A Look at
ACCESS CONTROL
in the Higher Education Industry

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O n April 16, 2007, Seung-Hui Cho, a senior student at Virginia Polytechnic Institute and State University in Blacksburg, Virginia, murdered 32 people and wounded 17 others in two separate attacks on the campus of the university he was enrolled in. Cho's rampage and subsequent suicide raised issues on the importance of student safety in the higher education industry.

School shooting is not a new occurrence and unfortunately, higher education institutes are not the only ones that have been targeted in such tragedies. Over the years, various schools and kindergartens worldwide have also fallen prey to this crime with innocent students and faculty becoming undeserving casualties. However, school shooting is not the only form of crime that exists on campus. Cases of robberies, theft, rape and many more have occurred frequently, making studying on campus a hazardous experience.

This article address some of the concerns surrounding the issue of student safety in the higher education industry and how FingerTec's access control devices and software can reduce such cases from reoccurring to ensure the safety of students and faculty alike.

Make Up Crimes on Campus

There are two major classes of crimes that occur on college campuses. The first is the low-probability, multiple death incident, such as the aforementioned Virginia Tech massacre and other widely known mass murders at school campuses, including the Columbine High School massacre, the Sandy Hook Elementary School shooting and the Bath School bombings. This kind of crime is known for instilling fear among students and faculty and due to its terrorism-like nature, will leave a long-lasting negative impression on them. The second class of crime has a higher frequency of occurrence compared to mass murder cases and these include crimes such as robberies, sexual assault, battery, burglary and fraud. According to Gover et. al. (2007), this class of crime is known to occur on a daily basis at schools, affecting the lives of college students. Granted, deaths rarely occur in these kind of situations, but if a student is a victim of any of these crimes, this will lead to them suffering from negative mental health consequences. Some of these consequences may include anxiety, depression, reduced self-esteem, increased stress and various physical health consequences. This will in turn disrupt and impede the students' academic progress in college.

It has been said that gender is one of the most salient individual characteristics that impacts fear of crime (Ferraro, 1995; Reid & Konrad, 2004). According to Sacco (1990), women are generally discovered to have higher levels of fear of crime across contextual settings and operational differences. Through much research, it has also been found that there are significant gender effects for all types of victimization and also for overall measures of fear of crime (Bankston & Thompson, 1989; Ferraro & LaGrange, 1992; Warr, 1984). Although men have a higher risk of victimization for almost all nonsexual violent crimes, such as robbery and assault, women's reported levels of fear of crime are found to be two to three times higher than those reported by men (Reid & Konrad, 2004). The biggest difference lies in two crimes which women are reported to have higher victimization rates than men and they are rape and sexual assault (Hilinski, Neeson & Andrews, 2011).

Among college women, the role that fear of rape and sexual assault plays in impacting fear of other crimes is particularly relevant among college women mainly due to the increased risk of being the victim of these crimes. A study conducted by the National College Women Sexual Victimization (NCWSV) discovered that the rate of completed rapes on college campuses is about 36 attempted or completed rapes per 1,000 students. As an example, let's say a college or university has 10,000 students. Out of those 10,000 students, there is a chance of 350 rape cases per academic that could potentially occur on that particular campus. Further research indicated that the rates of victimization ranged from 9.5 for threat of rape to 66.4 per 1,000 for attempted sexual contact without force (Fisher, Cullen & Turner, 2000). Altogether, these results suggest that rape and sexual assault are prevalent on the college campus (Hilinski, Neeson & Andrews, 2011).

DeVoe et. al. (2002) found that 10 percent of all public schools reported at least one serious violent crime to the police or a law enforcement representative in 1996-97. Some of the principal's reports of serious violent crimes include murder, rape or other type of sexual battery, suicide, physical attack or fight with a weapon or robbery. Meanwhile, another 47 percent of public schools reported at least one less serious violent crime or non-violent crime, including physical attack or fight without a weapon, theft/larceny and vandalism. Finally, the remaining 43 percent of public schools did not report any of these crimes to the police. The statistics for this case can be viewed below.

