International Journal of Research in Education Humanities and Commerce

Volume 06, Issue 02 "March - April 2025"

ISSN 2583-0333

INFLUENCE OF BLENDED TEACHING AND LEARNING STRATEGIES; AN ASSESSMENT OF STUDENTS' SATISFACTION WITH THE USAGE OF BLENDED LEARNING APPROACHES TO SUPPORT TRAINING STRATEGIES AT KENYA MEDICAL TRAINING COLLEGES (KMTC) IN NYANZA REGION, KENYA

COLLINS MOSES OWUOR (MBChB/MMed)
KCA University/ Kenya Medical Training College – Nairobi, Kenya

IGNATIUS MUNYIRI (PhD)
KCA University – Nairobi, Kenya

JACKSON MWANGI (PhD)
KCA University – Nairobi, Kenya Grace Achieng' Otieno (Bpharm/MPharm) – KMTC, Nairobi, Kenya

https://doi.org/10.37602/IJREHC.2025.6223

ABSTRACT

Background: This research evaluates students' satisfaction and training outcomes using blended learning approaches at Kenya Medical Training College (KMTC) in Nyanza Region, Kenya.

Methodology: This is mixed descriptive cross-sectional research that combined quantitative and qualitative information from 14 KMTC campuses in Kenya's Nyanza Region. Simple random and proportional stratified sampling procedures were applied to choose 280 respondents for the study. The information was collected via questionnaires, Focused Group Discussions (FGDs), and key informant interviews with an emphasis on research ethics and integrity.

Results: The outcomes revealed diverse attitudes to blended learning, with the majority acknowledging its flexibility and tailored strategy, while others expressed discontent. In particular, student satisfaction was impacted by variables other than academic success, such as lecturer assistance and individual learning styles.

Conclusion: Blended learning has the potential to improve student satisfaction and training outcomes, but its efficiency is contingent on student-specific requirements and lecturer engagement. The research highlights the need for flexible educational methodologies and continuous modification based on student input in medical training.

Keywords: Blended Learning, Medical Training, Student Satisfaction, KMTC, Training Outcomes, Flexible Teaching Strategies.

Volume 06, Issue 02 "March - April 2025"

ISSN 2583-0333

1.0 INTRODUCTION

Blended learning approaches are growing as a revolutionary force in an ever-changing educational setting. Globally, the techniques have redefined patterns of academic interaction between all stakeholders in the education scene. The merging of online and normative face-to-face training has been gradually implemented, notably in universities, providing students with a more flexible and individualized educational opportunity. Evidence from several studies emphasizes students' satisfaction with blended learning approaches (Garrison & Kanuka, 2004). For instance, research conducted at South East European University examined the links between blended learning and improved student satisfaction and academic performance (Zeqiri et al., 2021). The findings across different educational settings underscore the method's efficacy above traditional approaches.

The African continent faces challenges such as restricted educational opportunities and inadequate infrastructure. Blended learning is an important approach for providing exceptional educational opportunities economically. This is of special significance in medical training, where face-to-face learning comprises high college fees and regional constraints that restrict access (Bock et al., 2021). Consequently, the blended approach has promoted lecturer-student engagement through its flexibility and enabled the utilization of specialized materials, including books and online medical media, that are vital for training (Bock et al., 2021; Owuor, C., et al., 2024). Furthermore, improved communication creates avenues for prompt customization and response to specific student needs based on timely input (Bock et al., 2021).

The Kenyan environment, particularly at Kenya Medical Training College (KMTC), offers a unique opportunity to examine the influence of blended learning on student satisfaction and training outcomes. Amid worldwide optimism for blended learning, problems remain particularly students' troubles with educational software and the desire for immediate lecturer replies, which might dampen satisfaction (Kintu et al., 2017). Additionally, designing blended learning platforms and curriculum specifications is critical to increasing student satisfaction and training results (Alzahrani, 2017).

