INDIVIDUAL FACTORS INFLUENCING BLENDED LEARNING AMONG STUDENTS IN KENYA MEDICAL TRAINING COLLEGE

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Abstract

Purpose: The objective was to determine the individual factors of blended learning among students in Kenya Medical Training College.

Methodology: A cross-sectional descriptive study was done. In the KMTC campuses the average student population is thirty thousand (30,000). The research used simple random sampling in the selected campuses. The sample size was 384. Primary data was collected using questionnaires and Quantitative data was analyzed using descriptive statistics whereas qualitative data was analyzed using content analysis. Qualitative data was transformed into themes and analyzed with the helped of SPSS version 25. Collected data was edited, sorted, cleaned and coded for data analysis.

Findings: The study revealed that Student's departments, course of study and level of study have an influence in achievement of blended learning. There is an association at 5% significant level between having a device to use in online learning and attending virtual classes, χ^2 *(1, N= 396) = 4.393, p = 0.036*. The Phi = *.105, p = .036*. At 5% significance level, there is an association between student's proficiency in using learning applications and the percentage of attending virtual classes, χ^2 *(6, N= 230) = 16.889, p = .010*.

Unique contribution to Theory, Practice and Policy: The study recommends that departments should be strengthened to offer both virtual and face to face sessions The College should ensure that students participating in blended-Learning courses have access to adequate and appropriate learning resources. Students have access to Page Library and also the virtual library resources within the College.

Keywords: *Individual Factors, Blended Learning, Students, Kenya Medical Training College.*

INTRODUCTION

Today's educational institutions are expected to create learning opportunities independent of time and place, to offer easily accessible learning environments and interpersonal communication opportunities. Accordingly, higher education institutions develop strategies to meet these expectations through teaching strategies, such as e-learning, blended learning, mobile learning, etc., by using teaching technologies. These new technology-based teaching strategies are mainly shaped by decision-makers in education. Today's educational institutions are expected to create learning opportunities independent of time and place, to offer easily accessible learning environments and interpersonal communication opportunities (NMC Horizon Report, 2017). Accordingly, higher education institutions develop strategies to meet these expectations through teaching strategies, such as e-learning, mobile learning, distance learning, etc., by using teaching technologies. Besides, the concept of blended learning, which combines good learning practices, including both online and face-to-face practices, is more and more commonly employed in higher education institutions. These new technology-based teaching methods are mainly shaped by decision-makers in education. However, one of the important stakeholders of this process is the learners. In e-learning, which are relatively new learning environments, it is known that learners' learning strategies (Broadbent, 2017).

Blended learning is a teaching method that incorporates enhanced interaction using face-to-face teaching methods as well as various instructional technologies to improve teaching (Kintu, Zhu, & Kagambe, 2017). What is noteworthy here is that blended learning allows one to benefit from the conveniences offered by online learning during face-to-face contact (Rovai & Jordan, 2004). Educators believe that teaching using multiple communication channels can significantly increase learning outcomes and enhance student satisfaction (Kintu, Zhu, & Kagambe, 2017). In technology-based online learning practices, students cannot sufficiently benefit from these practices due to reasons such as the sense of loss, isolation, and lack of online communication skills, etc. Therefore, blended learning has an important advantage over online learning. Blended learning is considered as a short-term trend in the 2017 NMC Horizon Report for Higher Education. Due to this and many other reasons, blended learning practices, which presents a combination of both face-to-face education and online learning opportunities, have become more and more popular today. Blended learning practices offer an effective teaching method for learners with different learning styles and self-regulation skills. Hence, the literature revealed the positive effect of online and blended learning practices on learning for different teaching situations. Research studies involving student's learning in blended learning environments have focused on the correlations of demographic variables with learning performance and participation (Kintu, Zhu, & Kagambe, 2017)

