APPLICATION OF LEARNING DOMAINS IN PUBLIC PRIMARY SCHOOLS IN WEST POKOT COUNTY, KENYA

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Abstract

The quest to strike a balance between learning in the classroom context and excelling in national examinations in primary schools has remained a challenge to curriculum implementers for a long time. Proper application of learning domains in the classroom process is however very essential in determining the extent to which holistic learning has taken place. The purpose of the study was to assess primary school teachers' application of learning domains in classroom instruction in primary schools in West Pokot County. Objectives of the study were to determine teachers' understanding of learning domains, determine the extent to which learning domains were addressed in the classroom process in primary schools in West Pokot County, examine teachers' use of Table of Specifications in primary schools in West Pokot County. The study was guided by principles embedded in Daniel Stufflebeam's Context, Input, Process and Product (CIPP) Evaluation Model which is a model for guiding formative and summative evaluation of a program. A Conceptual framework was also used to show the interplay between the variables under study. The study employed a descriptive survey design and adapted mixed methods approach in collection of data in a pragmatist philosophical paradigm. The study used multi stage cluster sampling technique which combined both simple random and stratified proportionate sampling. A structured questionnaire was the main instrument of collecting quantitative data. Cronbach alpha was used to determine internal consistency of the instrument. An overall Coefficient of 0.7 was realized indicating that there was high internal consistency in the instrument. Classroom observation, interviews and document analysis were used to collect qualitative data. The study found that teachers did not understand what learning domains are and therefore did not apply them adequately in the learning process. The study concluded that application of learning domains in public primary schools in West Pokot influences learning achievements of pupils. The study recommended that supervision of schools be intensified to ensure that there is more teaching and learning.

Key Words: learning, instruction, learning domains, classroom

Background

In 2003, the Government of Kenya introduced universal FPE (Bunyi, Wangia, Magoma & Limboro, 2013) in order to tackle the problem of access to education However, it soon became evident that whereas FPE increased the enrolment rates, many public primary schools remained in poor condition and unfit for learning process, hence, academic performance stagnated in many schools and districts in Kenya (Wachira, 2011).

The key challenge posed for policymakers then was how to successfully implement equity through FPE without negatively affecting the quality of instruction and level of academic achievement (APHRC, 2010).

However, in spite of this commendable success in attainment of MDG 2 in improving access to schooling there is a global consensus that while enrolments have continued to surge, quality of education has plummeted due to poor quality of teaching (Ngware , Abuya, Admassu, Mutisya, Musyoka, & Oketch , 2012).

Learning achievement relies heavily on what goes on in the classroom. Frequent curricular changes calls for dynamic and holistic approach to teaching and learning with effective alignment between standards, educational goals and objectives. Teachers must therefore be sparing in how they spend their classroom time in order for learning to take place in psychomotor, cognitive, and affective domains. Orey(2010) submits that taxonomy offers teachers a powerful tool in designing lesson plans and to sequence learning tasks in a logical order.

Effective classroom instruction is therefore guided by properly constructed learning objectives which should focus on student achievements and the learning process (Airasian, 1994).Learning objectives are stated in cognitive, affective or psychomotor domains. Burden and Byrd (2010) assert that instructional objectives should be written for each of the three domains of learning and each objective should be evaluated using different types of evaluation instruments. Cognitive learning objectives deal with intellectual skills of knowledge, comprehension, application, analysis, synthesis, and evaluation. The other domains (affective and psychomotor) require at least some cognitive component (Bloom, 1956).

Maiyo (2009 cited in Reche, Bundi, Mbugua, & Riungu,2012) states that the most important manifestations of quality education have to do with literacy, cognitive abilities, performance and progression to higher levels of learning. Learning objectives are meant to clarify the purpose of instruction to ensure the learning is successful and the objectives are achieved.

Research reports in Kenya (Mwaka, Kegode, and Wambua,2000), & Karimi,Nyaga and Oundo (2014) indicate that schools burden learners with frequent continuous assessments at the expense of learning due to the high stakes placed on national examination. The Kenyan educational system therefore appears to emphasize more on academic performance than learning hence developing the cognitive domain at the expense of the psychomotor and the affective domains. This has led to private tutoring, extra tuition, remedial teaching and use of commercially developed examination papers which at times do not conform to the curricular objectives. This is echoed by Ondigi , Ayot , Mueni & Nasibi (2011) who argue that the classroom practice by both the teachers and the learners exhibit an academic system that does not meet the needs of both the individual and the general society at large hence failing to prepare the individuals in schools to meet the goals of education.

