Vine Comprehensive High School

Data Analysis Insghits Report

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Introduction

The purpose of this report is to analyze the performance and engagement of students at Vine Comprehensive High School using various data points related to academic results, extracurricular activities, and other factors. The data collected encompasses key elements such as student grades, attendance, extracurricular activities, parental support, and feedback from student surveys for the session.

By leveraging this comprehensive dataset, the report aims to uncover trends and correlations between these factors and academic success. The insights derived from the analysis are intended to inform actionable recommendations that will help the school administration, teachers, and parents improve the overall academic experience and outcomes for students.

This report is structured into several sections:

1. **School Overview** : A high-level analysis of the school's demographic and academic structure.
2. **Student Performance Overview** : An in-depth examination of student grades and performance metrics.
3. **Leaderboard Performance**: A ranking of top-performing students based on cumulative scores.
4. **Survey Feedback**: Insights from student survey data, highlighting areas of improvement and student concerns.
5. **Recommendations**: Strategies to enhance academic achievement, reduce failure rates, and support student well-being.

Data Overview

The dataset analyzed for Vine Comprehensive High School consists of various dimensions, including student demographics, academic performance, extracurricular involvement, and feedback from surveys. Below is a breakdown of the key datasets used in the analysis:

- **Student Demographic Data:**

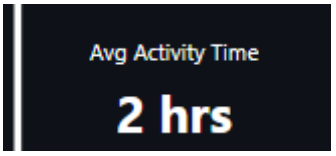
    - This data includes information such as student names, ages, gender, and class levels.. There are a total of 600 students across 12 classes, evenly distributed between junior and senior levels.
    - **Key Metrics:** Age, Gender, Class Level, Repeating Status
- **Academic Performance Data:**
    - Data on academic scores, grades, and total cumulative scores for each student in multiple subjects. The total score is calculated by summing up test scores, assignment scores, and exam results.
    - **Key Metrics:** Total Score, Grade (A-F), Subject Passed/Failed, Student Rank in class.
- **Extracurricular Activities Data:**
    - This includes the hours students spend participating in extracurricular activities such as sports, music, drama, and other school clubs.
    - **Key Metrics:** Hours Spent on Extracurricular Activities, School Average Participation.
- **Attendance Data:**
    - Daily attendance records, highlighting present and absent days over each academic term.
    - **Key Metrics:** Attendance Percentage, School Attendance Average.
- **Parental and Technology Support Data:**
    - This captures the levels of parental involvement, access to learning tools (computers, internet), and its impact on student success.
    - **Key Metrics:** Parent Support Level, Access to Computer, Access to Internet.
- **Student Survey Data:**
    - Student responses on factors affecting their performance, including stress levels, exam anxiety, teacher engagement, and motivation levels.
    - **Key Metrics:** Stress Levels, Exam Anxiety, Teacher Engagement, Motivation Levels.

This comprehensive dataset allows for detailed analysis across multiple facets of student life, providing a holistic view of the factors impacting academic success at Vine Comprehensive High School.

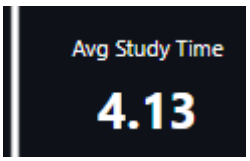
School Overview

1. With a total of **600 students spread across 12 classes**, the school maintains a favorable **class size of 50 students per class**. This ensures that each student receives adequate attention, especially with the teacher-student ratio being 1:10, which is an indicator of healthy academic support. Maintaining such a ratio contributes to better student outcomes, as teachers can focus on individual needs.

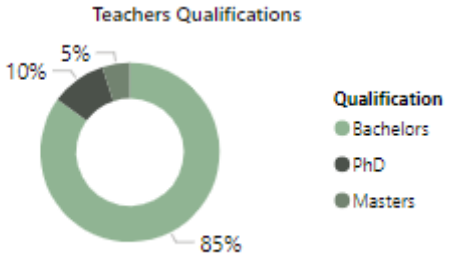
2. This KPI shows the average extracurricular activity time per student. Extracurricular activities have a positive impact on student engagement and overall performance. With **2 hours as the average**, the school may want to assess how this compares to the recommended guidelines for student development



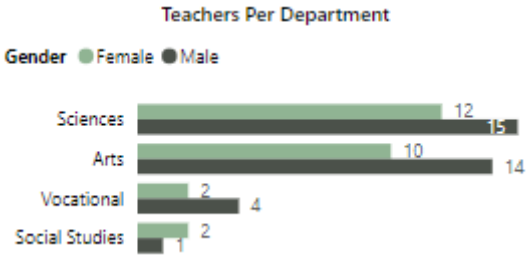
3. An average of **4.13 hours of study per student** indicates a healthy balance between academic work and extracurricular activities. This study time is critical for student success, as consistent studying helps students absorb material and improve academic performance. While 4.13 hours is a solid foundation, there could be opportunities for the school to promote better study habits or offer resources that encourage more productive study time, especially for students who may need additional academic support.



