

Influence of Availability of Instructional Resources on Teacher Effectiveness in Early Years Education centers

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ABSTRACT

Research findings indicate that availability of instructional resources is vital in the teaching and learning process. There are real concerns raised by stakeholders on teacher effectiveness with regard to availability of instructional resources in the implementation of early years education curriculum. Influence of availability of instructional resources on teacher effectiveness need to be established. The study involved 320 teachers drawn from 628 early years education centers in Siaya county, Kenya selected by systematic random sampling technique. The study was based on correlational and descriptive survey designs. Data was collected using teacher effectiveness assessment form (TEAF) and teacher questionnaire (TQ). The study found that out of the 18 listed instructional resources only a paltry 2 were said to be somewhat available across the centers under study, while the rest (16) in number were not available. The study established that there was a moderate positive correlation between availability of instructional resources and teacher effectiveness. In addition, the analysis also revealed that this relationship was significant at ($r=0.115$, $p\text{-value}=0.041<0.05$).

Keywords: Influence, availability of instructional resources, teacher effectiveness.

INTRODUCTION

According to Phillips (2013) the term ‘teaching’ refers to a complex, and great practice takes time, passion, high quality materials and tailored feedback designed to help each teacher continuously grow and improve. Oyediji (1998) defines teaching as a process

of imparting knowledge, skills and attitude in order to bring about desirable change in learners. Ogunyemi (2000) says the primary goal of teaching is to ensure that meaningful learning occurs. The definition given and the stress given is important to indicate that this is a vital process in any educational process.

Teacher effectiveness is complex to define given the complex nature of teaching. There is no agreed position on whether teacher effectiveness should be defined using teacher qualifications, pedagogical practices or learner achievement (Malunda, 2018). According to Walls (1999) teacher effectiveness entails the following: Clearly spelling out the learning outcomes to focus learners on the learning goals; Making the content as clear as possible as the teacher builds on existing knowledge; Engaging learners in activities during the teaching and learning process; and Display of high level of enthusiasm that reflects professional competence and confidence.

Popoola and Haliso (2009) define teacher effectiveness as the ability of a teacher to instill knowledge and skills in students, as well as positively influencing the learners’ behavior for a better living. Adeoye and Popoola (2011) link teacher effectiveness to the teacher’s knowledge of subject matter, expertise and resourcefulness that enhance students’ academic performance. Teacher effectiveness in this study is conceptualized as the teacher ensuring availability of the necessary instructional resources during the learning process to enhance the opportunities for learners to learn and attain the desired learning outcomes.

Kadzera (2006) stresses that availability of instructional materials brings life to learning by stimulating students to learn. The use of materials in the classroom has the potential to help the teacher explain new concepts clearly, resulting in better understanding of the concepts being taught. However, they are not ends in themselves but they are means to an end. By this it means that no matter how good instructional resources are, they cannot replace the teacher but it is upon the teacher to modify and utilize them in achieving the teaching and learning objectives.

According to DFID (2007) teaching and learning resources comprises basically three components: Material resources, physical facilities and human resources. Studies done in the past with regard to availability of teaching and learning resources reveal that they are not always available in schools, making it a very serious issue to educators. According to Lyons (2012) learning is a complex activity that involves interplay of students' motivation, physical facilities, teaching resources, and skills of teaching and curriculum demands. Availability of teaching and learning resources therefore enhances the effectiveness of schools as they are the basic resources that bring about good academic performance of learners. The necessary resources should be available for teaching and learning include material resources, human resource such as teachers, classrooms and others.

Wolery (2005) has argued that children learn well through a variety of materials and resources. These materials sustain interest and attention of young children. Further, the leading child psychologist Piaget called the period which Montessori training usually begins as the "Pre-operational" period. However Many centers lack adequate teaching and learning resource and facilities suitable for their learning environment. These include lack of properly ventilated classrooms, furniture suitable for children, kitchen, safe clean water, playground, toilets and play material (International Association for the Education of Young Children, 1991). This implies that teachers do not have adequate teaching and learning resources to enable them implement their teaching effectively. In essence this affects implementation of Curriculum negatively as creation of a sustainable learning environment helps deprived children to improve their academic performance (Offenheiser & Holcombe, 2003).

