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INFLUENCE OF BLENDED TEACHING AND LEARNING STRATEGIES - ESTABLISHING ROLE OF LECTURERS IN USING BLENDED LEARNING APPROACHES TO SUPPORT TRAINING STRATEGIES AMONG STUDENT IN KENYA MEDICAL TRAINING COLLEGES (KMTC) IN NYANZA REGION, KENYA

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ABSTRACT

Background: The study aims to evaluate the role of lecturers in implementing blended teaching methods used to support training strategies for students at Kenya Medical Training Colleges (KMTC) in the Nyanza region, Kenya.

Materials and Methods: A mixed descriptive cross-sectional design was adopted, including 9,954 students from 14 KMTC campuses. Questionnaires, focus group discussions, and interviews were utilized to collect data, which was then evaluated with descriptive statistics and multivariate analysis.

Findings: Results indicated conflicting perspectives of lecturers' involvement in blended learning. Whereas some students recognized the lecturers' expertise in curriculum creation and technological integration, a sizable number remained indifferent or doubtful. Multivariate research revealed a need to improve lecturers' educational and technological abilities.

Discussion: The research identified limitations in lecturers' use of blended learning approaches, indicating opportunities for professional growth, notably in adapting to modern teaching methods and increasing student participation.

Conclusion: The research emphasizes the value of lecturers' roles in increasing student engagement in blended learning settings at KMTC, as well as finding opportunities for advancement in training methods and technology incorporation. The set-up of the Lecturer Excellence Awards is proposed to motivate and appreciate blended learning execution and ongoing research into lecturers' attitudes toward blended learning use at KMTC.

Keywords: Blended Learning, Lecturers, Medication Training, KMTC, Technology Incorporation, Professional Skills

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1.0 INTRODUCTION

The introduction of blended learning techniques in universities worldwide has transformed the training and learning environment, reflecting an unprecedented move away from conventional educational methods and toward inventive, digital approaches. This transition is especially important in medical training, as changing healthcare needs warrant new teaching methodologies. The Kenya Medical Training College (KMTC) has been receptive to the blended learning approach in Africa.

Internationally, blended learning, which combines online and offline educational approaches, has been acknowledged for its capacity to improve students' participation and academic results (Garrison & Kanuka, 2004). This method is consistent with the Technological Pedagogical Content Knowledge (TPACK) paradigm, which emphasizes the necessity for lecturers to combine their competence in the discipline, teaching techniques, and technology to successfully deliver the curriculum (Mishra & Koehler, 2006).

In the African environment, where educational resources and student requirements are diverse and frequently demanding, the lecturers' role in negotiating these intricacies is extremely important. To effectively apply blended learning techniques, educators must not only have strong subject knowledge and pedagogical abilities but also exhibit competency in using technology tools to construct inclusive and flexible educational settings (Keengwe et al., 2009).

The use of blended learning methodologies in Kenya, particularly at KMTC, is affected by distinct Kenyan factors such as technological capacity, cultural concerns, and specialized medical training norms. The Kenyan academic scene, with its fast acceptance of technology in multiple fields, provides an ideal environment for the adoption of blended learning approaches, as indicated by the growing use of online resources for educational purposes (Keengwe et al., 2009; Owuor, C., 2021).

Lecturers at KMTC have a role that goes beyond simply delivering education. They play an important role in building a curriculum that accommodates different student preferences and requirements, creating a nurturing educational setting, and constantly analyzing and modifying training practices to guarantee successful learning (Tayag, 2020; Liu et al., 2021; Owuor, C., 2024). Furthermore, the development of virtual classrooms and the support of student interaction in these settings are critical aspects of KMTC's blended learning approach, as they foster greater bonds and a more inclusive educational process (Liu et al., 2021; Nortvig et al., 2018).