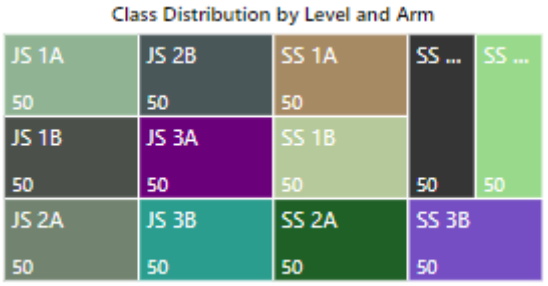
4. The qualifications of teachers at Vine Comprehensive High School are impressive, with **85% holding a Bachelor's degree, 10% holding a Master's degree, and 5% having a PhD**. This high level of teacher education ensures that students receive a quality education from knowledgeable instructors.



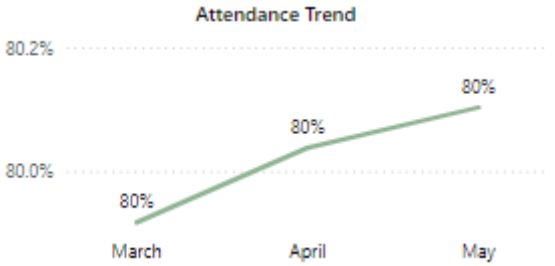
5. The breakdown of teachers by department reveals that the Sciences and Arts departments are the most heavily staffed, with **12 male and 15 female teachers in Sciences and 10 male and 14 female teachers in Arts**. The Vocational and Social Studies departments have fewer teachers, which might suggest a need for additional staff to balance the departments or prioritize student support in those areas



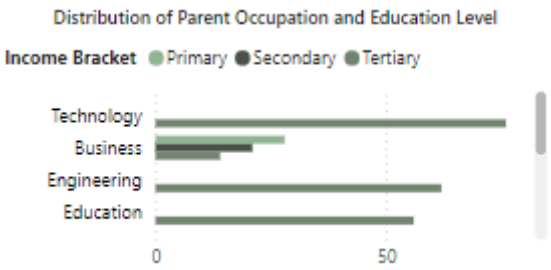
6. This visual displays an even distribution of students across the **12 classes (6 levels with 2 arms each)**. This balance reflects well-organized class groupings, allowing for optimal student-teacher interactions and academic monitoring.



7. The attendance trend visual highlights a consistent **80% attendance rate over time**, with **a slight increase toward the end of the term**. This suggests that the school has been effective in encouraging consistent attendance, which is crucial for academic success.

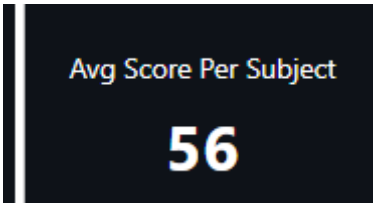


8. The distribution of parent occupations and education levels reveals that most parents fall into the Tertiary education bracket, followed by Secondary and Primary. In terms of occupation, **Engineering and Education are the dominant sectors, followed by Business and Technology**. Parents' education levels and occupations are critical factors influencing students' academic performance, particularly in the availability of resources and support at home

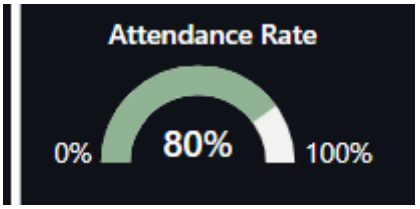


Academic Performance

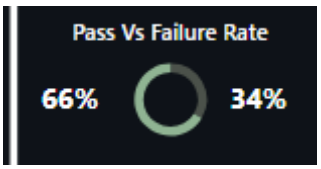
1. **The average score per subject stands at 56**, indicating room for academic improvement across the school. While 56 might be above failing thresholds in certain subjects, it reflects an overall moderate level of academic performance. It highlights the need for targeted interventions, particularly in challenging subjects or among specific groups of students to boost school performance metrics.



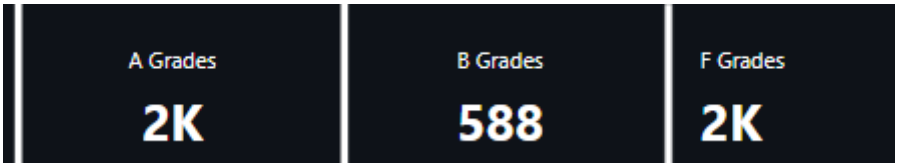
2. **With an attendance rate of 80%,** the school is performing fairly well in terms of keeping students in class, but there is still room for improvement. Consistent attendance is crucial for academic success, and the remaining **20%** absence rate suggests a segment of students may be at risk of falling behind. Interventions like parent-teacher communication, motivational programs, or extracurricular engagement could help boost attendance.



