfulness, coming up with this novel idea, not only in Nigeria, but in the area of Early Childhood Education. She concluded by stating that her initial doubts about the feasibility of the study had been cleared by the successful mounting of the collaborative intervention and the seminar which was attended by all the sixty teachers, and on a Saturday!

Vote of Thanks: The researcher expressed her appreciation to all for the cooperation they gave and the support provided while the intervention activities and the seminar lasted. She promised to make her findings on the study available to the participants when they are ready.

Closing: The researcher presented tokens of appreciation to the participants and group photographs were taken with the Resource Persons, Participants, Research Assistants and generally. The seminar ended at exactly 2.05pm.

Posttest

The posttest was conducted through the administration of the three questionnaires viz: TAEREQ, TARFIQ and TURFQ on awareness, acquisition and utilization of research respectively. These were the same set of questionnaires used for the pretest. This was followed up by a capture of the classroom practices of the sixty teachers which took one week. The post-intervention interviews were also conducted with the use of TIGU used for the pre-intervention interviews.

These activities were summarized in the action plan developed for the study by the researcher.

Table 3.2: Action Plan for the Study

Key Findings (From Literature)	Action	Specific Tasks	Who is Responsible	Who to Consult/ Inform	When (Duration)	Where	Resources Needed
1. Teachers' poor level of awareness of Research Findings 2. Non-Utilization of research by teachers 3. Teachers' poor classroom practices 4. Learners' poor performance 5. Research findings on effective strategies and best practices in schools	1. Making recent research findings available to teachers. 2. Intervention through collaboration with teachers to solve the problem of non-utilization of research findings. 3. Improving teachers' awareness, acquisition and utilization of research.	1. Document/ content Analysis	Researcher	Institution	Done	University Library	All Ph.D Theses on Pre-primary and Primary Education from year 2000-2010
		2. Development of package/manual	Researcher	Experts	Done	Faculty of Education	Extracts from 10 Theses
		3. Survey of Awareness, Acquisition and utilization of research among teachers.	Researcher and research assistants	Schools/ Teacher	1 week	Schools	TAEREQ, TARFIQ and TURRQ.
		4. Classroom observation	Research Assistants	Schools/ Teachers	1 week	Schools	TECOS
		5. Interviews	Research Assistants	Schools/ Teachers	1 week	Schools	Teachers Interview Guide
		6. Focus Group Discussion	Research Assistants	Schools/ Teachers	During intervention activities	Schools	Focus group Discussion Guide,
		7. Collaborative intervention activities	Researcher/ Research Assistants and Teachers	Schools/ Teachers	5 weeks (2hours per week)	Schools	Educational Research Findings package for Collaboration Intervention
		8. Seminar	Resource Persons, Researcher and Teachers	TESCOM /Schools/ Teachers	1 week	One centre per senatorial district	Resource Persons, Theses, seminar paper
		9. Measurement of posttest awareness, acquisition and utilization of research by teachers	Researcher and Research Assistants	Schools/ Teachers	1 week	Schools	TAEREQ, TARFIQ and TURRQ.
		10. Classroom observation	Research Assistants	Schools/ Teachers	1 week	Schools	TECOS
		11. Interviews	Research Assistants	Schools/ Teachers	1 week	Schools	Teachers Interview Guide
Total Duration = 12 weeks							

3.6 Methods of Data Analysis

Data collected were analysed using descriptive statistics of frequency count, percentage, mean and standard deviation. These were used to provide answers to research questions 1 and 5 while qualitative methods of data analysis were used for research questions 2, 3 and 4. For hypotheses 1 to 3, inferential statistic of paired samples t-test was adopted while the independent samples t-test was used to test hypothesis 4. All hypotheses were tested at .05 level of significance.

CHAPTER 4

RESULTS

This chapter presents the findings of the study. The results are presented based on the five research questions and four null hypotheses tested. A summary of the findings is presented at the end of the chapter.

4.1 Demographic Distribution of Participating Teachers by Qualification

Table 4.1: Highest Qualification of the Teachers

Qualification	Frequency	Percent
NCE	42	70.0
B.Ed	18	30.0
Total	60	100.0

Table 4.1 shows that teachers with the Nigeria Certificate of Education (NCE) are forty-two in number. These constitute 70% of the participating teachers. On the other hand, those with the Bachelor of Education degree account for the remaining 18 which represent 30% of the teachers. This reveals that the teachers selected for this study are not only qualified to teach at the pre-primary and primary schools based on minimum teaching qualification in Nigeria (FME, 2004), the teachers had gone through research project writing either at the College of Education or University during training. These place them on a good pedestal to understand issues concerning educational research which this study is all about.

4.2 Answers to the Research Questions

Research Question 1a: What are pre-primary and primary school teachers' level of awareness about educational research findings before and after collaborative intervention activities?

This research question was answered with the use of descriptive statistics presented on Table 4.2.

Table 4.2: Teachers' Awareness of Educational Research Findings Before and After Intervention

N=60

Item	Through information from research findings, are you aware of:	Before		After	
		Yes	No	Yes	No
1	The homework mode which is more effective than others?	41 (68.3)	19 (31.7)	52 (86.7)	8 (13.3)
2	The roles of parental involvement and gender on learners' performance and attitude?	54 (90.0)	6 (10.0)	57 (95.0)	3 (5.0)
3	The relative effectiveness of explicit and enhanced-explicit teaching in Primary Science?	39 (65.0)	21 (35.0)	57 (95.0)	3 (5.0)
4	The levels of male and female learners performance taught with explicit strategies?	34 (56.7)	26 (43.3)	53 (88.3)	7 (11.7)
5	Benefits of training teachers in the use of cooperative learning strategies?	50 (83.3)	10 (16.7)	53 (88.3)	7 (11.7)
6	Effect of cooperative learning on learners' learning outcomes?	42 (70.0)	18 (30.0)	53 (88.3)	7 (11.7)
7	The gains of process and product-based teaching approaches on learners' achievement?	45 (75.0)	15 (25.0)	54 (90.0)	6 (10.0)
8	The place of locus of control in the determination of learners' achievement?	30 (50.0)	30 (50.0)	45 (75.0)	15 (25.0)
9	Extent to which Constructivist Methods of teaching determine learning outcomes in Primary Science?	38 (63.3)	22 (36.7)	55 (91.7)	5 (8.3)
10	Effect of Metacognitive strategy on learners performance in Primary Science?	31 (51.7)	29 (48.3)	47 (78.3)	13 (21.7)
11	The use of preparation-assistance-reflection strategy in teaching reading comprehension?	43 (71.7)	17 (28.3)	51 (85.0)	9 (15.0)
12	Effect of Question-Answering-Relationship strategy on learners learning outcomes?	45 (75.0)	15 (25.0	52 (86.7)	8 (13.3)
13	The use of learning outcome specification in teaching primary science and other subjects?	40 (66.7)	20 (33.3)	53 (88.3)	7 (11.7)
14	Effect of learning outcomes specification on learners' achievement?	46 (76.7)	14 (23.3)	51 (85.0)	9 (15.0)
15	Impact of modelling instructional strategy on learners' learning outcomes?	43 (71.7)	17 (28.3)	53 (88.3)	7 (11.7)
16	Effect of picture-based instruction on learners' performance?	51 (85.0)	9 (15.0)	53 (88.3)	7 (11.7)
17	Conceptual change as an effective teaching strategy in primary schools?	39 (65.0)	21 (35.0)	50 (83.3)	10 (16.7)
18	The usefulness of enhanced explicit teaching strategy in the improvement of learners' learning outcomes?	41 (68.3)	19 (31.7)	54 (90.0)	6 (10.0)
19	Effect of medium of instruction on learners' classroom participation and achievement?	54 (90.0)	6 (10.0)	54 (90.0)	6 (10.0)
20	The role of home background on learners' participation and achievement?	57 (95.0)	3 (5.0)	52 (86.7)	8 (13.3)
	Weighted Average (%)	71.91		87.41	

Values in parentheses are percentages

From Table 4.2, the pre-primary and primary school teachers who claimed to be aware of selected educational research findings before the collaborative intervention activities range between 30 (50%) and 57 (95%) out of 60. These apply to the 20 items which cover the ten theses used in this study. At the post intervention level, between 45 (75%) and 57 (95%) of the teachers are aware of the educational research findings. While the total percentage awareness before intervention was 71.91%, this changed to 87.41% after intervention. This shows that the teachers' level of awareness of the findings has increased due to their exposure to the collaborative intervention. Figure 4.1 illuminates these findings.

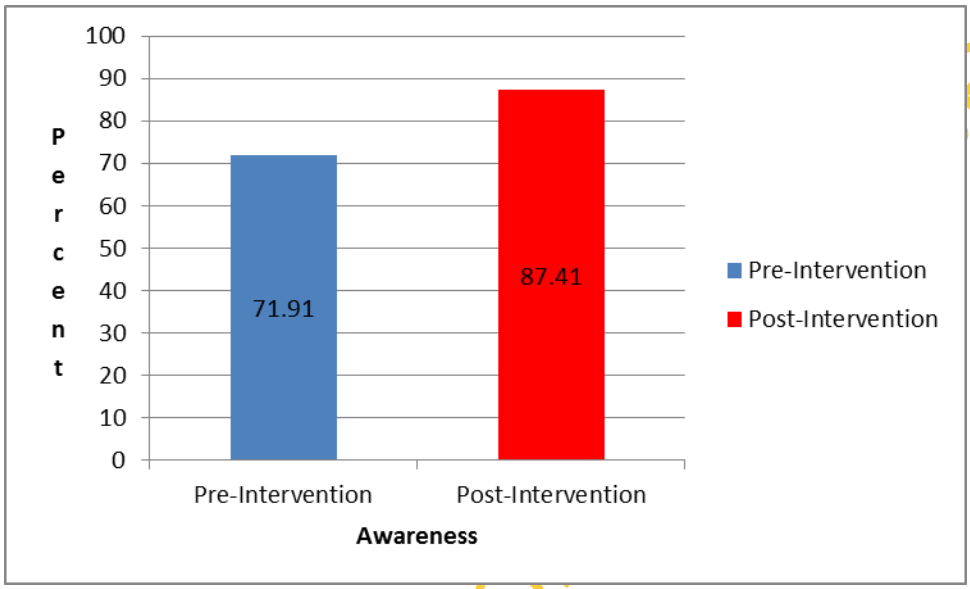

Figure 4.1: Weighted Average of Teachers' Awareness of Research Findings before and after Intervention

The chart shows that the bar for teachers' awareness after the intervention is taller than that before intervention. The 71.91 per cent obtained before intervention is as high as it is perhaps due to the location of the schools used for the study. They are all in Ibadan Township, the same town where the University of Ibadan is located. Many of the teachers run one degree programme or the other in the University and researchers use most of the schools for their studies. In spite of these, the teachers' post-intervention score on awareness of research findings is still higher than the pre-intervention score. This means that the teachers actually benefitted from the intervention activities especially the Focus Group Discussion and the seminar.

Research Question 1b: What are pre-primary and primary school teachers' level of acquisition of educational research findings before and after collaborative intervention activities?

Answers were provided using descriptive statistics presented on Tables 6 and 7.

Table 4.3: Teachers' Acquisition of Educational Research Findings Before Intervention

S/N	Statements N=60	Always (4)	Sometimes (3)	Rarely (2)	Never (1)	Mean	Std. Dev
1	I consult journal articles on pre-primary and primary education	3 (5.0)	28 (46.7)	11 (18.3)	18 (30.0)	2.26	.95
2	I seek tested professional knowledge from lecturers in higher institutions of learning	7 (11.7)	31 (51.7)	8 (13.3)	14 (23.3)	2.51	.98
3	I attend capacity building workshops organized on the teaching-learning of pre-primary and primary school subjects	5 (8.3)	36 (60.0)	7 (11.7)	12 (20.0)	2.56	.90
4	I attend seminars where current research findings are disseminated to teachers	9 (15.0)	31 (51.7)	9 (15.0)	11 (18.3)	2.63	.95
5	I visit libraries of universities and/or other higher institutions for information on the teaching profession	5 (8.3)	16 (26.7)	15 (25.0)	24 (40.0)	2.03	1.0
6	read professional books on pre-primary and primary education	24 (40.0)	17 (28.3)	13 (21.7)	6 (10.0)	2.98	1.0
7	I attend annual conferences of Teacher/Subject Association(s) organized to brainstorm on better strategies of teaching	6 (10.0)	14 (23.3)	18 (30.0)	22 (36.7)	2.06	1.0
8	I access general content journals on educational issues	6 (10.0)	20 (33.3)	9 (15.0)	25 (41.7)	2.11	1.0
9	I link up to Educational Resources Information Centre (ERIC) for current research information	4 (6.7)	12 (20.0)	11 (18.3)	33 (55.0)	1.78	.99
10	I consult abstracts of published research works in the field of Primary Education	4 (6.7)	18 (30.0)	16 (26.7)	22 (36.7)	2.06	.97
11	I access bound students' research projects from Departments and Faculties of Education to get acquainted with their findings	7 (11.7)	12 (20.0)	18 (30.0)	23 (38.3)	2.05	1.0
12	I browse the web for research findings on novel and innovative teaching strategies	11 (18.3)	16 (26.7)	8 (13.3)	25 (41.7)	2.21	1.1
13	I attend public lectures on educational topics and contemporary issues in education	8 (13.3)	22 (36.7)	18 (30.0)	12 (20.0)	2.43	.96
14	I discuss with senior colleagues on innovations on teaching strategies which they are aware of.	15 (25.0)	30 (50.0)	5 (8.3)	10 (16.7)	2.83	.99
15	I collate data on trends in my learners' performance for the purpose of appreciating areas where there are problems for me to address.	28 (46.7)	17 (28.3)	11 (18.3)	4 (6.7)	3.15	.95
16	I visit my lecturers, former teachers and mentors for best practices in teaching	16 (26.7)	18 (30.0)	14 (23.3)	12 (20.0)	2.63	1.0
17	I look for information on instructional materials locally available for teaching my learners	34 (56.7)	20 (33.3)	1 (1.7)	5 (8.3)	3.38	.88
18	I search for strategies which I can use to help my learners with learning difficulties from research publications	35 (58.3)	11 (18.3)	9 (15.0)	5 (8.3)	3.26	1.0
19	I collect information on effective strategies of teaching through radio, television and newspaper reports	26 (43.3)	26 (43.3)	5 (8.3)	3 (5.0)	3.25	.81
20	I cross-check any research information read with my colleagues to verify the usefulness of the findings	15 (25.0)	28 (46.7)	9 (15.0)	8 (13.3)	2.83	.95
Weighted Average (%) =				63.75			

Values in parentheses are percentages

Table 4.3 shows that before the collaborative intervention activities, the responses of the pre-primary and primary school teachers on acquisition of research yielded mean scores which revolve around "Rarely" (2.00) and "sometimes" (3.00). Teachers rarely: consult educational journal articles ($\bar{x}$ =2.26), visit university libraries ($\bar{x}$=2.03), attend conferences of Teacher/object Associates ($\bar{x}$=2.06), access general content journals ($\bar{x}$=2.01) link up to ERIC ($\bar{x}$=1.78), consult abstracts of published research work ($\bar{x}$=2.06), access bound research projects in the Department and Faculties of Education ($\bar{x}$=2.05), browse the web for research findings ($\bar{x}$=2.21) and rarely attend public lectures on educational issues ($\bar{x}$=2.43). On the other hand, there are 11 items with mean scores ranging from 2.51 to 3.38 indicating that the teachers sometimes acquire educational research findings. The 63.75% weighted average also shows that the pre-primary and primary school teachers' acquisition of educational research findings, which can improve their teaching effectiveness, is not good enough.

