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Original Article

Effects of Application of Technology on Student Discipline in Public Secondary Schools in Nakuru County, Kenya

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High standard of discipline amongst students is not only important in ensuring excellent academic performance, but it also guarantees success in the achievement of other school activities and ensuring sustainable development and instilling of good moral standards amongst students. It is worrying to note that the challenges of managing student discipline in secondary schools in Kenya are pervasive and constant. Different discipline management techniques have been used in schools, but the majority of them fail. This study was designed to investigate the effects of using technology to manage student behaviour in public secondary schools in Nakuru County, Kenya. The study's goal was to determine how the use of closed-circuit television (CCTV) affected student behaviour in public secondary schools in Nakuru County. The theory of Reasoned Action provided the study's direction (TRA). Explanatory sequential design, specifically mixed method research design, was employed. The target populations for the study included 579 teachers and 11,412 students, respectively. The sample population for the current study was composed of ten public secondary schools. Five of the schools have installed all of either of the four technologies, while the other five schools do not use technology in discipline management. The study compared the scores of the two categories of schools in regard to several disciplinary parameters. The sample size was 270 participants. Both questionnaires and interviews were used to gather data. Experts from the Department of Educational Management at Kenyatta University determined the validity of the study tools. Reliability was established using the test-retest methodology. Thematic analysis was used to analyse qualitative data, which was then presented narratively. Through descriptive analysis, specifically using percentages and averages, quantitative data was examined. Inferential statistics included regression analysis and analysis of variance (ANOVA). Quantitative data was presented in tables and charts. Results indicated a positive correlation between the independent and

dependent variables. It implies that the more schools implement CCTV technologies, the more discipline can be managed effectively.

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INTRODUCTION

Discipline is one of the determining variables of evaluating success in a schooling context. Teachers bear the responsibility of putting in place measures designed to curb indiscipline and enhance good behaviour amongst pupils and students (Government of Kenya, 2008). Besides enhancing better academic performance, high standards of discipline among learners augment an institution's push to be successful in other extra-curriculum activities such as competitions in games, music, and drama. Additionally, good discipline imparts high moral and ethical standards in learners, as explained by MOEST (2009).

It is perhaps the ideal time to evaluate the impact technology has had on secondary schools' discipline management in other countries. Russia, The United Kingdom, Malaysia, the US, Germany, and the Kingdom of Saudi Arabia, for instance, have successfully implemented technological approaches including web-based e-discipline systems in discipline management (Idzwan et al., 2011). Saudi Arabia, which turned to a technological approach to discipline management recently, has integrated a

robust e-discipline platform designed to enhance the efficiency in the management of electronic records of students to assist in the detection and prevention of discipline problems besides reducing the burden of teachers' work (Saman & Bakar, 2007).

Secondary schools in Kenya have experienced student discontent and indiscipline for a number of causes during the past few decades (GoK, 2001). At first, student unrest took the shape of strikes and nonviolent demonstrations, including sit-ins and other forms of peaceful protest. Cases of common indiscipline included tardiness, skipping lessons, small-scale stealing, and violent altercation. Worryingly, recent unrest and indiscipline cases have been marked by violence and property destruction during the previous 20 years, especially when the education ministry outlawed physical punishment (GoK, 2001; GoK, 2008). Students have attacked and fatally burned down one another and set their dorms on fire to kill one another (GoK, 2008; GoK, 2001). Even though the government has made a lot of effort to address the disciplinary issues secondary schools confront, much more work has to

be done in order to identify the causes and effects of unrest and indiscipline in secondary schools.

In the wake of the increasing indiscipline cases in Nakuru County, some schools in the county have turned to technology to help manage student discipline. Some of the schools, including Menengai High School, Nakuru Day Secondary School, Afraha High School, Natewa Secondary School, Upper Hill Secondary School, and Hill Crest Secondary School have adopted CCTV technology. Through this system, parents receive important updates about official school closing and opening dates, official start and end of half-term sessions, and official student visiting dates, among others. The current study examines the effectiveness of disciplinary techniques from a technological perspective. The study intended to examine the effectiveness of discipline management in secondary schools by comparing the frequency of discipline occurrence before and after the installation of the technological apparatus.

Purpose of the Study

So far, no study has been conducted to examine the effectiveness of technological methodologies in managing student discipline. It is for this reason that this study focuses on CCTV cameras' effectiveness in managing student discipline in secondary schools in Nakuru County.