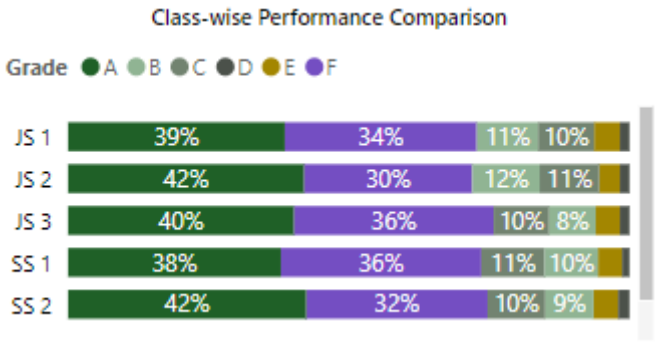
3. The **pass rate of 66%** shows that a majority of students are passing their exams, but **the 34% failure rate** is a concern. This indicates that a significant portion of the student body is struggling academically, requiring additional support. The school may need to explore targeted tutoring, after-school programs, or other academic supports to bring the failure rate down and ensure that more students succeed.



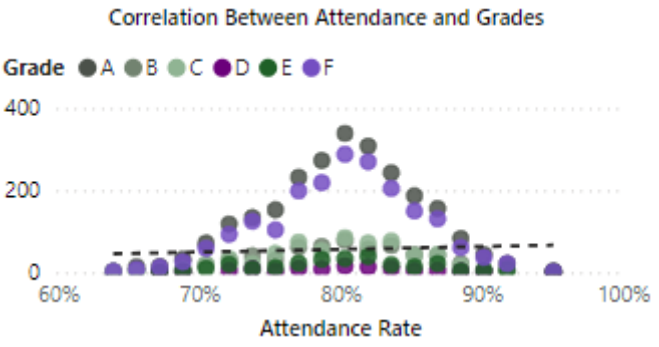
4. The distribution of grades shows that while **a decent number of students achieve A and B grades**, there is a concerning number of **students consistently scoring F (2,000 occurrences)**. This high number of F grades indicates that a significant portion of students are underperforming. A closer look into the subjects contributing to the F grades and the reasons behind this could help in devising strategies for academic improvement.



5. This visual provides a class-wise comparison of student performance, breaking down grades by percentage across different classes. Here are some key observations:
    - **High Achievement in Lower Classes**: JS1, JS2, and JS3 have higher percentages of A and B grades compared to senior classes. For instance, JS1 has 39% of students scoring an A, while SS2 has 42%.
    - **Higher Failures in Senior Classes**: There's a noticeable increase in lower grades (E and F) in senior classes (SS1 and SS2), with SS1 showing 10% in F and SS2 at 9%. This trend suggests potential challenges for senior students in maintaining high academic performance.
    - **Balanced Mid-Level Performance**: C and D grades are relatively consistent across classes, indicating a core group of students performing at an average level.



6. The correlation between attendance and grades shows an interesting and unexpected trend. While typically we expect better attendance to correlate with higher grades, in this case, the data reveals a positive correlation between attendance A and F grades. This indicates that as attendance rates increased, so did the number of F grades.



Possible Interpretations:

- **Attendance without Engagement:**

  While students are physically present in class, their engagement or understanding may be lacking, leading to poor academic outcomes despite good attendance.
- **Need for Targeted Support:**

  The increase in F grades despite higher attendance may indicate that certain

students, although attending regularly, need additional academic support, such as remedial classes, tutoring, or personalized learning plans.

- **External Factors Influencing Performance:**

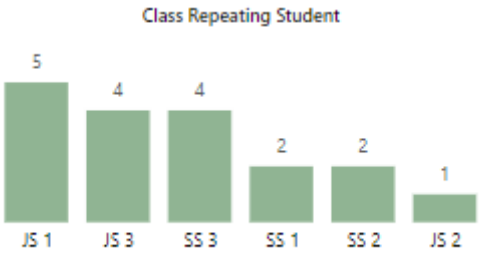
  There may be external factors at play, such as stress, anxiety, or socio-economic challenges, that hinder students' ability to perform well, even if they attend classes consistently. These factors could contribute to the disconnect between attendance and academic achievement.

7. The Department Overview table provides a summary of the academic structure across various departments. The Arts and Sciences departments each offer a wide array of subjects—8 and 9, respectively—indicating a broad curriculum in these areas. Vocational and Social Studies, however, have fewer subjects, with only 2 and 1, respectively, suggesting these are more specialized fields. Despite the differences in subject offerings, each department supports 12 classes with a shared teacher count of 60, highlighting the school's commitment to balanced staffing across all educational areas.