Mwaka, Kegode, and Wambua,(2000) argue that the educational system does not embrace implementation of the national educational goals, and does not show commitment to the evaluation of the goals. The cognitive domain receives the most attention in instructional programs and includes objectives related to recall or knowledge. The cognitive domain is the core learning domain (Marzano & Kendall, 2007). Most teachers' formal objectives are cognitive in nature and emphasize intellectual activities which include memorizing, interpreting, applying, problem solving, reasoning, analyzing and critical thinking (Airasian & Abrams, 2003).

Ondigi, Ayot, Mueni & Nasibi(2011) argue that varied pedagogic strategies will enable the learners realize their learning goals. This is only possible if the teacher prepares for lessons by emphasizing on Bloom's taxonomy of teaching and learning domains.

According to Beers (2006) teachers often plan for higher levels of learning but end up assessing lower levels such as knowledge and comprehension. A Table of Specifications (TOS) can therefore

be used to help teachers in decision making process of test construction and in enhancing the success of the classroom instruction.

The objectives of the Kenya Primary School Education Curriculum have not been fully achieved as envisaged in the 2002 curriculum rationalization and revision despite introduction of FPE ((Oketch, Mutisya,Ngware and Sangwe, 2010).). A study by MOE (2010) revealed that learners in Kenyan Primary schools have attained skills in literacy, numeracy and communication, which represent the cognitive domain of learning. However, learners have not attained skills in areas such as creativity, social responsibility, appreciation and respect for the dignity of work.

The revelation that of more than 770,000 pupils who sat KCPE in 2011, about 153,000 had no tangible academic skills is worrying. This means that in the past decade, Kenya may have produced about 1.5 million or more illiterates (Kigotho, 2012).

However the recently launched Sustainable Development Goals(SDGs),particularly SDG 4 which envisages provision of equitable and inclusive education offers hope in improvement of learning outcomes at all levels of education including universities which have been implicated by World Bank of churning out poor quality graduates. Achieving inclusive and quality education for is one of the most effective enabler of sustainable development.

Darling-Harmond and Brandsford (2005) assert that domain specific knowledge and general pedagogical knowledge are both highly significant for identifying instructional quality because many governments across the world require teachers to learn both domain specific knowledge and pedagogical knowledge.

According to recent studies by Uwezo (2011,2013) learning levels in West Pokot County were reported to be low with 28.1% and 32.5% of pupils in class 3 able to do mathematical division and read a story respectively.

The trend in Kenya has also been reported to be similar in which 11% of Standard 8 pupils lack standard two numeracy skills and that 70% of class 3 pupils have not effectively acquired literacy and numeracy skills

Learners spend too much time preparing for tests at the expense of actual learning and even participation in co-curricular activities. Due to poor learning in public schools, there is need for government to establish why a large number of children are going to school but not actually learning despite increased resource mobilization in the education sector (Kigotho, 2012).

Objectives of the Study

- 1. Determine teachers' understanding of learning domains in West Pokot County,
- 2. Determine the extent to which learning domains were addressed in the classroom instruction in primary schools in West Pokot County
- 3. Examine teachers' use of table of specifications in classroom instruction in primary schools in West Pokot County.

Theoretical Framework

This study was based on principles embedded in Daniel Stufflebeam's CIPP Model (1983). The Context Input, Process, and Product (CIPP) Model is a comprehensive open systems model for guiding formative and summative evaluation of a program and provide feedback and judgment of the program's effectiveness for continuous improvement. It includes Context, Input, Process, and Product (CIPP). These types are typically viewed as separate forms of evaluation, but they can also be viewed as steps or stages in a comprehensive evaluation.

Input evaluation includes activities such as a description of the program inputs and resources. Input evaluation assess alternative approaches, competing action plans, staffing plans and budgets for

their feasibility and potential cost effectiveness to meet targeted needs and achieve goals. In this study input will include the characteristics of teachers and students that they bring to the teaching and learning process (Huitt, 2006). In the classroom setting it's imperative to determine entry behaviour of students, their motivation level, living conditions of students, learning resources or materials, class size or enrolment and teachers' pedagogical skills. These are the educational factors that this study investigated.