THEORETICAL REVIEW

The study was informed by the Theory of Reasoned Action (TRA). TRA is a social psychology theory that explains the determinant factors of consciously intentional behaviour. Proponents such as Fishbein and Ajzen (1979) explain that the theory creates a relationship between people's perceptions towards a newly introduced variable and their level of acceptance of the variable. The scholar notes that beliefs, attitudes, norms, intentions, and behaviour contributes to the emancipation of a determined behaviour. For instance, the theory contends that behaviour, like accepting or rejecting technology,

results from an intention to do so. The attitudes of each person can influence whether they reject or embrace technology. Beliefs and arbitrary standards in regard to the desired action determine the attitude. Similarly, other proponents such as Fishbein (1979), explain that beliefs are core to the formation of attitudes. In this case, beliefs refer to the information possessed by people regarding the object in question. Therefore, the theory guided this study to put into consideration people's behaviour towards technology in schools and how it affects its performance.

Research Gaps

The study by Jeanne (2010) expedited the perspectives of key stakeholders in education in Australia in regard to the potency of CCTV cameras in building up discipline management in schools. While Jean (2010) focused on 5th to 10th graders in Australia, the proposed study intended to focus on public secondary schools in Kenya. Richard (2017) investigated visible school security measures and their effects on youth, with a specific focus on metal detectors. While Richards (2017) focused on 10th graders in the United States, the proposed study intended to focus on public secondary schools in Kenya. Lukman (2014) investigated the management of disciplinary obstacles in secondary schools with the Jalingo metropolis being the focal point. Even though the study created a strong linkage between the independent and dependent variables, the proposed study intended to employ a different approach. Thus, so far, no study has provided conclusive evidence of the effect of technology on student discipline in Kenya. Besides, there is a need to focus on Nakuru County because schools are turning to technology hoping that it will help manage rising indiscipline cases. Thus, this study intended to provide evidence to either back or disapprove of teachers' decision to turn to technology for help.

METHODOLOGY

This study used a mixed-method research design. It was an ideal research design because it necessitates the collection and analysis of qualitative and quantitative data simultaneously, the analysis of the two sets of data independently, and blends the two databases by amalgamating the outcome throughout interpretation (Creswell et al., 2003). The current study intended to collect and analyse qualitative and quantitative data. Therefore, the mixed research method provides an ideal approach to collect current, varied, and detailed responses concerning the effects of the application of technology in the discipline management of students in public secondary schools in Nakuru County, Kenya.

The study combined convenience and random sampling techniques to select the respondents of the study. The five schools with installed technologies were identified through convenience sampling,

while the other five schools with no installed technology were identified through random sampling. Random sampling gives each unit equal chances of being selected, while convenience sampling uses readily available data. Convenience sampling is ideal in the identification of schools with installed technologies because it allows the collection of data from institutions that are willing to participate in the study. Random sampling is ideal for selecting schools with no installed technologies because it gives all schools equal chances of being selected.

The sample population for the current study was composed of ten public secondary schools. Five of the schools have installed all or either of the four technologies, while the other five schools do not use technology in discipline management. The study compared the scores of the two categories of schools in regard to several disciplinary parameters. *Table 2* presents the sample population.

Table 1: Schools with installed technology

School Name	Category
School F	Subcounty
School G	Subcounty
School H	Subcounty
School I	Subcounty
School J	Subcounty

Table 2: Sample Population

Stratum	Population
Principals	10
Deputy Principals	10
Disciplinary Committee Members	30
Class Teachers	50
Department Heads	30
Head Students	30
Prefects	10
Ordinary students	100
Total	270

