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Effect of Frequency of using Social-Media on Academic Performance of Students in Primary School Teachers' Training Colleges in Vihiga County, Kenya

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Abstract

The study investigated the effect of frequency of social media usage on academic performance of students in primary school teachers' training colleges (TTCs) in Vihiga County, Kenya. The Technological Determinism theory by McLuhan Marshall (1964) guided the study. Correlation survey research design was employed in the study with the aid of mixed method approach. It was conducted in 6 colleges. The target population of 1584 comprised of 6 principals, 100 tutors and 1478 students. The 6 colleges and the 6 principals were sampled purposively. Simple random sampling technique was used to select 306 students and 80 tutors using the table developed by Krejcie and Morgan (1970) to give a sample size of 392. Questionnaires and interview guide were used to collect data. Validity and reliability were determined by piloting these tools in 2 teachers' training colleges in the neighbouring Kakamega County. Reliability was established through the Cronbach's alpha coefficient which yielded acceptable values of 0.78 and 0.80 for the questionnaires issued to tutors and students, respectively. The Statistical Package for Social Sciences version 20 assisted in data analysis. Quantitative data was analysed descriptively using frequencies and percentages. It was presented in tabular form. It was also analysed inferentially using Pearson Product Moment Correlation, Regression and ANOVA to test if a correlation existed between the variables. The study findings revealed that a positive significant association existed between the independent and the dependent variables since $p = 0.000 < 0.05$. The rejection of the null hypothesis led to a conclusion that the frequency of using social media influenced academic performance. The study recommended that students should always use appropriate social media platforms to bolster their academic performance.

Keywords: *Academic performance; colleges; frequency; social media*

1. Introduction

Carly and Anna (2016) argued that social media are online interaction based virtual societies or networks where online relations are created and nurtured by allowing people, communities and organizations to create and disseminate content generated by users like images, videos, memos, texts and profile pages for individuals or groups. Frequency of using social media is best measured by the number of hours spent on online events on social media. Efstratia and Martijn (2016) defined frequency of using social media as the time (or number of hours) spent per day by informants on online events in social media like Facebook, Twitter and others. Social media taking a big part of all online activities. For instance, Hunter (2012) said Facebook is the giant and most widely used social media in the world since the number of its monthly active users by 2012 reached one billion.

Many people of all ages, races and places of residence in the world spend many hours on social media with the major daily users being young adults, adolescents and teenagers (Pagoto et al., 2016). For instance, the data by Mediabistro (2014) showed that the daily number of users using the top ten social media by 2014 rose to over 4.5 billion and the average time they spend on social media daily was 2 hours 43 minutes. Argentina led on using social media by spending over 4 hours 3 minutes daily. Japanese were the least spenders as they used about 0.8 hours daily. Rosen



(2011) said people born between 1990 and 1999 spend over 20 hours in a day on online sites. Presently 8 to 18-year-old youths use about 7 hours 38 minutes on entertainment in a day. It is the same time adults spend per day at work. According to Duggan (2015), the use of social media by American teens rose by over 75%.

Shukor et. al. (2017) said that over 50% of Malaysian students spend 4 hours per day on social media. Bozkurt, Karadeniz and Okur (2015) reported that the daily rate of using social media by postgraduate students in Turkey to sustain their social relations was 96%. The study by Aslam and Nazim (2016) among Library and Information Services professionals from Science and Technology Institutions in India showed that students use social media regularly to share issues related to coursework. Their findings agreed with the study by Hameed, Maqbool, Aslam, Hassan and Anwar (2013) who revealed a positive significant link between social media, academics and behaviour of learners since university students in Pakistan since they mostly use social media.

Kolan and Dzandza (2018) analysed the effect of using social media on the academics of students in University of Ghana. They found that most students use it to download or sending pictures / videos and to chat but very few use it for academics. Those who use it for academics only use it to pass knowledge to others. Other surveys have revealed that the use of social media can hinder the academics of students. The research by Maya (2015) noted that its usage leads to lower academic performance. Kuppuswamy and Shankar (2010) reported that social media shifts the learning concentration of learners to inappropriate non-educational activities like unnecessary chatting. This means that social media can hinder the academics of students if care is not taken.