One of the major individual challenges is the technological challenges. The technical challenges are not about getting technology to work on networks. Rather, they consist of ensuring the success of the programme by utilizing and supporting appropriate technologies. Technical challenges include; ensuring participants can successfully use the technology; resisting the urge to use technology simply because it is available (Hofmann, 2011). The other major challenge is instructional design challenges. When learning technologies are introduced, attention is often paid

to the technology implementation, while the design of the actual appropriate content is left with too little time and budget to create a successful programme. Instructional design challenges include-; Looking at how to teach, not just what to teach; Matching the best delivery medium to the performance objectives; Keeping online offerings interactive rather than just "talking at" participants; Ensuring participant commitment and follow-through with "non-live" elements; Ensuring all the elements of the blend are coordinated (Hofmann, 2011)

E-readiness Survey of Kenyan Universities (2013) Report identified that only 11% of students in Kenyan universities are taking their courses using e-learning in blended mode (Kashorda and Waema, 2014). Kenya Vision 2030 key strategies on education is introducing e-learning and blended learning as a way of improving both access and quality of education in Kenyan institutions of higher learning (NESC, 2007).

Nafukho, (2005) highlights that Information Communication and Technology (ICT) use by African universities should focus on indirect and direct education cost reduction as well as increased access to education. E-learning overcomes the barrier of access to education. Students who lack access to education through barriers such as geographical distance, work, time, family responsibilities and lack of money can get access through online learning. E-learning will ensure that learners learn at their own speed. Employees can update their skills and upgrade their qualifications at their own pace through e-learning. The other inhibition is cultural context of ICT adoption, language barriers and attitudes towards ICT which affects the rate at which it is adopted. The perceived difficulty in the integration of ICT in education is based on believe that technology is challenging and its implementation requires extra time (Fourier, 2002).

Ssekakubo *et al.,* (2011) point out that majority of e-learning initiatives implemented in Sub-Saharan countries tend to fail, partially or totally due to various barriers to e-learning in developing countries. The absence or inadequacy of infrastructure is a barrier to access among students in developing countries. Touray *et al.,* (2013) identified 43 ICT barriers in developing countries that were grouped into eight possible critical success factors, namely socio-cultural, infrastructural, political and leadership, legal and regulatory, economical, educational and skills, security and safety and technical. In Saudi Arabia, according to Al-Ghaith *et al.,* (2010), the quality of the Internet was an important factor influencing the adoption and usage of e-learning.

Problem statement

Blended learning is a new approach to improving the quality of medical education. Acceptance of blended learning plays an important role in its effective implementation. In this regard, the acceptance of blended learning is considered critical in determining the success of the technology implementation. Teachers are reluctant to use ICT and some do not use it effectively during the implementation of a new system where one of the common issues is resistance to change (Salim, Lee, Ghazali, Ching, Ali, Shamsuddin & Dzulkarnain, 2018). The adoption level of each teachers to change are closely related to the failure or success of the implementation introduced.

METHODOLOGY

The specific objectives are to find out individual challenges, find out social economic challenges and institutional challenges. A cross-sectional descriptive study will be done. In the KMTC campuses the average student population is thirty thousand (30,000). The research will use simple random sampling in the selected campuses. The sample size will be 384. Primary data will be collected using questionnaires and Quantitative data will be analyzed using descriptive statistics whereas qualitative data will be analyzed using content analysis. Qualitative data will be transformed into themes and analyzed with the helped of SPSS version 25. Collected data will be edited, sorted, cleaned and coded for data analysis.

RESULTS

Introduction

A total of 396 responses were recorded representing 101% response. According to (Mugenda O, 2003) a response rate of 50% is adequate for analysis and reporting. Data was analyzed using SPSS version 25 and various descriptive statistics were employed to include frequencies and percentages. Chi square test was used to test for the strength of association at a P value of <0.05 between the various independent variables and the dependent variable.

Demographic characteristics of the study population

Campus

Campus	Frequency	Percent
Eldoret	17	4.3
Garissa	38	9.6
Gatundu	55	13.9
Kisumu	113	28.5
Kitui	68	17.2
Mathare	19	4.8
Others	5	1.3
Port Reitz	50	12.6
Vihiga	31	7.8
Total	396	100.0

