

Florida Discipline and the Effects of COVID-19

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I. Introduction

At the end of the 2019-2020 school year, COVID-19 caused schools across the United States to shut down. Quickly, administrations were forced to develop and implement fully online models of education with little warning and little resources. As the 2020-2021 school year approached, schools began to build an infrastructure for this model of learning, and offered varying level of education for their students: some schools offered a fully virtual educational experience, while others offered a hybrid educational learning opportunity. And even though some attempted to offer the traditional, in-person education, policies were established such as masks, social distancing, and quarantining that created a different learning environment than previously experienced.

When the 2021-2022 school year began, most schools and students were back to “normal”; that being, students were not required to engage in the COVID-19 related rules from the previous school year and schools attempted to operate as they did prior to March of 2020. Unfortunately, the student body was unable to revert back to “normal”: many students lost family members during the pandemic, and the fear and anxiety experienced during the isolation of quarantine produced lasting psychological effects.

This project seeks to better understand the psychological effects of COVID-19 in the education of students by analyzing the discipline incidents of students during the 2021-2022 school year and comparing this information to the school years prior to the pandemic. Due to the accessibility of data and working as an educator myself during this time, this project focused solely on the state of Florida. I wanted to answer the following questions:

- Is there a difference in the number of discipline occurrences post-pandemic?
- If there is a quantitative difference, are there categories that deviate further from the norm than others that could explain this difference?
- Is there a commonality to these different categories?

This project was created in the hope that the results would better equip administrators in school districts across Florida to assist their students in healing from the pandemic of 2020 and, with this understanding, allocate resources to meet the needs of the students to create the safest, healthiest learning environment possible.

II. Data

The data for this project was collected from the website of the Department of Education of Florida using the School Environmental Safety Incident Reporting (SESIR) System, which “currently collects data on 26 incidents of crimes, violence, and disruptive behaviors that occur on school grounds, on school transportation, and at off-campus, school sponsored events, during any 24-hour period, 365 days per year. Incidents are reported by schools to the districts which, in turn, provide the data to the DOE.” (fldoe.org/safe-schools/discipline-data) The 26 categories included: alcohol, arson, battery, burglary, bullying, disruption on campus, drug sales, drug use/possession, fighting, harassment, hazing, homicide, kidnapping, larceny/theft, other major incidents, physical attack, robbery, sexual assault, sexual battery, sexual harassment, sexual offenses (other), threat/intimidation, tobacco, trespassing, vandalism, and weapons possession. Full definitions and explanations can be found at <https://www.fldoe.org/safe-schools/sesir-discipline-data>. This project used data from years 2010-2019 and compared it with data from 2021-2022. Years 2019-2020 and 2020-2021 were omitted from this project due to their unreliability and inconsistency of school educational experiences.

III. Methodologies

The data for this project were collected as XLS files and compiled, cleaned, and analyzed using Python and Python script packages Pandas, Numpy, Seaborn, Matplotlib, SciKitLearn, and SciPy. Python was chosen as the primary coding language for this project due to the ease of use of the utilized packages and their ability to quickly calculate and create visualizations. Once the data were imported, they were compiled into a single dataframe. While cleaning the data, I made the following changes to the original data sets to keep consistency:

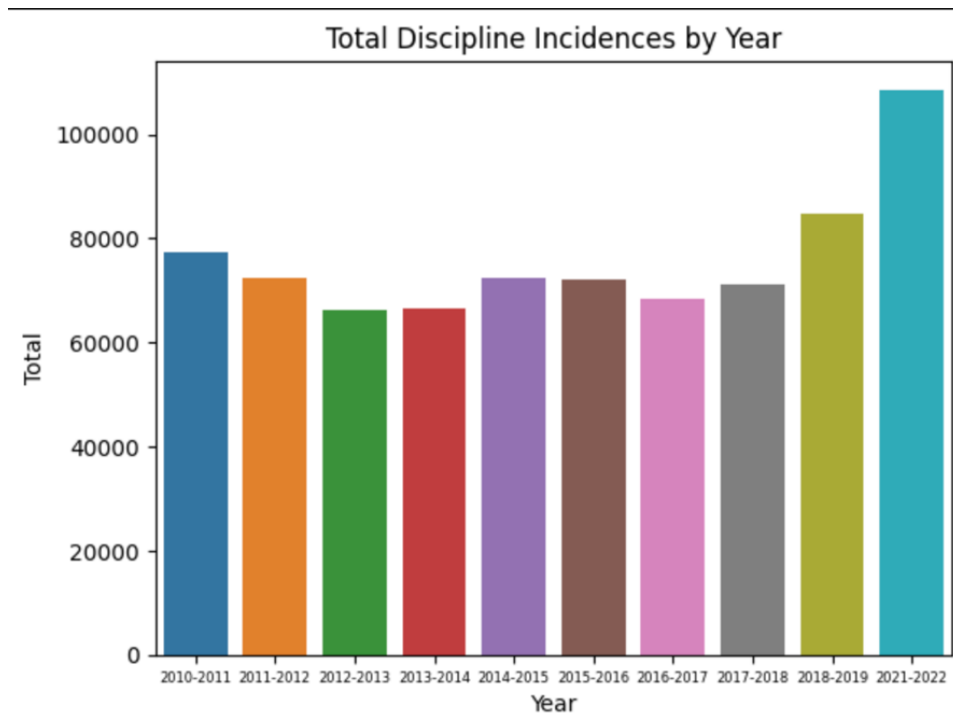
- In 2021-2022, “Aggravated Battery” was renamed to “Battery”.
- For years 2010-2014, new columns named “Physical Attack”, “Sexual Assault”, and “Hazing” were created.
- The category of “Homicide” was omitted due to the lack of data.

IV. Analysis

The first step was to compile the data into a single dataframe for comparison.

Year	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2021-2022
Type										
ALCOHOL	1182.0	1115.0	1067.0	1181.0	1210.0	1191.0	1154.0	1240.0	1251.0	1100.0
ARSON	93.0	93.0	97.0	107.0	104.0	100.0	80.0	83.0	73.0	150.0
BATTERY	6330.0	6274.0	4106.0	3217.0	2742.0	2516.0	2263.0	2323.0	2459.0	1302.0
BURGLARY	665.0	564.0	392.0	350.0	347.0	287.0	410.0	213.0	144.0	117.0
BULLYING	6107.0	4860.0	3861.0	3819.0	2952.0	2867.0	3153.0	2962.0	3408.0	2870.0
DISRUPTION ON CAMPUS	3327.0	2857.0	2888.0	3009.0	3220.0	3395.0	3320.0	3357.0	3359.0	4138.0
DRUG SALES	718.0	674.0	694.0	744.0	666.0	552.0	501.0	563.0	726.0	677.0
DRUG USE/POSSESSION	6061.0	6376.0	6489.0	6543.0	6523.0	6300.0	6082.0	6817.0	9013.0	11110.0
FIGHTING	29323.0	27539.0	25589.0	23714.0	24068.0	21957.0	19742.0	19372.0	19560.0	21825.0
HARASSMENT	1547.0	1764.0	1601.0	1719.0	1805.0	1832.0	1775.0	1657.0	1969.0	2267.0
HAZING	0.0	0.0	0.0	0.0	6.0	6.0	6.0	11.0	4.0	16.0
KIDNAPPING	1.0	2.0	2.0	1.0	0.0	2.0	3.0	1.0	0.0	1.0
LARCENY/THEFT	2520.0	2395.0	2565.0	2335.0	2082.0	2045.0	1962.0	1411.0	1179.0	582.0
OTHER MAJOR	2135.0	1933.0	1808.0	2164.0	2232.0	2696.0	2517.0	2449.0	2399.0	2853.0
PHYSICAL ATTACK	0.0	0.0	2.0	0.0	7956.0	10342.0	10633.0	9201.0	8375.0	14835.0
ROBBERY	199.0	217.0	187.0	174.0	138.0	167.0	148.0	129.0	130.0	93.0
SEXUAL ASSAULT	0.0	0.0	0.0	0.0	23.0	25.0	46.0	54.0	70.0	79.0
SEXUAL BATTERY	48.0	58.0	34.0	36.0	42.0	28.0	37.0	42.0	50.0	47.0
SEXUAL HARASSMENT	1442.0	1674.0	1608.0	1715.0	1775.0	1805.0	1952.0	2160.0	2509.0	1930.0
SEXUAL OFFENSES (Other)	1396.0	1395.0	1356.0	1415.0	1424.0	1581.0	1431.0	1496.0	1600.0	1792.0
THREAT/INTIMIDATION	4633.0	4176.0	4038.0	4740.0	4211.0	4314.0	4124.0	4913.0	5909.0	8190.0
TOBACCO	5420.0	4724.0	4446.0	6351.0	5943.0	4902.0	4179.0	8278.0	17926.0	29110.0
TRESPASSING	745.0	741.0	623.0	548.0	517.0	546.0	475.0	456.0	535.0	469.0
VANDALISM	1255.0	1051.0	832.0	686.0	646.0	782.0	805.0	708.0	831.0	816.0
WEAPONS POSSESSION	2144.0	1921.0	1802.0	1848.0	1818.0	1786.0	1567.0	1349.0	1315.0	2210.0
STATE TOTAL	77291.0	72403.0	66087.0	66416.0	72450.0	72024.0	68365.0	71246.0	84795.0	108579.0