Table 4.4: Teachers' Acquisition of Educational Research Findings after Intervention

N=60

S/N	Statements	Always (4)	Sometimes (3)	Rarely (2)	Never (1)	Mean	Std. Dev.
1	I consult journal articles on pre-primary and primary education	7 (11.7)	34 (56.7)	10 (16.7)	9 (15.0)	2.65	.87
2	I seek tested professional knowledge from lecturers in higher institutions of learning	6 (10.0)	28 (46.7)	16 (26.7)	10 (16.7)	2.50	.89
3	I attend capacity building workshops organized on the teaching-learning of pre-primary and primary school subjects	16 (26.7)	31 (51.7)	5 (8.3)	8 (13.3)	2.91	.94
4	I attend seminars where current research findings are disseminated to teachers	9 (15.0)	43 (71.7)	5 (8.3)	3 (5.0)	2.96	.66
5	I visit libraries of universities and/or other higher institutions for information on the teaching profession	4 (6.7)	23 (38.3)	20 (33.3)	13 (21.7)	2.30	.88
6	read professional books on pre-primary and primary education	15 (25.0)	29 (48.3)	8 (13.3)	8 (13.3)	2.85	.95
7	I attend annual conferences of Teacher/Subject Association(s) organized to brainstorm on better strategies of teaching	9 (15.0)	34 (56.7)	9 (15.0)	8 (13.3)	2.73	.88
8	I access general contact journals on educational issues	2 (3.3)	34 (56.7)	13 (21.7)	11 (18.3)	2.45	.83
9	I link up to Educational Resources Information Centre (ERIC) for current research information	6 (10.0)	21 (35.0)	19 (31.7)	14 (23.3)	2.31	.94
10	I consult abstracts of published research works in the field of Primary Education	7 (11.7)	27 (45.0)	18 (30.0)	8 (13.3)	2.55	.87
11	I access bound students' research projects from Departments and Faculties of Education to get acquainted with their findings	4 (6.7)	19 (31.7)	21 (35.0)	16 (26.7)	2.18	.91
12	I browse the web for research findings on novel and innovative teaching strategies	6 (10.0)	24 (40.0)	19 (31.7)	11 (18.3)	2.41	.90
13	I attend public lectures on educational topics and contemporary issues in education	15 (25.0)	28 (46.7)	7 (11.7)	10 (16.7)	2.80	1.0
14	I discuss with senior colleagues on innovations on teaching strategies which they are aware of.	19 (31.7)	28 (46.7)	9 (15.0)	4 (6.7)	3.03	.86
15	I collate data on trends in my learners' performance for the purpose of appreciating areas where there are problems for me to address.	21 (35.0)	24 (40.0)	12 (20.0)	3 (5.0)	3.05	.87
16	I visit my lecturers, former teachers and mentors for best practices in teaching	10 (16.7)	22 (36.7)	14 (23.3)	14 (23.3)	2.46	1.0
17	I look for information on instructional materials locally available for teaching my learners	33 (55.0)	22 (36.7)	2 (3.3)	3 (5.0)	3.41	.78
18	I search for strategies which I can use to help my learners with learning difficulties from research publications	25 (41.7)	27 (45.0)	5 (8.3)	3 (5.0)	3.23	.81
19	I collect information on effective strategies of teaching through radio, television and newspaper reports	25 (41.7)	24 (40.0)	4 (6.7)	7 (11.7)	3.11	.97
20	I cross-check any research information read with my colleagues to verify the usefulness of the findings	10 (16.7)	38 (63.3)	6 (10.0)	6 (10.0)	2.86	.81
Weighted Average (%) =				68.50			

Values in parentheses are percentages

Table 4.4 shows that after the collaborative intervention activities, teachers rarely acquire research findings based on 6 items (items 5, 8, 9, 11, 12 and 16) with mean scores of 2.18 to

2.45. For the remaining 14 items, the teachers sometimes acquire research findings (means range between 2.50 and 3.41).

On the whole, the weighted average for teachers acquisition of educational research findings before intervention is 63.75 (Table 4.3) while after the intervention, it is 68.50 (Table 4.4). This represents an improvement which can be attributed to the impact of the collaborative intervention activities. These findings were summarised on bar chart (Figure 4.2).

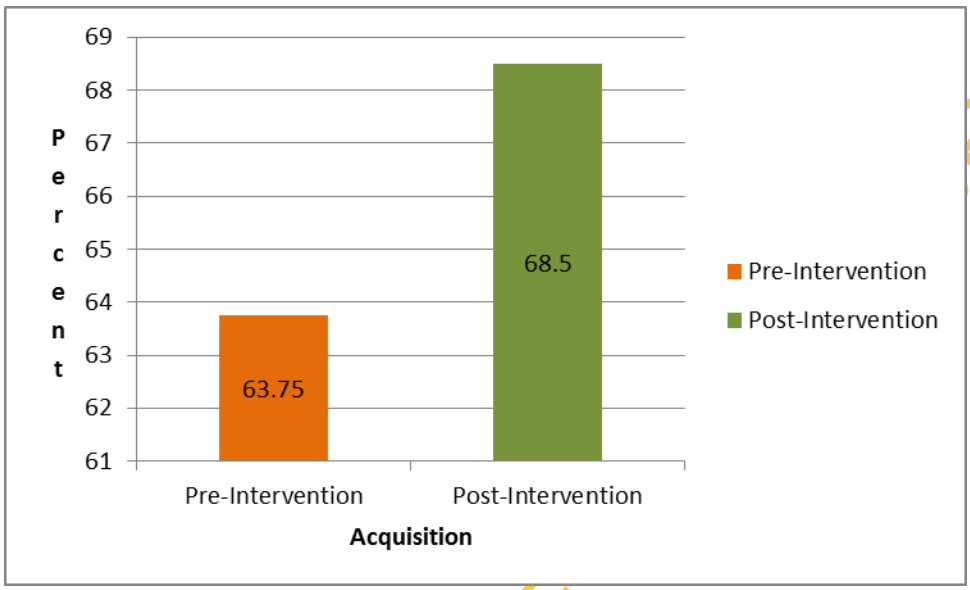

Figure 4.2: Weighted Average of Teachers' Acquisition of Research Findings before and after Intervention

The bar chart shows that the post-intervention acquisition score of the teachers is higher than the pre-intervention score. This depicts a level of impact of the intervention on the teachers' acquisition of research findings.

Research Question 1c: What are pre-primary and primary school teachers' level of utilization of educational research findings before and after collaborative intervention activities?

Tables 8 and 9 are presented to answer the research question.

Table 4.5: Teachers' Utilisation of Educational Research Findings before Intervention

N=60

Item	I utilize information from research:	Always (4)	Sometimes (3)	Rarely (2)	Never (1)	Mean	Std. Dev.
1	to get acquainted with effective teaching strategies	25 (41.7)	20 (33.3)	8 (13.3)	7 (11.7)	3.05	1.0
2	for innovations in school curricula	20 (33.3)	24 (40.0)	9 (15.0)	7 (11.7)	2.95	.98
3	on how to improve my learners interest in schooling	36 (60.0)	18 (30.0)	1 (1.7)	5 (8.3)	3.41	.88
4	to source for better evaluation techniques in day-to-day activities	36 (60.0)	13 (21.7)	5 (8.3)	6 (10.0)	3.31	.99
5	in order to prepare my lessons well	34 (56.7)	15 (25.0)	1 (1.7)	10 (16.7)	3.21	1.1
6	to help me in effective delivery of instruction	32 (53.3)	14 (23.3)	9 (15.0)	5 (8.3)	3.21	.99
7	to get facts on the development of locally available instructional materials	34 (56.7)	16 (26.7)	3 (5.0)	7 (11.7)	3.28	1.0
8	for effective use of instructional materials	35 (58.3)	18 (30.0)	3 (5.0)	4 (6.7)	3.40	.86
9	to become knowledgeable on recent theories of child development	28 (46.7)	21 (35.0)	6 (10.0)	5 (8.3)	3.20	.93
10	for theories behind the various new teaching strategies	30 (50.0)	14 (23.3)	9 (15.0)	7 (11.7)	3.11	1.0
11	to improve my content knowledge of school subjects	30 (50.0)	15 (25.0)	10 (16.7)	5 (8.3)	3.16	.99
12	for the acquisition of more pedagogical knowledge	24 (40.0)	18 (30.0)	11 (18.3)	7 (11.7)	2.98	1.0
13	for more effective classroom management techniques	41 (68.3)	12 (20.0)	5 (8.3)	2 (3.3)	3.53	.79
14	for skills at motivating and reinforcing my learners in learning	33 (55.0)	23 (38.3)	1 (1.7)	3 (5.0)	3.43	.76
15	to acquire knowledge and skills in using modern questioning techniques in class	36 (60.0)	17 (28.3)	4 (6.7)	3 (5.0)	3.43	.83
16	for further verification of research findings	18 (30.3)	19 (31.7)	15 (25.0)	8 (13.3)	2.78	1.0
17	to help in improving my learners' achievement	39 (65.0)	15 (25.0)	4 (6.7)	2 (3.3)	3.51	.77
18	to increase the level of classroom interaction i.e. teacher-student, student-student and student-material interactions	41 (68.3)	13 (21.7)	3 (5.0)	3 (5.0)	3.53	.81
19	for encouraging active participation of learners in the class activities.	40 (66.7)	14 (23.3)	4 (6.7)	2 (3.3)	3.53	.76
20	to assist me in planning and carrying out research on my learners	31 (51.7)	11 (18.3)	14 (23.3)	4 (6.7)	3.15	1.0
Weighted Average (%) = 81.50							

Values in parentheses are percentages

Table 4.5 shows that before the collaborative intervention activities, the pre-primary and primary school teachers' responses yielded mean scores on research utilisation which range from 2.78 to 3.53 out of a maximum score of 4.00. These show that the pre-primary and primary school teachers' level of utilization of educational research findings is moderately high. The weighted average of 81.50 per cent also lends credence to this.

Table 4.6: Teachers' Utilisation of Educational Research Findings after Intervention
N=60

Item	I utilize information from research:	Always (4)	Sometimes (3)	Rarely (2)	Never (1)	Mean	Std. Dev.
1	to get acquainted with effective teaching strategies	33 (55.0)	22 (36.7)	4 (6.7)	1 (1.7)	3.45	.69
2	for innovations in school curricula	33 (55.0)	21 (35.0)	4 (6.7)	2 (3.3)	3.41	.76
3	on how to improve my learners interest in schooling	43 (71.7)	14 (23.3)	1 (1.7)	2 (3.3)	3.63	.68
4	to source for better evaluation techniques in day-to-day activities	40 (66.7)	18 (30.0)	1 (1.7)	1 (1.7)	3.61	.61
5	in order to prepare my lessons well	38 (63.3)	19 (31.7)	1 (1.7)	2 (3.3)	3.55	.69
6	to help me in effective delivery of instruction	40 (66.7)	16 (26.7)	1 (1.7)	3 (5.0)	3.55	.76
7	to get facts on the development of locally available instructional materials	39 (65.0)	18 (30.0)	1 (1.7)	2 (3.3)	3.56	.69
8	for effective use of instructional materials	39 (65.0)	17 (28.3)	2 (3.3)	2 (3.3)	3.55	.72
9	to become knowledgeable on recent theories of child development	38 (63.3)	18 (30.0)	3 (5.0)	1 (1.7)	3.55	.67
10	for theories behind the various new teaching strategies	35 (58.3)	19 (31.7)	4 (6.7)	2 (3.3)	3.45	.76
11	to improve my content knowledge of school subjects	38 (63.3)	16 (26.7)	4 (6.7)	2 (3.3)	3.50	.77
12	for the acquisition of more pedagogical knowledge	29 (48.3)	23 (38.3)	4 (6.7)	4 (6.7)	3.28	.86
13	for more effective classroom management techniques	41 (68.3)	16 (26.7)	2 (3.3)	1 (1.7)	3.61	.64
14	for skills at motivating and reinforcing my learners in learning	35 (58.3)	23 (38.3)		2 (3.3)	3.51	.67
15	to acquire knowledge and skills in using modern questioning techniques in class	42 (70.0)	16 (26.7)	1 (1.7)	1 (1.7)	3.65	.60
16	for further verification of research findings	27 (45.0)	25 (41.7)	6 (10.0)	2 (3.3)	3.28	.78
17	to help in improving my learners' achievement	43 (71.7)	14 (23.3)		3 (5.0)	3.61	.73
18	to increase the level of classroom interaction i.e. teacher-student, student-student and student-material interactions	42 (70.0)	16 (26.7)	1 (1.7)	1 (1.7)	3.65	.60
19	for encouraging active participation of learners in the class activities.	43 (71.7)	16 (26.7)		1 (1.7)	3.68	.56
20	to assist me in planning and carrying out research on my learners	38 (63.3)	20 (33.3)	1 (1.7)	1 (1.7)	3.58	.61
Weighted Average (%) =				88.25			

Values in parentheses are percentages

Table 4.6 shows that after intervention, the mean scores for teachers' utilization of research range from 3.28 to 3.68. These values are quite generally high and the weighted average of

88.25 per cent at the post-intervention stage compared to the 81.50 per cent obtained at the pre-intervention stage indicates that the level of utilization has improved at the end of the intervention as it was higher than what obtained before intervention. Figure 4.3 is a bar chart representing these findings.