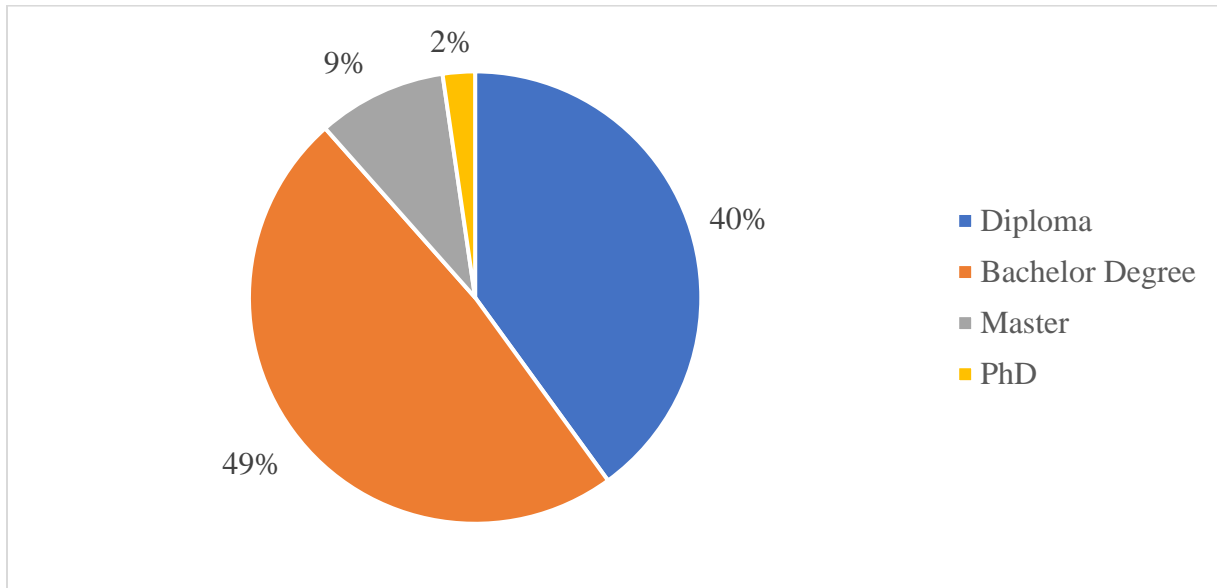
RESULTS AND DISCUSSION

Purposive sampling was utilised in this study to choose a sample population of 10 schools from the target population of 52 schools, yielding a total of 270 respondents. Complete questionnaires attached with an introduction letter were served to all 270 respondents and collected after five days. Out of the

270 surveys, 258 were completely filled out and returned. It equates to a good response rate of 95.55% (Kombo & Tromp, 2006).

The study was interested in evaluating the academic qualification of the teachers involved in the research. The results are shown in *Figure 1*.

Figure 1: Academic qualification of the respondents

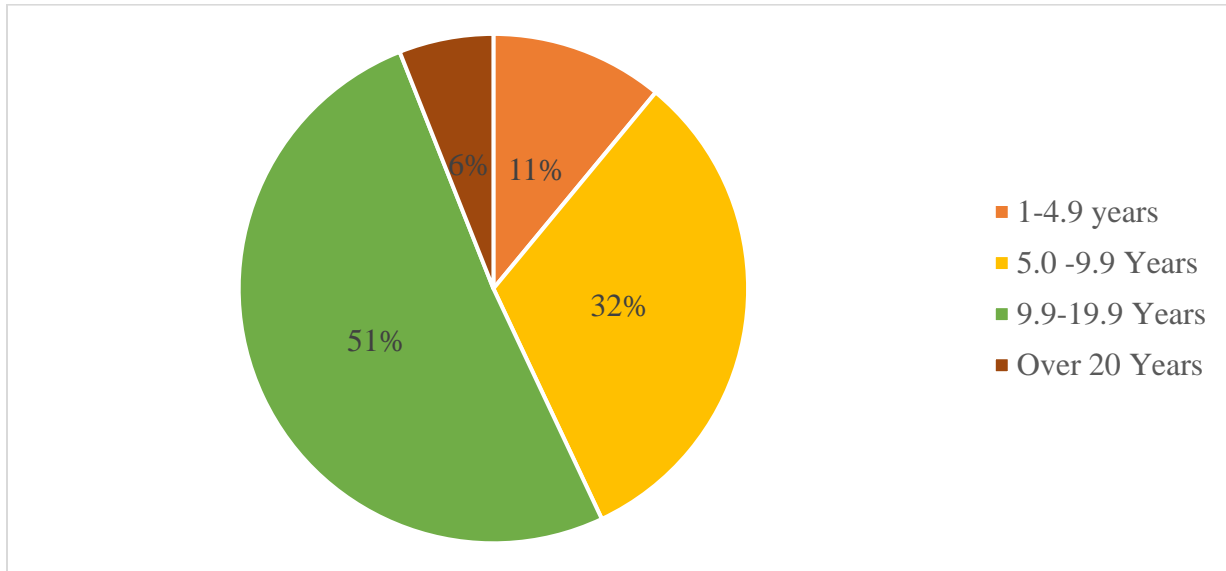


The study evaluated the academic qualification of the teachers involved in the research. *Figure 1* indicates that diploma holders were 52 (40%), bachelor degree holders were 63 (49%), master degree holders were 12 (9%), and PhD holders were 3 (2%). Evidently, the majority of the respondents were bachelor’s degree holders, followed by diploma holders. Even though the specific field of specialisation of the respondents was not examined, it is evident that 60% of the respondents had a

