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## **Bridging the Perception-Security Gap: Closed Circuit Television Surveillance in School Safety in Public Boarding Secondary Schools in Meru County, Kenya**

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### **Abstract**

*School safety is widely considered a hall mark of effective education, yet traditional security measures are constantly being challenged by emerging internal and external threats. In the Kenya case, schools were constantly on alert against terror and student arson attacks in the years 2015 to 2018. The purpose of the study was thus to investigate the impact of CCTV surveillance technology on school safety of public boarding secondary schools in Meru County, Kenya. Using a descriptive survey research design, the study sought to examine: the impact of CCTV surveillance technology on student safety; and the challenges faced in implementing CCTV surveillance technology in schools for safety. Interview schedules and questionnaires were administered to 246 respondents including students, security guards, and principals to help gather the relevant data. The study established that the main role of CCTV surveillance technology was monitoring students' activities and deterring offenders. While 100% of principals endorsed CCTV as a vital deterrent, only 24.5% of students perceived it as significantly enhancing their personal safety. The findings reveal a critical trust gap exacerbated by punitive surveillance perceptions and the identified vulnerability of dormitories and perimeter fences. The study identifies that CCTV effectiveness is frequently hampered by high maintenance costs and a lack of specialized personnel. Furthermore, the study situates these findings within the 2025/2026 legal framework, noting that most institutions remain non-compliant with the Office of the Data Protection Commissioner (ODPC) Guidance Note on Children's Data (2025). The article concludes that for technology to be effective, schools must transition from passive monitoring to a human-centric privacy by design security ecosystem. Recommendations include the integration of technology-driven anomaly detection, the establishment of school-level Data Protection Policies, and the fostering of soft security through improved student-teacher dialogue to mitigate the psychological tensions of surveillance. Other suggested alternative measures include proper fencing of schools and the hiring of additional security personnel.*

**Keywords:** *CCTV Surveillance; Data protection Act; School Safety; Student Protection; Security; governance*

### **Introduction**

Students need to feel safe and secure inside the school to concentrate on their studies without bothering about what could happen to them while in school. Safety is freedom from accidental harm, while security is protection from crime, violence, or other harm (Javed, 2022). The harm may be forestalled through design, patrols, and technology. Safety and security here will refer to the state of a student's feeling and being safe from injury or harm from objects or deliberate acts in the school. Security, both physical, and psychological, are important consideration both for individuals and community's well-being (Zotova, 2018). Galtung similarly explained the concept of security based on human needs: survival, development, freedom, and identity (Galtung, 1980). When this goal is not met, violence and insecurity arise. Individual students have various needs, summarized by Maslow (1970) as physiological, safety, love, esteem, and self-actualization. To be secure, students require to fulfill these safety and security needs. One study showed that student trust in teachers and school safety accounted for 98% of the 22% variance among schools in student identification (Brooks, 2017).

According to the Basic Education regulations in Kenya (Basic Education Regulations, 2015; Republic of Kenya, 2008) safety, security, and hygiene are left to the school Board of Management (BOM). The regulations require schools to



have well-maintained and safe facilities, including fencing, fire extinguishers, safe vehicles, lightning arresters, and fire drills. They also require schools to have a safe and friendly environment, especially for children with a disability. The regulations do not list Closed Circuit Television (CCTV) as a requirement. In Kenya, for instance, the government has attempted to address the safety problem by issuing schools with guidelines in the Safety Standards Manual. However, the big question is, "How far have the schools implemented the guidelines in this manual, especially on effectiveness of CCTV on school safety?" There have been debates by education stakeholders for schools to install CCTV cameras. What is yet to be established is how this CCTV technology will influence school safety as it enables students to focus on their studies without worrying about their safety, improving academic performance.