As we can see from the histogram below, there was clearly a difference in number. In 2021-2022, there were 108,579 incidents and 84,795 incidents in 2018-2019, a 28% increase.



Once it was determined that there was a significant increase in discipline incidents, I used statistical analysis to determine which categories outperformed others in 2021-2022 when compared to prior years. First, I analyzed the correlation between the 25 different categories when compared to the state total.

As we can see, there were six categories that had the highest positive correlations: Disruption on Campus, Drug Use/Possession, Harassment, Sexual Offenses (Other), Threat/Intimidation, and Tobacco.

Other methods were used to determine which categories outperformed others in 2021-2022. To further analyze this data, I found test statistics and p-values for all 25 categories, comparing the data value in 2021-2022 with the data values from 2010-2019. This information is relatively consistent with the correlation values, revealing that the six categories previously mentioned show the greatest test statistics and p-values, expressing that these categories deviate furthest from the norms prior to the pandemic. While Arson was considered to be a primary category originally, in the end, this category was not considered to have a significant impact in 2021-2022 due to having low total numbers in that category year after year.

Type	STATE TOTAL
ALCOHOL	-0.127336
ARSON	0.655049
BATTERY	-0.351870
BURGLARY	-0.491333
BULLYING	-0.163568
DISRUPTION ON CAMPUS	0.866668
DRUG SALES	0.220808
DRUG USE/POSSESSION	0.932369
FIGHTING	-0.169575
HARASSMENT	0.850392
HAZING	0.673872
KIDNAPPING	-0.349361
LARCENY/THEFT	-0.811256
OTHER MAJOR	0.600356
PHYSICAL ATTACK	0.570016
ROBBERY	-0.632222
SEXUAL ASSAULT	0.685754
SEXUAL BATTERY	0.410234
SEXUAL HARASSMENT	0.299655
SEXUAL OFFENSES (Other)	0.874399
THREAT/INTIMIDATION	0.954056
TOBACCO	0.950939
TRESPASSING	-0.228624
VANDALISM	0.109326
WEAPONS POSSESSION	0.369536
STATE TOTAL	1.000000