According to Goloba et al (2010), administrators are not sufficiently supervising teachers to ensure that they use instructional materials to promote the

highly recommended learner centered methods of teaching. This means that the administrators had laxity when it comes to the provision, selection and even utilization of instructional resources by the teachers within their jurisdiction. As a result, it is imperative for the schools administrators to supervise the teachers' utilization of the available resources for effective teaching in schools. However, Bizimana and Orodho (2014) in their study on teaching and learning resources availability and teachers' effective classroom management and content delivery in Rwanda established a significant positive relationship between availability of instructional resources and effective teaching.

The teacher is key to effective implementation of the use of materials in the educational system and given that teachers have tremendous potential to transmit beliefs and values to students, it is important to understand the biases and stereotypes that teachers may hold about the available instructional resources.

Adekunle (2008) opines that teaching resources means anything that can assist the teacher in promoting teaching and learning. When the students are given the chance to learn through more senses than one, they can learn faster and easier. The use of instructional materials provides the teacher with interesting and compelling platforms for conveying information since they motivate learners to learn more. Furthermore the teacher is assisted in overcoming physical difficulties that could have hindered his effective presentation of a given topic. Larson (2001) quoted Lane (1994) who noted that the use of electronically mediated instruction to duplicate the traditional face to face classroom has resulted in a shift from teacher- to student-centred classes. In this situation the responsibility for learning is shifted to the students. The teacher facilitates the learning by acting as a coach, resource guide and companion in learning. The use of instructional materials does not only encourage teachers and students to work collaboratively but also results in more cooperative learning activities among the students. Ikerionwu (2000) refers to instructional materials as objects or devices which help the teacher to make learning meaningful to the learners.

In achieving excellence in schools, it is important to ensure that teachers are able to integrate technology into the curriculum. As such, the groundwork must be laid at the trainee or pre-service teacher's level. To do otherwise is to produce future teachers with underdeveloped skills in the use of technology. In the

course of their training, pre-service teachers should be provided with the tools and experiences that will be useful for the regular activities in their future job: classroom instruction, research, and problem solving. Using technology enables pre-service teachers to arrange their environment and adjust their instructional strategies (Zhang & Espinosa, 1997). Instructional resources are support materials used by teachers in the classroom to enhance the learning process (Abdullahi, 2010). These help teachers to make their lessons explicit, more interesting and understandable to learners. These resources range from textbooks, display materials such as wall charts, chalkboard to pictures and diagrams, laboratory apparatus and plant and animal specimens. These make it possible to teach lessons that involve objects that cannot be brought to the classroom or which the learners cannot experience directly.

The teacher is key to effective implementation of the use of materials in the educational system and given that teachers have tremendous potential to transmit beliefs and values to students. Kennedy and Kennedy (1996) say that methods must be established to facilitate the development of teachers knowledge that supports contemporary instructional applications of research conclusions and correspond with best practices in education. A number of scholars (Busigye & Najjuma, 2015; Bizimana & Orodho, 2014; Goloba, Wokadala & Bategeka, 2010; Abdullahi, 2010; Raw, 2006; Orji, 2000) have attempted to explore the linkage between availability of instructional resources and teacher effectiveness in the classroom. For instance, Busigye and Najjuma (2015) investigated the influence of the teaching and learning resources on the learning outcomes in Uganda's primary schools. Findings of their study revealed that availability of teaching and learning resources had minimal influence on the learning outcomes of Mathematics and English pupils. They further observed that teaching and learning resources are only effective when teachers have the necessary skills to use them.

In Siaya County with the level of poverty index at 0.4, making it difficult to provide adequate and necessary educational resources, concerns have been raised over the poor state of the EYE programmes with regard to availability of instructional resources EYE learning in general. However, there is lack of information on influence of availability of instructional resources on teacher

effectiveness. Without this information, it would be difficult to implement appropriate strategies to address the problem. Therefore, this study intended to determine influence of availability of instructional resources on teacher effectiveness.