Other than would be expected, if media reports are anything to go by, schools are the most unsafe places in Kenya. Headlines like "Here is why students are burning schools"(Daily Nation,2018); "School closed down following insecurity" (The Standard, 2018); "Terror a key threat to student safety" (The Star, 2018); "Drugs, alcohol, noise the greatest threat to school security" (Daily Nation, 2018); "Shocking statistics of sex crimes in schools" (The Standard, 2018); "High school bullies take the game a notch higher, target Form ones with rich parents" (The standard, 2016) are becoming common in various media. Garissa University College, a constituent of Moi University, located in the northern part of Kenya. On 2 April 2015, a terror group claiming to be an Al Shabab invaded the institution, and a record 148 students and staff fell as a result of this attack.

However, these incidents that disrupt society violently project only one aspect of the status of safety at schools. Other incidents of concern, apart from unrest, such as violence between staff and students, theft, bullying, and drug use, may be more difficult to detect with the security cameras and thus less reported. Eliason and Frank (2002) report that, among other incidences, theft of property, fighting, physical violence and vandalism, bullying and intimidation, gangsterism, and rape were major school problems they surveyed. What is common about these incidents is that they all seem to have occurred in and around schools and mostly during school hours, highlighting schools' vulnerability to safety-threatening incidents. This includes the ease with which schools are accessed and intruded by unsafe elements, sometimes with violent and criminal consequences. This seems to point to the need for technology to monitor and record such incidents.

However, some researchers have argued that CCTV surveillance technology may not solve the roles expected (Lunch, 2016). One study from Nakuru county recently reported that "new security management practices such as buying of modern security management resources such as CCTV and other types of surveillance cameras have not helped minimize insecurity in the county" (Teimuge & Hamasi, 2022). According to Lynch (2016), 84 percent of high schools in the USA had security cameras for safety monitoring, but they did not prevent violence from happening. He concludes that "it would seem that in the case of high schools, cameras are more of a way to catch rule-breakers after the fact than a way to prevent violence and other criminal activities." The best investment we can make to safeguard our students and educators is in personal vigilance. Less reliance on so-called safety measures could lead to higher school alertness.

In Kenya, CCTV surveillance technology started gaining traction after the Westgate terror attack in 2013. In 2014 the government began planning to roll out an enhanced security plan involving CCTV in two main cities. By 2015 the Kenya Government had given a \$170m contract to Safaricom, a leading telecommunication company, to build a surveillance system dubbed the National Service Police Project, beginning with Nairobi and Mombasa. Faced with similar violent acts in school, some schools may be persuaded to install such CCTV systems to stem unrest and to keep schools safe. According to media sources (CNN, August 2016), 120 schools had been burned by students in two months since June of the same year, many times suspected to have other students' tacit approval. In 2017, a new wave of arson in Kenya school was reported, with 35 schools closed by November of the year. A new wave of unrest occurred in 2021 after schools reopened after the COVID pandemic (BBC, November 2021). The worst resulted in the death of ten girls in a Nairobi school.

According to literature, the most common safety risks that are monitored using CCTV in schools are attacks on staff and pupils in school and its immediate vicinity, including assaults on teachers by aggrieved parents, drugs, and solvent abuse, trespassing on school grounds, arson, vandalism, burglary, and theft of property (Hudson, 1999). It discourages further security infractions and reduces or eliminates the opportunities to commit such acts. Video cameras tend to promote a perception of safety and authority, which contribute to the overall order maintenance of a school (Hudson, 1999).



Studies show that CCTV aids detection through its surveillance capability and the opportunity it may afford to deploy security personnel appropriately (Ratcliffe, 2006). CCTV provides public reassurance and therefore reduces fear of crime, which may, in turn, increase the use of public spaces. Bennet and Gelsthorpe (1996) and Tilley (1999) suggest that CCTV may reduce crime as people are deterred from visiting CCTV-covered areas, believing them to be more dangerous). CCTV surveillance cameras also decrease the chances of bullying on school grounds. This helps to provide a child-friendly school for students to learn in (Tilley, 1999).