Process evaluation assesses the implementation of plans to help staff carry out progamme activities. In this study process included the thinking, feelings, commitments, and actions of teachers and students within the classroom or learning situation as well as the interaction patterns and descriptions of the learning environment that result from those interactions.

Product evaluation identifies and assesses intended and unintended and short term and long term outcomes. In this study product included the specific measurement or measurements of learning like student achievement, social skills and cognitive development.

This research was guided by Daniel Stufflebeam's CIPP Model which views pupils' learning achievements or change in behaviour (**product**) as a consequence of environmental or situational factors (**context**), characteristics of teachers and students (**input**) and classroom interactions (**process**). This theory can thus be conceptualized as follows:

Figure 1.2: Principles of CIPP Model



This model shows input and output (product) as the beginning and end of the learning process in a given context. The study sought to assess primary school teachers' application of learning domains in classroom instruction in primary schools in West Pokot County in relation to this theory.

Conceptual Framework

The conceptual framework suggests a causal linkage between learning domains and classroom instruction.



Figure 2: Conceptual Framework

Teachers play a significant role in the classroom process through wide variety of classroom practices which heavily depend on their instructional skills. The depicted process in Figure 2 illustrates that learning domains which is the independent variable affects learning achievements.

Methodology

Research Design

This study was guided by descriptive research design. Gall and Borg (2010)state that the advantage with descriptive research design is that it provides a quantitative representation of opinions and other educational phenomena at one point in time. This study adopted a descriptive design because data on attitudes and other characteristics about the participants were collected in their natural settings and in a one-time interaction with teachers and headteachers in a cross sectional study.

The investigation was based on expert opinions, teacher and headteacher perspectives on learning domains and review of literature related to the study. This enabled the researchers to obtain information that helped assess teachers' application of learning domains in classroom process by seeking individual respondents' views or opinions. The research design enabled the researchers collect data that answered questions concerning current status of teachers' application of learning domains under study.

Research Approach

This study adopted a mixed methods approach in which both quantitative and qualitative research paradigms were applied. It involved collection and analysis of both qualitative and quantitative data in order to infuse deductive and inductive thinking in answering study questions. This approach was generally used to offset the weaknesses inherent within one method with the strengths of the other method. This study collected both quantitative and qualitative data through questionnaires and semi structured interview schedule hence need for mixed methods approach. Gay, Mills and Airasian (2006) concur that the purpose of mixed methods research is to build on the synergy and strength that exists between qualitative and quantitative research in order to understand a phenomenon better

than using either of the two paradigms. Creswel and Clark (2007) confirm that mixed methods approach provides more comprehensive evidence for studying a research problem than either qualitative or quantitative data alone. According to this fundamental principle, the researchers therefore used a combination of methods that had complementary and corroborative strengths to better understand the dynamics of the classroom instruction in West Pokot. The goal of mixed methods approach in this study was to draw on the strengths and minimize the weaknesses of structured questionnaire and semi structured interview schedule.

Philosophical Paradigm

This study simultaneously employed both quantitative and qualitative approaches. The study hence adopted the pragmatic philosophical paradigm. This study adopted a mixed methods approach in collection of data making pragmatism its suitable philosophical partner. Pragmatism draws on many ideas using different approaches and valuing both objective and subjective knowledge. Pragmatic research philosophy was deemed applicable to the study because it borrowed from aspects of both positivist and interpretivist positions.

Research Method

The research method of the study was cross sectional survey. The researchers therefore studied a cross section of the population with varied characteristics at a single point in time with the intent of generalizing from a sample to a population. Ary, Jacobs and Razavieh (2002) and Creswel (2009) argue that cross sectional survey method permits the researchers to summarize the characteristics of different groups or to measure their attitudes and opinions toward a phenomenon. It is for these reasons that this study adopted a cross sectional method of collecting data in order to get opinions of teachers and headteachers in public primary schools on the aspects of application of learning domains in classroom instruction namely definitive understanding of learning domains, extent of use of learning domains in instruction and use of table of specifications.