bachelor’s degree and above. It denotes a high level of academic achievement, which is favourably connected with competence and an accurate understanding of the particular abilities required to carry out everyday disciplinary responsibilities successfully.

The study sought to find out the teachers’ years of service. *Figure 2* shows the results.

Figure 2: Years of Service

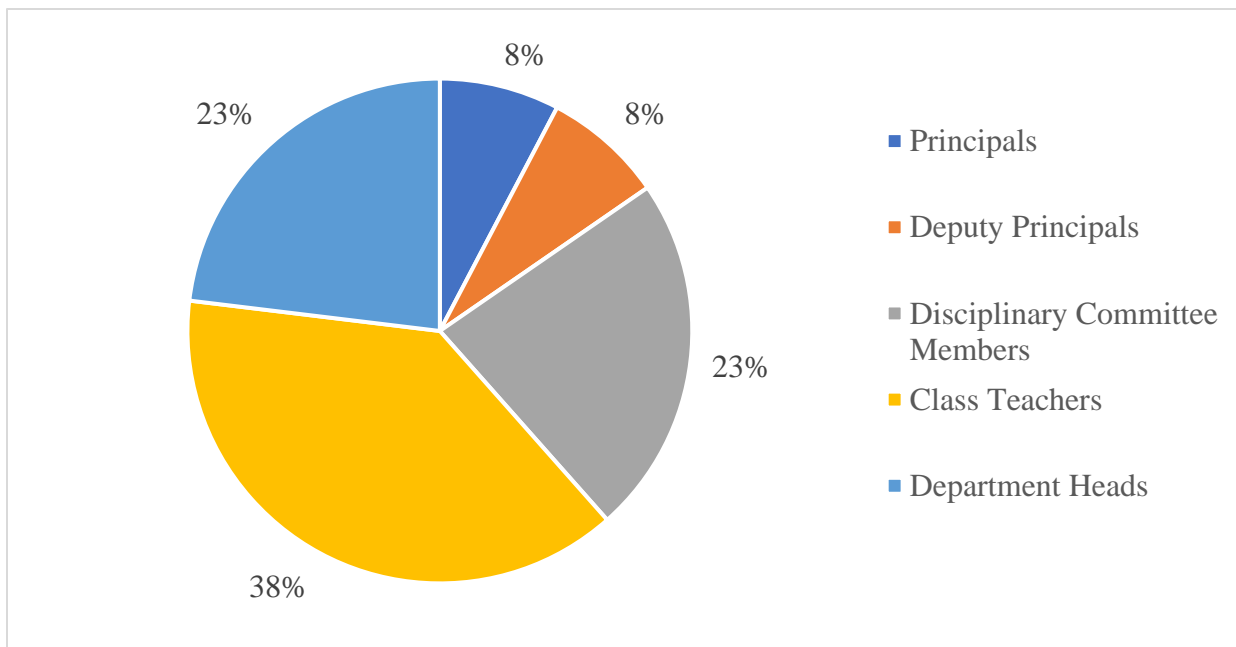


The data in *Figure 2* shows that the majority of the respondents had served for between 9 to 19.9 years (51%), followed by 5 to 9.9 years (32%). 11% and 6% of the respondents had worked for less than five years and over 20 years, respectively. Combined, the percentage of employees who have worked for more than five years is 89%. In this regard, it is prudent to conclude that 89% of the teachers

understand their role with respect to discipline management. This means that the respondents would be resourceful enough out of the experience.

The study further sought to understand the job position of all the respondents (teachers); *Figure 3* shows the results.

Figure 3: Job position



It was imperative to understand the job position of all the respondents (teachers). According to *Figure 3*, the majority of the respondents were class teachers (38%). They were followed by department heads (23%) and disciplinary committee members (23%). Principals and deputy principals had a 10% representation each. Therefore, the results provided by this study present the views of all school

departments involved in discipline management in schools.