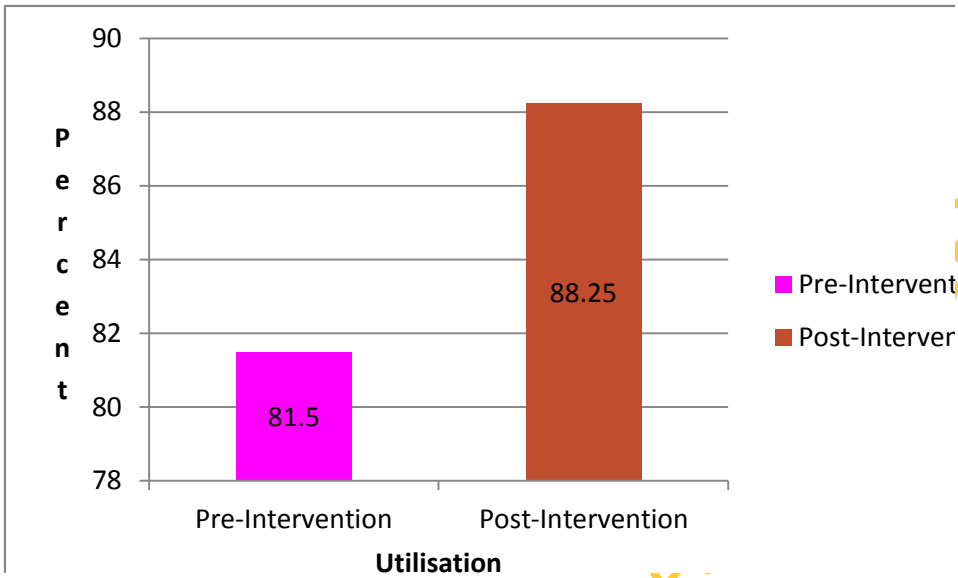

Figure 4.3: Weighted Average Showing Teachers' Utilisation of Research before and after Intervention

From Figure 4.3, teachers' utilisation of the research findings after the collaborative intervention was much compared to their sparing use of same before the intervention. Based on this, it could be said that the teachers' participation in the intervention activities has led to an improvement in their utilisation of research findings.

Research Question 2: To what extent do the pre-primary and primary school teachers perceive the need for implementing educational research findings and recommendations in their classroom teaching?

During the pre-intervention interview session with the teachers, question 1 on the interview guide was posed: "When faced with challenges in the classroom teaching-learning situation, learners' learning difficulty or underachievement". Their responses were: identification or diagnosis of student problem (more often without any specialized procedure/instrument), one-one interaction with learners and giving them greater attention, breaking the information down into simpler forms, moving round the class to monitor learners' progress, extra attention/Extra work for learners identified to be slow learners, closer relationship with the learners, re-teaching using novel strategies e.g. play, storytelling, role play, drama, using real objects as instructional materials, interviewing learners, use of mother tongue and teaching from known to unknown. Other responses were peer tutoring, use of more examples, teaching learners slowly, buying school materials for children (which ordinarily should not be the role of teachers), extra lessons, homework, insistence on doing corrections, remediating individual child's problem, learners with similar problems taught together, use of practice, persuasion and punishment.

Some of the teachers also claimed to cuddle learners' familiarity i.e. using their names to call them, chatting with individual learners personally, petting learners as children are too young (which will not help much as teachers need to be firm sometimes for learners to be well prepared for schooling) and teaching English Language class using Yoruba language (not in line with the policy). Also, some engage in teaching a concept meant for 1 week for 2 weeks for better learners understanding (not following scheme of work and content coverage could be jeopardized), use of personal knowledge as a parent and provision of solution in the best way they could (relying on personal experience), changing method of teaching (within the limits of their awareness and knowledge), informing parents (which is not an immediate solution). A few teachers claimed to minimize play (for children at the pre-primary school level who learn best through play), use reward e.g. food, water (which may lead to some other problems), advising parents to get private home teacher for their children (abdicating their primary responsibilities), prayer (shying away from their job roles and responsibilities) and use of verbal questioning for assessment (which cannot involve all the learners in the class as few students will answer verbal questions).

When probed about their sources of these knowledge/information according to question 2 on the interview guide, teachers mentioned the following: Seminars organized by the Oyo State Universal Basic Education Board quarterly, and National Teachers Institute annually (which frequency is too small, did not accommodate vast number of the teachers and featured obsolete information and resources), textbooks provided by the school (which may not be recent) and educative CDs/programmes on radio/television channels (which may not be directly relevant to problems encountered in the teachers' classes). Some also browse the web mostly on phone, interact with other teachers, undertake excursion/ field trips, consult charts related to the topic, attend workshops occasionally and meet or rehearse with experienced teachers (which are good avenues that could help teachers with authoritative knowledge).

Some of the teachers also rely on initial teacher preparation at teachers college or University(which may be out of date at the moment), news and newspapers (which sources of information are not always cited), visiting education Centres (with little or no collections of research information), micro-teaching (which is seldom heard of among teacher) and useful materials from the locality. Also, most of them said they learn from children taught and their own children (instead of theories of child development), hand-outs (which may be unproductive), personal experience from long period of teaching e.g. a teacher mentioned 27 years on the job (which may be faulty or even misapplied), consulting children that attend private schools (which could be misleading) and consulting from the Headmaster (subject to conforming with expert knowledge). Some teachers also recalled how they were taught, teach likewise and consult their 'educated' spouses (which could also be wrong).

On whether those who have access to educational research findings use them for classroom teaching (question 5) only 4 out of the 60 teachers said 'yes'. 3 of these claimed that they sometimes use the research findings in classroom teaching while the remaining 1 teacher who accessed research findings through "a friend in the United States" claimed to use such research information every time in classroom teaching. In the final analysis, these responses show that the teachers mostly rely on sources which are not authoritative, empirical, testable and systematic. Most of the teachers did not perceive research information sources such as journals, conference proceedings, research projects, dissertation and theses, visiting Colleges of Education, Universities and Lecturers for current information as necessary for effective classroom teaching to an appreciable extent. The remaining 56 teachers responded 'No' to this question indicating that they do not use educational research findings for classroom teaching.

After intervention, most of the teachers said they would rather wish that research findings be packaged be researchers and brought to them through collaborative activities and that research project undertaken in universities and other relevant institutions should be deposited in the pre-primary and primary schools. Above all, the vast majority of the teachers perceived that there need to be effective collaboration, sustained relationship and efficient dissemination channel between researchers and teachers.

Research question 3: Why would the pre-primary and primary school teachers use or not use educational research findings in their teaching?

During interview, the teachers bared their minds on the limitations they face towards possible use of research findings (question number 7 on the interview guide). These include lack of time, too much workload, tiredness, overpopulation of learners in school and large class. One of them said "all these wear me out and I become too tired to go after research information". Other issues raised by the teachers are non-availability of research information in the school library, lack of awareness of where to get research information, lack of encouragement, lack of motivation, poor salary therefore would rather go after other business to make ends meet, too many periods per day, lack of commitment to go the "extra mile" to consult sources of research information and adequacy of personal knowledge/experience. They also allude to the opinion that teaching elementary subjects do not require serious search for any specialized knowledge, lack of funds required to search for information and poor attendance of seminar. A teacher said he had attended just one seminar in his 17-year period of being on the job.

Part of the reasons given also include lack of interest, nonchalant attitude of teachers to work, delay in salary payment, inability to use the internet, school libraries closing at 2pm instead of being open for longer period, lack of computer/internet facilities either in the school or at home, lack of power supply and the fact that there are few higher institutions where these research works abound.

On the implementation of research findings in classroom teaching, (question 8 on the interview guide), some teachers claimed that they had little or no freedom to implement any new knowledge or research idea they personally acquired. One of them said his school Headmaster was against introduction of such new things sometimes. They also had less amount of time available to plan the incorporation of new ideas into their teaching or to source for materials to be used for that purpose. They also said that seminars of benefit to classroom teaching/learning were seldom organized to help teachers improve on the job, lack

of facilities for implementing innovative research findings in the school (even chalk was said to be unavailable in some of the schools).

Some teachers also lamented their tendency to forget new things read in journals, zero opportunity for microteaching or teaching practice among practicing teachers, poor safety/safekeeping of improvised materials designed for implementing the new ideas, lack of texts by students e.g. for homework, learners' poor background, discouragement from colleagues, opposition/condemnation of such new research ideas by supervisors/inspectors and inability to understand research reports.

On interview question 9, the recommendations given by the teachers towards utilization of research findings in classroom teaching also revealed the areas which when improved could directly or indirectly influence their utilization of research. Some of the teachers mentioned improved remuneration, dissemination of new research findings to teachers as a group, stocking of school library with journals, conference proceedings and internet facilities and equipment for accessing research findings. Some also made case for creating awareness on sources of research information during teacher preparation, adequate motivation of teachers, creating time for seeking research information by teachers themselves, reduction of class sizes, regular organization of seminars, provision of novel instructional materials by government, de-politicization of nomination of teachers for seminar and workshop attendance and invocation of periodic tripartite meeting of government, head teachers and teachers on these issues.

Most of the teachers added that school authorities should support new ideas acquired by teachers, and that new developments should even be brought to school by the school authority. Enlightenment through the media i.e. broadcast of new research findings, collaboration of researchers with stakeholders, communication of research findings obtained on primary schools to the schools and stocking of public libraries with research information are some of the teachers' recommendations. Also, few of them wanted the government to collate and publish research findings while individual schools should organize weekend meetings to share research information acquired by members of staff.

At the post-intervention stage, most of the pre-primary and primary school teachers seemed to have realized that they also have roles to play in the utilization of research findings in their teaching. A sizeable number of teachers said "non-availability and lack of access to research findings" are reasons they would not use educational research findings in classroom teaching.

Most of them also mentioned lack of capacity to understand the language of research and lack of necessary materials needed to implement certain research findings in the school as issues that may stop them from using such research findings. Other reasons given include lack of internet facility, lack of conferences and seminars on new research findings and lack of support and cooperation of school management and inspectors of education.

Research Question 4: What were the suggestions made by the pre-primary and primary school teachers on how educational research findings could be made available to them?

On the interview question 10, some of the teachers suggested that seminars should be organised during long vacation or weekends and that there should be group discussion among teachers during break time to brainstorm on acquisition and utilization of research findings. They also suggested that research findings should be made available in the school library and that the sources of research findings should be included in initial teacher training programmes. Special library for teachers, in-house seminar for teachers, workshops, dissemination efforts through SUBEB, Schools Board, Head teachers to teachers were also advocated by the teachers.

Some teachers wanted research findings to be disseminated to them through school supervisors and inspectors and they wanted awareness campaigns as well as media broadcast of research findings to be sponsored by the government. Some also averred that education authorities should bring research findings to schools; Centres for Educational Research should be established close to the schools; government should provide computer training for teachers to improve their capacity for acquiring research findings online; copies of research work should be acquired by government from higher institutions and individual researchers and made available in the school libraries; researchers should organize seminar workshops to disseminate their findings; technical aid for learning should be provided for teachers; and journal editors should be mandated to send their journals to schools by post free of charge.

At the post-intervention stage, most teachers wanted direct interaction with researchers to learn about their new discoveries. They expected researchers to make efforts at bringing the findings to the schools and having a rapport with teachers. Some teachers also wanted researchers to search into real-life problems confronting them in the classroom as they claimed this would be relevant to their situations and they would not but apply them in such classroom situation.

Research Question 5: To what extent do the classroom practices of selected pre-primary and primary school teachers reflect educational research findings before and after the collaborative intervention activities?

Table 4.7 presents the descriptive statistics used to answer research question 5.

Table 4.7: Observed Teachers' Classroom Practices Before Intervention

N=60

S/N	Classroom Features	Ratings						Mean	Std. Dev.
		0	1	2	3	4	5		
1	**Introduction** Specification of learning outcomes	9 (15.0)	6 (10.0)	13 (21.7)	9 (15.0)	8 (13.3)	15 (25.0)	2.76	1.7
2	Sharp and interesting	10 (16.7)	6 (10.0)	11 (18.3)	12 (20.0)	13 (21.7)	8 (13.3)	2.60	1.6
3	Evidence of adequately planned lesson	7 (11.7)	4 (6.7)	11 (18.3)	13 (21.7)	16 (26.7)	9 (15.0)	2.90	1.5
4	**Teachers' Knowledge and Skills** Identification of learners difficulties in learning	12 (20.0)	4 (6.7)	17 (28.3)	10 (16.7)	13 (21.7)	4 (6.7)	2.33	1.5
5	Knowledge of subject matter	4 (6.7)	3 (5.0)	10 (16.7)	10 (16.7)	21 (35.0)	12 (20.0)	3.28	1.4
6	Pedagogical skills	8 (13.3)	5 (8.3)	10 (16.7)	18 (30.0)	11 (18.3)	8 (13.3)	2.71	1.5
7	**Adoption of Teaching Strategies** Process Based	6 (10.0)	9 (15.0)	11 (18.3)	15 (25.0)	11 (18.3)	8 (13.3)	2.66	1.5
8	Product Based	10 (16.7)	3 (5.0)	11 (18.3)	14 (23.3)	9 (15.0)	13 (21.7)	2.80	1.7
9	Modelling	14 (23.3)	6 (10.0)	13 (21.7)	17 (28.3)	6 (10.0)	4 (6.7)	2.11	1.5
10	Picture-based	23 (38.3)	5 (8.3)	11 (18.3)	8 (13.3)	7 (11.7)	6 (10.0)	1.81	1.7
11	Conceptual-change	22 (36.7)	9 (15.0)	7 (11.7)	9 (15.0)	8 (13.3)	5 (8.3)	1.78	1.7
12	Enhanced explicit	17 (28.3)	8 (13.3)	12 (20.0)	10 (16.7)	9 (15.0)	4 (6.7)	1.96	1.6
13	Outdoor education activities	37 (61.7)	2 (3.3)	3 (5.0)	5 (8.3)	8 (13.3)	5 (8.3)	1.33	1.8
14	**Classroom Interaction** Use of Group Learning	31 (51.7)	6 (10.0)	3 (5.0)	8 (13.3)	3 (5.0)	9 (15.0)	1.55	1.9
15	Structured groupings	23 (38.3)	8 (13.3)	4 (6.7)	5 (8.3)	7 (11.7)	13 (21.7)	2.06	2.0
16	Unstructured groupings	22 (36.7)	9 (15.0)	5 (8.3)	12 (20.0)	8 (13.3)	4 (6.7)	1.78	1.7
17	Cooperative learning	25 (41.7)	8 (13.3)	6 (10.0)	7 (11.7)	6 (10.0)	8 (13.3)	1.75	1.8
18	Medium of institution	24 (40.0)	7 (11.7)	3 (5.0)	9 (15.0)	15 (25.0)	2 (3.3)	1.83	1.7
19	**Learners' Individual Traits/Differences** Gender sensitivity	14 (23.3)	8 (13.3)	4 (6.7)	18 (30.0)	13 (21.7)	3 (5.0)	2.28	1.6
20	Accommodation of Learners' Personalities	16 (26.7)	3 (5.0)	8 (13.3)	12 (20.0)	14 (23.3)	7 (11.7)	2.43	1.7
21	Consideration of home background/location	15 (25.0)	5 (8.3)	10 (16.7	14 (23.3)	14 (23.3)	2 (3.3)	2.21	1.5
22	Factoring learners' ability into activities	13 (21.7)	4 (6.7)	13 (21.7)	11 (18.3)	14 (23.3)	5 (8.3)	2.40	1.6
23	Identification and tapping into learners' Cognitive style.	12 (20.0)	11 (18.3)	6 (10.0)	10 (16.7)	16 (26.7)	5 (8.3)	2.36	1.6
24	**Homework** Use of preparation, enhanced practice or combination	20 (33.3)	11 (18.3)	4 (6.7)	2 (3.3)	13 (21.7)	10 (16.7)	2.11	1.9
25	Requirement of parental role/assistance/information	22 (36.7)	8 (13.3)	7 (11.7)	8 (13.3)	4 (6.7)	11 (18.3)	1.95	1.9
Weighted Average (%) = 45.80									

Values in parentheses are percentages

Table 4.7 shows that before the collaborative intervention activities, the classroom practices of the pre-primary and primary school teachers, as observed, are generally poor (mean range from 1.33 to 3.28 out of 5.00). This is more clearly represented in the weighted average of

45.80%. In other words, the classroom practices of the teachers did not reflect the selected educational research findings to an appreciable extent at the pre-intervention stage of the study.