CCTV technology helps to monitor remote entrances/exits and out-of-limit areas. (Federal Commission on School Safety, 2018). According to Carli (2008), some of the challenges in the use of CCTV technology are Inadequate resources; that is, Installing CCTV cameras requires huge resources for its successful implementation, while maintenance of the control room and coordination with security personnel requires additional resources for its effective operation in terms of logistics. Bandwidths for internet providers are expensive and inadequate. Taylor (2014) and Willis, et. al (2017) add the problem of displacement, a phenomenon where students avoid the CCTV system somehow or commit antisocial acts at a different place away from the surveillance cameras.

Coursen (2021) argues that insider threats pose a greater risk of harm than outsider ones. In the school, initial grievances are born, and ideation and execution of plans are hatched and planned disguised as usual activity. One suspects that the growing CCTV surveillance technology is more of a management tool to curb indiscipline and nab troublemakers for punishment or expulsion from the school. While school safety requires the concerted effort of all, Cooper (2022) mentions the tendency of Kenyan schools to strong-arm students into compliance, a practice that could jeopardize school safety and security.

According to Brooks (2017), schools have traditionally been kept safe using technologies like student and staff Identification, visitor badges, parking stickers, and palm scanners and employing many security guards. Modern-day schools have embraced other safety technology, including two-way interaction systems, alarm and protection systems like scream alarms, motion/sound/heat detectors, emergency alerts like Automated text messages or emails, school T.V. stations, voicemail systems, and websites with anonymous posts. Tracking systems like smartphone applications, GPS devices to track students' movements, and social media monitoring by automated scans of online content for terror, bullying, threats, and evidence of self-harm are also some of the technologies used in schools for safety purposes. (Matthew, 2017). The most common of these modern technologies is CCTV surveillance technology.

Schools have continually used technology worldwide in various spheres of operation (Squelch, 2001). On school safety, schools have embraced modern technologies to track children and their activities and keep them safe, monitor and deter outsiders who may intrude the schools illegally, provide evidence in case of criminal activity investigation in schools, protect school property from vandalism, and monitor staff as they engage in their respective duties (Matthew, 2017). Some modern technologies used for this purpose include CCTV, fingerprint identification, RFID (radio-frequency identification) chips, and Entry control equipment like Remote – controlled door locks (Matthew, 2017).

The shift toward technological surveillance is not unique to Meru County. Recent empirical evidence from Trans Nzoia County (Kerich, Omuterema, & Pepela, 2024) confirms that while 80.8% of school stakeholders support the effectiveness of electronic security systems, their actual utility is frequently 'hampered by operational obstacles' such as poor maintenance and a lack of specialized personnel. This aligns with Atieno and Kinyanjui's (2023) research in Nakuru County, which found that while CCTV implementation was useful in managing student discipline, the pervasive nature of school safety challenges requires a more nuanced application of technology than simple hardware deployment."

Several authors have affirmed the need for school safety measures and procedures (Librera,2004; Trump, 2005; Rono & Kyalo, 2007; Lulua, Nkwake, Sheburne, Angura, Dralega, & Ekuchu,2008; Calefati, 2009; Boehlke, 2010). The effect of CCTV is likely to arise from three main roles, summarized as the 3-D in Taylor (2014): deterrence, detection, and displacement. How can modern technology be used to enhance this safety? Is it a manager's personal investigative tool or a school tool to make it safer? Gill and Loveday (2003) found that CCTV presence did not deter offenders much. In view of the current deployment of CCTV in schools, this study set to find out if CCTV is likely to impact the unrest situations that probably necessitated schools' need for technology.