The current study was interested in investigating the effectiveness of surveillance cameras with respect to discipline management in schools. *Table 3* shows the results of responses provided by the study population.

Table 3: Effectiveness of CCTV usage

Criteria	VS		U		N		S		VS	
	n	%	n	%	n	%	n	%	n	%
Overall surveillance across the school	8	3.1	12	4.7	68	26.4	78	30.2	92	35.7
Surveillance in school entrance points (gates).	6	2.3	30	11.6	60	23.3	106	41.1	56	21.7
Surveillance in class attendance.	29	11.2	25	9.7	66	25.6	108	41.9	30	11.6
Surveillance in school dormitories.	18	7.0	25	9.7	45	17.4	164	63.6	6	2.3
Overall, how effective have CCTV cameras been in helping the administration in managing student discipline?	4	1.6	15	5.8	39	15.1	134	51.9	66	25.6

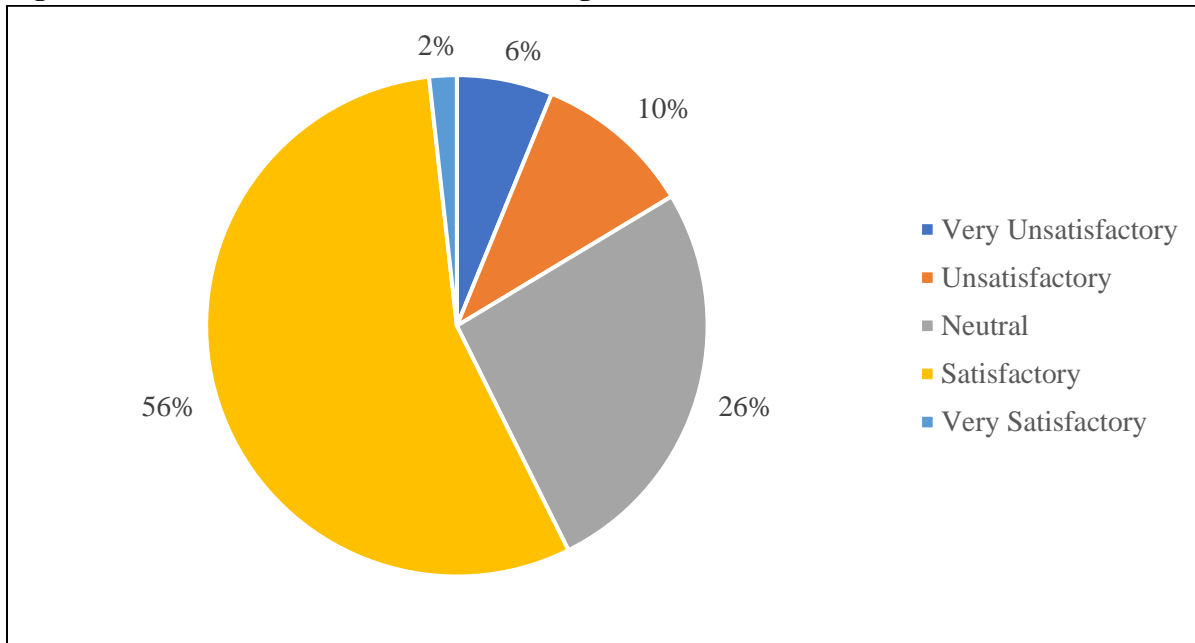
Note: VU = Very Unsatisfactory; U = Unsatisfactory; N = Neutral; S = Satisfactory; VS = Very Satisfactory

The current study was interested in investigating the effectiveness of surveillance cameras with respect to discipline management in schools. *Table 3* shows the results of responses provided by the study population. First, the study found that 78(30%) and 92(36%) of the respondents were very satisfied and satisfied, respectively, with the overall surveillance across the school. Additionally, 8(3%) and 12(5%) were very dissatisfied and dissatisfied, respectively with the overall surveillance across the school. These findings correspond to the survey findings published by Ashby (2017). Ashby (2017) noted that CCTV surveillance is critically important in deterring crime. Similarly, a report published by the Dyfed-Pows Police in Wales noted that cameras are critically important in detecting crime (Ashby, 2017).

