

RELATIONSHIP BETWEEN COMPETENCE-BASED DIGITAL LITERACY CONCEPTS AND MANAGEMENT OF PRIMARY SCHOOL CURRICULUM IMPLEMENTATION IN EMBU COUNTY, KENYA

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Abstract: The study investigated relationship between competence-based digital literacy concepts and management of primary school curriculum implementation in Embu County Kenya. Competence based curriculum digital literacy emphasizes development of digital skills, knowledge and core competences in learners' real life situation, in Kenya. However, competence-based curriculum implementation is insufficiently managed following limited digital technology use in schools; rising concern on effectiveness of competence based learning activities in Kenyan schools. The objective of the study is to determine relationship between competence-based digital literacy concepts and management of primary school curriculum implementation in Embu County, Kenya. The study involved 364 respondents using purposive and simple random techniques. The study employed correlation research design. The study respondents were: competence-based classroom teachers, subject panel heads, senior teachers, head teachers and deputy head teachers. The data collection tools were questionnaires and interview guides for head teachers, deputy head teachers, subject panel heads, senior teachers and competence based classroom teachers. The descriptive statistics was presented in frequencies and percentages; while inferential statistics was analyzed using regression statistic technique. The study reviewed that most school managers have integrated in teaching and learning the current and emerging digital technologies to support curriculum delivery and management; as well as managing and creating information in the immediate digital environment. The study established that digital technologies enable provision of individualized learning management system for teachers. The study indicated that there is significant relationship between competence-based digital literacy concepts and management of primary school curriculum implementation in Embu County, Kenya. Following study findings, the researcher concludes that competence-based digital literacy concepts are crucial in management of primary school curriculum implementation in Kenyan schools. Therefore, the researcher recommends that ministry of education should promote digital literacy technologies for efficient curriculum implementation management in primary schools in Kenya.

Keywords: Relationship, Competence-based curriculum, Digital literacy concepts, Management and Embu County

1. Introduction

Competence based curriculum digital literacy emphasizes development of digital skills, knowledge and core competences in learners' real life situation, in Kenya. According to Biasini, and Proudfoot, (2018) study in Italy on the digital world, noted that integrated information communication and technology may be incorporated in all the learning areas in the competence based curriculum during lesson planning and delivery; where a teacher may use digital literacy through learning experiences using text, animations and videos. Another study in United Kingdom by Pritchett and Beatty (2015) on matching curricula to student skill levels; reviewed that Knowledge of the rationale underpinning digital literacy includes manipulation of educational environments.

A study by Özdamar and Keskin, (2015) on examining digital literacy competences and learning habits of open and distance learners; suggested a blending of technical and organizational capabilities with personal teaching creativity, management, flair and style. Digital competence based teachers requires school managers to know how best teacher teach and manage learning through digital technologies; focusing on

Effective and engaging teaching performance, resource, class management and organizational approaches, and appropriate learning design. Broadband commission (2017) established that the digital literacy programs device in the schools such as competence based teacher digital device, competence based learner digital device, digital content server and wireless router, and external hard disk contain content that is being integrated in learning process and management

Digital literacy competence emphasizes understanding of the digital technology in the classroom management. Hooker (2017), study in queen's university Belfast on the implementation of the strengthening innovation and practice in secondary education initiative; reviewed that the potential for new educational technologies is the key to deliver individualized education in a cost effective way. The competence based teacher digital understandings support efforts to plan and structure learning programs to foster relevant competencies in learners. Technological competence focuses more on theoretical understandings related to the role and potential of digital technologies in teaching and learning management. Çam, and Kiyici, (2017) study in Malaysian on perceptions of prospective teachers on digital literacy; asserted that the competence based classroom teachers in technology drive competency-based models; primarily work independently, guided by an online curriculum offering standardized digital learning progressions with aligned computerized assessments to promote curriculum delivery and management. According to Ministry of education, science and technology (MOEST) Kenya (2012), digital literacy should be incorporated in learners learning and management of their learning activities.