Table 1: Campus Distribution

Table 1 above the distribution of student responses across the campuses. Clearly, a large portion of responses were from Kisumu campus with 28.5% of the total responses followed by Kitui, Gatundu, Port Reitz campuses with 17.2%, 13.9% and 12.5% respectively. The campus with the lowest response is Eldoret with only 4.3% of the overall response rate.
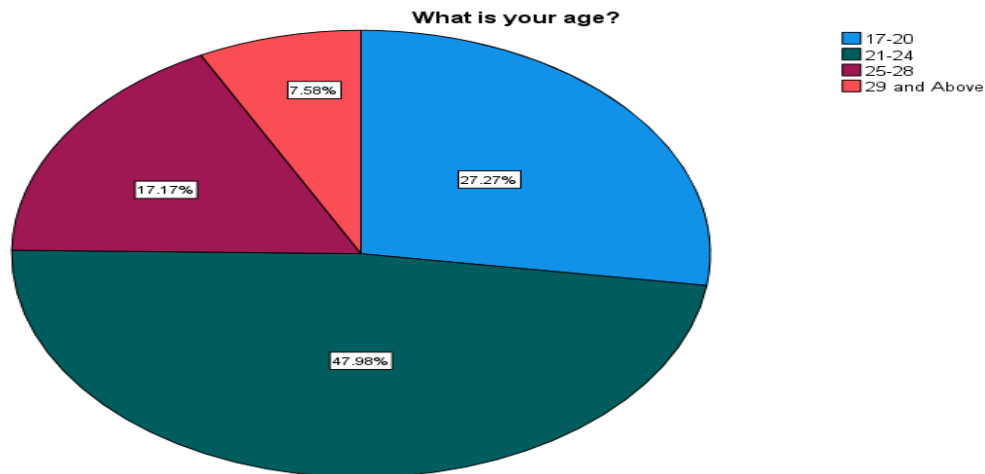
Age

Figure 1: Age Distribution Pie Chart

Based on age distribution, a large portion of the respondents falls in the 21-24 age bracket, i.e., 48% of the total respondents. Students aged between 17 years and 20 years constitutes 27.3% while those between 25 years and 28 years contributes 17.2% of the total respondents of the sample. Those above 28 years makes up only 7.2% of the study sample
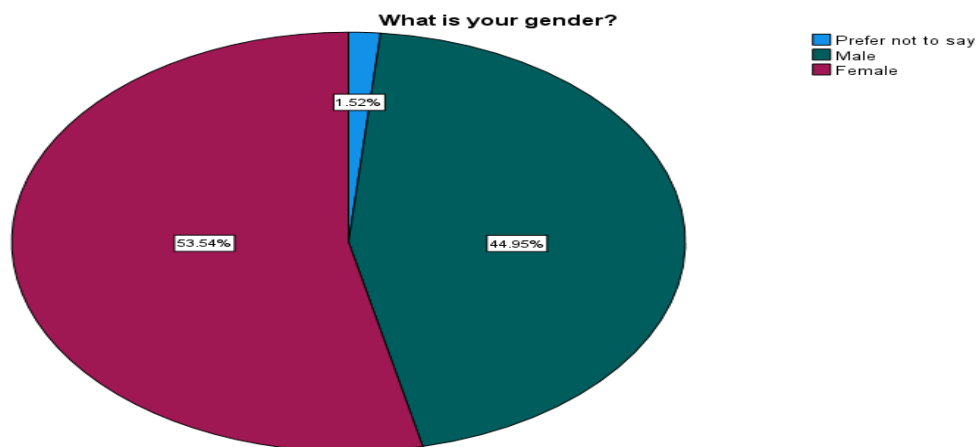
Gender