Table 4.8: Observed Teachers' Classroom Practices After Intervention

N=60

S/N	Classroom Features	Ratings						Mean	Std. Dev.
		0	1	2	3	4	5		
1	**Introduction** Specification of learning outcomes	2 (3.3)	1 (1.7)	3 (5.0)	16 (26.7)	16 (26.7)	22 (36.7)	3.81	1.2
2	Sharp and interesting	2 (3.3)	1 (1.7)	2 (3.3)	17 (28.3)	23 (38.3)	15 (25.0)	3.71	1.1
3	Evidence of adequately planned lesson	3 (5.0)	1 (1.7)	2 (3.3)	12 (20.0)	25 (41.7)	17 (28.3)	3.76	1.2
4	**Teachers' Knowledge and Skills** Identification of learners difficulties in learning	5 (8.3)	-	2 (3.3)	15 (25.0)	32 (53.3)	6 (10.0)	3.45	1.2
5	Knowledge of subject matter	3 (5.0)	1 (1.7)	-	18 (30.0)	20 (33.3)	18 (30.0)	3.75	1.2
6	Pedagogical skills	3 (5.0)	1 (1.7)	1 (1.7)	14 (23.3)	22 (36.7)	19 (31.7)	3.80	1.2
7	**Adoption of Teaching Strategies** Process Based	4 (6.7)	2 (3.3)	4 (6.7)	13 (21.7)	17 (28.3)	20 (33.3)	3.61	1.4
8	Product Based	3 (5.0)	7 (11.7)	11 (18.3)	19 (31.7)	9 (15.0)	11 (18.3)	2.95	1.4
9	Modelling	9 (15.0)	-	4 (6.7)	26 (43.3)	14 (23.3)	7 (11.7)	2.95	1.4
10	Picture-based	11 (18.3)	2 (3.3)	3 (5.0)	23 (38.3)	19 (31.7)	2 (3.3)	2.71	1.4
11	Conceptual-change	6 (10.0)	3 (5.0)	12 (20.0)	21 (35.0)	14 (23.3)	4 (6.7)	2.76	1.3
12	Enhanced explicit	5 (8.3)	2 (3.3)	3 (5.0)	24 (40.0)	19 (31.7)	7 (11.7)	3.18	1.3
13	Outdoor education activities	22 (36.7)	2 (3.3)	3 (5.0)	9 (15.0)	16 (26.7)	8 (13.3)	2.31	1.9
14	**Classroom Interaction** Use of Group Learning	9 (15.0)	6 (10.0)	8 (13.3)	12 (20.0)	15 (25.0)	10 (16.7)	2.80	1.6
15	Structured groupings	11 (18.3)	7 (11.7)	8 (13.3)	15 (25.0)	10 (16.7)	9 (15.0)	2.55	1.6
16	Unstructured groupings	11 (18.3)	5 (8.3)	8 (13.3)	14 (23.3)	12 (20.0)	10 (16.7	2.68	1.7
17	Cooperative learning	8 (13.3)	7 (11.7)	6 (10.0)	13 (21.7)	16 (26.7)	10 (16.7)	2.86	1.6
18	Medium of institution	7 (11.7)	5 (11.7)	2 (3.3)	12 (20.0)	26 (43.3)	8 (13.3)	3.15	1.5
19	**Learners' al Traits/Differences** Gender sensitivity	11 (18.3)	5 (8.3)	4 (6.7)	8 (13.3)	22 (36.7)	10 (16.7)	2.91	1.7
20	Accommodation of Learners' Personalities	6 (10.0)	2 (3.3)	6 (10.0)	17 (28.3)	20 (33.3)	9 (15.0)	3.16	1.4
21	Consideration of home background/location	9 (15.0)	2 (3.3)	5 (8.3)	17 (28.3)	22 (36.7)	5 (8.3)	2.93	1.5
22	Factoring learners' ability into activities	5 (8. 3)	1 (1.7)	5 (8.3)	18 (30.0)	25 (41.7)	6 (10.0)	3.25	1.2
23	Identification and tapping into learners' Cognitive style.	8 (13.3)	-	3 (5.0)	16 (26.7)	23 (38.3)	10 (16.7)	3.26	1.5
24	**Homework** Use of preparation, enhanced practice or combination	7 (11.7)	-	6 (10.0)	11 (18.3)	20 (33.3)	16 (26.7)	3.41	1.5
25	Requirement of parental role/assistance/information	12 (20.0)	-	2 (3.3)	15 (25.0)	20 (33.3)	11 (18.3)	3.06	1.7
Weighted Average (%) = 65.20									

Values in parentheses are percentages

From Table 4.8, the classroom practices of the teachers, after the collaborative intervention activities, yielded very high scores as rated by the trained observers. Ranging from 2.31 to 3.81, the mean scores obtained out of 5.00 indicate that the teachers' classroom practices have become highly reflective of the educational research findings used during the collaborative activities. Beyond these, a comparison of the pre- and post-intervention weighted averages i.e 45.80% and 65.20% respectively reveal an appreciable margin in favour of the post-intervention classroom practices. Figure 4.4 represents this result.

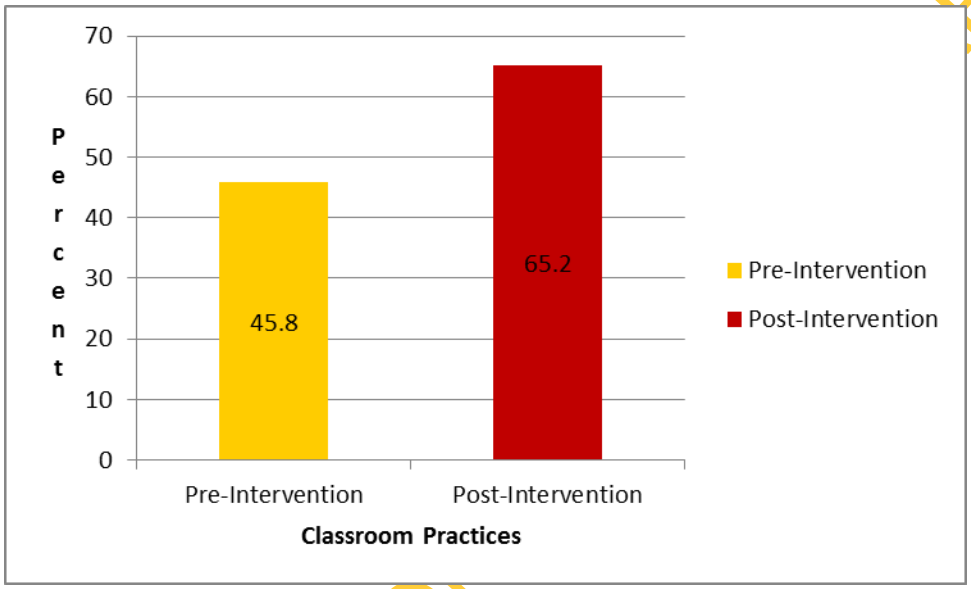

Figure 4.4: Weighted Average of Teachers' Classroom Practices before and after Intervention

From Figure 4.4, it is obvious that the teachers' classroom practices reflected more of the recommendations made in the studies used in the intervention activities. This means that the teachers' classroom practices have improved substantially in the course of this intervention. Table 4.9 is presented for a clear comparison of the aspects of classroom practices observed before and after intervention.

Table 4.9: Descriptive Table for Aspects of Teachers' Classroom Practices Before and After Intervention

Classroom Practices	Group Mean		Mean Difference (MD)	Rank
	Before Intervention	After Intervention		
Introduction	2.75	3.76	1.01	3
Teacher Knowledge and Skills	2.77	3.67	.90	4
Teaching Strategies Adopted	2.06	2.92	.86	5
Classroom Interaction	1.79	2.81	1.02	2
Learners' Traits/ Differences	2.34	3.10	.76	6
Homework	2.03	3.23	1.20	1
Total	**2.29**	**3.26**	**.97**	-

From Table 4.9, the mean difference obtained between observed classroom practice before and after intervention in the area of homework is the highest (MD =1.20) followed by classroom intervention (MD =1.02), introduction of the lesson (MD=1.01), teachers knowledge and skills (MD =.70), teaching strategies adopted (MD =.86) while the lowest is recorded by learners' traits and differences (MD =.76). Figure 4.5 represents these data more explicitly.

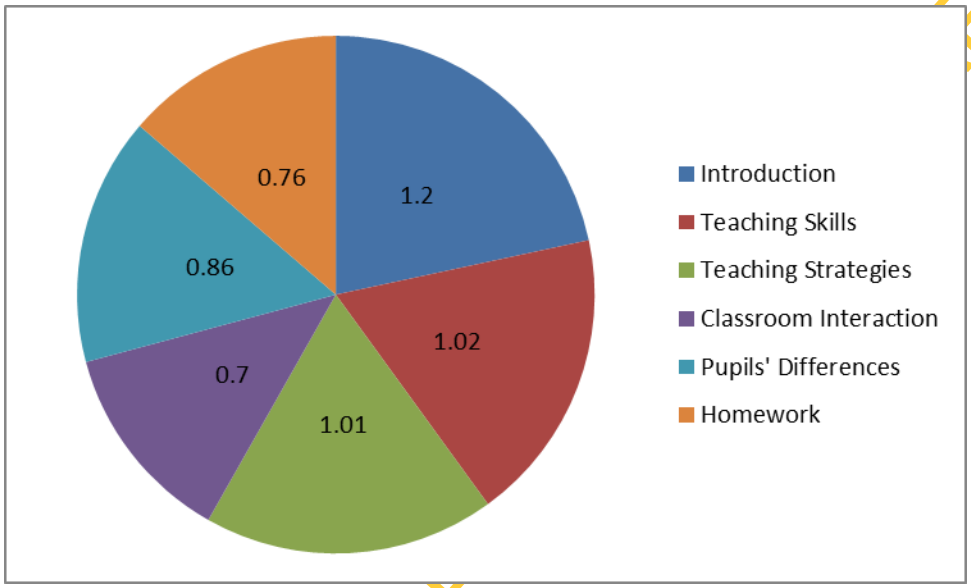

Figure 4.5: Pie Chart Showing Mean Differences for Each of the Six Aspects of Classroom Practices

Figure 4.5 reveals that each of the six aspects observed had a fair share in the improvements recorded from pre-intervention to the post-intervention level. The chart shows that the impact of the intervention on the different aspects of the teachers' classroom practices was more in the area of implementation of homework in classroom teaching, followed by classroom intervention, introduction of the lesson, evidence of teachers' knowledge and skills, teaching strategies adopted, in that order, while learners' individual differences benefitted the least.

4.3 Hypotheses Testing

Hypothesis 1: There is no significant difference in the teachers' level of awareness of educational research findings before and after the collaborative intervention activities.

To test this hypothesis, t-test was computed and the results are presented in Table 4.10.

Table 4.10: Paired t-test of Pre- and Post-Intervention Awareness Scores of Teachers

Pair	Mean	N	Std. Deviation	Std. Error Mean	Mean Difference	t	df	Sig.
PreAwareness	34.38	60	4.66	.60				
PostAwareness	37.48	60	4.40	.56	3.10	4.22	59	.00*

* Significant at p <.05

Table 4.10 shows that mean score for teachers' awareness of research findings intervention is 34.38 as against 37.48 after intervention. This shows that teachers' awareness has improved. This difference is significant (t =4.22; df =59; p<.05). On this basis, hypothesis 1 is rejected.

Hypothesis 2: There is no significant difference in the teachers' acquisition of educational research findings before and after the collaborative intervention activities.

To test this hypothesis, t-test was computed and the results are presented in Table 4.11.

Table 4.11: Paired t-test of Pre- and Post-Intervention Acquisition Scores of Teachers

Pair	Mean	N	Std. Deviation	Std. Error Mean	Mean Difference	t	df	Sig.
PreAcquisition	51.08	60	11.22	1.44	3.73	1.79	59	.07$^{n.s.}$
PostAcquisition	54.81	60	12.13	1.56				

n.s. = not Significant at p <.05

From Table 4.11, the mean score for teachers' acquisition of research before intervention is 51.08 which changed to 54.82 after intervention. This represents an improvement. The table also shows that the difference is not significant (t =1.79; df =59; p>.05). Based on this, hypothesis 2 is not rejected.

Hypothesis 3: There is no significant difference in the teachers' utilization of research before and after the collaborative intervention activities.

To test this hypothesis, t-test was computed and the results are presented in Table 4.12.

Table 4.12: Paired t-test of Pre- and Post-Intervention Utilisation Scores of Teachers

Pair	Mean	N	Std. Deviation	Std. Error Mean	Mean Difference	t	df	Sig.
PreUtilisation PostUtilisation	65.23 70.71	60 60	13.81 10.42	1.78 1.34	5.48	2.38	59	.02*

* Significant at p <.05

Table 4.12 shows that the teachers' utilization of research before intervention is 65.23. After intervention, it increased to 70.72. This yields a mean difference of 5.48 which is significant (t =2.38; df =59; p<.05). Thus, hypothesis 3 is rejected.

Hypothesis 4a: There is no significant moderating effect of school type on teachers' post intervention awareness of research findings.