Table 7.1.—Percentage of public schools that reported one or more criminal incidents to police, by seriousness of the incident, urbanicity, and selected school characteristics: 1996–97

School characteristics	Any incidents					Serious violent incidents					Less serious violent or nonviolent incidents and no serious violent incidents				
	Total	City	Urban fringe	Town	Rural	Total	City	Urban fringe	Town	Rural	Total	City	Urban fringe	Town	Rural
Total	56.7	59.3	58.4	63.2	46.9	10.1	16.8	11.2	5.4	7.8	46.5	42.4	46.7	57.8	39.2
Instructional level															
Elementary school	45.1	46.9	47.0	52.6	34.2	4.2	6.1	3.3	2.0	5.1	40.8	40.8	43.2	50.6	29.1
Middle school	74.1	86.7	78.8	70.0	62.0	18.7	35.8	21.7	7.0	15.0	55.4	50.9	57.1	63.0	47.0
High school	76.9	88.8	84.0	84.2	64.1	20.6	48.0	33.0	12.7	9.4	55.9	39.9	49.4	71.5	54.7
Region															
Northeast	51.6	51.9	49.3	53.7	52.5	6.8	9.5	6.9	2.6	11.0	44.7	42.2	42.4	51.2	41.5
Southeast	58.8	55.1	65.5	64.8	51.1	9.2	17.3	13.2	4.9	4.9	49.6	37.8	52.3	59.9	46.2
Central	50.8	52.5	51.7	59.9	43.6	11.1	16.4	12.4	6.4	10.2	39.7	36.1	39.3	53.4	33.5
West	64.3	69.8	69.9	72.5	45.8	11.9	20.2	13.3	7.2	5.7	51.9	49.5	54.4	65.3	40.0
School enrollment															
Less than 300	37.8	—	—	44.9	38.0	3.9	—	—	8.8	2.5	33.8	—	—	36.1	35.5
300–999	59.6	54.2	59.2	67.3	56.8	9.3	12.5	9.0	3.2	13.9	50.2	41.7	49.5	64.1	42.9
1,000 or more	89.1	93.1	86.7	86.5	—	32.9	44.2	29.8	15.9	—	56.0	48.1	56.9	70.6	—
Minority enrollment															
Less than 5 percent	46.7	—	47.2	53.9	40.8	5.8	—	5.9	3.3	7.3	40.9	—	41.3	50.5	33.5
5–19 percent	57.7	52.0	62.9	64.0	45.0	10.9	14.5	11.3	10.6	6.8	46.6	37.4	51.1	53.5	38.1
20–49 percent	58.1	54.7	58.5	66.7	53.3	11.1	19.1	10.1	5.0	8.0	47.0	35.6	48.4	61.7	45.3
50 percent or more	68.3	64.8	62.3	81.5	74.9	14.7	17.6	17.8	4.4	11.6	53.1	47.1	42.6	77.1	63.3
Free/reduced-price lunch eligibility															
Less than 20 percent	54.4	50.6	57.3	64.2	41.2	8.6	12.2	9.9	7.1	5.6	45.8	38.2	47.4	57.1	35.7
21–34 percent	53.2	56.0	65.5	57.2	39.5	11.7	18.4	13.3	7.1	11.6	41.6	37.5	52.2	50.2	27.9
35–49 percent	59.4	76.1	53.3	63.1	52.5	11.6	34.2	8.6	3.0	8.6	47.8	41.5	44.7	60.1	43.9
50–74 percent	58.8	60.8	54.7	66.6	52.0	8.9	22.9	10.3	2.0	2.3	49.5	37.9	42.4	64.6	49.8
75 percent or more	59.2	58.5	—	—	—	10.2	8.4	—	—	—	49.0	50.2	—	—	—

—Fewer than 30 sample cases.

NOTE: Serious violent crimes include murder, rape or other type of sexual battery, suicide, physical attack or fight with a weapon, or robbery. Less serious violent or nonviolent crimes include physical attack or fight without a weapon, theft/larceny, and vandalism. Any incidents refer to any of the crimes listed. Not included are any crimes not listed here and any crimes not reported to police. Schools were asked to report crimes that took place in school buildings, on school buses, on school grounds, and at places holding school-sponsored events. Population size is 78,000 public schools.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Principal/School Disciplinarian Survey on School Violence," FRSS 63, 1997.

Between 1996 to 2000, DeVoe et. al. discovered that teachers were victims of approximately 1,603,000 non-fatal crimes at school, including 1,004,000 thefts and 599,000 violent crimes. On average, this translates into 74 crimes per 1,000 teachers per year. With regards to students, from 1995 to 1999, the percentage of students aged 12 through 18 feeling unsafe while they were at school had decreased. Despite that, there were no changes of in the percentage of students feeling unsafe between 1999 and 2001, but in both 1999 and 2001, there were more students who were likely afraid of being attacked at school more so than when they are away from school (DeVoe et. al., 2002). Both statistics for these cases can be viewed below.