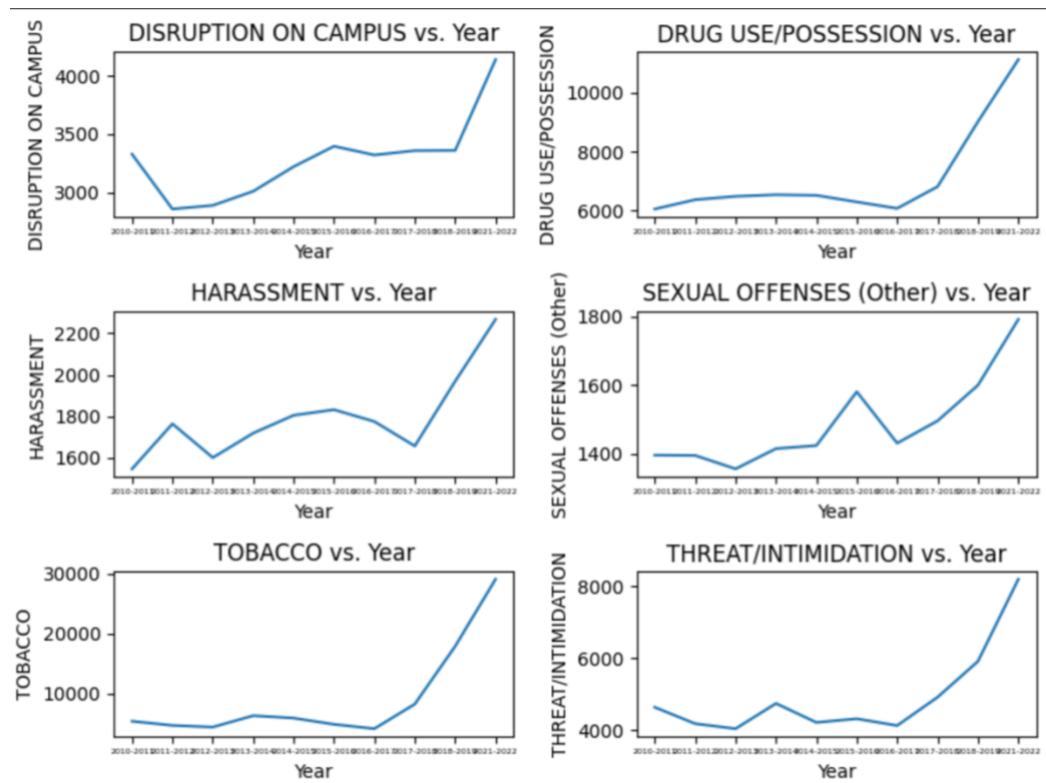
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Column 'ALCOHOL':
T-Statistic: 3.947025142014638
P-Value: 0.004253736889731276
---
Column 'ARSON':
T-Statistic: -15.161896421022924
P-Value: 3.545609228703196e-07
---
Column 'BATTERY':
T-Statistic: 4.157788959808066
P-Value: 0.003174835059606218
---
Column 'BURGLARY':
T-Statistic: 4.770014834847518
P-Value: 0.0014085843574609153
---
Column 'BULLYING':
T-Statistic: 2.5211980286915794
P-Value: 0.035742023553707335
---
Column 'DISRUPTION ON CAMPUS':
T-Statistic: -13.193009635709133
P-Value: 1.0379651040384897e-06
---
Column 'DRUG SALES':
T-Statistic: -0.9705416243626297
P-Value: 0.3602013267100657
---
Column 'DRUG USE/POSSESSION':
T-Statistic: -14.692139586265265
P-Value: 4.5250615058988823e-07
---
Column 'FIGHTING':
T-Statistic: 1.3350423596953496
P-Value: 0.21860315505517294
```