Department Overview

Department	Subjects	No. Classes	Teachers
Arts	8	12	60
Sciences	9	12	60
Social Studies	1	12	60
Vocational	2	12	60

8. The number of students repeating classes is highest in JS1, SS3, and SS2, indicating possible challenges in transitioning between academic stages or preparing for critical exams. Additional academic support during these key transitions could help reduce the need for students to repeat classes.



9. Agricultural Science, English, Literature and Mathemtics stands out as subject where a large number of students (230, 237, 264, 251) achieved an A grade, suggesting that it is either less challenging or that students receive better instruction in this subject. These subjects also have higher distributions of F grades, indicating that students some students are finding these subjects more difficult.

Subject-wise Performance

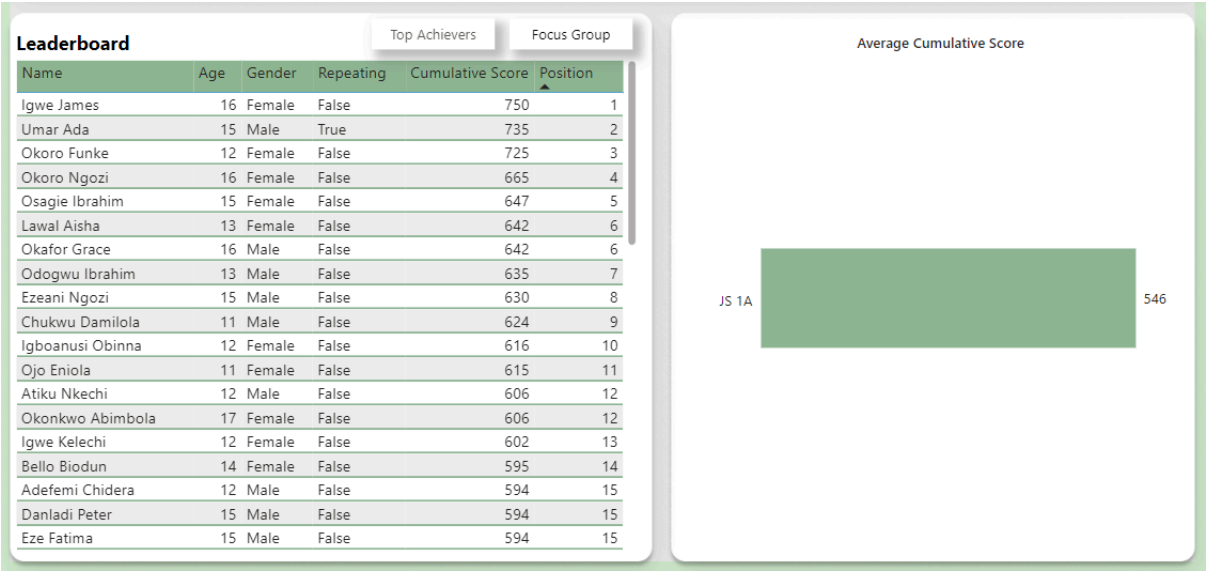
Subject	A	B	C	D	E	F
Agricultural Science	230	59	52	13	31	215
Basic Sciences	120	32	31	6	13	87
Biology	119	25	33	3	10	121
Chemistry	115	34	36	6	11	109
CRS	121	31	29	5	16	87
Economics	122	35	36	3	11	104

Leaderboard for JS1A Class

Overview of Performance

The leaderboard presents the top-performing students in each class, taking **JS1A as a case study**, students are ranked based on their cumulative scores. The students have been positioned from highest to lowest, showcasing a competitive academic environment within this class. The leaderboard highlights a range of scores, indicating different levels of academic achievement and room for improvement.

Top Performers



Leaderboard

Top Achievers | Focus Group

Name	Age	Gender	Repeating	Cumulative Score	Position
Igwe James	16	Female	False	750	1
Umar Ada	15	Male	True	735	2
Okoro Funke	12	Female	False	725	3
Okoro Ngozi	16	Female	False	665	4
Osagie Ibrahim	15	Female	False	647	5
Lawal Aisha	13	Female	False	642	6
Okafor Grace	16	Male	False	642	6
Odogwu Ibrahim	13	Male	False	635	7
Ezeani Ngozi	15	Male	False	630	8
Chukwu Damilola	11	Male	False	624	9
Igboanusi Obinna	12	Female	False	616	10
Ojo Eniola	11	Female	False	615	11
Atiku Nkechi	12	Male	False	606	12
Okonkwo Abimbola	17	Female	False	606	12
Igwe Kelechi	12	Female	False	602	13
Bello Biodun	14	Female	False	595	14
Adefemi Chidera	12	Male	False	594	15
Danladi Peter	15	Male	False	594	15
Eze Fatima	15	Male	False	594	15

The top performer in **JS1A** is **Igwe James**, a 16-year-old **female student**, who ranks **1st overall** in the class with a cumulative score of **750**. This is a solid score, reflecting her consistent performance in multiple subjects.