Table 9.1.—Number of nonfatal crimes against teachers and average annual number of crimes per 1,000 teachers at school, by type of crime and selected teacher characteristics: Aggregated from 1996 through 2000

Teacher characteristics	Total crimes from 1996 to 2000				Average annual number of crimes per 1,000 teachers			
	Total	Theft	Violent	Serious violent[1]	Total	Theft	Violent	Serious violent[1]
Total	1,603,300	1,004,300	599,000	68,600	74	46	28	3
Gender								
Male	468,600	201,700	266,900	30,600	89	38	50	6
Female	1,134,700	802,600	332,100	38,000	69	49	20	2
Race/ethnicity								
White, non-Hispanic	1,347,600	850,900	496,700	57,800	75	48	28	3
Black, non-Hispanic	123,200	84,800	38,400	8,600[2]	61	42	19	4[2]
Hispanic	113,900	57,900	56,000	2,200[2]	87	44	43	2[2]
Other, non-Hispanic	6,400	3,600[2]	2,800[2]	†	19	10[2]	8[2]	†
Instructional level								
Elementary	573,000	403,900	169,200	38,100	51	36	15	3
Middle/junior high	480,600	262,600	218,000	15,400[2]	107	59	49	3[2]
Senior high	549,600	337,800	211,800	15,000[2]	91	56	35	3[2]
Urbanicity[3]								
Urban	919,400	545,300	374,000	37,000	89	53	36	4
Suburban	460,100	312,900	147,200	22,700[2]	67	46	21	3[2]
Rural	174,200	112,800	61,400	4,700[2]	47	31	17	1[2]

†No cases were reported in this cell, although the crime defined by the cell could have happened to some teachers with these characteristics, had a different sample had been drawn.
[1]Serious violent crimes are also included in violent crimes.
[2]The estimate was based on fewer than 10 cases.
[3]Teachers teaching in more than one school in different locales are not included.

NOTE: Serious violent crimes include rape, sexual assault, robbery, and aggravated assault. Violent crimes include serious violent crimes and simple assault. Total crimes include violent crimes and theft. "At school" includes inside the school building, on school property, at work site, or while working. For thefts, "while working" was not considered since thefts of teachers' property kept at school can occur when teachers are not present. The data were aggregated from 1996 through 2000 due to the small number of teachers in each year's sample. On average, there were about 4.4 million teachers per year over the 5-year period for a total population size of 21,802,946 teachers. The population reported here includes part-time teachers as well as other instructional and support staff. Because of rounding or missing data, detail may not add to totals. Total crime numbers are rounded to the nearest 100.

SOURCE: U.S. Department of Justice, Bureau of Justice Statistics, National Crime Victimization Survey, 1996 through 2000.

Table 12.1.—Percentage of students ages 12 through 18 who reported fear at school or on the way to and from school and away from school during the previous 6 months, by selected student characteristics: 1995, 1999, and 2001

Student characteristics	Feared attack at school or on the way to and from school			Feared attack away from school	
	1995	1999	2001	1999	2001
Total	11.8	7.3	6.4	5.7	4.6
Gender					
Male	10.8	6.5	6.4	4.1	3.7
Female	12.8	8.2	6.4	7.4	5.6
Race/ethnicity					
White, non-Hispanic	8.1	5.0	4.9	4.3	3.7
Black, non-Hispanic	20.3	13.5	8.9	8.7	6.3
Hispanic	20.9	11.7	10.6	8.9	6.5
Other, non-Hispanic	13.5	6.7	6.4	5.4	6.6
Grade					
6th	14.3	10.9	10.6	7.8	6.3
7th	15.3	9.5	9.2	6.1	5.5
8th	13.0	8.1	7.6	5.5	4.4
9th	11.6	7.1	5.5	4.6	4.5
10th	11.0	7.1	5.0	4.8	4.2
11th	8.9	4.8	4.8	5.9	4.7
12th	7.8	4.8	2.9	6.1	3.3
Urbanicity					
Urban	18.4	11.6	9.7	9.1	7.4
Suburban	9.8	6.2	4.8	5.0	3.8
Rural	8.6	4.8	6.0	3.0	3.0
Control					
Public	12.2	7.7	6.6	5.8	4.6
Private	7.3	3.6	4.6	5.0	5.1

NOTE: In 1995 and 1999, students reported fear of "attack or harm" at school during the previous 6 months. In 2001, students reported fear of "attack or threat of attack" at school during the previous 6 months. Includes students who reported that they sometimes or most of the time feared being victimized in this way. See appendix B for details. Population sizes for students ages 12 through 18 are 23,601,000 in 1995, 24,614,000 in 1999, and 24,315,190 in 2001.

SOURCE: U.S. Department of Justice, Bureau of Justice Statistics, School Crime Supplement to the National Crime Victimization Survey, January–June 1995, 1999, and 2001.