Objective of the Study

The study sought to establish influence of level of availability of instructional resources on teacher effectiveness

MATERIALS AND METHODS

Research Design

This study used correlational and descriptive survey research designs. Descriptive Survey is a research procedure which involves depicting a situation as it exists in details. It entails an investigation of issues as they affect an activity such as pedagogical practice and teacher effectiveness. The subject is being observed in a completely natural and unchanged natural environment (Shuttleworth, 2008). The investigation is normally conducted within or across section of the society. Oriwa (2010) defines survey as a strategy used to collect information from a large population by use of structured interviews, questionnaires among other methods. Descriptive survey design was chosen because it is appropriate for educational fact finding and yields a great deal of information, which is accurate. The research aimed at gathering accurate information on the level of availability of instructional resources in early years education centers. On the same note Ravid (2011) defines correlation as a relationship or association between two or more variables. Correlation is a statistical technique that is used to measure and describe a relationship that exists between two or more variables. The design is most appropriate because it enabled the researcher to map out the relationship between two or more educational variables (Orodho, 2003). In this study, the relationship to be investigated is between level of availability of instructional resources and teacher effectiveness.

Sample and Venue

A sample of 320 was arrived at using Krejcie and Morgan estimation table. Systematic random sampling technique was used to select 320 teachers drawn from a population of 1926 teachers in 628 EYE centers in Siaya County, Kenya. Probability sampling that is systematic random sampling technique was used because every item of the universe has an equal chance of inclusion in the sample in other words it reduced the chance variation between a sample and the population it represents (Kothari, 2003; Grinnel, 1993; Mugenda and Mugenda, 1999).

Data Collection Instruments

Data collection instruments included Teacher effectiveness assessment form (TEAF) and Teacher questionnaire (TQ). The TEAF had five sections: Preparation, presentation, use of instructional resources/communication, conclusion and finally teacher personality. The score from the sections were summed up giving a final score over 100%. The level of teacher effectiveness in early years education centers was placed in 3 categories. Responses were elicited on a 3-point scale with the following options: Below 50% - Ineffective, 50% -74 %- effective, 75% and above very effective. Observation of the teachers were summed and averaged to yield a single score per case measured on the continuous scale; $0 \leq R < 50\%$ - ineffective, $50\% \leq R < 74\%$ - effective and $75 \leq R < 100\%$ - very effective.

On the hand teacher questionnaire had a rating scale for availability of the listed instructional resources constructed for this study following the likert scale format. The likert-type scale (or method of summated ratings) is the most widely used method of scale construction because of its relative ease of construction, its use of fewer statistical assumptions and the fact that, in contrast to other scaling techniques; no judges are required (Karakas-Doukas, 2011). To establish level of availability of instructional resources, data were first explored to understand level of availability of instructional resources in the early years education centers, consequently, 18 items were listed. Responses were elicited on a 5-point Likert scale with the following options: 1- very unavailable, 2-unavailable, 3-somewhat available, 4- available, 5- very available. Response score across the 18 items were summed and averaged to yield a single score per case measured on the continuous scale; $0 \leq R < 1.5$ - very unavailable, $1.5 \leq R < 2.5$ - unavailable, $2.5 \leq R < 3.5$ - Somewhat available, $3.5 \leq R < 4.5$ - available and $4.5 \leq R < 5$ – very available.

Pilot Study

To establish reliability of the research instruments, a pilot study was carried out in 10 EYE centers involving 20 teachers using test-retest method. The two tests were administered at an interval of two weeks. This was done so as to find out whether the terms used were understood by the teachers and also to guard against the response set, distortion of data and subjectivity of responses. The teachers were also observed twice by different people in a span of two weeks in order to establish the reliability of the teacher

effectiveness assessment form (TEAF). Teachers who participated in the pilot study were not involved in the final study. This method of establishing reliability of instruments was appropriate for the instruments that gather data which is qualitative in nature (Joppe, 2000; Creswell and Miller, 2000). For validity of the instruments to be ensured, three experts on the topic from Maseno University, examined the content of the instruments and advised the researcher on the content validity. Their feedback was used to revise the instruments

Data Collection Procedures

The researcher sought for a research permit and research authorization letter from the relevant authorities and the county education office before the process of data collection in the field. The instrument was administered through personal visits on appointment with teachers. The questionnaires were filled by the teachers and collected by the researcher and research assistants after a fortnight. The researcher and research assistants then made appointments with the teachers to be observed in their classrooms as they performed their duties in the classroom and also held discussions with the respective teachers during the collection of the questionnaires.