```
Column 'HARASSMENT':
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Column 'HAZING':
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P-Value: 1.3466948916349768e-05
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Column 'KIDNAPPING':
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P-Value: 0.34659350708733405
---
Column 'LARCENY/THEFT':
T-Statistic: 9.15917425828281
P-Value: 1.628733389687666e-05
---
Column 'OTHER MAJOR':
T-Statistic: -6.258776316400286
P-Value: 0.00024338531189566448
---
Column 'PHYSICAL ATTACK':
T-Statistic: 6.8872385539097
P-Value: 0.00039023828914274973
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Column 'ROBBERY':
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P-Value: 0.0001261432321770477
---
Column 'SEXUAL ASSAULT':
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```

```
Column 'SEXUAL BATTERY':
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Column 'SEXUAL HARASSMENT':
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P-Value: 0.46972486699522276
---
Column 'SEXUAL OFFENSES (Other)':
T-Statistic: -11.816455217214417
P-Value: 2.4108689429362093e-06
---
Column 'THREAT/INTIMIDATION':
T-Statistic: -18.48181444761514
P-Value: 7.569357060770614e-08
---
Column 'TOBACCO':
T-Statistic: -15.432122375885246
P-Value: 3.0913006669706237e-07
---
Column 'TRESPASSING':
T-Statistic: 3.042155296453351
P-Value: 0.016010751251184327
---
Column 'VANDALISM':
T-Statistic: 0.43369318626828285
P-Value: 0.6759689010241434
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Comparing these six categories from the 2021-2022 school year with the 2018-2019 school year, they contributed to approximately 71% of the total increase.

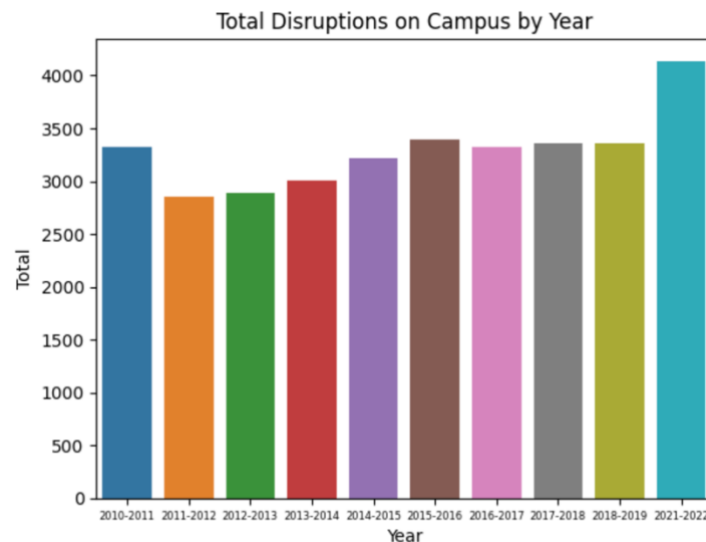
Below, we can see the drastic increases of each of these six categories year after year.



To further explain these six categories, below I present their individual comparisons with their state definitions.

i. Disruption On Campus

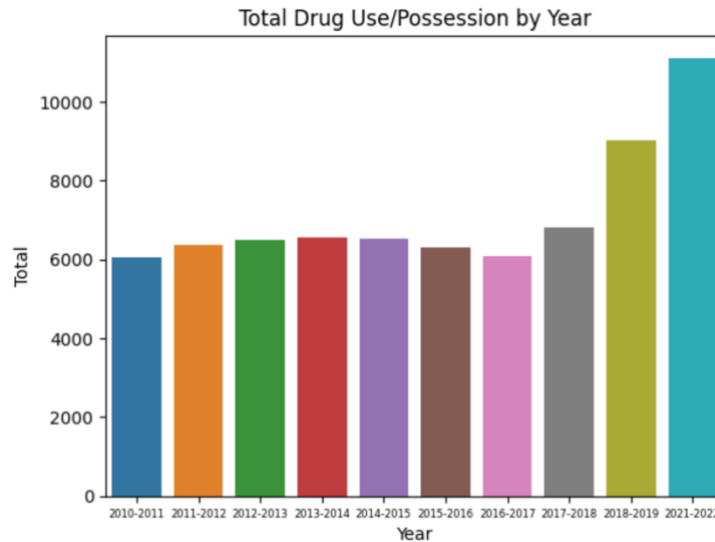