In 2016, a committee had been set up by the Ministry of Education, Kenya (MOE) to investigate the reason for the wave of violence in Kenyan schools headed by Claire Omolo (Republic of Kenya, 2022), but these were never



published. Media reports, however, indicated that the report had recommended fire drills in schools, schools to have a secure perimeter fence with a gate manned 24 hours a day, intelligence gathering, and that "Schools should adopt appropriate security measures such as 24-hour CCTV surveillance, sniffer dog checks for drugs, metal detector checks, random dog security patrols, and adequate security lighting." This could be one signal that led to the incorporation of CCTV technology in schools. Despite the Omolo committee, School arson cases continued unabated. In the wave of 2021 riots, the Ministry of Education issued a statement to parliament on the school arson crisis and revealed that there were 126 arson cases between January and November (The Star, 2021). It is necessary to start a discussion on the extent to which technology can contribute to school safety and security. This article, consequently, set out to investigate the perceived role of CCTV in our schools, and guided by the following research questions:

- i. What is the role of CCTV surveillance technology in school students' safety?
- ii. What challenges are faced in implementing CCTV surveillance technology in schools for safety?

### Research Methods

The study adopted a descriptive survey design. The study aimed to collect information from principals, security guards, and students about the roles of CCTV surveillance technology in school safety and the challenges facing implementing CCTV for school safety in public boarding secondary schools. Simple random and purposive sampling was used to select the respondents from eight public boarding secondary schools. Two schools were used in a pilot, while six were used for the main study. The study encompassed 6 public boarding secondary schools from Meru impact County, three for boys and girls each. The sample population included 240 students selected using simple random sampling technique and 3 principals and 3 school security guards selected purposively. Questionnaires and interview schedules were used in data collection, with respondents assured anonymity. One questionnaire for the students inquired about the roles CCTV plays in school safety challenges facing CCTV implementation for school safety. The interview schedule was used to obtain data from principals and security guards about the roles of CCTV surveillance for school safety and the challenges faced in implementing CCTV surveillance technology.

### Results and Discussion

Students and principals were required to indicate whether using CCTV cameras helped make schools safer. This question yielded the following feedback from the students and the principals. On how useful the CCTV surveillance cameras were in making the schools safe, Table 1 summarizes students' responses and principles.

**Table 1: Respondent Rating of CCTV System in School Safety**

Use of CCTV cameras and School Safety	Principals		Students	
	Frequency	Percent	Frequency	Percent
A little	-	-	105	52.5
Not at all	-	-	30	15
Much	-	-	16	8
Very Much	3	100	49	24.5
<b>Total</b>	<b>3</b>	<b>100</b>	<b>200</b>	<b>100</b>

Data captured in Table 1 show that all principals stated equivocally that using CCTV cameras greatly helped. This finding concurs with Hudson (1999) who concluded that video cameras tend to promote a perception of safety and authority, which contribute to the overall order maintenance of a school. This position was contradicted by the students (52.5%), who indicated that using CCTV cameras helped a little in keeping the school safe. These findings contradict the findings of Sarah et al. (2018) that suggest that students may perceive outside cameras and security as safekeeping. In contrast, inside cameras may evoke feelings of being viewed as potential perpetrators who need surveillance. This position taken by students could be attributed to the fact that safety technologies complement existing policies and procedures and assist staff in enforcing them, increases the chances of catching and identifying offenders, and cannot be a means to an end but requires support and collaboration from other players. The findings of this study thus indicate a trust gap, a necessary condition for students feeling of psychological safety (Mitchel et. al., (2016). This student skepticism is echoed in contemporary media reports and government audits. As of early 2026, The Standard (2026)



highlights that 'visible deterrents like perimeter walls and CCTV are no longer enough' as criminals and internal actors increasingly exploit gaps in human routine and response times. Furthermore, a December 2025 report by the National Gender and Equality Commission revealed that over 66% of surveyed schools still reported forms of learner violence despite surveillance, suggesting that cameras are missing the 'soft' safety issues like emotional abuse and online harassment that students prioritize (The Standard, 2026)."