1.1 Objective of the Study

To determine the relationship between competence-based digital literacy concepts and management of primary school curriculum implementation in Embu County, Kenya.

1.2 Hypothesis

Competence-based digital literacy concept has no statistical significant relationship with management of primary school curriculum implementation in Embu County, Kenya.

1.3 Statement of the Problem

Competence based curriculum digital literacy emphasizes development of digital skills, knowledge and core competences in learners' real life situation, in Kenya. However, competence-based curriculum implementation is insufficiently managed following limited digital technology use in schools; rising concern on effectiveness of competence based learning activities offered in competence based curriculum in Kenyan schools.

2.0 Research Methodology

2.1 Research Design

The study adopted correlation research design. The correlation design involves collection of more than one data from one characteristic and compare how they vary. A correlation research design determines relationship between variables without researcher manipulating or controlling any of the variables. Correlation research design is ideal for gathering information from natural setting; thus helping researcher generalizes findings to real life situation. The correlation design helps researcher to assess degree of relationship that exist between two or more variables. Correlation design is most appropriate for the study because it provides replicable procedure for understanding relationship.

2.2 Sampling Technique and Sample Size

2.2.1 Sampling Technique

The researcher employed stratified sampling technique to select 52 primary schools from 520 primary schools to participate in the study. The researcher utilized Krejcie and Morgan sample determination table to determine 364 respondents from 7000 target population. According to Krejcie and Morgan (1970) sample determination table, 364 respondents under study are adequate to represent the total of 7000 individuals. The 364 respondents selected

represent 5.2% of target population. Therefore 5.2% was used as guiding percentage to determine sample sizes for competence based curriculum classroom teachers, head teachers, deputy head teachers, senior teachers and subject panel heads. The study purposively sampled 57 head teachers, deputy head teachers and senior teachers which represented 5.2% of 1092 targeted head teachers/deputy head teachers and senior teachers. The researcher sampled 187 competence based curriculum classroom teachers from 52 sampled schools using simple random technique to represent 5.2% of 3600 competence based curriculum classroom teachers. The researcher then randomly sampled 120 subject panel heads to represent 5.2% of 2308 subject panel heads.

2.2.2 Sample Size

The sample size was 364 respondents comprising 187 competence-based curriculum classroom teachers, 120 competence-based curriculum subject panel heads and 57 head teachers, deputy head teachers and senior teachers. The unit of analysis was categorized as competence based classroom teachers, subject panel heads, head teachers, deputy head teachers and senior teachers.

2.3 Research Instruments

2.3.1 Questionnaires

The researcher utilized questionnaires for head teachers, deputy head teachers, subject panel heads and competence based curriculum classroom teachers. Questionnaire was most appropriate since it is a standardized measuring instrument where queries are phrased exactly the same way for all respondents. Self-completion questionnaire was also advantageous because it is less expensive and saves time for the researcher. Questionnaire contained two sections. Section A reviewed demographic data of respondents. Section B addressed issues regarding to relationship between competence-based digital literacy concept and management of primary school curriculum implementation.

2.2.2 Interview Guides

The researcher utilized interview guides for senior teachers in Embu County. The interview guides for senior teachers had two items in line with the objectives the study. Item one will capture issues regarding biographical information and item two on competence based digital literacy. The interview guides help researcher get first-hand information from the respondents.

2.4 Data Collection Procedure

The researcher first obtained ethical clearance from the Chuka University ethics review committee. Then researcher used recommendation letter from Chuka University ethics review committee to apply and seek permission from National Commission of Science Technology and Innovation (NACOSTI) to undertake study in Embu County, Kenya. The acceptance letter from National Commission of Science Technology and Innovation; helped researcher to seek permission from Embu county commissioner and county director of education to carry out study in selected schools. Letter of introduction reviewing study objectives was attached to each questionnaire. The data was then collected by filling questionnaires and interview guides by the respondents.