1.1 Problem Statement:

The role of lecturers in implementing blended learning strategies is crucial in enhancing student engagement and academic performance, particularly in medical training institutions. However, at Kenya Medical Training Colleges (KMTC) in the Nyanza region, the effectiveness of lecturers' involvement in blending face-to-face and online teaching methods remains unclear. Despite KMTC's adoption of blended learning to meet evolving educational demands, there is limited research evaluating how well lecturers integrate technological tools and innovative teaching approaches. This gap creates challenges in maximizing the benefits of blended learning, as lecturers may face limitations in their technological proficiency, curriculum design, and student engagement strategies, ultimately impacting student outcomes and satisfaction.

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1.2 Purpose of the Study:

The purpose of this study is to assess the role of lecturers in implementing blended teaching methods at Kenya Medical Training Colleges (KMTC) in the Nyanza region, Kenya. The research aims to evaluate lecturers' involvement in curriculum design, technological integration, and student engagement, and how these factors influence training outcomes. By identifying areas where lecturers excel and where improvements are needed, the study seeks to provide insights for enhancing the effectiveness of blended learning strategies at KMTC, with the broader goal of improving medical education in the region.

1.3 Study Objectives

The primary objective of this study was to evaluate the role of lecturers in implementing blended teaching methods at Kenya Medical Training Colleges (KMTC) in the Nyanza region. Specifically, the study aims to assess how lecturers integrate curriculum design, technology, and pedagogical practices to support blended learning and its impact on student engagement and training outcomes. Additionally, the study seeks to identify the challenges lecturers face in adopting these methods and propose strategies for enhancing their effectiveness in the blended learning environment.

2.0 METHODS AND METHODOLOGY

2.1 Research Design

The research used a mixed descriptive cross-sectional design to look into the role of lecturers in implementing blended teaching methods at Kenya Medical Training College (KMTC) in Kenya's Nyanza region. This method enabled the acquisition of qualitative and quantitative data, resulting in an accurate depiction of the present processes and issues in blended learning at KMTC.

2.2 Study Location

The study was undertaken at 14 KMTC campuses in the Nyanza region, Kenya. This location was chosen because of its importance to medical training and reflection of a varied student body, ensuring the results apply to a larger educational setting.

2.3 Population and Sampling

The survey included 9,954 students from the chosen KMTC campuses. Fisher et al.'s method was used to calculate a sample size of 280 students, taking into account the overall population size and the required level of statistical significance. To ensure an accurate representation, the respondents were selected using a mixed sampling approach that used purposive, proportional stratified, and simple random selection methods.

Table 1. Sampling Grid

KMTC Campus	Students Population	Percentage	Cumulative Percent	Proportionate Sample per College
KMTC Kisumu	1532	15.4	15.4	43
KMTC Homabay	1100	11.0	26.4	31
KMTC Lake Victoria	622	6.2	32.6	17

KMTC Kisii	1211	12.1	44.7	34
KMTC Nyamira	706	7.1	51.8	20
KMTC Migori	420	4.2	56.0	12
KMTC Nyamache	210	2.1	58.1	6
KMTC Kombewa	1031	10.3	68.4	29
KMTC Bondo	600	6.0	74.4	17
KMTC Rera	270	2.7	77.1	7
KMTC Ugenya	300	3.0	80.1	8
KMTC Siaya	1234	12.4	92.5	35
KMTC Rachuonyo	248	2.5	95.0	7
KMTC Kuria	500	5.0	100.0	14
TOTAL	**9954**		**100.0**	**280**

2.4 Data Collection Methods

Data was obtained through questionnaires, Focused Group Discussions (FGDs), and key informant interviews. The questionnaires, which were created for virtual delivery, entailed open and closed questions to collect quantitative data. Interviews and discussions were used to acquire qualitative information, which revealed information about lecturer roles and interactions with blended learning at KMTC.

2.5 Research Ethics

The research met ethical standards, which included receiving research clearance from KCA University's graduate school dean and a research license from the National Commission for Science, Technology, and Innovation (NACOSTI/P/23/2358). Every participant provided informed consent, and their confidentiality and anonymity were diligently protected during the research process.