To test this hypothesis, t-test was computed and the results are presented in Table 4.13.

Table 4.13: Independent Samples t-test of Post Intervention Awareness Scores of Teachers in Public and Private Schools

School Type	N	Mean	Std. Deviation	Std. Error Mean	t	df	Sig.
Public Private	30 30	36.90 38.06	4.64 4.16	.84 .75	1.02	58	.31 n.s.

n.s. = not significant at p<.05

From Table 4.13, teachers from public schools obtained a mean awareness score of 36.90 while this is 38.07 for private schools teachers. This reveals that private schools teachers had greater awareness than their public schools counterparts. This difference is, however, not significant (t =1.02; df = 58; p>.05). Hypothesis 4a is, therefore, not rejected.

Hypothesis 4b: There is no significant moderating effect of school type on teachers' post intervention acquisition of research findings.

To test this hypothesis, t-test was computed and the results are presented in Table 4.14.

Table 4.14: Independent Samples t-test of Post Intervention Acquisition Scores of Teachers in Public and Private Schools

School Type	N	Mean	Std. Deviation	Std. Error Mean	t	df	Sig.
Public Private	30 30	57.73 51.90	8.72 14.34	1.59 2.61	1.90	58	.06 n.s.

n.s. = not significant at p<.05

Table 4.14 reveals that teachers in public schools had higher of acquisition mean score ($\bar{x}$ =57.73) than private schools teachers ($\bar{x}$ =51.90). This difference is also not significant (t =1.90; df =58; p>.05). Hypothesis 4b is therefore not rejected.

Hypothesis 4c: There is no significant moderating effect of school type on teachers' post intervention utilisation of research findings.

To test this hypothesis, t-test was computed and the results are presented in Table 4.15.

Table 4.15: Independent Samples t-test of Post Intervention Utilisation Scores of Teachers in Public and Private Schools

School Type	N	Mean	Std. Deviation	Std. Error Mean	t	df	Sig.
Public	30	73.10	7.62	1.39	1.80	58	.07 n.s.
Private	30	68.33	12.30	2.24			

n.s. = not significant at p<.05

Table 4.15 shows that teachers in the public schools had higher mean score in utilization of research ($\bar{x}$ =73.10) than their private schools counterparts ($\bar{x}$ =68.33). This difference is not significant (t =1.80; df =58; p>.05). Therefore, hypothesis 4c is not rejected.

4.4 Summary of Findings

Findings of this study were summarized and presented as follows:

1. The pre-primary and primary school teachers' level of awareness recorded an improvement after collaborative intervention over what obtained before intervention.
2. There was an improvement in the teachers' acquisition of educational research findings after exposure to the collaborative intervention when compared to the situation before intervention.
3. Teachers' utilization of educational research findings have received a boost at the end of the collaborative intervention programme judging by their status at the onset of the intervention.
4. At the pre-intervention stage, the ore-primary and primary school teachers mostly rely on sources which are not authoritative, empirical, testable, systematic and therefore not research-based. This changed at the post-intervention stage as they opted for sources which are evidence- and research-related such as journals, internet, direct dissemination of findings to teachers by researchers, among others.
5. Before intervention, reasons adduced for non-utilisation of research findings are basically related to lack of time and heavy workload; lack of motivation and non-

conducive environment. At the end of the intervention, lack of knowledge and skills of understanding and implementation of research findings, non-availability and inaccessibility to the findings were adduced.

6. The teachers initially expected frequent organization of seminars and workshops on new research findings, stocky school and special libraries with research findings as well as improved dissemination efforts by researchers SUBEB, and school authorities. At the end of the intervention, they expected direct link between researcher and themselves and research-driven seminars and conferences.
7. While teachers' classroom practices reflect selected educational research findings to some extent before intervention, these have greatly improved at the end of the intervention.
8. There is significant difference in the teachers' level of awareness of educational research findings before and after the collaborative intervention activities. This is in favour of the post-intervention measure.
9. There is no significant difference in the teachers' acquisition of educational research findings before and after the collaborative intervention activities.
10. There is significant difference in the teachers' utilization of research and after the collaborative intervention activities. This is in favour of the post-intervention measure.
11. There is no significant moderating effect of school type on teachers' post-intervention awareness acquisition and utilization scores of teachers in public and private schools.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

In this chapter, the findings obtained are presented in discussion, a statement of conclusion is made based on the focus of the study and relevant recommendations are made to various stakeholders.

5.1 Discussion

5.1.1 Findings on the Research Questions

This study found that the pre-primary and primary school teachers' awareness of educational research findings improved at the end of collaborative intervention activities. This improvement could be ascribed to the initial focus group discussion which addressed the kinds of problems encountered by the teachers in their day-to-day teaching activities. For instance, it called the teachers' attention and consciousness to the fact that there were classroom instructional problems which needed solutions towards effective learners' learning. The need for research information dawned on the teachers during the discussion which preceded the collaborative activities.

During the collaborative activities, the teachers not only became aware of the educational research findings, they also had ample opportunity to clarify necessary aspects of the studies discussed which were not immediately clear to them. To these, the research assistants provided satisfactory answers which helped the teachers to understand the findings. Again, the abstracts of the studies presented had been modified. The technical language and statistical aspects had been either simplified or removed to aid the teachers' ease of comprehension. Little wonder, the level of awareness of the teachers improved after their exposure to the collaborative intervention activities.

This finding is in line with the assertion of authors like Nzeribe (2004) that teachers need to be conversant with current research on teaching/learning strategies especially though working with other experts as a team (Maduewesi, 1999). Indeed, this study have proved that strategies for improving research impact in education include the development of communication network, links between researchers and practitioners in the process and approached to the sharing of 'good practice' as emphasized by Brown and Sharp (2002).

Findings also showed that there was improvement in the teachers' acquisition of educational research findings after the collaborative intervention. This could have resulted due to their exposure to a novel avenue of acquiring research findings apart from the usual

means they were hitherto aware of. For instance, they used to acquire research findings, if at all, through journals, seminars, workshops, libraries and the internet which were popular. With their exposure to the collaborative intervention which offered links between researchers and practitioners, greater involvement in the research dissemination process and new approaches to the sharing of 'good practice', the hitherto 'best practice' for primary school teachers getting information from experts, authorities and researchers by reading discoveries and findings especially through published sources and ICTs (Ezekiel, 2010) has become an old practice. The teachers now have greater flair for closer ties between themselves and researchers, academic and service institutions towards direct acquisition of research findings especially as they derived more meaning from the research works presented during the collaborative activities. This finding is in agreement with the position of Crane (1995), Rastas (2000) and Hamsley-Brown (2002) which advocated the need for improved relationship among teachers and researchers towards greater acquisition of research findings. This finding is however, in tangent with the assertion of Ezekiel (2010) which favoured the linear approach to research dissemination.

This study found that the pre-primary and primary schools teachers' utilization of research have improved with their exposure to the collaborative intervention activities. Indeed, it could be said that the teachers benefitted immensely from the discussion of the abstract of the research studies especially the aspect of findings and recommendations for classroom practice. This was possibly concretized by the teachers' and research assistants' organization of micro-teaching which afforded the teachers opportunity to attempt the use of the research findings through practice with themselves and in the presence of the research assistants. They, therefore, have acquired necessary skills which made it easy for them to implement the findings after the collaborative intervention. Also, the teachers had additional benefit of meeting with the authors of the research works used during the seminar organized at the end of the intervention. The teachers were able to ask questions on the study and their findings from the authors and in turn, they got the questions directly answered by the researchers. This could have led to the teachers' improved utilization of research. This finding is in agreement with Landry, et al (2000) who asserted that knowledge utilization depends on various disorderly interactions occurring between researchers and users. It has therefore solved the existing problem of lack of such interaction identified by Oh and Rich (1996) and Lomas (1997).

The study found that at the onset of the collaborative intervention, the teachers mostly relied on sources of research findings that were not authoritative, empirical, testable,

systematic and therefore, not research-based. This changed at the post-intervention stage as they opted for sources such as journals, internet and direct dissemination of new findings to teachers by researchers. From this finding, it is obvious that personal experience (Costa, et al, 2000) information from colleagues, previous knowledge acquired from school, the way they themselves were taught, school libraries, handouts of their lecturers during their pre-service training, among others, dominated teachers' sources of information. Changing from these to such sources as are in favour of sharing ideas, information and expertise among themselves and researchers, is a clear indication that they have embraced the novel trend of collaboration which they have just been exposed to. The importance of credible, reliable and usable solutions advocated by Costa, et al. (2000) has evidently been recognized by the teachers and this is a good omen towards the utilization of research findings in classroom teaching.

On reasons for non-utilization of research, the teachers initially complained of lack of time and heavy workload, lack of motivation and non-conducive environment. It thus appeared that the teachers expected that they were not responsible, and indeed not liable, for the non-utilization of research in the class. Their beliefs tallied with the presentation of Barbara, et al. (2001) that researchers and their entire study and findings are at a remote distance from the teachers. The authors also stated that the traditional models of transferring research into practice takes a long time and long process. At the end of the intervention, the teachers' reasoning had changed to the acceptance of responsibility. They said their knowledge and skills, understanding and implementation of research findings were determinants of use. They recognized that they have roles to play in the process of awareness, acquisition and utilization of research. This lends credence to the assumption of Hendricks (2009) that collaboration which demands participation of both researchers and teachers (end-users) increase the chances that research findings would be translated into practice.

In a related development, the teachers initially expected organisation of seminars and workshops on new research findings, stocking school libraries and some special libraries with research findings as well as improved dissemination efforts by researchers, the SUBEB and school authorities. Not any action from their end was considered necessary. Their exposure to the intervention has however, given them a re-orientation making them to advocate direct link between researchers and themselves. The beauty of this finding is that the possibility that the dissemination efforts of researchers, SUBEB, school authorities and so on could become unproductive once teachers still refuse or fail to tap the resources, would be no more. With the teachers' direct involvement in the collaborative activities, their awareness, acquisition and utilization of the findings were more guaranteed.

Results of the study also showed that, compared with the pre-intervention stage, the teachers' classroom practices after intervention reflected the selected educational research findings to a greater extent. To this end, in the lesson introduction, teachers' knowledge and skills of strategies involved, specific teaching strategies adopted, teacher-learner interaction, provision for learners' individual differences and homework modes, the teachers in the study generally improved in relevant classroom practices. This improvement is due to the focus group discussion identifying the actual problems the teachers encounter in teaching and the relationship with the problems of the studies treated. Also, the intervention activities involving the methodologies of the studies, the results obtained and the recommendations helped to inculcate the practices in the teachers. Above all, there were opportunities for practising the classroom implementation of the findings during the micro-teaching sessions. This finding supports the report of Huberman (1992) in a study that sustained interactivity among researchers and practitioners lead to research utilization.

5.1.2 Findings on the Null Hypotheses

This study showed that there was significant difference in the teachers' level of awareness of educational research findings before and after the collaborative intervention activities. This difference is in favour of the post-intervention measure which means that the impact of the intervention on research awareness is good enough. The teachers have been able to learn about the innovations derivable from the selected research works and with the withdrawal of the research assistants and the authors of the theses would make no difference as the teachers' experience in the study period cannot be wished away easily. This study has achieved research findings' coincidence with teachers' needs, researcher credibility and credibility of the findings as well as getting results to the user early enough. The study has satisfied the criteria listed by Amara and Lamari (2000) as pointers to user awareness of research towards use. The finding implies that teachers understood the language of research, hence, the problem of reading technical scientific papers have been overcome.

It was also found that there was significant difference in teachers' level of utilization of research moving from the pre-intervention stage to the post-intervention stage. This represents a good impact of the intervention on teachers' utilization of research. Indeed, more than packaging of the findings, the engagement of the researcher and the team of resource persons who actually authored the research works had serious impact on the extent to which the findings were positively acknowledged and considered for use by the teachers. This finding has also confirmed that of Huberman (1985) who reported that researcher's

interaction with practitioners improved their conceptual mastery of the research findings and applications in the field.

For acquisition of research, the difference produced between pre- and posttest measures was not significant. This could be due to the fact that the teachers had not much opportunity to attempt sourcing and accessing research information during the period of the study. Although there was improvement in teachers' acquisition of research, it was not significant. The moderating effect of school type on teachers' awareness, acquisition and utilization of research was not significant. This means that it does not matter whether a school is public or private, the benefits derivable by teachers from a collaborative intervention study such as this are similar. In fact, teachers in both settings had comparable levels of enthusiasms towards the study, participated equally well in the course of the intervention, had similar challenges during initial stages of the study and it was not out of place to find that their performance across the three dependent variables were quite close.

5.2 Contribution to Knowledge

This study is an eye-opener to stakeholders in the pre-primary and primary education level and the education industry generally in the use of intervention strategies for improving research utilization among teachers. It has provided evidence of the extent to which the collaborative method could be effective in fostering teacher awareness, acquisition and utilization of research. The study has also successfully developed the framework and action plan for the design and implementation of action researches in the area of research dissemination and utilization. This would be found useful by researchers in designing and determining impacts of different strategies on research utilization specifically and for mounting intervention studies within the action research setting. The study has extended knowledge in the use of mixed methods design through a combination of qualitative methods content analysis, focus group discussion, interview and observation with the quantitative methods of pre-experimental design and analytical tools. Finally, the benefits of cooperation, partnership and the working together of teachers and researchers have become essentially clear if research findings would be translated to use.

5.3 Recommendations

Based on the findings, the following recommendations were made:

1. Pre-primary and primary school teachers need to develop the interest and culture of consistent search for research findings relevant to the teaching and learning of school

subjects. This would go a long way to turning around the current trend of lack of awareness, acquisition and utilization of educational research findings among the teachers.

2. Teachers should endeavour to cooperate with researchers, research organizations, educational institutions, government and non-governmental organizations involved in the production and dissemination of new research findings. Indeed, teachers should be ready, more than ever before, to partner with researchers in the entire research process for the purpose of sharing ideas towards the application of findings in classroom teaching.

3. Researchers should adopt the collaborative method in disseminating their findings to classroom teachers who are the end users of research. They need also top carry teachers along in identifying problem areas to research into, involve them in carrying out research works and make the findings available to the teachers at the completion of the study. This would further bridge the wide gap between teachers and researchers.

4. Universities' Faculty of Education and related institutions of higher learning have to design effective dissemination models that would make for teachers' unhindered access to research findings as soon as such research was completed.

5. School authorities, head teachers and school management boards should encourage efforts at making research findings available to the teachers and provide necessary support and facilities that would predispose teachers to utilize new research findings in classroom teaching.

6. Non-governmental organizations need to show interest in research utilization especially in the pre-primary and primary school levels in Oyo State and Nigeria as a whole. This would complement researchers' efforts towards research dissemination, awareness, acquisition and utilization.