Research on the efficacy and flexibility of the blended learning approach in medical training is essential for KMTC. The capacity of this model to accommodate different learning habits, provide scheduling flexibility, and promote student engagement, particularly in medical courses, fits current training expectations (Müller & Mildenberger, 2021). Nonetheless, preserving the equilibrium of technology's availability and educational framework holds fundamental significance (Thai et al., 2020; Owuor, C., et al, 2021)

1.1 Problem Statement:

Despite the global shift towards blended learning, integrating online and face-to-face instruction, its impact on student satisfaction and training outcomes in medical education remains underexplored in Kenya. Kenya Medical Training College (KMTC), particularly in the Nyanza Region, faces challenges in adapting to these innovative teaching methods due to limited resources, varying technological proficiency among students, and the need for greater lecturer support. While blended learning offers flexibility and personalized learning opportunities, the extent to which it enhances student satisfaction and training outcomes at KMTC has not been thoroughly investigated. This gap calls for an evaluation of how

effectively blended learning is meeting the needs of medical students and contributing to improved educational outcomes.

1.2 Purpose of the Study:

The purpose of this study is to assess the influence of blended learning approaches on student satisfaction and training outcomes at Kenya Medical Training College (KMTC) campuses in the Nyanza Region. Specifically, the study aims to evaluate how blended learning facilitates course management, improves motivation, and enhances overall student satisfaction. Additionally, the research will explore the role of students' technological skills and demographic factors, such as age and gender, in shaping their experiences and satisfaction with blended learning. The findings will provide insights for refining and optimizing blended learning strategies in medical training at KMTC

1.3 Study Objective

The research aimed to evaluate students' satisfaction and training outcomes using blended learning approaches at Kenya Medical Training College (KMTC) in Nyanza Region, Kenya. This involved inquiring whether blended learning eased course management, motivation, and satisfaction with the approach and the impact of the student's technological skills on the blended learning experience. Additionally, the study examined the relationship between demographic variables and satisfaction with blended learning.

2.0 MATERIALS AND METHODS

2.1 Research Design

The research employed a mixed descriptive cross-sectional technique. This technique integrated quantitative and qualitative data collection to ensure authenticity and synergy. The quantitative part showed connections between factors, perspectives, and events that helped to understand the population's behavior (Martin et al., 2013). The descriptive study gave a full account of current circumstances, activities, and procedures.

2.2 Study Location

The research was carried out across 14 purposefully selected KMTC campuses in Kenya's Nyanza Region of Kenya, a major base for medical training. The choice provided a diversified and valid sample from a variety of regions and towns, ensuring that the study's conclusions were widely relevant.

2.3 Population and Sampling

The survey recruited 9,954 students from 14 KMTC campuses in the Nyanza Region, Kenya. Simple random and proportional stratified sampling procedures were applied to choose 280 respondents, assuring distribution by gender, study level, age, department, and campus location. This strategy reduced possible biases and guaranteed that the sample was accurate (Bujang, 2021).

Volume 06, Issue 02 "March - April 2025"

ISSN 2583-0333

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 Techniques

Structured and semi-structured questionnaires collected primary data, Focused Group Discussions (FGDs), and key informant interviews. The questionnaires, which were conducted using an encrypted online toolbox, collected quantitative data, and FGDs and interviews supplied qualitative feedback. The data-gathering techniques were developed to protect individual anonymity and privacy.

2.5 Ethical Considerations

The research met ethical requirements, with clearance from KCA University's graduate school dean and a research license from the National Commission for Science, Technology, and Innovation (NACOSTI) (license No: NACOSTI/P/23/2358). Approval to conduct research at KMTC was sought from the institution's main office and principals from the 14 campuses in the Nyanza region, Kenya. Each participant provided authorized consent, which ensured their rights and privacy.

2.6 Research Validity and Reliability

The research tools were verified by professional review and pilot testing at the KMTC Kuria and Vihiga campuses. The pilot study group comprised each gender and several demographic variables. Cronbach's alpha value ($\alpha = 0.86$) and kappa coefficient ($\kappa = 0.87$) were used to confirm the reliability of questionnaires and qualitative data, respectively. Cronbach's alpha value assured the internal coherence of the questionnaires (Kennedy, 2022). The Kappa coefficient guaranteed a high degree of agreement between the coders (Halimoon et al., 2021).

2.7 Data Analysis Techniques

The data was coded and assessed using SPSS software version 28. Descriptive statistics, MANOVA, Mixed-Effect Regression Model analysis, Multiple Logistic Regression analysis,

Volume 06, Issue 02 "March - April 2025"

ISSN 2583-0333

and the Generalized Estimate Equation model were used to investigate the associations between variables while accounting for individual differences and confounding factors.