Participants

This study targeted all primary school teachers and headteachers in West Pokot County. For the purpose of this study, the researchers opted to use only public schools which had pupils from class 1 to class 8 and are registered by the Ministry of education. There were 497 public primary schools in West Pokot County in this category. This formed the basis of the study population. Table 1 shows the total teachers' population in the four sub-counties in West Pokot County.

Sub-Counties	Schools	Teachers	Head Teachers
Pokot Central	133	1063	133
Pokot North	120	958	120
Pokot South	64	642	64
West Pokot	180	1621	180
TOTAL	497	4284	497

Table 1: Target Population in the Sub-Counties

Source: CDE West Pokot

Sub-County	Schools (N)	Sample size (n)	Teachers (N)	Sample Size (n)
Pokot Central	133	15	1064	88
Pokot North	120	13	960	79
Pokot South	64	9	640	53
West Pokot	180	22	1620	133
Total	497	59	4284	353

Table 2: Summary of Sampling

To obtain the number of schools to participate in the study, the researchers used the proportionate sampling technique. The records in the CDE's office indicated that the most poorly staffed school in the county had six teachers. This number was then divided by the total number of sampled teachers in each sub-county to obtain the proportionate number of schools to be sampled from each sub-county as shown in Table 2. Through simple random sampling the researchers selected 6 teachers from each of the schools sampled. The number six was therefore used to give each school an equal chance of being sampled for the study through random sampling technique. One head teacher was purposively selected from each of the schools sampled as indicated below. The researchers obtained a complete list of all public primary schools in the four sub-counties of West Pokot County to facilitate sampling.

Table 2:Sample size and Sampling Techniques

Sample Items	Sample Size	Sampling Techniques
Schools	59	Proportionate sampling
Teachers	353	Simple Random
Headteachers	59	Purposive

Research Instruments

The researchers used four research instruments-questionnaires, interview guide, document analysis and classroom observation schedule. All the four research instruments were developed by the researchers to enhance the depth of the research perspective on classroom process and learning achievements. Cohen and Manion (1992) assert that exclusive reliance on one method may bias a researcher's picture of the phenomenon under investigation. Although self reports as is the case with a study like this one is prone to subjectivity, the researchers used four research instruments namely teachers' questionnaire, headteachers' interview guide and document analysis to significantly reduce the subjectivity thus producing valid and reliable generalizations about application of learning domains in classroom instruction in public primary schools in West Pokot.

Teachers' Questionnaire

The main data collection instrument was the questionnaire that was used to collect quantitative and some qualitative data respectively. The instrument was developed by the researchers. It was administered to the sampled teachers in public primary schools in West Pokot County. The teachers' questionnaire was accompanied by general information letter on what was expected from respondents as well as instructions to respondents on how to complete the questionnaire. The Questionnaire

consisted of a mixture of open and closed ended items. This enabled the researchers to control and focus responses to application of learning domains in classroom instruction in West Pokot County. Since this study adopted a mixed methods approach both quantitative and qualitative data was collected. The questionnaire was deemed fit because it enabled the researchers to cover a wide geographical area and to question a large number of respondents inexpensively while remaining anonymous hence enhancing honesty and well thought out responses and thus increasing completion and return rate

Headteachers' Interview Guide

A structured interview guide developed by the researchers was used to obtain qualitative data from headteachers. In-depth face-face interviews were conducted by the researchers on the teachers' application of learning domains in classroom instruction. The researchers first briefed the respondents in order to create friendly atmosphere of trust and confidence during the interview. The interviews were crucial in determining how headteachers perceived diverse aspects of classroom instruction. During the interview, the researchers listened keenly to the respondents, asked questions, probed them and took notes in order to capture more details from them. The headteachers' interview guide consisted of questions aimed at obtaining specific information on definitive understanding of learning domains, how learning domains are addressed in the classroom process, and teachers' use of table of specifications in primary schools in West Pokot County.