Data Analysis Procedure

Data was analyzed by use of descriptive statistics namely frequencies, percentages, mean scores and standard deviations while inferential statistics involved regression analysis involving Pearson correlation coefficient to establish the relationship between availability of instructional resources and teacher effectiveness. Qualitative data was categorized and reported in emergent themes. Watson (1994), defines qualitative data analysis as a systematic procedure followed in order to identify essential features, themes and categories. Data was then presented in frequencies, percentages, mean scores, standard deviations and tables.

RESULTS

Teacher Effectiveness

As per the teacher effectiveness assessment form and scores the teachers were awarded score from the observations carried out in class. The mean of three observations was used as the final score for the teachers for the five components observed: Preparation (max score 10 marks), presentation (max score 20 marks), use of instructional resources/communication/classroom management/organization (max score 60 marks), conclusion (max.

score 5 marks) and teacher personality and organization (max score 5 marks) were added the final score given. Therefore those whose tallies were below 50% were considered ineffective, between 50%-74% were effective and finally above 75% were very effective. The teacher effective assessment form had sections which were scored and the tallies given to understand the level of teacher effectiveness in the early years education centers. Teacher effectiveness were elicited on a 3-point scale with the following options: those who scored 50% and below – were regarded as ineffective, those who scored between 50% -74 %- effective and finally those who scored 75% and above were regarded as to be very effective. Observation of the teachers were summed and averaged to yield a single score per case measured on a continuous scale; $0 \leq R < 50\%$ - ineffective, $50\% \leq R < 74\%$ - effective and $75 \leq R < 100\%$ - very effective. The findings are as shown in Table 1

Table 1: Teacher Effectiveness

	F	%age	Valid	Cumulative
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			%	%
1. <50%	13	3.9	4.2	4.2
2.50%-74%	94	28.5	30.2	34.4
3.75%-100%	204	61.8	65.6	100
Total	311	94.2	100	

Key:1. Ineffective; 2. Effective ; 3. Very Effective

Therefore the findings in Table 1 indicate that out of the 311 respondents a majority 204 (65.6%) scored between 75% and 100% as per the teacher assessment form indicating that they were very effective, 94 (30.2%) scored between 50 and 74 indicating that they were effective while a paltry 13 (4.2%) scored below 50% indicating that they were not effective.

Availability of Instructional Resources

Based on the responses of 320 teachers, the teachers' responses regarding the level of availability of 18 instructional resources listed were computed as presented in Table 2.

Table 2: Level of Availability of Instructional Resources

Instructional resources	VU F(%)	U F(%)	SA F(%)	A F(%)	VA F(%)	MS	SD
Charts	94(30.2)	64(20.6)	64(20.6)	56(17.7)	33(10.6)	2.58	1.360
Work cards	45(14.5)	39(12.5)	66(21.2)	83(26.7)	78(25.1)	3.35	1.362
Coloring books	62(19.6)	166(53.4)	29(9.3)	54(17.4)	0 (000)	2.24	.965
Manuals	30(9.6)	81(26.0)	78(25.1)	92(29.6)	30(9.6)	3.04	1.154
Guidelines	38(12.2)	96(30.9)	86(27.7)	34(10.9)	57 (18.3)	2.92	1.280
Syllabi	35(11.3)	126(40.5)	78(25.1)	29(9.3)	43(13.8)	2.74	1.199
Local stories	76(24.4)	86(27.7)	72(23.2)	39(12.5)	35(12.2)	2.60	1.310
Wooden letters	18(5.8)	164(52.7)	47(15.1)	28 (9.0)	54(17.4)	2.79	1.227
Poems	125(40.2)	93(31.5)	31(10.0)	29(9.3)	28(9.0)	2.15	1.291
Material development manual	92(29.6)	70(22.2)	68(21.9)	52(16.7)	29(9.2)	2.54	1.319
Riddles	102(32.8)	80(25.7)	13(4.2)	44(14.1)	72(23.2)	2.69	1.597
Toys	26(8.4)	114(36.7)	70(22.5)	75(24.1)	26(8.4)	2.87	1.125
Films	60(19.3)	128(41.2)	63(20.3)	26(8.4)	34(10.9)	2.50	1.210
Video cassettes	24(7.6)	134(43.1)	54(17.4)	57(18.3)	42(13.5)	2.87	1.204
Photographs	116(37.3)	33(10.6)	58(18.6)	60(19.3)	44(14.1)	2.62	1.491
Cassette recorder	14(4.5)	144(46.3)	75(24.1)	41(13.2)	37(11.9)	2.82	1.105
Computer	100(32.2)	102(32.8)	32(10.3)	41(13.2)	36(11.6)	2.39	1.359
Computer software	75(24.1)	108(34.7)	38(12.2)	52(16.7)	38(12.2)	2.58	1.341
Valid N (list wise)						2.57	1.272