2.5 Data Analysis

The data was organized and analyzed using descriptive and inferential statistic approaches of data analysis in close reference to objective of the study. The descriptive statistic utilized numerical tables to look for patterns in a data set; summarize the information revealed in a data set, and to present study information in a convenient form that is easy to understand. Descriptive data was presented using, frequencies and percentages. The inferential statistic utilized regression statistical method to estimate relationship between variables and generalize a population based on information obtained from the sample. Data processing adopted statistical package for social sciences software program.

3.0 Results and Discussion

The objective of the study is to determine relationship between competence-based digital literacy concepts and management of primary school curriculum implementation in Embu County, Kenya. The responses were rated as: Strongly agree (SA), Agree (A), Undecided (U), Disagree (D) and Strongly disagree (SD).

Table: 1 Head teachers, deputy head teachers, subject panel heads and competence based classroom Teachers’ Responses on Digital Literacy Concepts and Management of Primary School Competence Based Curriculum Implementation in Embu County, Kenya.

Statement	SA		A		U		D		SD	
	F	%	F	%	F	%	F	%	F	%
We have integrated in teaching and learning the current and emerging technologies such as radio, laptops, television and phones to support curriculum and management.	27	51.9	12	23.1	6	11.5	4	7.7	3	5.8
Digital understandings support efforts to plan and structure management learning programs to foster relevant competencies in learners.	23	44.2	13	25.0	7	13.5	4	7.7	5	9.6
We access, process, manage and create information in the immediate digital environment using digital technologies.	16	30.8	21	40.4	7	13.5	2	3.8	6	11.5
Online curriculum offer standardized digital learning progressions with aligned computerized assessments and managerial guidelines to promote curriculum delivery	17	32.7	24	46.2	5	9.6	3	5.8	3	5.8
Digital technologies enable provision of individualized learning management system for teachers	15	28.8	19	36.5	10	19.2	5	9.6	3	5.8

The information shown in table 1, majority of the head teachers and deputy head teachers (51.9%) strongly agreed that they had integrated in teaching and learning the current and emerging technologies such as radio, laptops, television and phones to support curriculum delivery and management. The findings concurs with concepts of Biasini, and Proudfoot, (2018) longitudinal study in Italy on the digital world, who noted that integrated information communication and technology may be incorporated in all the learning areas in the competence based curriculum during lesson planning and delivery; where a teacher may use digital literacy through learning experiences using text, animations and videos. On the same idea of digital literacy integration in management of teaching and learning, 23.1% of the head teachers and deputy head teachers agreed the concept while 11.5% remained neutral. Some 7.7% of the head teachers and deputy head teachers disagreed and 5.8% strongly disagreed, the concept of digital literacy integration in management of teaching and learning.

The researcher further noted that majority (44.2%) of head teachers and deputy head teachers strongly agreed that digital understandings support efforts to plan and structure management learning programs to foster relevant

competencies in learners. The findings concurs with concepts of a cross-section study in United Kingdom by Pritchett and Beatty (2015) on matching curricula to student skill levels; who reviewed that the competence based teacher digital understandings support efforts to plan and structure learning programs to foster relevant competencies in learners. Technological competence focuses more on theoretical understandings related to the role and potential of digital technologies in teaching and learning management. 25.0% of the head teachers and deputy head teachers agreed and 13.5% remained neutral on the similar ideas of digital understandings support efforts to plan and structure management learning programs to foster relevant competencies in learners. On the other hand 7.7% and 9.6% of competence based classroom teachers disagreed and strongly disagreed on the same issue of digital understandings support efforts to plan and structure management learning programs to foster relevant competencies in learners.

Several head teachers and deputy head teachers (30.8%) strongly agreed that they accessed, processed, managed and created information in the immediate digital environment using digital technologies. The study findings were in agreement with across-section study in United Kingdom by Pritchett and Beatty (2015) on matching curricula to student skill levels; which reviewed that Knowledge of the rationale underpinning digital literacy includes manipulation of educational environments. Digital literacy competence emphasizes understanding of the digital technology in the classroom management. Some 40.4% of the head teachers and deputy head teachers agreed and 13.5% remained undecided on the similar idea of accessing, processing, managing and creating information; in the immediate digital environment using digital technologies. On other hand 3.8% and 1.5% % of the head teachers and deputy head teachers disagreed and strongly disagreed respectively on the same concept of accessing, processing, managing and creating information in the immediate digital environment using digital technologies.