Igboanusi Isioma, another 15-year-old **male student**, comes in with a cumulative score of **735** and holds the **2nd position**. Despite being a **repeating student**, he has outperformed some of his peers, which suggests that he repeating the year may have had a positive impact on his learning and overall understanding of the curriculum.

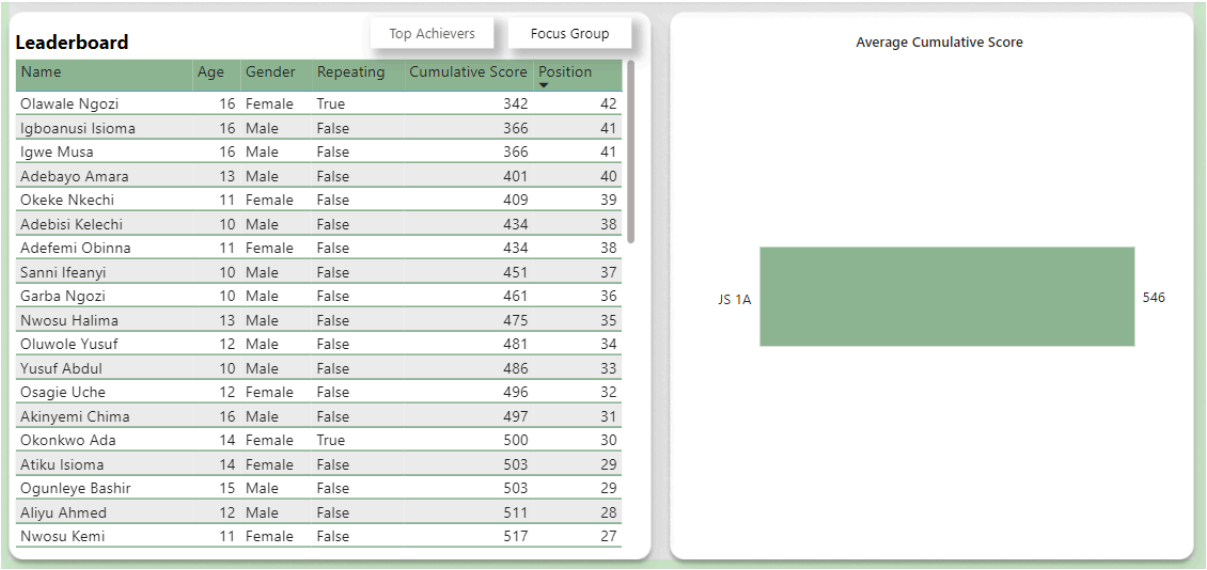
Okeke Nkechi, a female student follows closely with a score of **725**, in the **3rd position**.

It is noteworthy that most of the top-performing students are female, showing strong female academic representation within this class.

Mid-Tier Performers

Moving down the leaderboard, we see students like **Adefemi Chidera**, **Danladi Peter**, Eze Fatima all in the middle-tier, scoring **594**. These students hold the **17th position**, placing them in a competitive spot within the class. Although they are not at the top, they still demonstrate solid academic capabilities and may be just a few steps away from reaching higher ranks with some additional focus.

Focus Group



Leaderboard

Top Achievers | Focus Group

Name	Age	Gender	Repeating	Cumulative Score	Position
Olawale Ngozi	16	Female	True	342	42
Igboanusi Isioma	16	Male	False	366	41
Igwe Musa	16	Male	False	366	41
Adebayo Amara	13	Male	False	401	40
Okeke Nkechi	11	Female	False	409	39
Adebisi Kelechi	10	Male	False	434	38
Adefemi Obinna	11	Female	False	434	38
Sanni Ifeanyi	10	Male	False	451	37
Garba Ngozi	10	Male	False	461	36
Nwosu Halima	13	Male	False	475	35
Oluwole Yusuf	12	Male	False	481	34
Yusuf Abdul	10	Male	False	486	33
Osagie Uche	12	Female	False	496	32
Akinyemi Chima	16	Male	False	497	31
Okonkwo Ada	14	Female	True	500	30
Atiku Isioma	14	Female	False	503	29
Ogunleye Bashir	15	Male	False	503	29
Aliyu Ahmed	12	Male	False	511	28
Nwosu Kemi	11	Female	False	517	27

Olawale Ngozi, aged 16, has the **lowest cumulative score of 342 and holds the last position** but interestingly, this student is marked as **repeating**. This suggests a need for further intervention to understand why the academic improvement expected from repeating hasn't yet occurred.