KEY: VU = Very Unavailable U = Unavailable SA = Somewhat Available A = Available ,VA = Very Available

From the 7th column of table 2, it is noted that the individual mean response scores (μ) for each of the

listed items of their availability was above 2.15. For a majority it was above 2.5 and the mean score for all the listed 18 items stood at 2.57. On a scale of 1 to 5 scored from 'very unavailable to 'very available' this

means that the ratings in both cases the listed items were rated 'unavailable' implying the respondents agreed that the 18 listed items were unavailable in the centers.

The standard deviations (SD) in 8th column, Table 2, indicate that responses on the level of availability of riddles were most polarized ($SD=1.597$) while those on coloring books were least polarized ($SD=.965$) implying that even though the means for all the items indicate they were rated unavailable ($2.15 \leq \mu \leq 2.5$) with mean response of four falling below 2.5, the spread of responses from the mean of each item was varied. Never the less, given the scale, there was spread of the responses as all of them were more than 1.0 point away from the mean. This implies that the centers are faced with unavailability of instructional resources more or less the same way.

Influence of availability of instructional resources on teacher effectiveness

From Table 1 respondents gave their responses regarding the level of availability of the 18 items listed as instructional resources, the study went further to carry out a correlation between availability of instructional resources and teacher effectiveness. A model of regression of the dependent variable (teacher effectiveness) on the independent variable (Availability of instructional resources) was used as shown below. Model of regression of the dependent variable (teacher effectiveness) on the independent variable (availability of instructional resources).

$$Y = \beta_0 + \beta_1 X_1 + E$$

Where: Y = Teacher effectiveness (dependent variable), β_0 = Coefficient estimate of the intercept (constant), β_1 = Coefficient of availability of instructional resources, X_1 = Availability of instructional resources and E = Error (assumed to have a normal distribution and constant variance)

Table 3: Correlation between availability of instructional resources on teacher effectiveness

Correlations			
		TEA	AIR
TEA	Pearson Correlation	1	.115*
	Sig. (2-tailed)		.041
	N	311	311
AIR	Pearson Correlation	.115*	1
	Sig. (2-tailed)	.041	
	N	311	311

*. Correlation is significant at 0.05 level (2-tailed).

**Key: TEA: Teacher Effectiveness Assessment ;
AIR: Availability of Instructional Resources**

The Pearson Product-Moment correlation result indicates a moderate positive correlation between availability of instructional resources and teacher effectiveness. In addition, the analysis also revealed that this relationship is significant ($r=0.115$, $p\text{-value}=0.041<0.05$).

Discussion

The assertion by Ouko (2014) that there is lack of essential instructional resources in learning institutions is confirmed here by the unavailability of the listed items in the early years education centers. Okobia (2018) agrees with the current study by reporting high level of unavailability or missing of instructional resources. Malunda and Abwebembeire (2018) also concur that early years education programmes are expected to have instructional resources in order to contribute to teacher effectiveness. Chepsiror (2012) concurs with the current study that there was high rate of unavailability of instructional resources including the improvised ones. Koech, Kabwos and Jeruto (2016) agree that there were very few available instructional resources, they also add that the teachers were well prepared to use the resources however they were not doing what is required. They are supported by Makokha (2015) who also found teachers to be experienced enough to use instructional resources but were not doing enough due to unavailability of the instructional resources. However, the current study negates the assertion by Akungu (2014) that instructional resources were available especially those to be used in the classroom setting.