THE IMPORTANCE OF
International Student Safety

International student safety is another topic of discussion. In America, many students from China and Saudi Arabia would be sent to America to further their studies. The reason for that is due to being fueled by a hunger for U.S. education on the part of China's growing middle class. As for Saudi students, the Saudi government would offer their students a generous scholarship program to further their studies to America.

However, there have been some setbacks stemming from concerns regarding safety, this despite the overall number of international students studying in America increasing in recent years. Students have rated America in the top five in terms of both the safest and the least safe countries to study abroad. According to a report from the British Council (2012), such a divided opinion is due to factors such as "the product of (the country's) size, diverse urban and rural nature and the national celebrity status generated by its media, television and sports industries and afforded to it by countries around the world." In that same report, the United Kingdom, thanks to its multicultural nature of Britain's society, has a reputation of being the safest country to study. This, along with tight firearms ownership, good medical care and a low crime rate, contributed to the country's strong reputation as a study haven. On the other end of the spectrum, Israel is reported to be the least safe country to study in due to fears of terrorist attacks while high street crimes contribute to South Africa's place as the second least safe country to study in.

Students in the survey conducted by the British Council pointed out how they are satisfied with the low risk of terrorist attacks in America, but are still wary about the possession of firearms, which may be prevalent on campus. Chris Nyland, a professor of management at Monash University in Australia, interviewed 200 international students in Australia, who felt that Australia is much safer than their respective home countries, although it is not the case for students from Singapore and Japan, who are very sensitive to the threat of crime of any kind.

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# Access Control: Is it the Solution?

There is a need to implement access control systems in any and every higher education institute. Many universities in North America have gone out of their way to implement access control systems, most notably RFID card access control systems, in order to boost the security of their premises and ensure that neither students, nor the university's faculty are harmed. In addition, efforts undertaken by the local police have been enforced further to help reduce the crime rate of such cases that occur in higher education institutes.

FingerTec provides comprehensive and simple-to-use access control terminals that can help to reduce many of these cases from happening on campus. Most of our terminals are embedded with a fingerprint recognition device, which is very helpful in reducing unauthorized access by any intruder. This is because everyone's fingerprint is unique to an individual, thus ensuring that any potential intruder who is not registered under the campus' system will not breach entry. Terminals, such as i-Kiosk 100 Plus and Q2i are useful in maintaining a great quality of access control for any kind of premise, even on campus to ensure the safety of students and faculty alike. To beef up the state of access control on campus, master and slave terminals, such as the ones from the R2 series, are also useful to control the students' and faculty's in/out activity throughout the university.

Another device that is useful in providing access control is Ingressus, a controller that helps to centralize access control devices for conven-

ience. Providing support for a one-door or two-door environment, users can verify at the relevant Wiegand terminals through fingerprint, RFID card, password or any combination of the three verification methods during entry or exit. After a user attempts to enter a secured area, Ingressus will verify the user's identity first before granting the user access. Every transaction record is saved into the controller's inbuilt memory and the records are then sent to Ingress, the software that comes bundled with every Ingressus controller.

Ingress, as well as the Ingressus controller, contains a wide range of features. Real-time monitoring is especially crucial in order to monitor the movements of students and faculty. Because higher education institutes tend to be huge in size consisting of buildings, fields, cafeterias and more, it would be useful to have a visual map in order to track the activities taking place in and around campus. Ingress has a visual map which can be configured to suit your needs in monitoring real-time activities in order to detect anything suspicious that happens on campus. A sample visual map used in Ingress can be seen below:
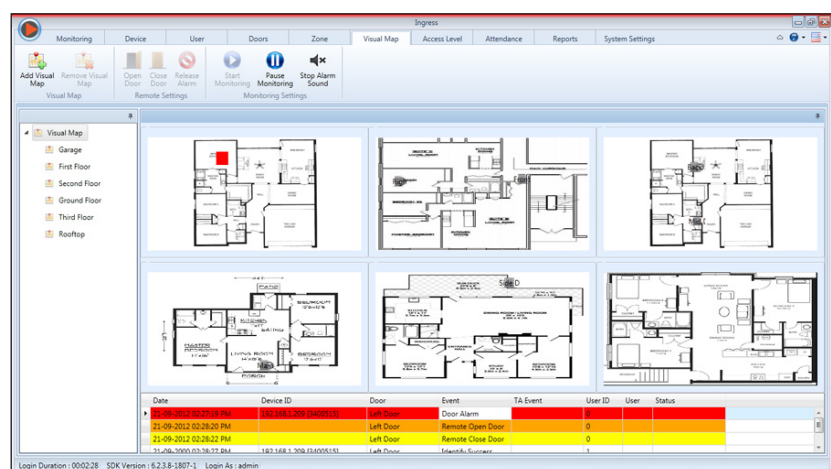