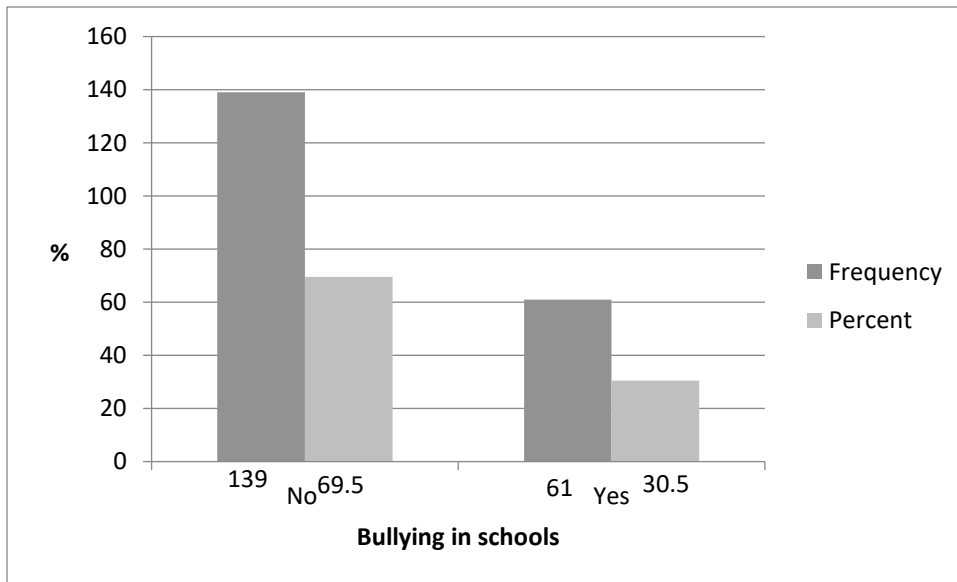
Who monitors the CCTV system for efficiency when principals are out of office? The following feedback was generated from the interviews and observations made by the researcher.

**Table 2: Monitoring of CCTV**

<b>Monitoring of CCTV system</b>	<b>Frequency</b>	<b>Percent</b>
Deputy Principals	4	66.7
ICT staff	2	33.3
<b>Total</b>	<b>3</b>	<b>100</b>

Data captured in Table 2 show that in most schools, principals were assisted by their deputies (66.7) to monitor the CCTV surveillance system when they were not in the office. In contrast, their ICT staff members assisted 33.3% of the principals. This could be attributed to a limited number of monitoring screens in the school and the school personnel involved in the exercise.

The researcher was interested in establishing whether students had ever been bullied. Students were requested to indicate if they had ever been bullied in school, and the question received the following feedback.



**Figure 1: Bullying in schools**

Data depicted in Figure 1 postulate that 69.5 % of students had not been bullied in school, while 30.5 % had been bullied in schools. Though few students had once experienced bullying in school, there was a need for school administrators to tame bullying by sensitizing students on the negative effects of bullying, encouraging teachers to be on the lookout, and installing CCTV cameras in areas perceived to be unsafe in schools in order to identify students who were potential threats to school safety. This finding resonated with the findings of Roy (2019) who established that when CCTV cameras were introduced to a high school in Sydney in, Australia, there was a noted 70% drop in bullying, and Hope (2009) noted that bullying or other noncriminal social disturbances were likely to be affected by security cameras in the same way as criminal behaviors given that both would be met with disapproval.



Watchmen were required to indicate areas they manned, and the question elicited the following responses. The researcher established that CCTV cameras helped complement the work of the security guards as they provided crucial information about the events around the school. Therefore, it helped security guards beef up security in certain areas they realized had some safety threats to students. The study also established that security guards complement the work of the CCTV system, monitor the CCTV system, and act on the activities captured in the system by alerting the authorities concerned. These findings echo the Federal Commission on school safety (2018) which established that CCTV equipment could provide instant alerts when problematic trouble occurs, ensuring that crime against people, theft, and vandalism is reduced.

Watchmen were requested to indicate how they were empowered to use the CCTV cameras. They gave the following feedback: security guards had access to the control room when principals were there (66.7%), and the principals shared information on school safety (33.3%). The security guards indicated that principals share school safety information with them so that they can take necessary action to ensure that the school is safe. A question directed to the security guards on the linkages of the CCTV system with SMIS established that majority of the schools (66.7%) CCTV systems were not linked to SMIS. This would mean that the principals wanted to have the system even when the system is not fully utilized to stop threats from continuing. Further, the study sought to establish whether the CCTV systems were connected to other ICT technology, and it was established that CCTV systems were connected to the ICT technology in the school.