Even though the works of the above authors concur and also one has disagreed with the current study, none of the above has reported how the level of availability of the listed items alongside other elements influences teacher effectiveness. The joint listed items level of availability within a center is more likely to impact on teaching and learning in a practical situation than a single item in isolation. The level of availability which is unavailability of instructional resources revealed in the current study is envisaged to awaken the stakeholders to be proactive in availing the required instructional resources.

The findings are corroborated by the center managers that availability of the resources is very technical issue in these center as a large number of managers put it "It is not easy to avail all the necessary materials

because we have very meager resources”

This findings concur with those of Ouko (2004) who found that there was lack of essential instructional resources in schools leading to poor performance by students however the current study delved on the teachers effectiveness with regard to the availability of these instructional resources. This finding is not surprising because many other studies have found the unavailability of instructional resources contributes negatively to the performance of learners except that this one has paid attention to how effective the teacher is in terms during the teaching and learning process.

The findings also concur with those of Okobia (2011) who found that many of the instructional resources were unavailable or were missing, and that there was no significance difference in the use of instructional resources by specialist teachers and non-specialist teachers this is in line with the current study. However, Okobia's interest was on the categories of teachers with regard to use of instructional resources the current study looked at teachers irrespective of whom they were as long as they were practicing in early years education centers. On the same note, Malunda and Abwebembeire (2018) found that availability of instructional resources significantly contribute to teacher effectiveness which is in line with the current study which established that there was significant relationship between availability of instructional resources and teacher effectiveness.

Aina (2013) found that there were shortage of instructional resources and in addition they were not put into use both the available and the improvised ones. On their part Tuimur and Chemwai (2015) established that the available materials were few for effective implementation of the teaching and learning process and at the same time the teachers were ill-prepared to teach some areas within the syllabus. This means that very few instructional resources were put into use.

Koech, Kabwos and Jeruto (2016) who established that despite the fact that teachers were well prepared to use the instructional resources, they did not maximize the few available instructional resources. They also concur with Makokha (2015) who found that majority of the teachers were experienced and were therefore in a position to use instructional resources. The current study departure from the above studies is that many of them paid attention to availability of instructional resources while the current study has gone a step further to establish if availability had any significant

relationship with teacher effectiveness of which it has established that there is a significant relationship between availability of the instructional resources and teacher effectiveness.

CONCLUSIONS

Based on the findings, the following are the conclusions of the study.

- (i) Out of the 18 listed instructional resources, only 2 ere somewhat available, the others were unavailable. This implies that instructional resources were unavailable in early years education centers.
- (ii) The responses on the level of availability of riddles were most polarized ($SD=1.597$) while colouring books were least polarized ($SD=.985$). implying that the responses were varied however they all indicated a range of unavailability of instructional resources.
- (iii) There was a significant relationship between availability of instructional resources and teacher effectiveness, meaning that availability of instructional resources influences teacher effectiveness.

RECOMMENDATIONS

Based on the above conclusions, the study recommends that;

- (i) There is need to sensitize the stakeholders on the importance of availing instructional resources to teachers since it builds confidence thus adding their efficiency during the teaching and learning process.
- (ii) There is need to empower the EYE administrators and teachers through acquisition of relevant knowledge to enable them be able to improvise and avail or acquire instructional resources from the local environment so as to facilitate efficient teaching and learning.
- (iii) A program should be designed to build community capacities for the development and equipment of partnership with the government and other stakeholders. This will ensure that EYE centers avail instructional resources for teachers to use.
- (iv) The county governments which are currently in-charge of the centers in

conjunction with the National government should work on ways and means of ensuring that the EYE centers are provided with instructional resources for use by the teachers.

- (v) The situation is dire in the early years education centers in terms of instructional resources, needs serious strategies in terms of planning and funding both from the government both national, county government and all other concerned parties.

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