An easier way to ensure that higher learning institutes are safe without any criminal activities through the use of Ingress

Another useful tool that Ingress possesses is antipassback, which is a great way to manage access control, particularly in campus buildings. In the event a student were to enter a building by relying on another student's credential, he will require his fellow student's credential in order for him to leave the building. In the event of an intrusion by an outsider who does not have any sort of credential registered into the system, it would make it easier for campus security to track the intruder down due to the visual aids, such as the above visual map, as well as taking advantage of the antipassback feature to ensure the intruder doesn't escape from the building. Below is an example of the antipassback feature in Ingress.
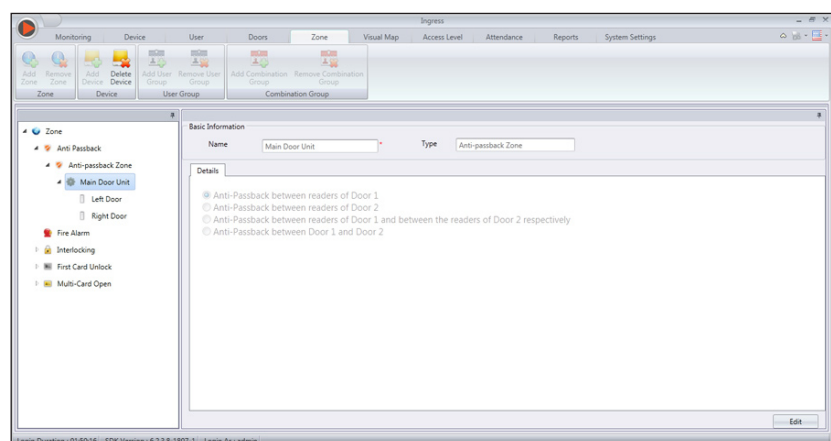
The antipassback feature in Ingress

Interlocking is another important element in the increase of access control for a campus. Interlock works by ensuring a sequence where one door can only be released when other doors are closed. Ingress possesses this feature in its system which will be crucial in making sure that all students and faculty will abide by a sequence in order to access a secured area. A screenshot of the interlocking feature in Ingress can be seen below.
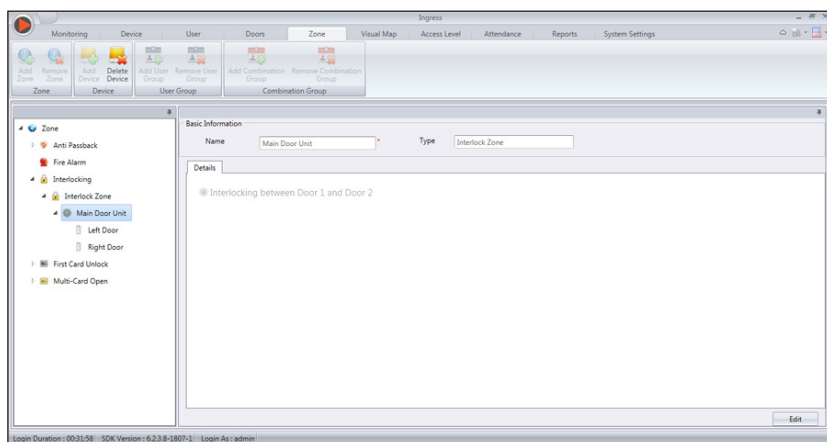
The interlocking feature in Ingress

Invest Now, For Future Benefits

With the need to increase the level of access control in campuses, it is absolutely essential for all institutes to deploy an access control system in order to maintain the safeness of all campus personnel. FingerTec Worldwide's access control terminals, as well as its Ingressus controller, are thoroughly beneficial to ensure a healthy and safe environment in higher learning institutes. Though costly at first, the long-term benefits these devices possess will strengthen the assurance of student safety on campus and encourage students to continue pursuing their studies without the need to feel threatened by any form of crime that may occur on campus.

It is very difficult to predict what happens on campus as crimes can easily spring from out of nowhere. That is why access control is required in order to increase safety and reduce crimes in colleges and universities. Being able to monitor real-time happenings on campus make it an easy and efficient way for campus security to take swift action in the event of a crime or intrusion. With education being an important element in nurturing and enriching the lives of students of all ages, safety must be a top priority and if the level of access control continues to increase, students will strive to make good progress in their studies while teachers continue to spread the knowledge they possess to educate them without the thought of their lives being constantly at risk on campus every day.

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