To curtail bullying and ensure students were safe in school, there was a need to identify areas where unsafe activities mostly occur within the school. Students were required to identify unsafe activities that mostly occur within the school, and the question yielded the following.

**Table 2: Student Responses on Unsafe Areas in the School**

Area	Frequency	Percentage
classes	7	3.5
dormitories	68	34
Fence	37	18.5
Field	22	11
Outside school	30	15
Toilets	36	18
Total	200	100

Data in Table 2 show that the dormitories, toilets, and near the fence were the most unsafe areas in the school, with 34%, 18%, and 18.5%, respectively. Other areas the students also felt were unsafe were the field at 11% and the classes at 3.5%. One notices that the dormitory where students live for at least one-third of their school term was considered unsafe by a higher percentage of students (34%), an indicator that principals may need to look more in that direction for clues. Is it a reference to bullying or even homosexuality in schools? The Kenyan Cabinet Minister of Education has previously hinted at such a problem in boarding secondary schools by warning a few boarding students who infringe on the rights of other students by “moving from one bed to another” (IOL, 2022). What happens around the area between the toilets and the school fence? These unsafe areas may require the installation of CCTV cameras in order to deter possible offenders. These findings tend to concur with the findings of Hope (2013), who noted that school security cameras are used in public spaces such as hallways, gymnasiums, and lunchrooms to control access to schools, control conduct within and outside schools and gathering evidence in instances of crime or misbehavior. Installing cameras where they are not necessary will not provide any security benefit but will cost and burden the school with additional maintenance work and legal responsibility. Many student antisocial behaviors in schools may require more conversation than suppression and cameras, as the indiscipline is a manifestation of students’ imitation of observed use of power in society (cooper, 2014).

Principals were required to indicate the safety of the area in which the school is located. Two-thirds of the principals indicated that the areas where schools were located were safe. On their perception of school safety, all six school watchmen indicated that the school was safer with CCTV cameras than before the cameras were installed, with indiscipline cases such as theft and bullying in the school reducing. With modern systems, one can view what is happening on monitoring screens, mobile or tablet devices. Often these systems can trigger an alarm to be sent discreetly to security or staff in case of an intrusion. The installation of cameras in classrooms can intrude on students’



privacy and lead to students hiding things from parents, feeling mistrust, becoming emotionally withdrawn, and losing independence and autonomy.

**Table 3: Reasons Cited for Lack of safety in the school**

Reason	Frequency	Percent
Inadequate CCTV Cameras	100	50
Harsh teachers	24	12
Inadequate security	50	25
Indiscipline	16	8
Outsiders	5	2.5
Poor fencing	5	2.5
<b>Total</b>	<b>200</b>	<b>100</b>

Table 3 shows students' responses when asked about what causes their school to be unsafe. As seen in Table 3, the most highlighted reason was the inadequate use of CCTV cameras (50%) in surveillance and monitoring. The other significant factors were inadequate security personnel (25%), harsh teachers (12%), undisciplined students (2.5%), and incomplete fencing (2.5%).

Installation of CCTV surveillance technologies in schools faces a myriad of challenges. From the interviews, principals indicated that installing CCTV cameras required huge resources for its successful implementation; prohibitive cost of maintenance of the control room and coordination with security; high cost of equipment; and finally, inbuilt cameras required strategic fixing to ensure effective surveillance. Principals reported that CCTV systems installation cost upwards of Ksh 200,000 (USD2000). Schools find this amount difficult to mobilize to cater to these installations. Though the installation enhances students' safety, schools must include such installations in their budgets. A cost of this kind was also extremely out of reach to several schools that needed more allocations for this cost in their budget, and this explained why cameras were only installed in some of the key areas that students considered unsafe for effective surveillance in the schools. This challenge was also identified in a study by Carli (2008), who noted that installing CCTV cameras required huge resources for its successful implementation and maintenance in schools. Evidence by Le Vigne (2011) shows that CCTV system installation is cost-effective for systems installed in public areas to reduce crime.