Another challenge brought by social media is addiction. Acheaw and Larson (2015) indicated that over use and addiction to social media significantly affected the grades of university students in Jordan by reducing their concentration. Hameed, Maqbool, Aslam, Hassan and Anwar (2013) said that social media affect the behaviour and academic performance of students in the University of Pakistan. Bozkurt et. al. (2017) said that distance education students use social media for lengthy hours daily. Length of using social media showed that social media is a vital part of the routine life of most of the students since they incorporated it in their daily social lives.

Overuse of social media also leads to poor performance in examinations. Owusu and Agatha (2015) reported that social media negatively affect the academic performance of many tertiary students in Ghana because they use it for chatting and downloading contents. This corroborates the finding by Osharive (2015) who established that lack of concentration on learning due to use of social media make students not to pass exams. Social media also affect the use of language by students. Obi, Bulus, Adamu and Sala'at (2012) discovered that social media affect the use of English by students since they use short-form when communicating with their peers. They unconsciously get used to it and replicate these mistakes in examinations. Mingle and Musah (2015) also observed that many high school students in Ghana face negative effects in academics like poor spelling in grammar and submitting assignments late due to overusing social media.

The research by Amadi and Ewa (2018) revealed that social media affects the academic performance of students at River State University in Nigeria negatively by reducing their grade point; reducing the time they spend on studying and distract them during library and lecture sessions. This concurred with the study by Balogun et. al. (2017) who noted that many undergraduate university students in Nigeria spend a lot of their time on Facebook and WhatsApp more than any other activity hence leading to poor academic performance. It was also observed by Moshi, Ndeke, Asatsa and Ngozi (2018) who said that the irresistible attraction to online sites has encroached into and affected the learning habits, time and academics of students in Tanzania.

This study concurred with the study by Koross and Kosgei (2016). It reported that social media has impacted the academics and communication of public university students in Kenya because they use it more than television, newspapers, face to face and radio. The study by Amukune (2013) also revealed that there was a strong link between browsing Facebook and the academic grade achieved by most university learners in Mombasa County because they used Facebook actively. This agreed with the report released by Communications Authority of Kenya (CAK) in the last quarter of the year 2018 that showed that by 2018, about 45.7 million Kenyans used social media (CAK, 2019). According to the 2019 report by Social Media Lab Africa on use of social media, most Kenyans aged 26 to 35 years use various types of social media frequently like Facebook, WhatsApp, Twitter, LinkedIn, YouTube, Yahoo, Google+ and others (SIMELab Africa, 2019). Those over 46 years were not active on social sites as they use them least. Snapchat



and Instagram were the popular sites among Kenyans aged 14 to 25. This meant that Kenyan teenagers and youths were dominant on social media. Students in TTCs fell in this age bracket. This justified the need to do the study among students in TTCs because little is known about how social media affect their academic performance. Further, the limited scholarly work on frequent usage of social media and academics of students in TTCs in Kenya with special reference to Vihiga County was the key concern of this study. Thus, this knowledge gap was addressed in the current study to determine if social media empirically relates with academic performance of students in TTCs in the county.

The study was guided by technological determinism theory by McLuhan Marshall (1964). It gives the relationship between the prevailing technology and the key features of society (Chandler, 2002). The theory holds that the technology of a society drives the development of its social structure and cultural values. In this study, social media was the technology that was considered while the effect of technology on society was its influence on academic performance of students in TTCs in the county since technology varies the way users communicate and relate globally. For instance, social media is being used in all areas of human life including academics of students. The rapidly varying social media have made students to use various online sites like Facebook, WhatsApp, Twitter and others to promote their academic performance.

The objective of this study was to establish the relationship between the frequency of using social media and the level of academic performance of students in TTCs in Vihiga County, Kenya. The null hypothesis (H_0) which was tested was: There was no significant relationship between frequency of using social media and the level of academic performance of students in TTCs. This hypothesis was tested at a level of significance of 0.05.