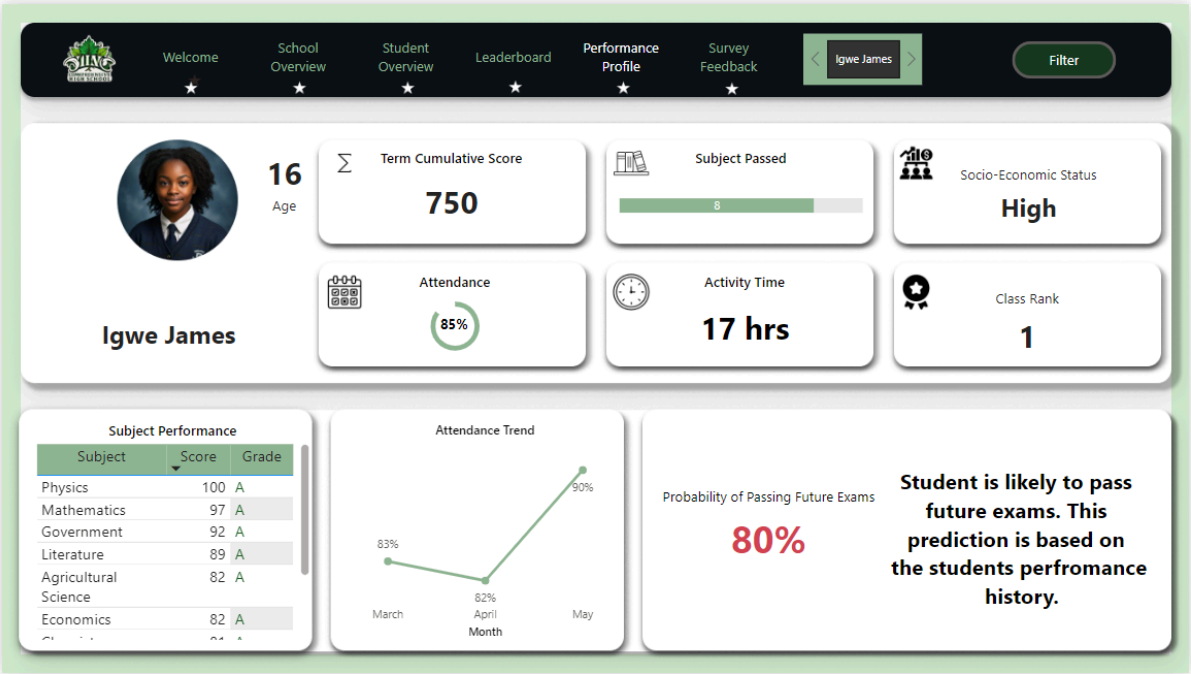
Several younger students, such as **Aliyu Ahmed** (12 years old) and **Nwosu Kemi** (11 years old), show promising performance **with cumulative scores of 511 and 517, in the 28th and 27th** position respectively, despite being younger than many of their peers in the leaderboard. Their relatively high scores might indicate that early intervention or natural academic abilities are paying off.

It is noteworthy that most of the Focus group students have a cumulative score below the class average.

Additionally, students like **Okafor Ifeanyi** and **Adebayo Bashir**, with cumulative scores of **559** and **552** respectively, have the potential to rise through the ranks. A targeted approach, focusing on these students' weaknesses, could help boost their overall performance and secure higher ranks in the next term.