3.0 RESULTS

Data analysis from the research that examined students' satisfaction and training outcomes using blended learning approaches at Kenya Medical Training College (KMTC) in Nyanza Region, Kenya, revealed several important outcomes. The questions involved filling out responses to statements on a Liker-T scale format to offer numerical values to facilitate the assessment of students' viewpoints. The research received a high response rate, with 237 of 280 questionnaires successfully evaluated, accounting for 84.6% of the intended population.

The research inquired as to whether blended learning enabled easier course management for the students. When asked if blended learning made managing coursework easier, replies were divided. A sizable proportion of students, 27.3%, strongly agreed, and 12.5% agreed, suggesting a favorable response. 22.5% of the students maintained a neutral opinion on the subject. However, 23.9% disagreed, with 13.6% strongly disagreeing, indicating that students' perceptions vary. The average response had a standard deviation of 1.413, which indicated a neutral opinion.

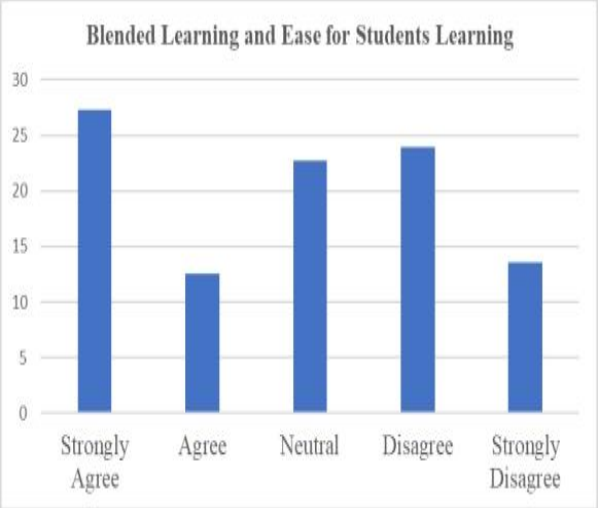

Figure 1. Blended Learning and Ease for Students' Learning Bar Graph

The study investigated the students' motivation and satisfaction with the blended learning approach. Submissions on whether blended learning is motivating, flexible, and enjoyable revealed split opinions. Although 21.6% strongly agreed and 18.2% agreed, 27.3% disagreed, and 8% strongly disagreed. 25% of the students maintained a neutral perspective. The total average response evaluation revealed that students held a neutral opinion with a standard deviation of 1.273.

Moreover, the influence of blended learning on student involvement and creativity yielded a range of findings. The distribution is as follows: 15.9% strongly agreed, 20.5% agreed, 26.1% neutral, 29.5% disagreed, and 8% strongly disagreed with its efficacy. Generally, the resulting

standard deviation of 1.211 suggests a clustered opinion around the mean of 3.07, suggesting neutrality.

Students' technological expertise had a substantial impact on their blended learning experience. 39.7% of technologically proficient students preferred blended learning, whereas 36.4% had indifferent or unfavorable sentiments. Additionally, perspectives on the increasing implementation of blended learning in medical training were divided. The percentage distribution of the analyzed feedback was as follows: 25% strongly agreed, 14.8% agreed, 22.7% neutral, 28.4 disagreed, and 9.1% strongly disagreed. A mean of 3.18 and a standard deviation of 1.335 depict mixed feelings on the gradual rollout of blended learning methods in medical schools.

A multivariate analysis was used to examine variables such as students' family income, age, marital status, educational level, opinion of online learning, and satisfaction with blended learning. The results revealed substantial variations in the means of the groups preferring and not preferring blended learning. The discriminant function analysis identified family income and perceptions of online learning as important factors. The classification data showed a moderate predictive accuracy for estimating student preferences, with a hit ratio of 63.7%, implying a relatively strong predictive ratio but a 36.3% possibility of misclassification.