2.6 Reliability and Validity

The research tools were evaluated in a test run at the KMTC Kuria and Vihiga campuses. The validity was assured by expert assessment and meticulous question formulation. Cronbach's alpha coefficient was used to determine reliability for questionnaires, as well as inter-rater reliability assessment for qualitative data analysis. Cronbach's alpha coefficient ($\alpha = 0.86$) validated the surveys' internal cohesiveness (Kennedy, 2022). Inter-rater reliability tests indicated that the coders agreed strongly on the interviews and Focused Group Discussions (FGDs), with a kappa coefficient of 0.87 (Halimoon et al., 2021). Thus, the data collection tools were unified and precise.

2.7 Data Analysis

Descriptive statistics were used with the SPSS version 28 program for data assessment. A p-value of 0.05 was used to test for significant relationships. Multiple statistical approaches, such as MANOVA, MER model analysis, and the GEE model, were used to investigate the correlations between variables and to handle unpredictable variables. Variance tests were done using MANOVA, while deeper links were investigated using the MER model and Multiple Logistic Regression analysis. The regression variables were analyzed using the GEE model. Statistical words and symbols were specified using conventional procedures. Exploratory analyses were segregated from predetermined analyses to ensure the statistical investigation's credibility.

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3.0 RESULTS

The analysis provides important information into the role of lecturers in the application of online learning approaches at KMTC. A significant proportion of the participants (33%) had a neutral view of lecturers' knowledge and use of technology and content in blended learning, with an equal percentage agreeing (22.7%) and strongly agreeing (17%). A smaller percentage disagreed (14.8%) or strongly disagreed (12.5%). The average response was neutral (3.17), with a standard deviation of 1.243, showing a central trend around this viewpoint.

Table 2. Lecturers' Knowledge and Use of Technology in Blended Learning Frequency

Teachers Understanding of Technology and Subject Matter				
		Frequency	**Valid Percent**	**Cumulative Percent**
Valid	**Strongly agree**	40	17.0	17.0
	Agree	54	22.7	39.8
	Neutral	78	33.0	72.7
	Disagree	35	14.8	87.5
	Strongly Disagree	30	12.5	100.0
	Total	**237**	**100.0**	

Considering the inclusion of technology in training, 34.1% of the students were indifferent, while 28.4% agreed and 13.6% strongly agreed that lecturers effectively integrate technology. A few disagreed (12.5%) or strongly disagreed (11.4%), with a mean neutral response (3.20) and a standard deviation of 1.176. Moreover, in terms of developing a curriculum for blended learning, 31.8% agreed and 15.9% strongly agreed that lecturers efficiently designed programs that met the different requirements of their students. Neutral replies were 30.7%, with minor disagreement (9.1%) and strong disagreement (12.5%). The average reply was modestly positive (3.30), with a standard deviation of 1.214.