7. Teacher professional associations like the Nigeria Union of Teachers (NUT), subject associations like the Early Childhood Association of Nigeria (ECAN) and others should invest in research development, dissemination and utilization. This would make them major stakeholders that they really are towards the application of research findings in classroom teaching.

8. The government should be more proactive at educational research dissemination and utilization. The Nigerian Educational Research and Development Council (NERDC) should be mandated to galvanize efforts of various stakeholders towards bringing research findings to the door steps of teachers and thus move the education industry to a research-driven field.

5.4 Limitations of the Study

This study stops short of the use of the various knowledge transfer models (KTM) such as the Serial KTM, the Best Practice KTM, the Exemplary KTM and the Strategy-based KTM along with the Expert KTM adopted. The researcher therefore, could not compare the relative effectiveness of the different models. Also, apart from the collaborative approach, the study did not use other recommended approaches available in literature which could also impact more or less on teachers' awareness, acquisition and utilization of educational research findings.

School type is the only intervening variable built into this study based on the fact that the study is not primarily an experimental study which could have accommodated two or three moderator variables. Again, one out of the three Senatorial Districts in Oyo State was covered in this study and this has limited the extent to which the study could be generalized.

5.5 Suggestions for Further Studies

Further studies should be carried out in the following areas:

- A comparison of different models of research dissemination and utilization could be attempted with a view to determining the more effective models especially within the Nigerian socio-cultural milieu.
- Other strategies for enhancing pre-primary and primary school teachers' levels of awareness, acquisition and utilization of research apart from collaboration need to be researched into.
- Future research should venture into other factors which can influence pre-primary and primary school teachers' awareness, acquisition and utilization of research apart from school type.
- Similar studies could be carried out with pre-primary and primary school teachers in other parts of Oyo State and even in other states of Nigeria for comparability of findings.
- An experimental study to compare different strategies for improving research utilisation among pre-primary and primary school teachers should be attempted.

5.6 Conclusion

The collaborative intervention programme has impacted positively on the pre-primary and primary school teachers. Their levels of awareness, acquisition and utilization have greatly improved as their initial level of poor awareness, low level of acquisition and non-utilization of educational research findings changed for the better through the intervention. Given this new trend, the era of the use of outdated and ineffective instructional strategies by the teachers, poor classroom practices, learners' poor performance, reliance on traditional linear channels of research dissemination and wide gap between teachers and researchers is over. A new chapter has therefore, been opened for researchers to communicate their findings to potential users in an atmosphere where both parties share ideas and expertise, compare experiences, dialogue over the process and products of research and foster clearer mutual understanding and ultimately engendering a new breed of researchers and teachers working together for better achievement of the goals of pre-primary and primary education in Nigeria.

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APPENDIX I
NAMES OF SCHOOLS USED FOR THE STUDY

Local Govt Area	Public Schools	Private Schools
Ibadan North	Immanuel College Primary School, Orita UI	Baptist Nursery/Primary School, University of Ibadan
Ibadan North East	St Paul's Primary School II, Yanbule	Jubilee Life Nursery/Primary School, Orita-Basorun
Ibadan North West	Community Primary School I, Olopomewa	Olayomi Nursery/Primary School, Oluseyi, Eleiyele
Total	**3**	**3**

APPENDIX II
EDUCATIONAL RESEARCH PACKAGE FOR COLLABORATIVE INTERVENTION (ERPACI)

This package is 5-week collaborative intervention activities towards impacting pre-primary and primary school teachers' levels of awareness and acquisition of research as well as their attitudes to and utilization of educational research. The package also features a seminar presentation for rounding off the activities. 10 selected Ph.D theses written between years 2000 and 2010 on pre-primary and primary education which formed the nucleus of the package are:

S/N	Author	Year	Title of Thesis	Department	Week Treated
1	OGUNSANWO, T.	2003	"Homework Mode and Parental Involvement in Homework as Determinants of Primary School Pupils' Learning Outcomes in Mathematics in Ibadan North, Ibadan".	Teacher Education	1
2	AJILA, P. K.	2003	"Comparative Effects of Explicit and Enhanced Explicit Teaching on Learning Outcomes in Primary Science in Ikere-Ekiti Local Government Area, Nigeria".	Teacher Education	1
3	OMOSEHIN, F. M.	2004	"Effects of a Training Programme in Cooperative Learning on Pre-Service Teachers' Classroom Practice and Pupils' Learning Outcomes in Social Studies".	Teacher Education	2
4	ONOSODE, T. T.	2004	"Effect of An Instructional Writing Approach, Locus of Control and Gender in Achievement in English Language Written Composition Among Primary Five Pupils in Benin City, Nigeria".	ICEE	2
5	OSINUBI, E. O.	2004	"Constructivist Methods of Teaching and Metacognitive Strategy as Determinants of Learning Outcomes in Primary Science".	ICEE	3
6	IDOGO, G. A.	2006	"Preparation-Assistance Reflection and Question-Answering Relationship on Primary School Pupils' Learning Outcomes in Reading Comprehension in Ibadan North Local Government Area, Oyo State, Nigeria".	Teacher Education	3
7	OSHODI, O. O.	2006	"Effect of the Use of Learning Outcome Specification on Pupils' Achievement in Primary Science in Lagos State, Nigeria".	ICEE	4
8	IROEGBU, V. I.	2007	"Effect of Modeling and Picture-Based Instructional Strategies on Primary School Pupil's Learning Outcomes in English Language".	Teacher Education	4
9	OKORUWA, T. O.	2008	"Effects of Conceptual Change and Enhanced Explicit Teaching Strategies on Learning Outcomes in Primary Science in Ibadan, Nigeria".	Teacher Education	5
10	AMAO, T. A.	2010	"Effect of Medium of Instruction on Pupils Participation and Achievement in Two Core Subjects in Selected Primary Schools in Ogun State".	Teacher Education	5

Four of these resource persons in Language, Mathematics, science and Social Science, were contacted and they consented to delivering seminars on their studies as well as the benefits of

utilizing research findings in classroom teaching. In case any of the resource persons defaults, substitutes have also been put on the stand-by.

CHOSEN	STAND-BY
1.Dr. T. Ogunsanwo, Lecturer, Tai Solarin University of Education, Ijebu-Ode.	Dr. T. A. Oladokun
2.Dr. F. M. Omosehin, Lecturer, Adeniran Ogunsanya College of Education, Oto-Ijanikin, Lagos.	Dr. S. A. Olatundun, Director, Governor's Office, Oyo State Secretariat, Ibadan.
3.Dr. T. O. Okoruwa, Federal College of Education, Osiele, Abeokuta.	Dr. V. I. Iroegbu, Lecturer, Obafemi Awolowo University, Ile-Ife.
4.Dr. T. A. Amao, Lecturer, Osun State University, Oshogbo.	Dr. L. A. Lawani, National Open Univeristy of Nigeria, Victoria Island, Lagos.

RESOURCE PERSONS WHO ATTENDED THE SEMINAR ON SATURDAY 9TH MARCH, 2013

S/N	NAME	SUBJECT AREA	ADDRESS
1	Dr. T. Ogunsanwo,	Mathematics	Tai Solarin University of Education, Ijebu-Ode
2	Dr. S. A. Olatundun	Social Studies	Governor's Office, Oyo State Secretariat, Ibadan.
3	Dr. T. O. Okoruwa,	Science	Federal College of Education, Osiele, Abeokuta.
4	Dr. T. A. Amao.	Language	Osun State University, Oshogbo
5	Dr. M. N Odinko	Early Childhood Education/ Evaluation	International Centre for Educational Evaluation/Institute of Education, University of Ibadan.

WEEK 1

Step 1: Focus Group Discussion on Problems and recommendations in thesis 1.

Step 2: Researcher's clarification of grey areas in the issues discussed.

Step 3: Collaborative Activities on recommendations in Thesis 1.

Title: Homework Mode and Parental Involvement in Homework as Determinants of Primary School Pupils' Learning Outcomes in Mathematics in Ibadan North, Ibadan

Modified Abstract

This study investigated the relative effectiveness of three modes of homework; namely, preparation, practice and a combination of preparation and enhanced practices homework. It also found out the influence of parental involvement and gender on primary school pupils' learning outcomes in mathematics.

Three hundred and twenty eight primary five pupils from nine schools within Ibadan North Local Government Area of Oyo State were randomly assigned to the experimental and control groups. A pretest, posttest control group quasi-experimental design was employed. Six instruments were used for data collection. They are the Parents' Letter/Questionnaire (PLQ), Mathematics Achievement Test (MAT), Attitude to Mathematics Questionnaire (ATMQ), Preparation Homework Worksheet (PREH), the Enhanced Practice Homework worksheets (EPRAH) and Lesson Plan. The data collected were analysed using descriptive statistics (frequency, percentages, mean and standard deviation) and inferential statistics of Analysis of Covariance (ANCOVA) and Multiple Classification Analysis (MCA).

The results of the study showed that: Preparation and the combined homework modes had significant effects on pupils' achievement in mathematics and their attitude towards mathematics. Preparation homework was found to be better than the practice homework (control) in enhancing achievement in and attitude towards mathematics while the combined homework (enhanced practice and the preparation) was the best of the three modes. Parental involvement had significant effects on pupils' achievement in mathematics with pupils having high parental involvement performing better than pupils with low parental involvement. However, there was no significant effect of parental involvement on pupils' attitude towards mathematics. Gender did not have any significant main effect on learners' achievement and attitude towards mathematics. Homework mode and parental involvement had significant interaction effects on pupils' academic achievement but not on their attitude towards mathematics.

In view of the findings, it was recommended that primary school teachers should encourage parents to be actively involved in their children's school work by assisting them with their homework. Primary school teachers were also enjoined to assign a variety of homework to children and make sure that the homework is regularly assigned, checked and returned to the pupils. It was recommended that parents should be actively involved in their children's schoolwork especially by helping them with homework while the guidelines for helping with homework were given.

Key words: *homework mode, parental involvement, achievement in mathematics, attitude towards mathematics*

Step 4: Collaborative Activities on recommendations in thesis 2.

Title: Comparative effects of explicit and enhanced-explict teaching on learning outcomes in Primary Science in Ikere-Ekiti Local Government Area, Nigeria

Modified Abstract

This study investigated the comparative effect of explicit teaching, enhanced-explicit teaching and the conventional teaching methods on pupils learning outcomes in primary science using gender and academic ability as moderator variables. It examined which of the three instructional methods would be more effective on pupils' learning outcomes in primary science.

The study adopted pre-test, post-test control group quasi-experimental design using a 3 x2 x 3 factorial matrix. Three hundred and ninety four primary five pupils drawn from twelve randomly selected classes in six public primary schools in Ikere Ekiti Local Government Area of Ekiti State constituted the subject of the study. The twelve classes were randomly assigned to two experimental groups and one control group. Seven hypotheses were generated and tested in the study at 0.05 level of significance. The four major instruments used for collecting data were, Science Achievement test (SAT); Attitude Towards Science Questionnaire (ATSQ); Operational Guide to Instructions (OGI) and Standardized Ability test. Analysis of covariance (ANCOVA) was used to analyse the data. Multiple Classification Analysis (MCA) and Scheffe post-hoc Analysis were used where significant differences were indicated. This helped to detect the sources of variation and the direction of differences.

The results showed that there were significant main effects of treatment on the dependent measures, Achievement and Attitude. The enhanced-explicit preferred better than the other three methods. However, there was no significant main effect of academic ability on

pupils' achievement in and attitude to primary science respectively. The study revealed no significant main effect of gender on achievement in science but for attitude. The post-test score showed significant main effect. For the 2 way interaction, only treatment crossed with sex was significant. The 3-way interaction also showed significant effect of treatment by gender and ability.

Based on the finding, it is recommended that explicit teaching and peer tutoring should be adopted for teaching primary science particularly when the two are combined.

Key words:
Comparative effect, Peer-tutoring, Enhanced-explicit, Learning outcomes, Primary Science

Step 5: Micro-teaching on the implementation of effective strategies recommended in the two theses.

WEEK 2

Step 1: Focus Group Discussion on Problems and recommendations in thesis 1.

Step 2: Researcher's clarification of grey areas in the issues discussed.

Step 3: Collaborative Activities on recommendations in Thesis 1.

Title: Effects of a Training Programme in Cooperative Learning on Pre-Service Teachers' Classroom Practice and Pupils' Learning Outcomes in Social Studies

Modified Abstract

Cooperative Learning is generic term for various small groups in which pupils work together to maximize their own and one another's learning. Essentially then, this study determined the effects of a training programme in Cooperative Learning (CL) on pre-service teachers' classroom practice and pupils' learning outcomes in social studies in relation to their counterparts who were not so exposed. The study also investigated the moderating effect of pre-service teachers' academic ability on their classroom practice and on the pupils' achievement in and attitude to social studies.

The study adopted a pretest, posttest control group quasi-experimental design using a 2x2 factorial matrix. Eight hypotheses were tested at 0.05 alpha level. Thirty-eight pre-service teachers from a College of Education in Lagos State and seven hundred and sixty secondary school pupils from eight selected secondary schools in Agege/Alimosho Local Education District of Lagos State were involved in the study. Both descriptive and inferential statistics which include Analysis of Covariance (ANCOVA), Multiple Classification Analysis (MCA) and t-test were used to analyse the data collected.

The results showed that there was a significant difference in the pre-service teachers' knowledge of and attitude to CL before and after exposure to the training programme in CL. Also there was a significant main effect of treatment on teachers' classroom practice. Furthermore, teachers' academic ability had a significant main effect on students' mean achievement scores. There was also a significant interaction effect of treatment and teachers' academic ability on the three dependent measures. However, the effect of treatment on students' attitude to social studies and the effect of teachers' academic ability on students' attitude to social studies were found not to be significant. Furthermore, it was revealed that the students taught by pre-service teachers who were exposed to the training programme exhibited higher time-on-task levels than those taught by other teachers.

Based on the findings, it was recommended among other things, that, to enhance pupils' achievement in social studies, the CL method should be adopted in the Nigerian secondary

schools and that, teacher-training programmes in Nigeria should include Cooperative learning considerations in order to equip pre-service teachers towards effective use of the method in future.

Key words: *Cooperative Learning, Social Studies Education, Pre-service Teacher, Classroom Practice, learning Outcomes.*

Step 4: Collaborative Activities on recommendations in thesis 2.