Table 2. 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 3. Tests for Equality 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

Volume 06, Issue 02 "March - April 2025"

ISSN 2583-0333

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 4. Canonical Discriminant Function Coefficients

Canonical Discriminant Function Coefficients	
	Function
	1
Students Estimated Family Income	2.229
Students' Perception of Online Learning	3.909
Students Perception of Teacher Factors Affecting Blended Learning	-8.053
Gender	-1.259
Age Bracket	-.068
Education Level	.090
Students Mode of Study	.811
Students Residence	1.331
(Constant)	3.231
Unstandardized coefficients	

Table 5. Functions at Group Centroids

Functions at Group Centroids	
	Function
Students' Preference for Blended Learning	1
Preferred	-.259
Not Preferred	.416
Un-standardized canonical discriminant functions evaluated at group means	

4.0 DISCUSSION

The results report that student satisfaction with blended learning at KMTC varies, which coincides with and compares with diverse findings in previous literature. The majority of students enjoyed blended learning's flexibility and individualized approach, resulting in enhanced performance and satisfaction, similar to studies by Zeqiri et al. (2021) and Garrison

& Kanuka (2004). However, concerns similar to those described by Kintu et al. (2017), such as problems with educational management systems and the requirement for precise guidelines, were also present. These divergent outcomes underscore the need for a deeper comprehension of blended learning's influence in various educational settings, notably in medical education, emphasizing the significance of continuous adaptation and development in blended learning methodologies.

Students' satisfaction with blended learning at KMTC was found to not only depend on training outcomes. This is in line with studies stressing the importance of lecturer assistance in the educational experience (Garrison & Kanuka, 2004). The variance in student replies on lecturer assistance in this research highlights the necessity for standardized and flexible training approaches, underlining the value of proactive lecturers, which is also noted in broader academic research, for instance, Garrison & Kanuka (2004).

The study recognizes students' varying engagement with blended learning at KMTC, mirroring the diversity of student participation shown in larger studies. It emphasizes how unique traits, such as study habits and individual inclinations, have a substantial impact on student engagement using blended learning approaches similar to findings by Torrisi-Steele and Drew (2013). The study by Torrisi-Steele and Drew (2013) focused on the hurdles experienced by students who are more introverted or less adaptable to group dynamics, echoing issues raised in this research concerning inclusion in educational techniques. This emphasizes the significance of creating flexible and open blended learning solutions that can meet a wide range of student requirements and learning styles.

The report recommends that KMTC frequently seek student input to resolve disconnects in satisfaction with blended learning. Periodic surveying of students will allow KMTC to improve the structure and roll out of its blended medical programs. Students' experiences and views provide valuable information for improving educational approaches. Furthermore, given the influence of demographic variables on training outcomes, it is suggested that KMTC implement targeted support initiatives. These programs, which cater to individual requirements, may provide funding, transportation, or academic assistance, helping students in resolving the barriers associated with medical training.

Subsequent studies should investigate specific factors of blended learning that influence students' satisfaction. Further research into topics like curriculum design, engagement tactics, and the applicability of technology in medical training will yield a more profound understanding of enhancing the educational experience for students. Furthermore, research into best practices for developing and offering blended learning systems in medical training is advised. This involves factoring in the special demands of medical training, such as practical experiences and patient participation. There is a need to explore the effects of blended learning on students' professional growth with a focus on actual practice and patient relationships. The findings inform on the effectiveness of blended learning in the training and post-training phase.

5.0 CONCLUSION

The research discovered that, although many students found blended learning efficient, satisfaction levels differed, highlighting the importance of flexible teaching strategies. It is critical to differentiate between the statistical importance of the results and their practical

applications in a medical training context. Although the research provides useful information regarding student interactions with blended learning, it fails to include general assertions regarding the economic advantages. Future research should look into the factors of blended learning influencing students' satisfaction, optimal design and delivery procedures for blended learning systems in medical training, and the effects of blended learning methods in the health sector.

5.1 Acknowledgment

I am expressing my deepest appreciation to the Kenya Medical Training College (KMTC) for its exceptional assistance and resources, which were essential to the research. Particular thanks to the KMTC students for their involvement and perspectives, which enriched the project's results. My supervisors, Dr. Ignatius Nyaga Munyiri and Dr. Jackson Mwangi are commended for their advice and experience. I am also grateful to the KMTC personnel, as well as my friends and family, for their ongoing support throughout this study. Finally, I acknowledge the academic and research community that established the basis for blended learning studies.