2. Methodology

The research design used was correlation survey to determine the association between frequent usage of social media and academic performance (Creswell & Plano Clark, 2010). It was aided by the mixed methods approach. The target population was 1478 students, 6 principals and 100 tutors in 6 TTCs totaling to 1584. The Krejcie and Morgan (1970) table was used to get the sample size of 6 principals, 80 tutors and 306 students. It was adequate because according to Kothari (2014) a minimum sample of 100 is adequate for a study. Respondents were sampled using probability and non-probability sampling techniques. Simple and stratified random sampling techniques were the probability sampling procedures that were used because of the heterogeneous in nature of the target population. Purposive sampling was the non-probability sampling technique that was used to give each member an equal chance to be represented in the study (Kothari, 2014). Purposive and simple random sampling techniques were used to get the sample size of students and tutors. Principals were sampled using purposive sampling technique. Questionnaire and interview guide were used to gather data for better understanding of the study (Neubauer, 2019). Principals were interviewed and questionnaires were issued to tutors and students. Piloted was done in 2 TTCs in Kakamega County to test accuracy of the tools (Kombo & Tromp, 2011). The piloting sample size was 10% of the study sample size (Ondiek, 2008) to get 44 informants (34 students, 1 principal and 9 tutors). The tools were examined by Kisii University experts test validity and reliability. Cronbach's alpha value used to get reliability of questionnaires (Ganti, 2020). The α -value of 0.79 got meant that the tool was reliable. The reliability is adequate if the α -value is over 0.7 (Plano and Ivancova, 2015).

The data gathered was analyzed quantitatively. It was analyzed both descriptively and inferentially using SPSS software Version 20. It was analyzed descriptively using frequencies, percentages and presented in frequency tables. Quantitative data was also analyzed inferentially using inferential statistics to test (accepting or rejecting) the null hypothesis and draw conclusions from the study objectives. Inferential statistics that were used to test the hypothesis are Pearson Product Moment Correlation, Regression Analysis and Analysis of Variance (ANOVA). Pearson Product Moment Correlation was used to establish the association existing between frequency of using social media and academic performance in terms of both direction and strength. The effect of the independent variable on the dependent variable was established using Regression and ANOVA. The value of the regression analysis was explained using the Adjusted R Square value since it informed how well data points fit in a regression line.

The null hypothesis was tested at a level of significance of 0.05 as the preferred level in a social science research (Gunby & Schutz, 2016). It was rejected if the P-value was less than 0.05 making the alternative hypothesis to be accepted meaning a significant association was present. The null hypothesis was accepted if the P-value was more than 0.05. Thus, it would be concluded that the existing association was significant (Molina & Cameroon, 2015).



3. Results and Discussions

3.1 Descriptive Statistics on Frequency of using Social-Media and Academic Performance

The current study analyzed the descriptive statistics in terms of frequencies and Likert Scale as discussed below.

3.1.1 Frequency Analysis on Frequent usage of Social-Media and Academic Performance

In order to determine the rate at which students use social media, tutors and students were asked to comment about the frequency of its usage per day. The results were as shown in Table 1.

Table 1: Frequency of usage of Social-Media by Students

Frequency of social media usage	Students		Tutors	
	F	%	F	%
No frequent	17	5.6	9	12.0
Frequent	101	33.5	24	32.0
Very frequent	184	60.9	42	56.0
Total	302	100.0	75	100.0

Table 1 suggests that two-thirds of students representing 60.9% (184) and over a half of tutors representing 56% (42) indicated that students use social media very frequently. About a third of both tutors (24) and students (101) noted that students use social media frequently. More than a tenth of tutors (9) and less than a tenth of students (17) said they do not use social media frequently. This information shows that most students use it very frequently. This agreed with the report by Bozkurt, Karadeniz and Okur (2015), who found out that the frequency at which post-graduate students' login to social media on a daily basis was 96% meaning it was high. Li, Lai and Zhang (2015) said that frequency of using social media daily was 94.8%. Also, Marett and Choo (2016) reiterated that social media was frequently used by most adolescent learners in secondary schools in Malaysia. SIMElab Africa (2019) revealed that most Kenyans access social media frequently. Due to the frequent usage of social media by most students in TTCs, there was need to determine the amount of time they use when on social media. These findings are displayed in Table 2.