Title: Effect of An Instructional Writing Approach, Locus of Control and Gender in Achievement in English Language Written Composition Among Primary Five Pupils in Benin City, Nigeria

Modified Abstract

The study investigated the effects of instructional strategy (process and product-based approaches), and students' locus of control as well as gender on primary five pupils' achievement in English language written composition. Through judgmental and stratified sampling techniques, 35 pupils (made up boys and girls) from four primary schools in Benin City, were selected for the study. Two research instruments were used for the collection of data. One was the Written Composition Test (WCT). This consisted of two descriptive essays, which were developed by the International Association for the Evaluation Achievement (IAEA). The other one was an adapted version of the Locus of Control Scale (LCS) that was developed by Umoionyang (1998).

A pretest, posttest control group research design in which the independent variables were crossed in a 2 X 2 X 2 factorial arrangement was utilized for the study. Seven null hypotheses were tested. Analysis of Covariance (ANCOVA), Multiple Classification Analysis (MCA) and simple effect analysis were used for data analysis.

The results showed that there was a significant main effect of treatment (process writing and product-based approaches) on pupils achievement in English language written composition with pupils who were exposed to the process-writing approach performing better than their counterparts that were exposed to the product-based approach. Locus of control also had a significant main effect on pupils' achievement in English language written composition with the internally oriented pupils' performing better than the externally oriented ones. Gender, however, had no significant main effects on pupils' achievement in English language written composition. With respect to the interaction effects, the results revealed that there was a significant interaction effect of effect of treatment and locus of control on pupils' achievement in written composition with the attendant effects that the achievement level of the pupils who are internals increased when they were taught with both approaches combined. A significant interaction effect of treatment and gender on pupils achievement in written composition was also observed. The implication of which is that the treatment was sensitive to the pupils' gender with the attendant effect that female pupils performed better when they were exposed to the approaches. The results further revealed that there was no significant interaction effect of locus of control and gender on pupils' achievement in English language written composition. With respect to the interaction effect of treatment, locus of control and gender, the result indicated that there was no significant effect of these variables on pupils' achievement in written composition.

Based on the findings of this study, recommendations were made as to the needs for the English language teachers to make use of the process-writing approach to cater for all categories of pupils within the class.

Key words: *Instructional strategy, Process-writing approach, Product-based approach, Locus of control, Gender, Achievement, Effects and Written composition.*

Step 5: Micro-teaching on the implementation of effective strategies recommended in the two theses.

WEEK 3

Step 1: Focus Group Discussion on Problems and recommendations in thesis 1.

Step 2: Researcher's clarification of grey areas in the issues discussed.

Step 3: Collaborative Activities on recommendations in Thesis 1.

Title: Constructivist Methods of Teaching and Metacognitive Strategy as Determinants of Learning Outcomes in Primary Science.

Modified Abstract

This study investigated the effects of two constructivist methods of teaching (concept mapping and interactive method) and a metacognitive strategy (SQ3R) on primary six pupils' achievement in science and attitude towards science. It also examined the effects of gender and school-type (public/private) on learning outcomes.

The study adopted a 4x2x2 non-randomized pretest control group quasi-experimental design in which treatment (at 4 levels) was crossed with school-type and gender. The subjects were 152 primary six pupils from 8 schools in Lagos metropolis, Nigeria. These pupils were exposed to treatment conditions for a period of eight weeks. The study also utilized three valid and reliable instruments for data collection namely. 'The International Association For The Evaluation of Educational Achievement (IEA) Second IEA Science Study (SISS, Nigeria), Achievement tests and Attitude to Science questionnaire (ASQ) and Operational Guide for Instruction (OGI). Data analysis involved the use of Analysis of Covariance (ANCOVA), Scheffe multiple range test and simple effect analysis (supported with graphical illustrations).

The results showed significant main effect of treatment and school type. Pupils exposed to a combination of concept mapping interactive method and SQ3R achieved significantly better than their counterparts in the other experimental and control groups. However, there was no significant difference between the achievement of pupils in the control group and those of their counterparts in the experimental groups that involved concept mapping with SQ3R and interactive method with SQ3R respectively. In addition, pupils in private schools achieved significantly higher than those in public schools. The results also showed that the effect of school type on attitude towards science was significant. Pupils in private schools exhibited more positive attitude towards science than their counterparts in public schools.

These findings underscore the need to extensively use a combination of concepts mapping interactive method and SQ3R as parts of the strategy for improving the quality of learning

outcomes for the Universal Basic Education (UBE) programme in Nigeria. Efforts should also be made to make the environment of public schools as learner friendly as private schools.

Key words: Constructivist methods; Metacognitive Strategy, Learning Outcomes; Primary Science; concept mapping.

Step 4: Collaborative Activities on recommendations in thesis 2.

Title: Preparation- assistance reflection and question-answering relationship on primary school pupils' learning outcomes in reading comprehension in Ibadan North Local Government Area, Oyo State, Nigeria.

Modified Abstract

Lack of reading comprehension skills in English has been identified as one of the causes of reading disability. This study therefore investigated the relative effectiveness of Preparation- Assistance-Reflection and Question-Answering Relationship strategies on primary pupils learning outcome in and their attitude to reading comprehension. It investigated the interaction effects of verbal ability and gender.

The study adopted a pretest, posttest control quasi-experimental design and 3x3x2 factorial matrix. A total of three hundred and seventy primary five pupils from six schools randomly drawn from public primary schools in Ibadan North Local government areas of Ibadan were used for the study. Four instruments, three of which were designed and validated by the researcher were used to collected data for analysis. They were Attitude test Reading Comprehension Achievement Test and Operational Questionnaire, Verbal Ability test reading Comprehension Achievement Test and Operational Guide for Instruction. The data were analyzed using descriptive statistics, which included means and standard deviation, as well as inferential statistics, using Analysis of Covariance and Multiple Classification Analysis. The Scheffe post-hoc analysis was employed to determine the source of the significant difference found among the groups. The alpha level of .05 was used for statistical decision.

The results showed that there was significant main effect of treatment on pupils' reading comprehension skills and their attitude to reading comprehension. Pupils in the PAR group has higher mean scores followed by pupils in the QAR group while the conventional had the least scores. There was significant main effect of verbal ability on pupils' learning outcomes in reading comprehension. The high verbal group had the highest mean score of

followed by the average ability group, while the low ability group had the least score. There was significant interaction effect of treatment and verbal ability on pupils' Attitude towards reading comprehension. However, there was no significant main effect of gender on pupils' learning outcomes in reading comprehension and attitude to reading comprehension.

It follows therefore that reading comprehension needs to be taught in primary classroom. In view of the findings hat preparation-Assistance-reflection and Question-Answering Relationship improves pupils' reading comprehension skills and their attitude towards reading effectively using the two strategies. Therefore, the two strategies could be considered important in the planning and teaching of reading comprehension at the primary school level. In order to provide the necessary resources for the effective use of the strategies in teaching reading comprehension in schools, the school authorities should provide well-equipped libraries.

Key words: Preparation-Assistance-reflection, Question-Answering relationship, reading Comprehension Learning Outcome, Reading Comprehension Attitude.

Step 5: Micro-teaching on the implementation of effective strategies recommended in the two theses.

WEEK 4

Step 1: Focus Group Discussion on Problems and recommendations in thesis 1.

Step 2: Researcher's clarification of grey areas in the issues discussed.

Step 3: Collaborative Activities on recommendations in Thesis 1.

Title: Effect of the Use of Learning Outcome Specification on Pupils' Achievement in primary Science in Lagos State, Nigeria

Modified Abstract

The teaching of science at the primary level of education builds a sound foundation in the pupils for technological development needed for the advancement of any country. Pupils' performance in Primary Science has not been high enough, thus there is a need to put in more effort to improve such performance. One way of doing such is using methods that will enable pupils know what is expected of them to enhance learning and improve their performance. Therefore, this study is on the use of learning outcome specification and its effects on the achievement of pupils in Primary Science in Lagos State.

The study adopted a 2-group pretest posttest control group quasi-experimental design. Sixteen NCE/trainee teachers and four hundred and eighty-four pupils in primary 5 classified into three ability levels (high, medium and low) and male and female were used in this study. Eight of the NCE/trainee teachers were trained on how to specify learning outcome while the remaining NCE/trainee teachers were not. Training Manual on Learning Outcome Specification (TMLOS) was used to train trainee teachers on how to specify learning outcomes and write items on them. Learning Outcomes on Primary Science Concepts (LOPSC) was used as basis for writing items. Achievement Test in Primary Science (ATPS) was used to ascertain the level of comprehension of what the pupils have been taught. Trainees' Competence Rating Scale (TCRS) was used to rate the pre-service teachers during and after the training. All instruments were validated. The achievement test of fifty items gave a reliability coefficient of 0.91 with an item difficulty range of 0.45 to 0.60. The training of the eight NCE/trainee teachers on learning outcome specification lasted a period of six weeks and they taught the pupils using this method. The remaining NCE/pre-service teachers taught their own pupils using conventional method.

The NCE/trainee teachers trained on the skill of learning outcomes specification were able to practice the skill in their respective classes. The result of the Achievement Test based on the Specification of Learning Outcomes showed that there was significant main effect of method on pupils' achievement in Primary Science with the value in the treatment group than in the

control group. There was significant main effect of gender on pupils' achievement in Primary Science in the treatment group than in the control group. There was also significant main effect of ability on pupils' achievement in Primary Science in the treatment group than in the control group. There was no significant interaction effect of method and gender on pupils' achievement in Primary Science, no significant interaction effect of gender and ability on pupils' achievement in Primary Science and no significant interaction effect of methods, gender and ability on pupils' achievement in Primary Science. However, there was significant interaction effect of method and gender on pupils' achievement in Primary Science.

The implications of the study include making teachers conversant with what to include in specification of learning outcome, which will improve their evaluation skills in their area of specialization, and achievement of pupils in such. The incorporation of specification of learning outcome and the writing of items based on them into the training of pre-service teachers would bring about innovation into the teacher preparation for better achievement pupils.

Key words: *Specification; Learning Outcome; Competence; Achievement; Primary Science.*

Step 4: Collaborative Activities on recommendations in thesis 2.

Title: Effect of Modelling and Picture-Based Instructional Strategies on Primary School Pupils' Learning Outcomes in English Language

Modified Abstract

The problem of low achievement in public examinations and the low ranking of Nigerian public primary schools in the international evaluation of learning achievement has been attributed to several factors including poor foundation work in English Language. This study was designed as an intervention involving three variable associated with variations in English Language attainment. These are instructional strategy, school location and parental educational supportiveness.

The study adopted pretest, posttest control group design in a quasi-experimental setting. Treatment had three levels (modeling, picture-based and conventional teaching); school location had two (Urban and Peri-Urban) and Parental Educational Supportiveness had two (high and low). The sample consisted of 355 pupils randomly draw from six purposively selected public primary schools, three in urban and three in peri-urban location in Ibadan. Intact classes were randomly assigned to the three study conditions. The study lasted ten weeks and involved reading comprehension, lexis and structure. Pupils were made to

practice, read, demonstrate and express their ideas and observations both orally and in structured statement, patterned after those of trained experts. English Language Achievement Test, English Language Attitude Scale, Parental educational Supportiveness Assessment Schedule and a Teaching Guide were used as instruments for the study. Analysis of covariance was used to evaluate seven null hypotheses, which were formulated and tested at .05 level of significance.

The results revealed that instructional strategies had significant main effects on English Language achievement and attitude respectively. The order of mean achievement scores was modelling, conventional and picture-based strategies respectively; while for attitude, the order was: modelling, picture-based and conventional strategies in that order. School location had significant effect on English language achievement but not on attitude. Peri-urban condition produced a higher achievement mean score than urban condition. Similarly, Parental Educational Supportiveness had a significant effect on achievement but not on attitude. Higher parental Educations supportiveness produced higher learner achievement. Two way interactions of treatment and location were significant for both achievement and attitude respectively. Modelling was the most enhancing strategy for the both achievement and attitude in Urban and Peri-urban locations although it was more enhancing in Peri-urban location. Peri-Urban location was found to have promoted higher learner achievement and attitude than urban location, while Parental Educational Supportiveness enhanced learner achievement more than less parental supportiveness. The effects of the teaching strategies were found to vary considerably when used at different school locations.

The study has shown that modelling instructional strategy is better than conventional strategy in promoting higher achievement and positive attitude change. It also revealed that higher parental educational supportiveness as well as Peri-urban location of school encouraged higher achievement and positive attitude gain. It was therefore recommended that modelling strategy should be used to teach in Nigerian primary schools.

Key words: *Modelling, Picture-Based Instructional, Achievement in English Language, English Language, Instructional Strategies*

Step 5: Micro-teaching on the implementation of effective strategies recommended in the two theses.

WEEK 5

Step 1: Focus Group Discussion on Problems and recommendations in thesis 1.

Step 2: Researcher's clarification of grey areas in the issues discussed.

Step 3: Collaborative Activities on recommendations in Thesis 1.

Title: Effects of Conceptual Change and Enhanced Explicit Teaching Strategies on Learning Outcomes in Primary Science in Ibadan, Nigeria

Modified Abstract

One of the goals of primary school education in Nigeria is to lay a sound foundation for scientific thinking. The use of the conventional teaching methods in the primary science classroom often leads to poor performance and poor scientific attitude. This study investigated the effects of conceptual change and enhanced explicit teaching strategies on pupils' achievement in primary science and their acquisition of scientific attitude. The moderating effects of cognitive style and gender on the dependent measures were also examined.

The study adopted a pretest, posttest control group quasi-experimental design with a 3x2x2 factorial matrix. One hundred and ninety primary six pupils from three public primary schools selected from Ibadan Southwest Local Government Area participated in the study. Four instruments were developed: Science Achievement Test (SAT), Scientific Attitude Questionnaire (SAQ), Teacher's Assessment Guide (TAG) and Operational Guide for Instruction (OGI)] while Cognitive Styles Analysis (CSA) was adopted for the study. Data were analyzed using both descriptive statistics and Analysis of Covariance (ANCOVA). All the hypotheses were tested at 0.05 level of significance.

Treatment had significant effect on pupils' achievement scores and scientific attitude. The pupils in the Conceptual Change Teaching Strategy (CCTS group had the highest mean achievement score, followed by those in the Enhanced Explicit Teaching Strategy (EETS) group and those in the Conventional Teaching Strategy (CTS) group respectively. Pupils in the EETS group obtained the highest scientific attitude mean score, followed by those in the CCTS group and the CTS group. Furthermore, there was significant moderating effect of cognitive style on pupils' achievement in science and scientific attitude. The analytics had higher mean achievement and scientific attitude scores than the wholists respectively. There was bi significant moderating effect of gender on achievement but it was significant on scientific attitude ($p<0.05$). Boys had higher scientific attitude mean score than girls.