5.2 Conflicts of Interest

The author states no conflicts of interest in the development or delivery of this work. The research was performed objectively and impartially, with no interference from outside influences.

REFERENCES

Alzahrani, M. G. (2017). The Effect of Using Online Discussion Forums on Students' Learning. Turkish Online Journal of Educational Technology - TOJET, 16(1), 164–176. https://eric.ed.gov/?id=EJ1124930

Bock, A., Kniha, K., Goloborodko, E., Lemos, M., Rittich, A. B., Möhlhenrich, S. C., Rafai, N., Hölzle, F., & Modabber, A. (2021). Effectiveness of face-to-face, blended and e-learning in teaching the application of local anesthesia: a randomized study. BMC Medical Education, 21(1). https://doi.org/10.1186/s12909-021-02569-z

Bujang, M. A. (2021). A Step-by-Step Process on Sample Size Determination for Medical Research. Malaysian Journal of Medical Sciences, 28(2), 15–27. https://doi.org/10.21315/mjms2021.28.2.2

Garrison, D. Randy., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. The Internet and Higher Education, 7(2), 95–105. https://doi.org/10.1016/j.iheduc.2004.02.001

Halimoon, H., Mukhtar, M. I., & Roddin, R. (2021). Validity and Reliability of Practical Teaching Practice Instruments among Construction Technology Lecturers in Vocational Colleges. Journal of Technical Education and Training, 13(3), 162–171. http://penerbit.uthm.edu.my/ojs/index.php/JTET/article/view/7912

Kennedy, I. (2022). Sample Size Determination in Test-Retest and Cronbach Alpha Reliability Estimates. British Journal of Contemporary Education, 2(1), 17–29. https://doi.org/10.52589/bjce-fy266hk9

Kintu, M. J., Zhu, C., & Kagambe, E. (2017). Blended learning effectiveness: the relationship between student characteristics, design features, and outcomes. International Journal of Educational Technology in Higher Education, 14(1), 1–20. https://doi.org/10.1186/s41239-017-0043-4

Martin Lee Abbott, & McKinney, J. (2013). Understanding and Applying Research Design. John Wiley & Sons.

Müller, C., & Mildenberger, T. (2021). Facilitating Flexible Learning by Replacing Classroom Time with an Online Learning Environment: A Systematic Review of Blended Learning in Higher Education. Educational Research Review, 34, 100394. https://doi.org/10.1016/j.edurev.2021.100394

Owuor, C., Tshombe, D., Musuya, A., and Otieno, G (2021) "FACTORS AFFECTING STUDENTS ASSESSMENTS PERFORMANCE: CASE OF KENYA MEDICAL TRAINING COLLEGE (AN OPERATIONAL STUDY OF KMTC)". African Journal of Education and Practice, 7(2). https://www.iprjb.org/journals/index.php/AJEP/article/download/1257/1373

Owuor, C., Otieno, O. G., Kinyua, K., Shunet, N. S., Muirugi, H. M., and Otieno, S. A (2024) "SOCIODEMOGRAPHIC RISK FACTORS OF MENTAL HEALTH AND ACADEMIC PERFORMANCE IN THE CONTEXT OF ADOPTION OF ADOPTION OF INNOVATIVE TECHNOLOGIES AT THE KENYA MEDICAL TRAINING COLLEGE (KMTC): A CRITICAL REVIEW OF LITERATURE". International Journal of Research in Education Humanities and Commerce. https://doi.org/10.37602/IJREHC.2024.5502

Thai, N. T. T., De Wever, B., & Valcke, M. (2020). Face-to-face, blended, flipped, or online learning environment? Impact on learning performance and student cognitions. Journal of Computer Assisted Learning, 36(3). https://doi.org/10.1111/jcal.12423

Torrisi-Steele, G., & Drew, S. (2013). The Literature Landscape of Blended Learning in Higher Education: The Need for Better Understanding of Academic Blended Practice. International Journal for Academic Development, 18(4), 371–383. https://www.learntechlib.org/p/156164/

Zeqiri, J., Kareva, V., & Alija, S. (2021). Blended Learning and Student Satisfaction: The Moderating Effect of Student Performance. Business Systems Research Journal, 12(2), 79–94. https://doi.org/10.2478/bsrj-2021-0020