Figure 1: Pie Chart for Gender

As shown in **Error! Reference source not found.** and Figure 1, 44.9% of the respondents are male while 53.5% are female. Only 1.5% of the respondents didn't disclose their gender. Hence, the study sample has a well representation of gender.
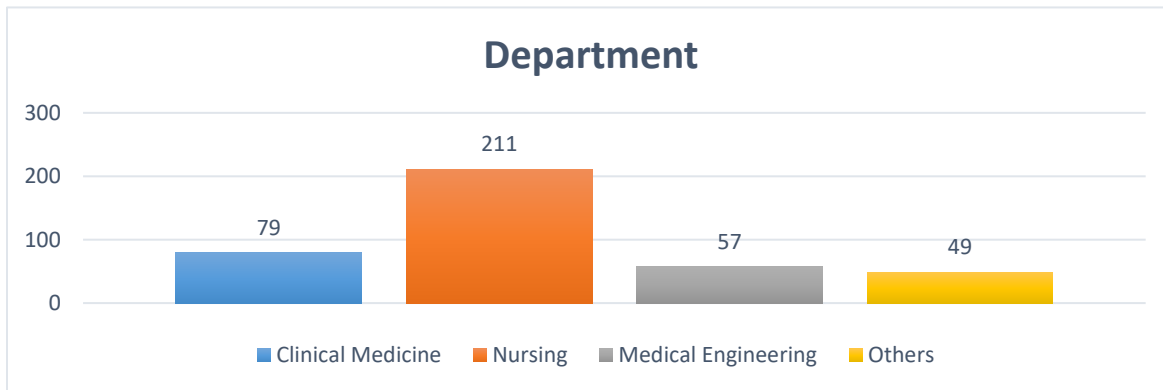
Department

Figure 3: Pie Chart for Department

The distribution of the sampled students based on the departments indicates that majority of the respondents belongs to the nursing department, i.e., 53.3%. The proportion of respondents from the Department of Clinical Medicine and Medical Engineering are 19.9% and 14.4% respectively. Other departments contributed only 12.4%.

Course

Course	Frequency	Percent
Certificate	139	35.1
Diploma	252	63.6
Higher Diploma	5	1.3
Total	396	100.0

Table 2: Course Distribution

The distribution of the respondents based on the courses they are pursuing is presented in 2 Clearly, a large percentage of the students sampled are pursuing diploma courses, i.e., approximately 64% of the sample. On the other hand, 35.1% are certificate students while 1.3% are higher diploma students.
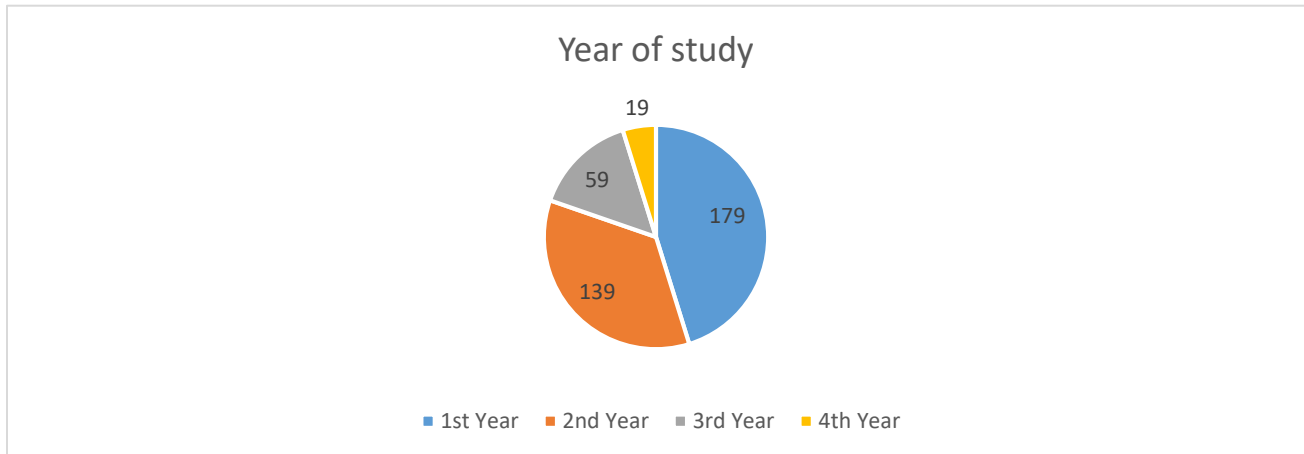
Level of study

Year of study

Figure 4: Pie Chart for the Level of Study

From the sample data, 45.2% are first year, 35.1% are second year, 14.9% are third year while only 4.8% are fourth year students. Clearly, majority of the students in the sample are first years.

Individual factors influencing blended learning

Access to E-learning platform

Accessed E-learning platform	Frequency	Percent
Not sure	2	.5
Yes	220	55.6
No	174	43.9
Total	396	100.0

Table 3: Access to KMTC E-Learning Platform

From the table, 55.6% have been able to access the e-learning platform while 43.9% haven't been able to access it.