“Disruptive behavior that poses a serious threat to the learning environment, health, safety, or welfare of others. Examples of major disruptions include bomb threats, inciting a riot, or initiating a false fire alarm.”



In 2021-2022, Disruption On Campus increased 23% from 2018-2019.

ii. Drug Use/Possession

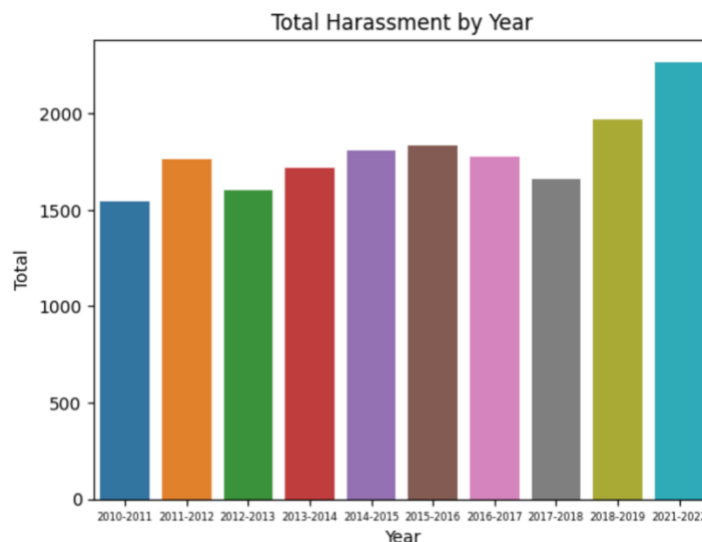
“The use or possession of any drug, narcotic, controlled substance, or any substance when used for chemical intoxication.”



In 2021-2022, Drug Use/Possession increased 23% from 2018-2019.

iii. Harassment

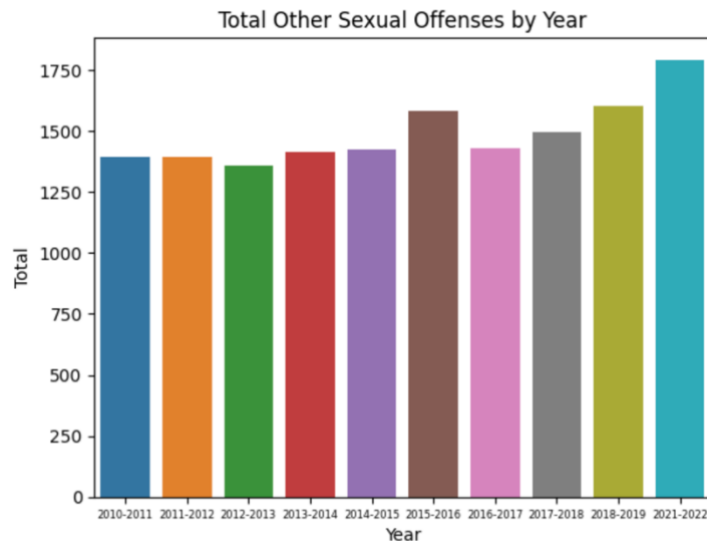
“Any threatening, insulting, or dehumanizing gesture, use of data or computer software, or written, verbal, or physical conduct that places a student or school employee in reasonable fear of harm to his or her person or damage to his or her property, has the effect of substantially interfering with a student’s educational performance, opportunities, or benefits, or has the effect of substantially disrupting the orderly operation of a school including any course of conduct directed at a specific person that causes substantial emotional distress in such a person and serves no legitimate purpose. Instances of Harassment that are chronic or repeated in nature should be evaluated for Bullying or Bullying-related.”



Following lockdown, harassment reports in public schools in Florida increased by 15%.

iv. Sexual Offenses (Other)

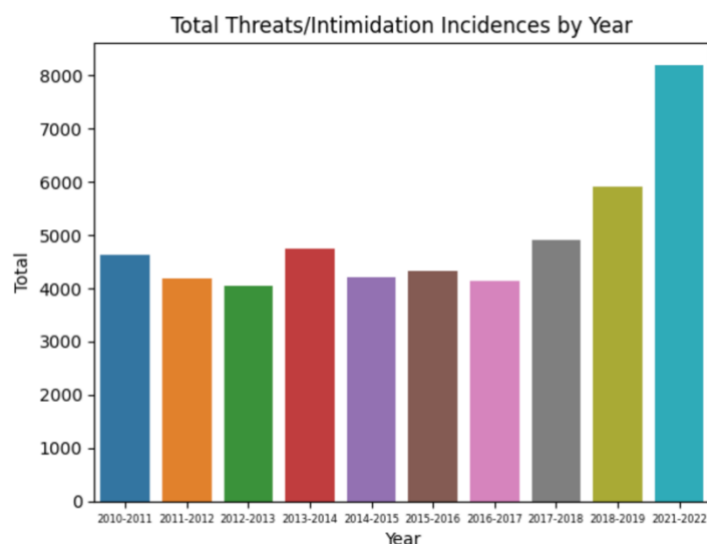
“Other sexual contact, including intercourse, without force or threat of force. Subjecting an individual to lewd sexual gestures, sexual activity, or exposing private body parts in a lewd manner.”



Other Sexual Offenses increased by 12% during the 2021-2022 school year.

v. Threat/Intimidation

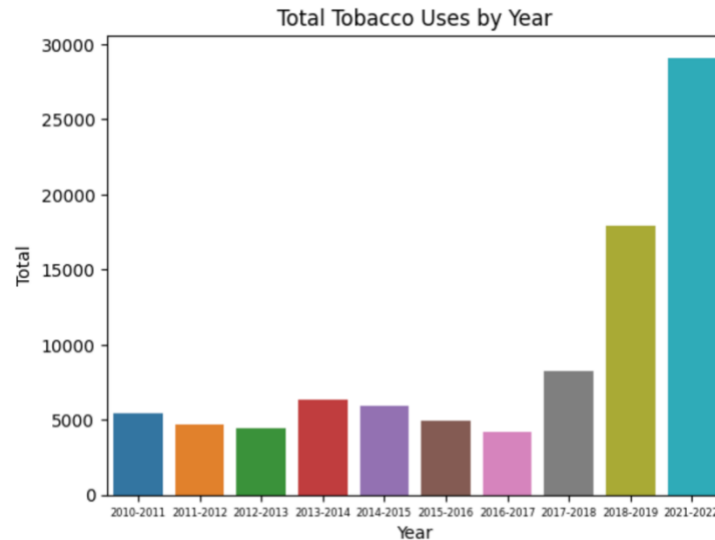
“An incident where there was no physical contact between the offender and victim, but the victim reasonably believed that physical harm could have occurred based on verbal or nonverbal communication by the offender. This includes nonverbal threats and verbal threats of physical harm which are made in person, electronically or through any other means.”



