policy brief

data-driven school safety

by ora d. tanner and karissa mckelvey

In efforts to prevent another mass shooting in U.S. schools, state lawmakers have increasingly turned to technological solutions to protect our nation's students. As a result, K-12 learning environments have been encroached upon by technologies including AI-enabled video surveillance, facial recognition, electromagnetic door locks that can be controlled remotely, anonymous tip lines, and social media monitoring. However, there is little to no empirical evidence to support the use of these technologies to prevent gun violence. Despite this lack of evidence, in May 2019, the Marjory Stoneman Douglas High School Public Safety Act (Senate Bill 7030) was signed into law by Florida Governor Ron DeSantis. The legislation included a provision that mandated a centralized, integrated database called the Florida Schools Safety Portal (FSSP) be developed in order to "identify, assess and provide intervention services for individuals whose behavior may pose a threat to themselves or others."

Using integrated data to identify a potential school shooter may appear to be an innovative use of technology. However, a quick dive below the surface reveals yet another "unprecedented techno-political solution," crafted by those in power, that will disproportionately and negatively impact students and communities who live in poverty. In this brief, we recommend that the Federal Government, as well as the State of Florida's Department of Education, create an Office of Technology Assessment (OTA). The OTA would have the ability to provide rigorous policy analyses on the social and policy implications of data-driven school safety initiatives like the FSSP. The technology officers housed at the OTA would be similar to other public servants, such as the Congressional Research Service that provides policy analysis for elected leaders regardless of party affiliation.

data-driven predictive policing algorithms and risk assessments

There exists a considerable body of work on the prediction of violence in the field of criminology and psychology over the past fifty years. More recently, the use of these statistical and algorithmic methods has exploded across the country for instances of pretrial release, juvenile justice, and sentencing. A wide body of evidence suggests the inherent bias and lack of accuracy of these predictive tools and many in civil society and academia have called for "algorithmic impact assessments" that measure their effects on society. Largely, advocates and academics are calling for the strengthening of local democratic input regarding what surveillance technology should be adopted and the conditions under which it should be deployed. In this context, predicting a mass shooting in a school is an open area of research largely unfounded in theory and practice. However, research in criminology has shown that there are some predictive features for violence in youth. These are mostly drawn from psychological and behavioral data, including the progression of antisocial behavior over time, isolation, and the circumstances of a child's life at home. Surprisingly, research does not support the common misconception that people with mental health disabilities (excluding suicide) are more prone to commit gun violence than anyone else.

case study: florida schools safety portal (fssp)

The FSSP will integrate data from a number of sources including, but not limited to; Florida's Department of Education, Department of Juvenile Justice, Department of Children and Families, Baker Act mental health data, Department of Law Enforcement, local law enforcement, a mobile suspicious activity reporting tool called FortifyFL, social media posts, school environmental safety incident reports and discipline records. The ultimate goal of the system is to be able to type in a student's name whose behavior has been identified as a threat and provide timely access to accurate data associated with the inquiry. Data analytics tools will be used by authorized individuals of a school's threat assessment team and law enforcement. If the student is flagged to be a serious threat, an intervention will be made to assist them in getting the "professional support" needed. This data-driven school safety solution poses a number of issues as it relates to privacy, security, bias, and ethics. What's more concerning is that this type of big data is contributing to the criminalizing infrastructure being established within public schools that has been shown to negatively impact students of color.

Privacy. Thirty-three advocacy and civil rights groups wrote an open letter to the Florida Governor expressing alarm over privacy, security, and data governance risks in the FSSP. They insisted that the construction of the database cease until a commission of parents, students, and experts in areas such as education, privacy, security, equity, disability rights, and school security could be convened to identify proven measures for this data-driven approach to school safety. These

advocacy and civil rights groups have requested evidence that the development of the database was not violating the laws designed to protect students' data. These laws include the Family Educational Rights and Privacy Act (FERPA) that protects the privacy of student education records, the Children's Online Privacy Protection Act (COPPA) that protects the online privacy of children under age 13, and the Health Insurance Portability and Accountability Act of 1996 (HIPAA) that safeguards medical information. Other than a statement issued in a press release, policymakers insisted they were in compliance with all laws to use student data for the safety portal.

Security. The nation's schools have become the target of increased cyberattacks due to outdated systems and lack of IT staff. Malicious actors have stolen student data and district money through repeated ransomware attacks. By including massive amounts of student information in a centralized database, policymakers in Florida put millions of students' data at risk. Students in this system will have a higher security risk, simply because they have more records across multiple data sources. In other words, every source is error-prone, and the security of personally identifiable information is magnified when multiple data sets are combined.

Bias. The FSSP includes datasets that are highly correlated with race and socioeconomic status. This increases the probability of students from minoritized groups being flagged for potentially causing gun violence compared to other students. Algorithmic bias in K-12 educational technology is a growing challenge, and it must be mitigated to ensure fair and equitable systems that use student data. There is also the potential for individual bias by threat assessment teams and law enforcement who have access to the data. Observation bias takes place when individuals tend to see patterns they expect to see because of preconceived prejudices (conscious or unconscious) about certain student groups.

recommendations

A former successful collaboration between technologists and policymakers was the Office of Technology Assessment (OTA)—and we need to bring it back. The OTA was a nonpartisan agency within the U.S. Congress that provided rigorous policy analyses on the social and policy implications of emerging technologies. They operated from 1972 to 1995 and contributed scientific and technical expertise that informed the policy making decisions of Congressional members and committees. The OTA was defunded in 1995. However, the Select Committee on the Modernization of Congress has proposed to introduce a new and improved OTA that will "study and recommend emerging technologies, provide nonpartisan information and policy analysis to Member offices, support legislative branch agencies in their examination of new technologies, focus on general oversight and policy, and facilitate peer reviews of potential new technologies." An independent agency such as the OTA could assess the societal impacts of these technologies as well as provide oversight for policymakers to identify how these technologies could violate privacy laws.

Methods for preventing school shootings should be incorporated from criminology, sociology, and education literature. The literature for reducing violence in youth across the United States centers on intervention programs in schools, including cognitive-behavioral skills training as well as employing student resource officers to directly deal with problems of bullying, racial tensions, student disrespect, and gangs. Other potential alternatives studied in the literature include home visits, preschool, early childhood intervention, skills training in middle schools, and multi-systemic therapy. Policymakers should be prioritizing these evidence-based approaches to curb mass gun violence as an alternative or complementary program to a centralized, integrated database.

conclusions

As we move into an age of big data and algorithms, current and future policy leaders must engage with and learn from technical and sociological experts. Lawmakers must be held accountable for making informed and effective technology policies that move beyond the identification of individual attributes of potential school shooters, and instead address the structural and institutional conditions that facilitate mass gun violence at schools. The FSSP is an example of the gap between what policymakers *think* technology can do versus what experts know technology can do. The trend toward increased digital surveillance will continue if state policymakers and law enforcement are the only voices included in the technology and school safety conversation. The knowledge and insights of technologists, sociologists, students, parents, educators, and community stakeholders must be included in order to develop a holistic approach to keeping students safe. If lawmakers insist on using emerging technologies to prevent school shootings, it is paramount to craft policies that incorporate effective evidence-based strategies in tandem.

A list of sources and recommended reading can be found under the policy brief section on contexts.org.

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