Conceptual change and enhanced explicit teaching strategies enhanced pupils' achievement in science and their scientific attitude more than the conventional method. It is therefore

recommended that teachers could adopt the CCTS and EETS in order to improve achievement in primary science and develop a better scientific attitude in the pupils.

Key words: *Conceptual change, Enhanced explicit teaching, Cognitive style, Scientific attitude, Primary science.*

Step 4: Collaborative Activities on recommendations in thesis 2.

Title: Effect of Medium of Instruction on Pupils Participation and Achievement in Two Core Subjects in Selected Primary Schools in Osun State

Modified Abstract

The poor performance recorded yearly in core subjects in common entrance examinations in Osun State has been traced to non-comprehension of English Language as a medium of instruction by the pupils. A variation of two or more mediums of instruction has been advocated as a solution to the problem. A majority of the studies, however, carried out in this field have focused mainly on secondary schools. Therefore, this study investigated the relative effectiveness of three mediums of instruction English Language Medium (ELM), Language of Immediate Community (LIC), Bilingual Medium (BM) in pupils participation and achievement in Social studies and Mathematics in Osun State, Nigeria.

The pretest, posttest, control group quasi experimental design with a 3x2x2 factorial matrix was employed in the study. Four hundred and eighteen primary six pupils from six randomly selected primary schools participated in the study. The instruments for data collection were Social studies Achievement Test; Mathematics Achievement Test; Classroom Participation Observation Chart and Home Background Questionnaire. Seven hypotheses were tested at 0.05 alpha levels. Data were analyzed using Analysis of Covariance and Scheffe Pairwise comparison test.

There was a significant effect of treatment on pupils' participation in Social Studies and Mathematics. The students exposed to instruction in Bilingual Medium (BM) made the highest gain in classroom participation, followed by LIC, while those in EM had the least. Similarly, there was a significant main effect of treatment on pupils' achievement in Social Studies and Mathematics. The pupils in the LIC combined with BLM had a higher achievement followed by LIC Medium, while the conventional group had the lowest. Also there was significant main effect of school location on pupils' Social Studies classroom participation with pupils from rural schools having a higher score of as against their urban counterparts. However, there was no significant main effect of home background on pupils' classroom participation in Social Studies and Mathematics.

The BM was effective in enhancing pupils' participation and achievement in Social Studies and Mathematics. Therefore, they should be officially recognized and adopted in teaching and learning in the primary schools to enhance effective teaching/learning of Social Studies and Mathematics.

Key words: *Medium of instruction, Language of immediate community, Bilingual medium, English medium, Classroom participation*

Step 5: Micro-teaching on the implementation of effective strategies recommended in the two theses.

General

Two abstracts were discussed per meeting which came up weekly. Emphasis was placed on the problem identified, methodology, findings and recommendations. The Focus Group Discussion covered the problem while collaborative activities took care of the methodology (treatment implementation), findings and recommendations.

Seminar Presentation: Four of the ten researchers whose theses were included in the package delivered seminar papers with group discussion on the role of research in pre-primary and primary education with their studies' findings and recommendations as case studies. These covered English language, Mathematics, Science and Social Studies.

APPENDIX III
TEACHERS' AWARENESS OF EDUCATIONAL RESEARCH FINDINGS QUESTIONNAIRE (TAEREQ)

Dear Sir/Madam,

This study is a research endeavour based in the Early Childhood Education Unit, Department of Teacher Education, University of Ibadan. Kindly provide all information to the best of your knowledge of the issues raised. All information provided will be used for academic purpose only and will be treated with utmost confidentiality.

Thank you.

Yours Faithfully,

Mrs. Yewande Ogunleye

Section A: Demographic Information

Name of School:……..

Item	Through information from research findings, are you aware of:	Yes	No
1	The homework mode which is more effective than others?		
2	The roles of parental involvement and gender on learners' performance and attitude?		
3	The relative effectiveness of explicit and enhanced-explicit teaching in Primary Science?		
4	The levels of male and female learners' performance taught with explicit strategies?		
5	Benefits of training teachers in the use of cooperative learning strategies?		
6	Effect of cooperative learning on learners' learning outcomes?		
7	The gains of process and product-based teaching approaches on learners' achievement?		
8	The place of locus of control in the determination of learners' achievement?		
9	Extent to which Constructivist Methods of teaching determine learning outcomes in Primary Science?		
10	Effect of Metacognitive strategy on learners performance in Primary Science?		
11	The use of preparation-assistance-reflection strategy in teaching reading comprehension?		
12	Effect of Question-Answering-Relationship strategy on learners learning outcomes?		
13	The use of learning outcome specification in teaching primary science and other subjects?		
14	Effect of learning outcomes specification on learners' achievement?		
15	Impact of modelling instructional strategy on learners' learning outcomes?		
16	Effect of picture-based instruction on learners' performance?		
17	Conceptual change as an effective teaching strategy in primary schools?		
18	The usefulness of enhanced explicit teaching strategy in the improvement of learners' learning outcomes?		
19	Effect of medium of instruction on learners' classroom participation and achievement?		
20	The role of home background on learners' participation and achievement?		

APPENDIX IV
TEACHERS' ACQUISITION OF RESEARCH FINDINGS QUESTIONNAIRE (TARFIQ)

Dear Sir/Madam,

This study is a research endeavour based in the Early Childhood Education Unit, Department of Teacher Education, University of Ibadan. Kindly provide all information to the best of your knowledge of the issues raised. All information provided will be used for academic purpose only and will be treated with utmost confidentiality.

Thank you.

Yours Faithfully,

Mrs. Yewande Ogunleye

Section A: Demographic Information
Name of School:……..
Class Taught:……
Highest Qualification:

NCE ☐
B.Ed/B.A/B.Sc. Ed ☐
PGDE ☐
B.A/ B.Sc ☐
M. A.Ed/M.Sc. Ed/M.Ed ☐
M.Sc/M.A ☐
Ph.D in Education ☐
Ph.D outside Education ☐

Section B: Acquisition of Research

Kindly tick ☐ Always, Sometimes, Rarely or Never based on the extent to which you carry out any of the activities listed.

S/N	Statements	Always	Sometimes	Rarely	Never
1	I consult journal articles on pre-primary and primary education				
2	I seek tested professional knowledge from lecturers in higher institutions of learning				
3	I attend capacity building workshops organized on the teaching-learning of pre-primary and primary school subjects				
4	I attend seminars where current research findings are disseminated to teachers				
5	I visit libraries of universities and/or other higher institutions for information on the teaching profession				
6	read professional books on pre-primary and primary education				
7	I attend annual conferences of Teacher/Subject Association(s) organized to brainstorm on better strategies of teaching				
8	I access general contact journals on educational issues				
9	I link up to Educational Resources Information Centre (ERIC) for current research information				
10	I consult abstracts of published research works in the field of Primary Education				
11	I access bound students' research projects from Departments and Faculties of Education to get acquainted with their findings				
12	I browse the web for research findings on novel and innovative teaching strategies				
13	I attend public lectures on educational topics and contemporary issues in education				
14	I discuss with senior colleagues on innovations on teaching strategies which they are aware of.				
15	I collate data on trends in my learners' performance for the purpose of appreciating areas where there are problems for me to address.				
16	I visit my lecturers, former teachers and mentors for best practices in teaching				
17	I look for information on instructional materials locally available for teaching my learners				
18	I search for strategies which I can use to help my learners with learning difficulties from research publications				
19	I collect information on effective strategies of teaching through radio, television and newspaper reports				
20	I cross-check any research information read with my colleagues to verify the usefulness of the findings				

APPENDIX V
TEACHERS' UTILIZATION OF RESEARCH FINDINGS QUESTIONNAIRE (TURFQ)

Dear Sir/Madam,

This study is a research endeavour based in the Early Childhood Education Unit, Department of Teacher Education, University of Ibadan. Kindly provide all information to the best of your knowledge of the issues raised. All information provided will be used for academic purpose only and will be treated with utmost confidentiality.

Thank you.

Yours Faithfully,

Mrs. Yewande Ogunleye

Section A: Socio-Demographic Data

Name of School:……..

Gender: Male ☐ Female ☐

Section B: Utilization of Research

Kindly tick ☑ the extent to which you utilize information from research using Likert Scale of Always, Sometimes, Rarely or Never.

Item	I utilize information from research:	Always	Sometimes	Rarely	Never
1	to get acquainted with effective teaching strategies				
2	for innovations in school curricula				
3	on how to improve my learners interest in schooling				
4	to source for better evaluation techniques in day-to-day activities				
5	in order to prepare my lessons well				
6	to help me in effective delivery of instruction				
7	to get facts on the development of locally available instructional materials				
8	for effective use of instructional materials				
9	to become knowledgeable on recent theories of child development				
10	for theories behind the various new teaching strategies				
11	to improve my content knowledge of school subjects				
12	for the acquisition of more pedagogical knowledge				
13	for more effective classroom management techniques				
14	for skills at motivating and reinforcing my				

	learners in learning				
15	to acquire knowledge and skills in using modern questioning techniques in class				
16	for further verification of research findings				
17	to help in improving my learners' achievement				
18	to increase the level of classroom interaction i.e. teacher-student, student-student and student-material interactions				
19	for encouraging active participation of learners in the class activities.				
20	to assist me in planning and carrying out research on my learners				

APPENDIX VI

TEACHERS' CLASSROOM OBSERVATION SCALE (TECOS)

School:……

Class:…..

Time/Period:……..

Subject:……...

Classroom Features	Ratings					
	0	**1**	**2**	**3**	**4**	**5**
Introduction 1. Specification of learning outcomes 2. Sharp and interesting 3. Evidence of adequately planned lesson						
Teachers' Knowledge and Skills 4. Identification of learners difficulties in learning 5. Knowledge of subject matter 6. Pedagogical skills						
Adoption of Teaching Strategies 7. Process Based 8. Product Based 9. Modelling 10. Picture-based 11. Conceptual-change 12. Enhanced explicit 13. Outdoor education activities						
Classroom Interaction 14. Use of Group Learning 15. Structured groupings 16. Unstructured groupings 17. Cooperative learning 18. Medium of institution						
Learners' Individual Traits/Differences 19. Gender sensitivity 20. Accommodation of Learners' Personalities 21. Consideration of home background/location 22. Factoring learners' ability into activities 23. Identification and tapping into learners' Cognitive style.						
Homework 24. Use of preparation, enhanced practice or combination 25. Requirement of parental role/assistance/information						

APPENDIX VII

TEACHERS INTERVIEW GUIDE

1. When faced with challenges in the classroom teaching-learning situation, learners' learning difficulty or underachievement, how do you attempt to solve such problems?
2. As a teacher, what are the sources of your knowledge/information for effective teaching to improve learners' achievement?
3. Do you have access to educational research findings? (If No, go to 7)
4. What are the points/places/avenues of your access to such findings?
5. Do you use such information you acquired from educational research? (If Yes, go to 7)
6. What are your reasons for not using the information acquired?
7. What limitations do you have towards accessing research information?
8. What limitations do you encounter implementing new things you have learnt (through research or other means) in your teaching and related assignments in the school?
9. How do you think the limitations you mentioned in 7 and 8 could be surmounted?
10. Through what means would you suggest that research information should be made available to you?

APPENDIX VIII

FOCUS GROUP DISCUSSION GUIDE

The FGD will be guided along the following:

1. Problems investigated in the theses.
2. School/Teacher/Classroom problems which are in line with the problems identified and researched into by the selected theses.
3. Ways by which teachers have attempted to solve the problems.

These discussions will always precede the collaborative intervention activities based on the intervention package.

APPENDIX IX
LIST OF SOME Ph.D THESES ON PRE-PRIMARY AND PRIMARY SCHOOLS IN THE FACULTY AND INSTITUTE OF EDUCATION (2000-2010)

S/N	Author	Year	Title of Thesis	Department
1	OLUDOTUN, J. S. O.	2001	"Science Achievement And Its Correlates Among Some Selected Primary And Secondary School Students in Nigeria and Zambia".	ICEE
2	SALAWU, K. A.	2001	"Language of Instruction and Pupils' learning Outcomes in Selected Aspects of Primary Social Studies in Ogun State, Nigeria".	Teacher Education
3	NDUKWU, P. N.	2003	"School and Teacher Factors as Determinants of Classroom Material Resources Utilization in Pre-Primary School in Lagos State".	ICEE
4	ODINKO, M. N.	2003	"Home and School Factors as Determinants of Literacy Skill Development Among Nigeria, Pre-Primary School Children".	ICEE
5	OGUNSANWO, T.	2003	"Homework Mode and Parental Involvement in Homework as Determinants of Primary School Pupils' Learning Outcomes in Mathematics in Ibadan North, Ibadan".	Teacher Education
6	AJILA, P. K.	2003	"Comparative Effects of Explici and Enhanced Explicit Teaching on Learning Outcomes in Primary Science in Ikere-Ekiti Local Government Area, Nigeria".	Teacher Education
7	AKINTUNDE, S. A.	2004	"Effects of Structured and Unstructured Group Interaction Patterns on Learning Outcomes of Primary School Pupils in Some Environmental Education Concepts in Ibadan.	Teacher Education
8	LAWANI, L. A.	2004	"A Casual Model of Home and Factors as Determinants of Pupils' Achievement in English Language and Mathematics".	Teacher Education
9	OMOSEHIN, F. M.	2004	"Effects of a Training Programme in Cooperative Learning on Pre-Service Teachers' Classroom Practice and Pupils' Learning Outcomes in Social Studies".	Teacher Education
10	OSINUBI, E. O.	2004	"Constructivist Methods of Teaching and Metacognitive Strategy as Determinants of Learning Outcomes in Primary Science".	ICEE
11	OKUNOLA, O. M.	2004	"Home and School Factors as Developments of Early School Adjustment of Pre-School Children in Ibadan Municipality".	ICEE
12	AJAYI, O. H.	2005	"Psycho-Social Factors as Correlates of Primary School Pupils Reading Proficiency in the English Language in Ibadan, Nigeria".	Teacher Education
13	IDOGO, G. A.	2006	"Preparation-Assistance Reflection and Question-Answering Relationship on Primary School Pupils' Learning Outcomes in Reading Comprehension in Ibadan North Local Government Area, Oyo State, Nigeria".	Teacher Education

14	OSHODI, O. O.	2006	"Effect of the Use of Learning Outcome Specification on Pupils' Achievement in Primary Science in Lagos State, Nigeria".	ICEE
15	IROEGBU, V. I.	2006	"Effect of Modeling and Picture-Based Instructional Strategies on Primary School Pupils' Learning Outcomes in English Language".	Teacher Education
16	AGOMOH, C. C.	2007	"An Evaluation of Child-Friendly Environmental Status of Primary Schools in Abia State, Nigeria".	ICEE
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