According to principals, the CCTV system faced three main challenges: system breakdown, maintenance expenses, and inadequate personnel to manage CCTV cameras in schools for safety effectively. The principals were equally divided into three main challenges. According to the security guards, the main challenges to CCTV systems in schools were Insufficient training and the need for monitors in the security guards' offices. It was observed that schools did not have signage to alert students and the public on the presence of CCTV cameras, which like Taylor (2011) noted in the UK, could put schools in contravention of the current Data Protection law (Taylor, 2011; Office of the Data Protection Commissioner, 2025). Policy implementation must now move beyond the 2015 Basic Education Regulations to include the stringent requirements of the Office of the Data Protection Commissioner (ODPC) guidance regarding Processing of Children's Data (2025). As school principals increasingly act as 'Data Controllers, they are legally mandated to conduct best interest assessments before initiating surveillance (ODPC, 2025). Failure to integrate these 2025/2026 legal standards not only undermines student safety but also exposes institutions to significant legal liability under the Data Protection Act. Guidelines by the ODPC Guidance Note (2025) necessitate that schools no longer view CCTV as a purely administrative tool, but as a regulated data processing environment that must respect children's evolving capacities for autonomy.

Students were requested to state how the school can handle the challenges experienced in using the CCTV system and improve school safety. The following responses were obtained.

**Table 4: Measures to improve safety**

Measures to improve safety	Frequency	Percent
Additional security personnel	30	15
Effective use of CCTV	100	50



Fencing	40	20
Discipline among the students	10	5
Outsider Screening	5	2.5
Parents involvement	5	2.5
Teacher restrictions	10	5
<b>Total</b>	<b>200</b>	<b>100</b>

According to Table 4, the students indicated that the effective use of CCTV cameras (50%) would be the best measure to improve school safety. This agrees with Tilly's findings in Glasgow, where he found that 72% of all those interviewed believed CCTV cameras would prevent crime and disorder. (Tilly, 1999). Other measures that were suggested included: proper fencing (20%), additional security personnel (15%), improved discipline among the students (5%), reducing teacher restrictions by being more friendly (5%), proper screening of outsiders and parental involvement (2.5%). Using security technologies in schools, such as CCTV, increases the safety of (or reduces the risk to) students, staff, and school assets. In addition, It prevents major disruptions to teaching and learning. Safety technologies complement existing policies and procedures and assist staff in enforcing them, increasing the chances of catching and identifying offenders.

### **Conclusions and recommendations**

The study established that all the schools were located in a safe area from both internal and external threats. The safety of a school's location largely depends on other factors beyond the school, and which change agents outside the school may address. The dormitories, toilets, and near the fence were the most unsafe areas in the school, which deserve a closer look. These areas are likely to blind-spots which need more human supervision to complement the CCTV system. CCTV surveillance technology has limitations such as image resolution in bad weather or limited field of view in specific spaces unique to each school. The CCTV system is also not able to capture subtle offenses or deter an offense, especially where the students are determined to do so, regardless of the consequences. CCTV cameras should thus be deployed where they offer maximum benefit, while human supervision by school staff and student community focus a little more on the blind-spots.

The investigation into CCTV surveillance in Meru County reveals a significant perception gap between school administrators and the student body. While principals view CCTV as a panacea for order maintenance, the 52.5% of students who feel it helps only "a little" point to a deeper issue. Technology can monitor bodies, but it cannot fix a broken school culture. Students were aware of the cameras' presence and did not seem to mind them, perhaps having learnt to live with them. Schools have embraced CCTV surveillance as a measure of addressing school safety. It was noted that the school CCTV surveillance systems cameras were concentrated more on watching students than school safety. Since the decision to purchase the systems comes from the Board of management, it may be necessary to buy in the students into such need, so that the CCTV system in the school is more than just a want of management.