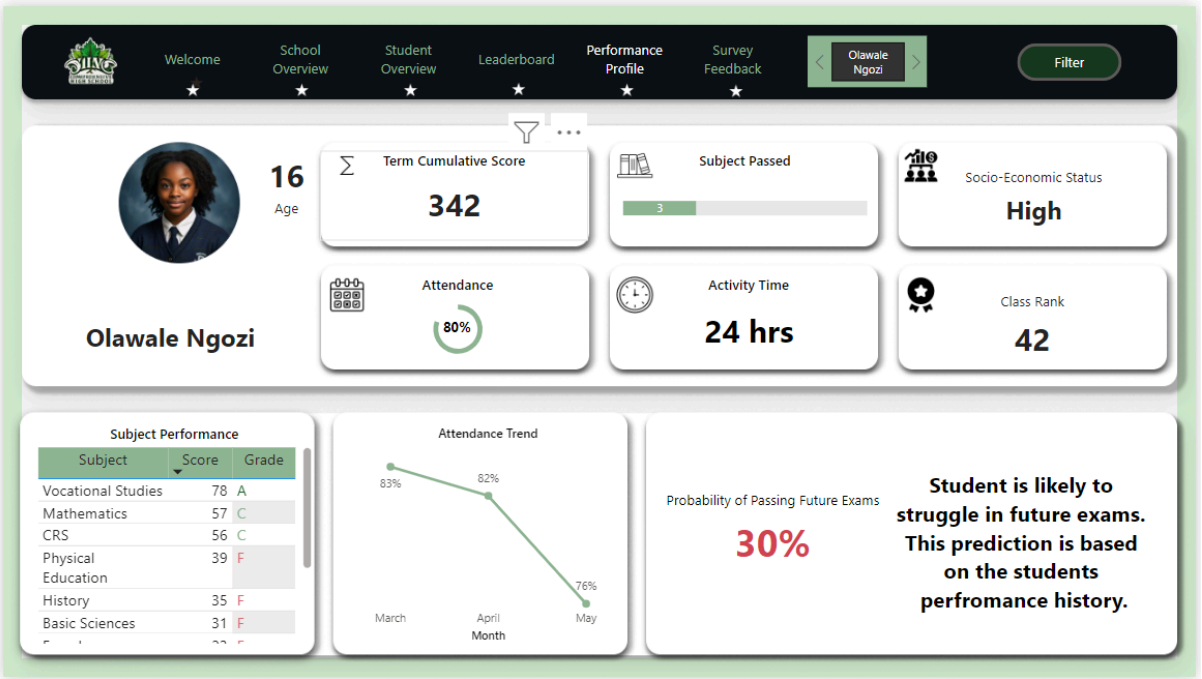
Student Profile

Top Perfomer



Igwe James, a 16-year-old student, is the top performer in JS1A, with an impressive total score of 750, securing the first position in her class. She has passed eight subjects, excelling in all with top grades—most notably scoring a perfect 100 in Physics and 97 in Mathematics. Her attendance rate of 85% is above the school average, and her 17 hours of activity time suggest balanced involvement in both academics and extracurricular activities. Despite her academic excellence, the model predicts a moderate probability (80%) that she might struggle in future exams, indicating areas of improvement. James' performance and involvement make her a role model for others, with room for ensuring continued academic success in the future.

Focus Group



Olawale Ngozi, a 16-year-old student, has been identified as having the lowest cumulative score of 342, placing her last in the class ranking. This low performance is especially notable since Ngozi is repeating her class, which raises concerns about the effectiveness of the support provided during the repetition year. Despite being in a higher socio-economic bracket, Ngozi struggles with her academics, having passed only three subjects and failed seven. Her attendance rate of 80% is on par with the school average, but the consistent decline in attendance over the past few months suggests that her engagement may be waning, potentially contributing to her academic difficulties.

The detailed subject scores reveal that Ngozi excels in Vocational Studies with a score of 78 (Grade A), but is performing poorly in critical subjects such as Physical Education, History, Basic Sciences, and French, where she scored below 40%. This uneven performance across subjects, combined with an overall failing grade in essential subjects like Mathematics (Grade C), indicates a need for targeted academic support.

Ngozi has a predicted probability of 30% for passing future exams, with the prediction based on her historical perfromance. This suggests that, without intervention, she is likely to continue struggling in upcoming assessments. Her high activity time (24 hours) compared to

the school average (2 hours) suggests she is putting in the effort, but the low academic output signals that there may be gaps in how she approaches her studies or uses her study time effectively.

The story that unfolds from these visuals emphasizes the need for a deeper evaluation of Ngozi's learning methods and possibly more personalized tutoring to address her weaknesses in specific subjects.

Survey Feedback Analysis

1. The data reveals a strong correlation between teacher engagement and student motivation levels. Students who reported **high levels of teacher engagement** had significantly higher motivation, with **56 students** showing a high motivational response. On the contrary, students with **low teacher engagement** saw a steep decline in motivation, with **139 students** reporting low motivational levels. This indicates that teachers play a crucial role in fostering a positive academic environment, and increased focus on teacher-student interaction could further boost overall motivation across the school

Impact of Teachers on Motivational level

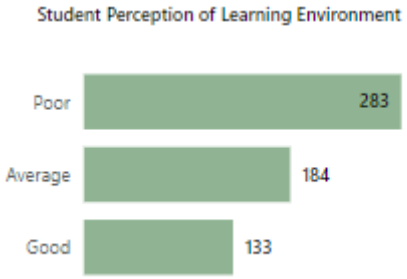
Teacher Engagement	High	Low	Medium
High	21	56	29
Low	52	139	89
Medium	44	111	59

2. Stress has a direct impact on students' anxiety levels, particularly during exams. The data highlights that students experiencing **high stress levels** had the highest levels of exam anxiety, with **140 cases** reported. Interestingly, even students with **low stress** reported exam anxiety, but at a significantly lower rate (**65 students**). For **medium stress levels**, the anxiety was still prevalent, with **110 students** affected. This suggests that while some level of stress is inevitable, intervention strategies should focus on minimizing high-stress situations to reduce exam-related anxiety.