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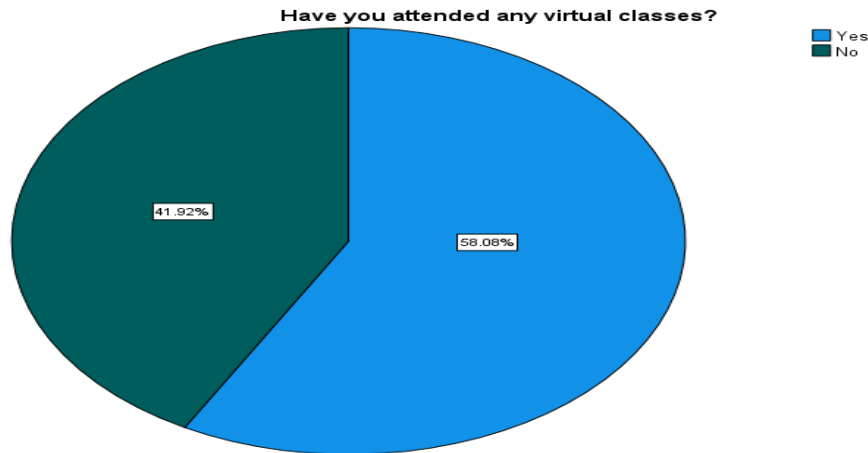## Attendance of virtual classes

Figure 5: Virtual Classes Attendance

The percentage of the students among the respondents that attended virtual classes at KMTC is 58.1%. The implication here is that 41.9% have never attended classes virtually. The pie chart presented in 5 shows the graphical representation of virtual class attendance of the students. Clearly, a large proportion of KTMC student have accessed classes virtually.

Percentage of attendance

what is the percentage of your attendance?		
Percentage	**Frequency**	**Percent**
90%-100%	79	34.3
80%-90%	36	15.7
70%-80%	28	12.2
Below 70%	87	37.8
Total	230	100.0

Table 4: Percentage of Virtual Class Attendance

Among those of who have attended the classes virtually, 37.8% attended in less than 70% of the time. The proportion of those who attended the virtual classes over 90% of the time is 34.4% of the sampled students. Cumulatively, the students that have attended virtual classes for at least 70% of the time is 62.2%. The frequency table of the virtual attendance is presented in Table .
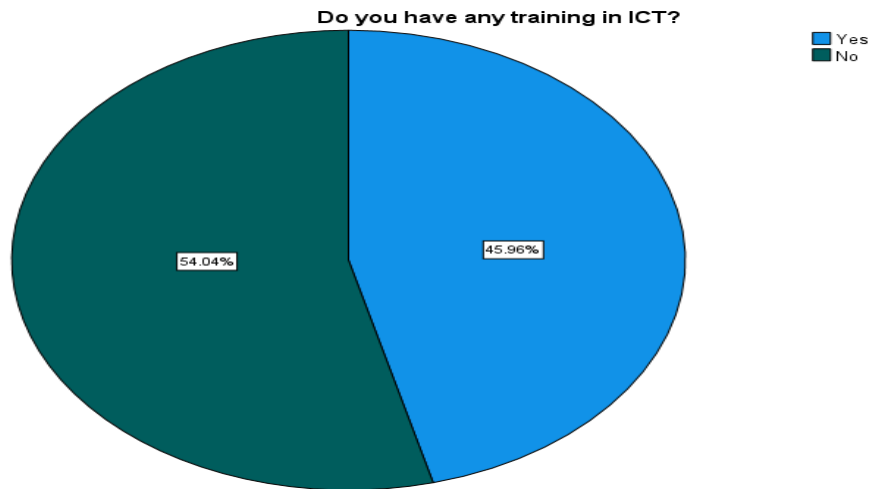
ICT Training

Figure 6: Pie Chart for ICT Training

The percentage of students with training in ICT is 46% while those without the training is 54%.