A critical finding of this research is that inside cameras can evoke student feelings of being viewed as potential perpetrators of antisocial behavior. When students feel mistrusted, they become emotionally withdrawn or find creative ways to circumvent the system. This surveillance tension can be mitigated by strictly defining Privacy Zones where cameras never go, and by Integrating CCTV with Student-Friendly Policies that encourage dialogue over suppression. Regular reports need to be made to the school community on what needs to be corrected from data collected in time to remove ownership of the system to the school, alternatively other ways must be instituted to hold the administration accountable in line with the Data Protection Act and the Constitution to make students safe that is physically safe, emotionally secure and psychologically enabling.

Despite installing CCTV surveillance cameras in schools, students continued to steal other students' property. Harsh teachers and bullying, too, were mentioned as significant misdemeanors in the schools despite the presence of CCTV surveillance technology' This finding makes us conclude that students may have learned to live with the surveillance cameras, for example, by displacing their offences and mischief to areas not covered by the cameras. Further discussion needs to be made on how to deal with sexual offences, that intimidate pupils in school private spaces, in view of student safety and privacy visa-viz the role of CCTV surveillance technology.



On the challenges facing the implementation of CCTV surveillance technology for school safety, the study established that CCTV systems were fairly expensive. This explained why the cameras were only installed in some of the key areas, students considered unsafe for effective surveillance in the school. Two operators were used to operate the CCTV systems in schools, thus confirming the limited resources in installing adequate monitoring screens for effective surveillance. CCTV systems face many challenges, including camera breakdown, the system needs to be more expensive to maintain, and inadequate personnel to effectively manage CCTV cameras in schools. Insufficient training and lack of monitors in the security guards' offices were considered the main challenge facing the use of CCTV surveillance in the schools. Installing a system without a sufficient maintenance budget or a legal data policy is a liability. Other measures suggested to improve school safety include proper fencing of schools, additional security personnel, improved discipline among the students, reducing teacher restrictions by encouraging teachers to be more friendly, proper screening of outsiders, and parental involvement in school safety.

For CCTV to be effective, it must transition from an administrative gadget to a governed system that is financially sustainable and legally compliant. From 2025, all CCTV systems should operate within the Kenya Data Protection Act to protect the school from litigation. There is a need for a safety and security committee in the school that would update the safety and security issues around the school, including highlights from the CCTV surveillance system. In order to enhance the use of CCTV surveillance technology on school safety in boarding secondary schools, the government, through the Ministry of Finance and Ministry of Education, should allocate funds for upgrading school safety and security status, including the acquisition of CCTV surveillance cameras in boarding schools. Training is needed for managers, teachers, and students as the first responses on the ground when disaster or violence breaks out. In addition, training courses/capacity building for those responsible for handling the equipment for effective use of CCTV surveillance Technology. In the end, CCTV surveillance is not an end in itself but a component of a larger safety ecosystem. True school safety in schools will be achieved only when technology is matched by a culture of respect, professionalism and friendliness by all in the school, and by a student body that feels protected rather than policed.

### **Suggestions for Future Research**

While this study established a baseline for CCTV use in Meru County, the rapid technological and regulatory shifts of 2025 necessitate this study to suggest the following possible future inquiry:

- i. A longitudinal study on the dynamics of perceived displacement of student mischief from monitored areas to blind-spots in the school over a longer period.
- ii. More comparative studies to study the digital divide in education safety through security technology. For example, urban schools with stable power/internet vs those rural schools without.
- iii. Research is needed to evaluate whether integration of Artificial Intelligence would help reduce the trust gap, for example by using software capabilities to monitor fire and intruder loitering, to increase students trust of the CCTV system.
- iv. Explore the cost benefit of AI integrated CCTV systems against the manual guarding in rural contexts.

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