Table 2: Time Spent on Social-Media per Day by Students

Time spent daily	Students		Tutors	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Below 1 hours	139	46.1	46	61.3
2 to 3 hours	152	50.3	29	38.7
4 to 5 hours	11	3.6	0	0.0
Over 6 hours	0	0.0	0	0.0
Total	302	100.0	75	100.0

Table 2 shows that 139 students (46.1%) spend below 1 hour per day on social media; 152 students (50.3%) spend 2 to 3 hours daily; 11 students (3.6%) spend 4 to 5 hours and student spend over 6 hours. Similarly, 46 tutors representing 61.3% said students spend less than one hour on social media and the remaining 29 tutors representing 38.7% asserted that students spend between 2 to 3 hours daily on social media. Tutors reported that no students spend over 4 hours on social media. This could probably be because quite a number of these students are in class learning for a better part of the day. This implies that it was most likely that most students access social media during their free time as most of the time they are attending classes during the day. The same results were reported by Jenssen, Klein, Salazar, Daluga, and Diclemente (2009) who indicated that many learners spend many hours daily immersed on social media like Facebook to bond with other users. Similarly, Rosen (2011) noted that people born between 1990 and 1999 spend nearly 20 hours in a day on online social sites. Balogun et. al. (2017) also showed that many undergraduate university students in Nigeria spend a lot of their time on social media. These findings were also in line with the outcomes of the survey by Mutua (2011) opined that over 35% of youths aged 7 to 24 years in Kenya, Uganda and Tanzania access Internet with Kenya leading at 49% followed by Tanzania at 30% and Uganda at 26%. They use a lot of their time on social media for surfing Internet, communication, entertainment and hearing music.



3.1.2 Likert Scale Analysis on Frequency of using Social-Media and Academic Performance

A five-point Likert scale was used in the questionnaires to determine the way frequent use of social media affect the academic performance of students negatively. The Likert Scale was used to indicate the level of agreement or disagreement of informants where: SA meant strongly agree; A meant agree; N meant not sure; D meant disagree; and SD meant strongly disagree. It was strongly agreed by the respondents that social media wasted the time of learning for students, distract them during learning time, diverts their concentration, cause them to postpone doing assignments, and leads to poor or low academic performance. Therefore, it was generally concluded from this results that frequent use of social media by students affect their academic performance negatively. This was supported by the average mean score value of 1.45 and a standard deviation value of 0.550. This view balanced with the study by Marett and Choo (2016) who reiterated that social media was frequently used by most adolescent learners in secondary schools in Malaysia thus affecting their academic performance negatively. These responses from the informants are presented in Table 3.

Table 3: Students' Rating on Frequent Social Media use and Academic Performance

Response on frequent usage of social media	N=	SA	A	N	D	SD	Mean	St.Dev
	302							
It wastes learning time by reducing the time they use on their studies	F	268	30	4	0	0	1.13	0.370
	%	88.8	9.9	1.3	0.0	0.0		
Social media distract them during time of lesson and library sessions	F	132	161	3	4	2	1.62	0.645
	%	43.7	53.3	1.0	1.3	0.7		
It diverts students' attention and concentration of towards learning	F	175	117	7	2	1	1.47	0.613
	%	57.9	38.8	2.3	0.7	0.3		
It causes them to postpone doing assignments and submit them late	F	146	150	2	2	2	1.56	0.617
	%	48.3	49.6	0.7	0.7	0.7		
It lead to poor or low academic performance by directly affecting their cumulative / average grade	F	156	145	1	0	0	1.49	0.507
	%	51.7	48.0	0.3	0.0	0.0		
Average score							1.45	0.550

3.2 Inferential Statistics on Frequency of usage of Social-Media and Academic Performance

In reference to the objective of this study, parametric analysis was used to test the null hypothesis using Pearson Product Moment Correlation so as to establish the strength and direction of the association between frequency of using social media and level of academic performance. The level of significance was set at 0.05 as the recommended level in social sciences. The null hypothesis was dismissed if the p-value was less than 0.05 and concluded that a significant association exist. If the p-value was bigger than 0.05, it is said that a significant association do not exist and so the null hypothesis was upheld. The other statistical tools that were used to make an inference were Regression Analysis and Analysis of Variance (ANOVA). They are explained below.