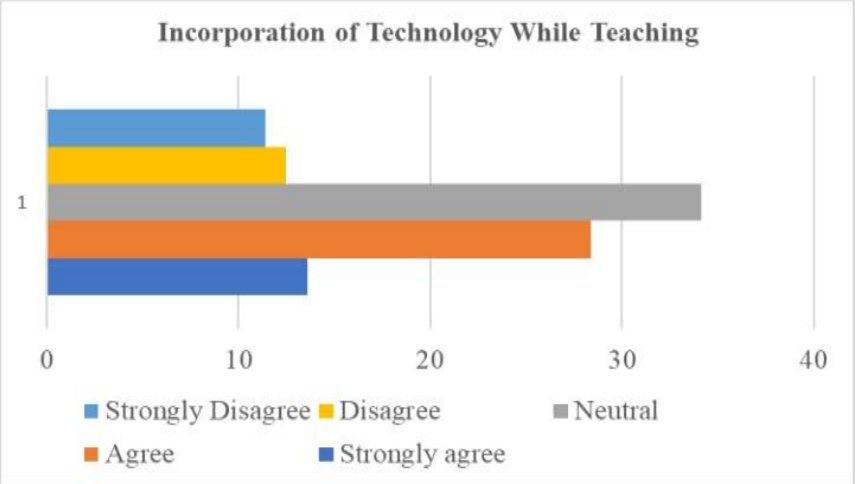

Figure 1. Bar Graph for Lecturer' Inclusion of Technology in Training

The study examined the students' perceptions of lecturer support in online learning approaches at KMTC. 31.8% agreed, with 13.6% strongly agreeing that lecturers offered enough assistance. 29.5% of respondents had neutral sentiments, 11.4% disapproved, and 13.6% strongly disagreed. The mean response (3.20) inclined toward approval, with a standard deviation of 1.224. The students were also probed on their views on lecturers' efficacy in the evaluation of students' progress in online learning at KMTC. A majority of students (34.1%) believed that lecturers successfully examined student learning in online environments, with 12.5% strongly agreeing. Neutral replies were 33%, with 9.1% disagreeing or strongly disagreeing (11.4%). The average answer was marginally positive (3.27), with a standard deviation of 1.152.

Table 3. Perceptions of Lecturers' Support in Blended Learning

Teachers Support in Blended Learning Environment		
N	**Valid**	237
	Missing	0
Mean		3.20
Mode		4 (Agre)
Std. Deviation		1.224

Furthermore, a multivariate analysis looked into the role of lecturers in implementing blended teaching methods at KMTC. The discriminant analysis looked at factors such as students' opinions of blended learning, their satisfaction with blended learning, and their perspectives on lecturers' obligations in this setting. Students' satisfaction and preference for blended learning were calculated resulting in a canonical discriminant function coefficient of 1.716 and 1.694 respectively. The analysis offered clarity on how these characteristics affected students' choices for blended learning, emphasizing the critical role of lecturers in influencing their experiences and opinions toward blended learning techniques in the KMTC setting. The lecturer's role had a notable impact with a canonical discriminant function coefficient of -2.364. The findings highlight the significance of lecturers' abilities and methods in effectively using blended teaching methodologies.

Table 4. Group Statistics for Preference for Blended Learning

Group Statistics					
Students' Preference for Blended Learning		**Mean**	**Std. Deviation**	**Valid N (listwise)**	
				Unweighted	Weighted
Preferred	**Students' Estimated Family Income**	1.40411	.605478	146	146.000
	Students' Perception of Online Learning	1.68219	.318333	146	146.000

	Students' Satisfaction with Blended Learning	1.72854	.322062	146	146.000
	Students Perception of Teacher Factors Affecting Blended Learning	1.76937	.317164	146	146.000
	Gender	1.63699	.510309	146	146.000
	Age Bracket	2.10274	.819836	146	146.000
	Education Level	1.95890	.467963	146	146.000
	Marital Status	1.20548	.438144	146	146.000
	Students Mode of Study	1.12329	.329899	146	146.000
	Students Residence	1.63014	.484429	146	146.000
Not Preferred	**Students' Estimated Family Income**	1.70330	.674858	91	91.000
	Students' Perception of Online Learning	1.71429	.253233	91	91.000
	Students' Satisfaction with Blended Learning	1.71612	.244564	91	91.000
	Students Perception of Teacher Factors Affecting Blended Learning	1.80800	.250933	91	91.000
	Gender	1.47253	.502011	91	91.000
	Age Bracket	2.06593	.786019	91	91.000
	Education Level	2.00000	.494413	91	91.000
	Marital Status	1.15385	.514740	91	91.000
	Students Mode of Study	1.08791	.284736	91	91.000
	Students Residence	1.63736	.483425	91	91.000
Total	**Students Estimated Family Income**	1.51899	.648220	237	237.000
	Students' Perception of Online Learning	1.69451	.294892	237	237.000
	Students' Satisfaction with Blended Learning	1.72377	.294236	237	237.000
	Students Perception of Teacher Factors Affecting Blended Learning	1.78420	.293551	237	237.000
	Gender	1.57384	.512380	237	237.000
	Age Bracket	2.08861	.805540	237	237.000
	Education Level	1.97468	.477671	237	237.000
	Marital Status	1.18565	.468640	237	237.000
	Students Mode of Study	1.10970	.313183	237	237.000
	Students Residence	1.63291	.483031	237	237.000