Second, the study was interested in understanding the role of the cameras in surveilling key areas within schools. The key areas include the main

entrances to the school, outside and inside classrooms, and the dormitories. Results as shown in *Table 3* indicate that 106(41%) and 56(22%) were very satisfied and satisfied, respectively, understanding the role of the cameras in surveilling key areas within schools. Another 6(2%) and 30(12%) were very dissatisfied and dissatisfied, respectively, understanding the role of the cameras in surveilling key areas within schools. This finding concurs with a previous study conducted by Saman & Bakar (2007) that surveyed a set of schools in Glasgow. Saman & Bakar (2007) found out that installing surveillance cameras in strategic areas within any institution of learning averts disorder because students understand that someone is watching. On the other hand, 21% of the population expressed their dissatisfaction with the failure to install surveillance cameras inside classrooms and dormitories. In contrast, none of the schools has installed cameras inside dormitories.

Figure 4: Overall Effectiveness of CCTV Usage

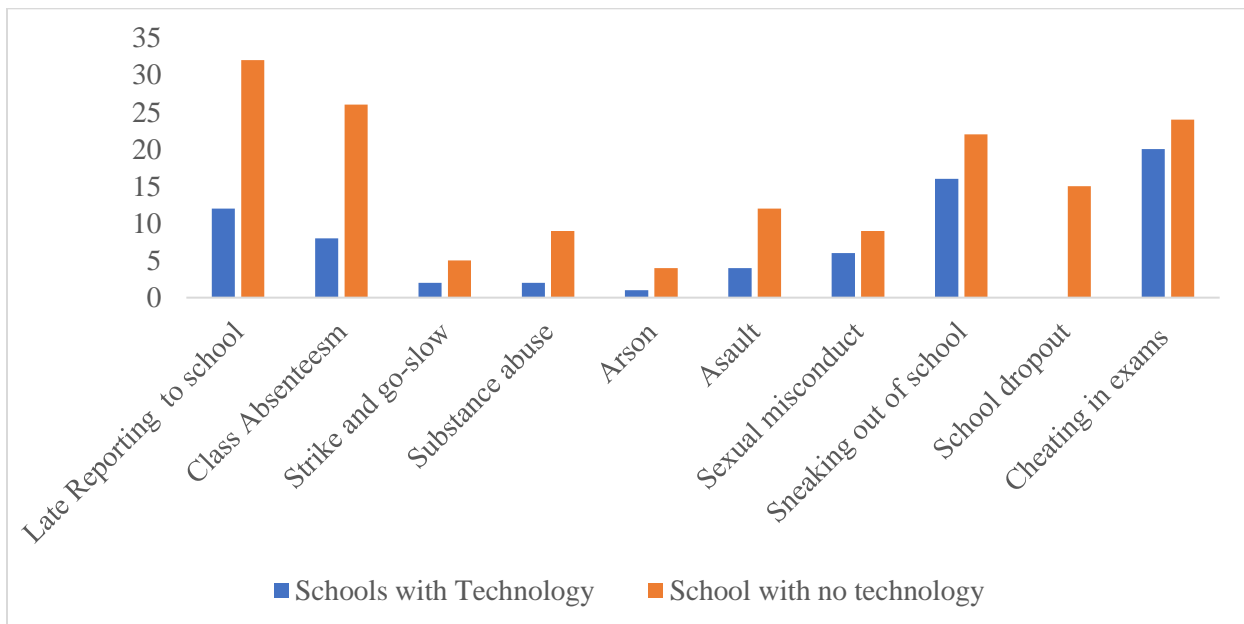


Third, the study investigated the overall response with respect to the effectiveness of CCTV cameras in helping the administration in managing student discipline in the schools. Results indicate that 56% of the respondents were satisfied, and 6% were very satisfied. This finding is reflected in the study conducted by Saman & Bakar (2007), which noted

that 72% of the respondents believed that CCTV cameras help prevent crime and disorder.

The study further sought to understand the instances and forms of indiscipline in secondary schools in Nakuru County. Results are shown in *Figure 5*.