3.2.1 Association between Frequency of using Social-Media and Academic Performance

Based on these responses raised by the respondents, the study sought to establish if there was an association between the variables in objective. Pearson Product Moment Correlation was used to do a correlation analysis in order to make an inference on the association between the variables. The results were shown in Table 4.

Table 4: Association between Frequency of using Social Media and Academic Performance

		Frequent use of social media	Performance in end of semester exam
Frequent use of social media	Pearson Correlation	1	.708**
	Sig. (2-tailed)		.000
	N	302	302
Performance in end of semester exam	Pearson Correlation	.708**	1
	Sig. (2-tailed)	.000	
	N	302	302

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



Table 4 indicates that there was a strong positive association between frequent usage of social media and performance in end of semester exam which was statistically significant ($r = 0.708$, $n = 302$, $p = 0.000 < 0.05$) at 0.05 significance level. This result meant that the more students use social media frequently, the more their academic performance in end of semester examination improves. In short, these results show that frequent usage of social media by students in TTCs associated positively with their academic performance. It followed that the null hypothesis formulated was rejected because the p-value got (that is 0.000) was less than 0.05. The alternative hypothesis was therefore accepted implying that there was a significant association between the two variables. The outcome of this study was reiterated by Bozkurt et. al. (2017) who reported that there was a positive association between frequent usage of social media by learners and their academic performance.

3.2.2 Regression on Frequency of using Social-Media and Academic Performance

The null hypothesis was tested further using linear regression at a level of confidence of 95% to find out the magnitude of the effect of this positive association between the independent and dependent variables. The outcomes are shown in Table 5.

Table 5: Model Summary of Regression Analysis on Frequency of using Social Media and Academic Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.429 ^a	.184	.170	.547

The Adjusted R Square value of 0.170 in Table 5 signified that the academic performance of students (dependent variable) was influenced by 17% of all the predictors of the independent variables (like social media waste their time for learning by reducing the time they use on their studies, it distracts them during time of lesson and library sessions, among others). The remaining 83% of other factors not included in this study influence students' academic performance in TTCs in the county. This meant that frequency of using social media had a fairly low effect on their academic performance. This was also supported by the R value of 0.429 which represented a weak association between the two variables. The facts seen in Table 3.5 further supported the rejection of the null hypothesis of this study at a level of significance of $P < 0.05$. However, in order to determine if frequency of using social media was indeed a significant predictor of academic performance, the researcher conducted Analysis of Variance (ANOVA) test to test the null hypothesis according to the suggestion by Creswell (2014).

3.2.3 ANOVA Results on Frequent use of Social-Media and Academic Performance

Table 3.6 shows the ANOVA results used to predict the effect of frequency of social media on academic performance.

Table 6: ANOVA Results on Frequency of using Social Media and Academic Performance

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	19.956	5	3.991	13.320	.000 ^b
	Residual	88.696	296	.300		
	Total	108.652	301			

Table 6 shows that the dependent variable was statistically affected by frequent using social media (social media waste their time for learning by reducing the time they use on their studies as seen in the ANOVA result [$F(5, 296) = 13.320$, $p = 0.000$, Adjusted $R^2 = .170$] at 0.05 significance level. This was because the independent variable accounted for 17.0% of the variation in academic performance. As such, the independent variable predicted the dependent variable statistically as the p-value (0.000) got was less than 0.05. This small p-value of 0.000 obtained supported further the rejection of the null hypothesis (H_0) and hence acceptance of the alternative hypothesis (H_A) which stated there was a significant relationship between frequency of social media and level of academic performance. Thus, frequency of using social media significantly predicted academic performance of students in TTCs in the county.

4. Conclusions



The negation of the null hypothesis formed led to the conclusion that frequency of using social media influence the level of academic performance of students in TTCs in the county because the two variables had a positive statistically significant association based on Pearson Product Moment Correlation coefficient that was obtained which was less than the level of significance that was set for this study (that is, $p = 0.000 < 0.05$).

5. Recommendations

The conclusion made in this study led to the following recommendations:

- i. The government should enact regulations that will govern the proper and positive use of social media among learners to promote their academics in institutions of learning since social media used by learners frequently affects their academics.
- ii. College administrations should initiate sensitization campaign to enlighten learners on the negative impact of the frequent usage of social media on their academics.

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