Several numbers of the head teachers and deputy head teachers (46.2%) agreed that online curriculum offer standardized digital learning progressions with aligned computerized assessments and managerial guidelines to promote curriculum delivery. On similar concept of online curriculum regarding standardized digital learning progressions with aligned computerized assessments and managerial guidelines to promote curriculum delivery; 32.7 % and 9.6 % of the head teachers and deputy head teachers strongly agreed and remained undecided respectively. On other hand, 5.8 % and 5.8% of the head teachers and deputy head teachers disagreed and strongly disagreed respectively, the concept of online curriculum regarding standardized digital learning progressions with aligned computerized assessments and managerial guidelines to promote curriculum delivery. The study findings were in agreement with views of Çam, and Kiyici, (2017) longitudinal study in Malaysian on perceptions of prospective teachers on digital literacy; who asserted that the competence based classroom teachers in technology drive competency-based models; primarily work independently, guided by an online curriculum offering standardized digital learning progressions with aligned computerized assessments to promote curriculum delivery and management.

Majority of head teachers and deputy head teachers (36.5%) agreed that digital technologies enabled provision of individualized learning management system for teachers; followed closely by 28.8 % of head teachers and deputy head teachers who strongly agreed. The study findings were in agreement with Hooker (2017), cross-section study in queen's university Belfast on the implementation of the strengthening innovation and practice in secondary education initiative; who reviewed that the potential for new educational technologies is the key to deliver individualized education in a cost effective way. Some 19.2% of the head teachers and deputy head teachers were undecided, while 9.6 % disagreed on idea of digital

Technologies concerning provision of individualized learning management system for teachers. Some of the head teachers and deputy head teachers strongly disagreed (5.8%) the concept of digital technologies concerning provision of individualized learning management system for teachers. The study findings were in agreement with Mamba and Putsoa, (2018) descriptive study in Swaziland on secondary school science teachers' knowledge and implementation of effective teaching strategies in high-performing schools in Swaziland; who stressed that the types of online competency-based models tend to overemphasize the use of technology and individualization, often to the detriment of other key learning elements of a personalized competency-based approach such as competence based teacher interaction, management, collaboration, and ownership of learning trajectory.

Table 2: Relationship between Competence Based Digital Literacy concepts and Management of Curriculum Implementation in Embu county

R	R-Square	Adjusted R Square	R Square	Change F	Change	df1	df2	Sig. F Change
.113a	.013	.010	.013	4.140		1	362	.043

F (1, 362) = 4.140, P< 0.05 (Hypothesis Rejected).

a Predictors: (Constant), Digital Literacy Concepts

From table 2, since p-value (0.043) is less than critical value (0.05); we rejected the null hypothesis and therefore go for alternative hypothesis that states that there is significant relationship between competence- based digital literacy concepts and management of curriculum implementation. The study findings supported ideas of Özdamar Keskin, (2015) case study on examining digital literacy competences and learning habits of open and distance learners; who suggested a blending of technical and organizational capabilities with personal teaching creativity, management, flair and style. Digital competence based teachers requires school managers to know how best teacher teach and manage learning through digital technologies; focusing on effective and engaging teaching performance, resource, class management and organizational approaches, and appropriate learning design. The study findings also concurs with views of Broadband commission (2017) which viewed that the digital literacy programs device in the schools such as competence based teacher digital device, competence based learner digital device, digital content server and wireless router, and external hard disk; contain content that is being integrated in learning process and management.

4.0 Conclusions

Following study findings, the researcher concludes that competence-based digital literacy concepts are crucial in management of primary school curriculum implementation in Kenyan schools.

Recommendations

The researcher recommends that ministry of education should promote digital literacy technologies for efficient curriculum implementation management in primary schools in Kenya.

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