Figure 5: Instances and forms of indiscipline in schools



The current study endeavoured to test the following hypothesis: technology is effective in helping administrators manage discipline in secondary schools in Nakuru County. To test this, the study compares instances of reported indiscipline cases in schools with installed technologies and schools without any form of technology. With the help of deputy principals, class teachers, and head students, the researcher recorded instances of different forms of indiscipline from both the control and experimental groups. The different forms of indiscipline investigated were late reporting to school, class absenteeism, strike and go-slows, arson, assault, sexual misconduct, sneaking out of schools, school dropout, and cheating in exams. The data was collected for a period of three months. Schools with one or more forms of technology reported fewer indiscipline cases compared to schools without any form of installed technology. Late reporting and class absenteeism were the most reported form of indiscipline in the control group. However, note that both the experimental and control groups reported high cases of sneaking out of school and cheating in exams. Generally, it is prudent to infer that schools with installed technologies reported fewer indiscipline cases than schools without the technologies.

CONCLUSION

Generally, the respondents indicated that the surveillance cameras have helped deter strikes and go-slows, arson, assault, substance abuse, and undesired sexual behaviours within the institutions. Some respondents cited instances where CCTV footage provided sufficient information to identify individual students involved in indiscipline instances such as sneaking out of school and strikes. The senior administrators within the schools highlighted the importance of the CCTV surveillance system and expressed their intention to expand the installation to cover at least 90% of the school's geographical area.

Recommendations

The current study noted that schools are not reaping optimal results from the use of CCTV surveillance because the cameras installed are few and do not cover the entire school. Additionally, the study also noted that due to the dynamism of technology, some schools end up with outdated CCTV technology. Therefore, there is a need to fund secondary schools in Kenya to provide the capacity to acquire the right technology of CCTV in needed quantities. To realise optimal effectiveness, the cameras should cover the entire school.

Numerous previous studies have investigated the relationship between technology and student performance. Limited studies have focused on the different variables relating technology to discipline management. It is against this background that the researcher recommends the following. First, there is a need for a nationwide comprehensive study investigating the role of technology in discipline management in schools in Kenya. The study should investigate primary and secondary schools alike, as well as private and public institutions of learning. Second, there is a need for the relevant authorities to publish a comprehensive list of schools that have implemented technology as a measure of managing discipline. Mentioning the kind of technology implemented in these schools is also important.

REFERENCES

- Ashby, M.P.J. The Value of CCTV Surveillance Cameras as an Investigative Tool: An Empirical Analysis. *Eur J Crim Policy Res* **23**, 441–459 (2017).
- Creswell, J. W., Plano Clark, V. L., Gutmann, M., & Hanson, W. (2003). Advanced mixed methods research designs. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioral research* (pp. 209–240). Thousand Oaks, CA: Sage.

- Fishbein, M. (1979). A theory of reasoned action: Some applications and implications. *Nebraska Symposium on Motivation*, 27, 65–116.
- Fishbein, M., & Ajzen, I. (1979). *Belief, attitude, intention, and behaviour: an introduction to theory and research*. Boston (MA): Addison-Wesley.
- Government of Kenya. (2001). *The Education Act (School Discipline) Chpt 211 Legal Notice No. 56/2001, the Education school discipline (Amendment) regulation 2001*.
- Government of Kenya. (2008). *Sessional Paper I on Policy framework for education training and research*.
- Idzwan, S. M., Rahimi, M. M. R., Yaacob, R. A., & Yusoff, Z. (2011). Managing students' electronic disciplinary records via E-merit web content management system. In *Proc. 2011 IEEE Conference on Open Systems (ICOS)*, pp. 261-266.
- Jeanne, A. (2011). Stakeholders' perspectives of the nature and role of assessment during practicum. *Teaching and Teacher Education*, 27, 742-750
- Kombo, K.D. and Tromp, L.A.D. (2006) *Proposal and Thesis Writing: An Introduction*. Paulines Publishers, Nairobi, Kenya.
- Lukman, A. (2014). Management of Disciplinary Problems in Secondary Schools: Jalingo Metropolis in Focus. Accessed from: https://www.academia.edu/en/66568568/Management_of_Disciplinary_Problems_in_Secondary_Schools_Jalingo_Metropolis_in_Focus
- MOEST (2009). *National Action Plan on Education for All*. Unpublished.
- Richard, A. J. (2017). *Visible School Security Measures and Its Effects on Youth: An Analysis of U.S. 10th Graders*. Accessed from <http://udspace.udel.edu/handle/19716/23166>
- Saman, M. M., & Bakar, M. Y. M. (2007). Smart Checker: Real time monitoring and tracking students class attendance using wireless PDA. In *Proc. Mobile Online Learning Technology and Application* pp. 86-93.