Threats and intimidation incidents increased by 38% post the Covid-19 lockdown

vi. Tobacco

“(cigarettes or other forms of tobacco/nicotine) The possession, sale, purchase, distribution, or use of tobacco or nicotine products on school grounds, at school-sponsored events, or on school transportation by any person under the age of 21. Tobacco incidents cannot be Drug-related.”



From 2018-2019 to 2021-2022, tobacco incidences increased 62.3%.

V. Conclusion

The pandemic of 2020 brought significant change to the behaviors of students in Florida public schools. From the 2018-2019 school year to the 2021-2022, schools state-wide saw nearly a 30% increase in discipline incidents. The primary categories that contributed the most to this increase were Disruption on Campus, Drug Use/Possession, Harassment, Sexual Offenses (Other), Threat/Intimidation, and Tobacco. These six categories might speak to deterioration of the mental and emotional health of the student body from COVID-19. Students are more susceptible to finding unhealthy and dangerous coping mechanisms and bringing these substances on school campuses. Students are generally more agitated; not necessarily at particular individual, but once provoked, being unable to control their emotions and more likely to have outbursts or lash out at an individual in their wake. These categories share the common thread of an inner turmoil and unease which will continue to hinder their ability to learn. It is the hope of this project for school administrators to use this information to allocate resources for students who are struggling with poor mental and emotional health.

Further analysis for this project could include analyzing data from the 2022-2023 school year when available, comparing this data with other state data, and for state administrators to compare these findings to their own district data.