Proficiency on using learning applications

	Frequency	Percent
Good	146	36.9
Fair	207	52.3
Poor	43	10.9
Total	396	100.0

Table 5: Proficiency in Using Learning Applications

Most of the students (52.3%) have fair proficiency in using learning applications in their phones of laptop. On the other hand, 36.9% and 10.9% have good and poor proficiency respectively as shown in above.

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Perception of blended learning

(i) Blended learning is beneficial to students		
	Frequency	Percent
Neither	7	1.8
Agree	252	63.6
Disagree	72	18.2
Strongly Agree	38	9.6
Strongly Disagree	27	6.8
Total	396	100.0
(ii) Blended learning helps students understand more		
	Frequency	Percent
Neither	102	25.8
Agree	172	43.4
Disagree	75	18.9
Strongly Agree	24	6.1
Strongly Disagree	23	5.8
Total	396	100.0
(iii) Blended learning is expensive		
	Frequency	Percent
Neither	104	26.3
Agree	156	39.4
Disagree	43	10.9
Strongly Agree	79	19.9
Strongly Disagree	14	3.5
Total	396	100.0

Table 6: perception on E-learning

Among the respondents, 63.6% are agreement that blended learning is beneficial to students while 18.2% disagree. In overall, the students who agree and strongly agree that blended learning is beneficial to student is approximately 73%, 1.8% neither agree nor disagree while the rest disagree.

Similarly, 43.4% of the respondents are agreement that blended learning helps students understand more while 18.9% disagree. Also, 25.8% of the students neither agree nor disagree with the statement. On the other hand, 6.1% and 5.8% of the student strongly agree and strongly disagree that blended learning helps students understand more. In general, therefore, 49.5% and 24.7% of the students disagree with the statement

Among the respondents, 39.4% feel that blended learning is expensive while 19.9% strongly feel that it is expensive. In overall, the students who agree and strongly agree that blended learning is expensive is approximately 59%. Also, 26.3% neither agree nor disagree while 10.9% and 3.5% disagree and strongly disagree that the learning model is expensive.

The chi-square statistical analysis was used to determine the relationship between the variable used in the study. The significance level was set at 5%.

There exist an association between the student's department and his/her attendance of virtual classes, χ^2 *(3, N= 396) = 58.125, p < 0.01*, at 5% significance level. The Cramer's V = .383, p < .01, hence the association is very strong.

There also exist a strong association between the campus of the student and the attendance of virtual classes, χ^2 *(8, N= 396) = 39.622, p < 0.01*, at 5% significance level. The Cramer's V = .316, p < .0.

There exist a strong association between the student's course and the attendance of virtual classes, χ^2 *(2, N= 396) = 72.404, p < 0.01*, at 5% significance level. The Cramer's V = .420, p < .01.

Similarly There is a strong association at 5% significant level between the student's level of study and attending virtual classes, χ^2 *(3, N= 396) = 101.183, p < 0.01*. The Cramer's V = .505, p < .01.

There is a negligible association at 5% significant level between having a device to use in online learning and attending virtual classes, χ^2 *(1, N= 396) = 4.393, p = 0.036*. The Phi = .105, p = .036.

At 5% significance level, there is a weak association between student's proficiency in using learning applications and the percentage of attending virtual classes, χ^2 *(6, N= 230) = 16.889, p = .010*.

There exist not association between the age of the student and the attendance of virtual classes, χ^2 *(3, N= 396) = 7.791, p = 0.051 > 0.05*, at 5% significance level. The Cramer's V = .140, p = .051.

There is no association between student's gender and attending virtual classes, χ^2 *(2, N= 396) = 4.772, p = 0.092 > 0.05*, at 5% significance level.

At 5% significance level, there is no association between student's county of residence and attending virtual classes, χ^2 *(41, N= 396) = 52.454, p = 0.108 > 0.05*.

Conclusions

The study concluded that Student's departments, course of study and level of study have an influence in achievement of blended learning. The study also concluded that tblended learning is beneficial to students, blended learning helps students understand and that blended learning is expensive

Recommendations

The study recommends that departments should be strengthened to offer both virtual and face to face sessions The College should ensure that students participating in blended-Learning courses have access to adequate and appropriate learning resources. Students have access to Page Library and also the virtual library resources within the College.

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