Document Analysis Guide

Document analysis guide was used to triangulate data collected from teachers' questionnaire and headteachers' interview guide. Cohen and Manion (1992) define triangulation as the use of two or more methods of data collection in the study of some aspect of human behaviour. Bryman (2008) observes that triangulation implies that the results of an investigation employing a method associated with one research strategy are crosschecked against the results of using a method associated with the other research strategy. Document analysis guide in form of Table of Specifications (TOS) developed by the researchers was used to analyse data on nature and prevailing practices of teachers' application of learning domains in classroom instruction in the sampled schools. TOS consisted of 6 hierarchical levels of cognitive learning domains namely knowledge, comprehension, application, analysis, synthesis and evaluation against two teaching subjects, Mathematics and English in Class III and VII. Kibera and Kibera (2011) found that establishing the extent to which various aspects of cognitive domain have been achieved at primary level lays the foundation for all the other levels of education. Classroom tests were analysed against the TOS to determine their nature in respect of cognitive domains of learning.

Teachers' instructional tools namely schemes of work and lesson plans of different subjects were analysed using the Learning Domain Guide(LDG) developed by the researchers to determine their level of reflection of the three domains of learning-cognitive, affective and psychomotor. Analysis in regard to cognitive domain covered the six levels namely knowledge, comprehension, application, analysis, synthesis and evaluation. Analysis in regard to affective and psychomotor domains document analysis was limited to the first 3 basic levels namely receiving, responding valuing and imitation manipulation and precision respectively. This is because the higher levels of affective (organization and internalization) and psychomotor (articulation and naturalization) domains were not necessarily applicable to primary school age pupils. This was also used to triangulate qualitative data collected through structured interviews and quantitative data collected through questionnaire.

Classroom Observation Schedule

Structured Classroom Observation Schedule was used as additional tool for understanding the aspects of learning domains under study to triangulate data collected from teachers' questionnaire, headteachers' interview guide and document analysis. Jwan and Ong'ondo (2011) define observation as a data generation method that involves critically watching what people do and listening to what they say in a given situation with a view to obtaining deeper understanding of the phenomenon under study. The researchers personally sat behind classrooms, listened and watched carefully defined list of activities that teachers and pupils were engaged in during teaching and learning process. The researchers made 12 different classroom observations each lasting 35 minutes in 12 different schools sampled purposively. The data collected during classroom observation was on how learning domains were applied in learning in the classroom context. Classroom observation was deemed fit because it provided opportunity to the researchers to assess teachers' application of learning domains in classroom instruction.

Discussion of Findings

The study sought to assess how learning domains were applied by teachers in classroom instruction.

Teachers' Definitive understanding of Learning Domains

The study sought to establish the teachers' definitive understanding of learning domains. It is important that teachers at this level understand this concept as learning experiences at the primary school level laid a solid foundation upon which later levels of education would be built on. Figure 3 captures teachers' definitive understanding of learning domains



Figure 3: Teachers' Definition of Learning Domains

Teachers were asked to indicate if the correct definition of cognitive domain of learning was enhancement of learners' skills in physical movement. Figure 3 reveals that 79.4% confirmed it to be true while 17.5% objected the definition as false while 3.1% were uncertain.

Concerning affective domain, teachers were asked to indicate whether it enabled teachers to motivate their learners in class. 92.8.9% responded in the affirmative, 5.0% objected the assertion while 2.2% were uncertain. Figure 3 shows that 61.9% responded in the affirmative, while 35.0% indicated that psychomotor domain of learning did not focus mainly on learners' intellectual skills. Results of the study in Figure 3 also reveal that most (80.0%) of the teachers defined Table of specifications as a chart that breaks down the topics that will be on a test while 16.9% objected the definition. The results in Figure 3 indicate that most respondents (79.4% and 61.9%) wrongly defined cognitive and psychomotor domains respectively. However majority (92.8%) of the teachers got the correct description of affective domain of learning. This implies that most teachers are unable to adequately apply learning domains in the classroom process.

Learning Domains and Classroom Instruction

Figure 4 captures the various ways in which learning domains are applied in the classroom instruction.



Figure 4: Learning Domains and Classroom Instruction

Teachers were asked to indicate how they applied learning domains in classroom instruction. In regard to lesson planning, Figure 4 shows that most (90.3%) of the teachers indicated that they captured specific learning activities in developing individual parts of a lesson plan, 8.1% indicated that they did not, while 1.6% were uncertain of what they captured in a lesson plan. Thematic analysis of interview data and results from semi structured observation revealed that most teachers

did not prepare lesson plans despite their pedagogical importance. Figure 4 also shows that most (89.1%) of the teachers used specific learning aspects in determining learning objectives of a lesson. Only 9.4% of the teachers did not use specific learning aspects in determining learning objectives while 1.5% were uncertain.