Table 5. Equality Tests for Group Means

Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
Students Estimated Family Income	.949	12.526	1	235	.000
Students' Perception of Online Learning	.997	.663	1	235	.416
Students' Satisfaction with Blended Learning	1.000	.100	1	235	.753
Students Perception of Teacher Factors Affecting Blended Learning	.996	.971	1	235	.326
Gender	.976	5.895	1	235	.016
Age Bracket	1.000	.117	1	235	.733
Education Level	.998	.414	1	235	.521
Marital Status	.997	.680	1	235	.411
Students Mode of Study	.997	.714	1	235	.399
Students Residence	1.000	.012	1	235	.911

Table 6. Standardized Canonical Discriminant Function Coefficients

Standardized Canonical Discriminant Function Coefficients	
	Function
	1
Students Estimated Family Income	1.411
Students' Perception of Online Learning	1.154
Students Perception of Teacher Factors Affecting Blended Learning	-2.364
Gender	-.638
Age Bracket	-.055
Education Level	.043
Students Mode of Study	.254
Students Residence	.644

4.0 DISCUSSION

Although current research by Mishra & Koehler, (2006) emphasized the role of lecturers in ensuring the correct execution of blended learning using the TPACK framework, with a focus on flexibility in curriculum and evaluation, the study's findings indicate that these features are not fully operational in reality. Several students are still ambivalent or unsure regarding the efficiency of professors in these subjects. This gap highlights the necessity for lecturers' professional growth in combining technology with educational approaches and topic expertise (Garrison & Kanuka, 2004; Keengwe et al., 2009). The outcomes are consistent with previous research on the importance of lecturer-student involvement and technological proficiency for effective blended learning (Liu et al., 2021; Tayag, 2020). The dialogue refers to KMTC's future path, which focuses on providing lecturers with the knowledge and tools they must fully adopt and efficiently execute blended learning methodologies. This strategy will increase not just student happiness, but also the general standard of education given.

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To improve the efficiency of blended learning at KMTC, Lecturer Excellence Awards should be established. These awards would recognize and motivate lecturers who succeed in managing blended learning environments. By recognizing lecturers who make substantial contributions to student academic development and involvement in medical courses, KMTC may encourage faculty members to enhance their technical and instructional abilities. This project not only promotes ongoing improvement in teaching techniques but also inspires lecturers to be creative and aspire for achievement in medical training results. This distinction might be critical in establishing a culture of quality and creativity in blended learning at KMTC.

Additional research should focus on the views and issues that lecturers confront while using blended learning in medical training. Studying lecturers' encounters, professional growth requirements, and barriers to implementing blended learning might provide useful information for faculty members. Furthermore, comparison studies across medical disciplines might evaluate the efficacy and consequences of blended learning while taking into account each field's specific learning objectives and constraints. Inter-institutional research, which includes several medical training institutions, can give a more comprehensive knowledge of blended learning in medical training, showing common issues and successful solutions. Furthermore, it is critical to investigate the elements that influence the acceptance and efficient execution of blended learning courses at medical institutions, such as organizational readiness, infrastructure requirements, and faculty support systems. Such studies would significantly add to the growth and optimization of blended learning in medical school.

5.0 CONCLUSION

The research critically examined lecturers' roles in adopting blended learning approaches at KMTC. The outcomes are consistent with the aims, offering important insights into lecturers' technical skills, curriculum creation, and student evaluation in blended learning contexts. Whereas the study emphasizes the significance of lecturers in increasing student engagement and academic achievement, it also highlights development opportunities, notably in pedagogical approaches and technological integration. It recommends new directions for future studies, such as understanding instructors' viewpoints and doing comparison studies across medical fields. These results are obtained by analyzing the data and are consistent with the study's objective.

5.1 Acknowledgments

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5.2 Conflicts of Interest

The researcher states that there is no conflict of interest linked to this work. This declaration assures that the research, assessment, and findings provided are neutral and centered on the study's primary aims.

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