Asked whether learning activities guided them in determining depth of teaching content, majority (91.2%) of the teachers responded in the affirmative, 7.5% indicated that learning activities did not guide them in determining depth of teaching content while 1.3% were uncertain. The teachers were also asked to state if learning activities guided them in developing test questions. Most (88.1%) of the teachers stated that the statement was true; some (10.3%) of the teachers found it to be false while only 1.6% were uncertain.

The teachers were also asked to indicate whether their learners were given different types of written tests. Figure 4 shows that most (73.4%) indicated that they gave their learners different types of written tests, (25.3%) did not, while 1.3% was uncertain. It can therefore be deduced that most of the teachers were engaged in prescribed routine instructional activities with little concern on changing the routine to suit changing circumstances hence hindering holistic classroom instruction. This is echoed by Kisirkoi (2014) who observed that the affective domain is said to be intimately related to cognitive and psychomotor domains because cognitive learning and retention of concepts are strongly reinforced or hindered by attitudes, motivation and values and act as barriers to effective classroom instruction.

Use of Table of Specifications (TOS)

Table 4 captures teachers' responses in regard to whether they use TOS or not in developing test items.

Use of Table of Specifications					
Response	Frequency	Percentage (%)			
True	231	72.2			
False	82	25.6			
Uncertain	7	2.2			
Total	320	100.0			

Table 4:

Asked whether they used TOS in developing test items, results of the study as shown in Table 4 reveal that 231(72.2%) used Table of specifications to prepare classroom tests while 82(25.6%) indicated that they did not. The remaining 7(2.2%) were not sure whether they used TOS or not. However this result contradicts findings from the interview of headteachers in primary schools who reported that they did not understand what TOS is and how to use it. Document analysis on tests administered to pupils in Class III and VII revealed that tests were either not balanced as far as levels of cognitive domain of learning was concerned or that they were not appropriately weighted in respect to content areas.

The semi structured classroom observation conducted by the researchers revealed that most teachers did not prepare lesson plans. Most teachers were therefore not guided by stated curriculum objectives during classroom instruction. It was also established that no teacher used TOS as a guide to construction of test items. This means teachers did not distribute test items to areas of content receiving more instruction time and as per instructional objectives they considered more important. This is an indication that teachers neither used TOS as a guide in purchasing commercially prepared tests or in the development of classroom tests.

Conclusion and Recommendations

Extent to Which Learning Domains are Used in the Classroom instruction

The study sought to determine the extent to which learning domains were used in the classroom process. The study found out that teachers did not understand what learning domains are and therefore did not apply them adequately in the learning process. Most (79.4%) of the teachers could not give correct definitive meaning of the three domains of learning. This means teachers did not consciously apply the domains of learning in the classroom instruction yet this understanding was crucial in laying the solid foundation upon which later levels of educational experiences would be built on, hence, affecting learning achievements.

From the foregoing findings, the following conclusions can be drawn:

I. Teachers do not fully understand what learning domains are

It is evident from the findings of the study that most teachers did not give correct definitions of two domains of learning namely cognitive and psychomotor. The correct definition of affective domain given by most teachers could therefore have been out of guesswork.

II. Teachers do not adequately Apply Learning Domains in the Classroom Process

The findings of the study revealed that teachers neither understood nor consciously applied learning domains in classroom process. In regard to cognitive domain of learning, teachers overemphasized use of the lower levels of knowledge and comprehension hence ignoring the equally important higher levels of cognition.

III. Teachers do not use TOS to enhance application of learning domains in instruction

The findings of the study brought to the fore the contradictions on whether teachers used TOS to enhance application of learning domains in instruction or not. However triangulation of results of the study confirmed that most teachers either did not understand what TOS is or simply did not use it to enhance application of learning domains in classroom instruction.

Based on these findings it was recommended that;

Qualiy control in schools requires that teachers adhere to set educational standards and those who meet the standards should be recognized by way of promotion or award of Certificate of excellence.QASO should therefore intensify supervision of schools to ensure that there is more teaching and learning as opposed to drilling of pupils to pass examinations

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