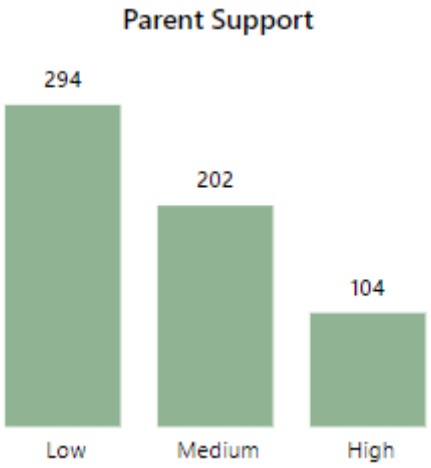
Impact of Stress on Student Anxiety

stress level	High	Low	Medium
High	140	47	93
Low	65	28	37
Medium	110	37	43

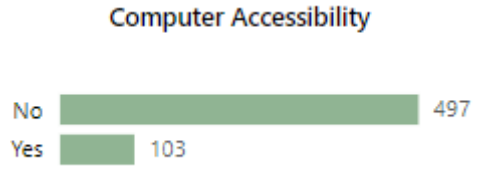
3. The perception of the learning environment varies among students. Notably, a significant number (**283 students**) rated their learning environment as **poor**, which raises concerns about the quality of facilities or resources available. **184 students** rated it as **average**, and only **133 students** rated it as **good**. This disparity in perception suggests that improvements in the classroom setting or resource availability might be necessary to elevate the overall learning experience for students.

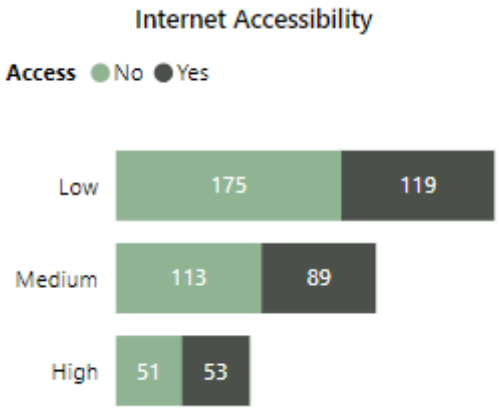


4. Parental involvement plays a significant role in student success, and the data shows a concerning trend where **294 students** reported **low parental support**, compared to **104 students** who reported **high support**. This highlights the need for stronger parent-school partnerships to ensure that students receive the necessary encouragement and guidance at home.

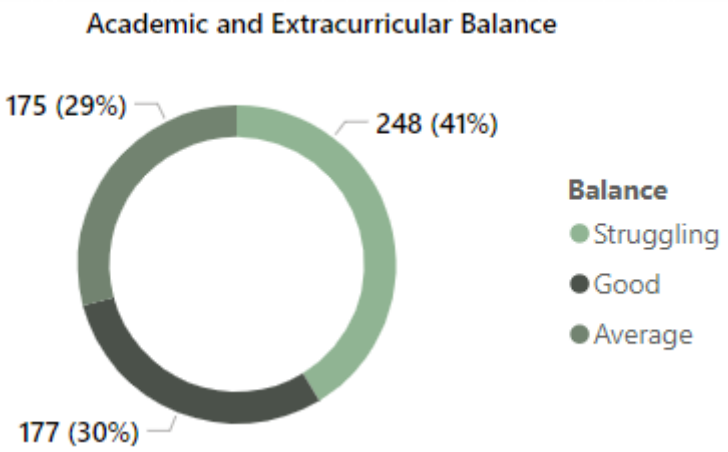


5. In terms of technology access, **497 students** do not have **access to computers**, which can hinder their learning, particularly in subjects requiring research or digital tools. Access to the internet is also varied, with **175 students** who have low internet access and **119 students** reporting no internet access. These technological disparities create a gap in learning opportunities that must be addressed through school-provided resources or community support initiatives.





6. The donut chart illustrates how well students balance their **academic and extracurricular commitments**. A significant portion of students (**41% or 248 students**) report maintaining a good balance between academics and extracurricular activities. However, **30% of students (177 students)** struggle to find a balance, and **29% (175 students)** are performing below average, likely due to being overwhelmed or not having the right support systems in place. This balance is crucial as students who engage in extracurricular activities often perform better academically, and more structured support could improve outcomes for the struggling group.



Recommendation

Targeted Academic Support:

- Implement remedial programs or after-school tutoring for students who are struggling, especially in key subjects with high failure rates like Mathematics, History, and Basic Sciences.
- Develop personalized learning plans for students who show a gap between attendance and performance, with a focus on engagement and understanding.

Parental Engagement Initiatives:

- Strengthen communication between the school and parents, encouraging active participation in their children's academic progress. Workshops on supporting students academically at home could help bridge the current gap.

Teacher-Student Interaction:

- Invest in more teacher engagement programs to improve student motivation. Regular teacher-student feedback sessions can help identify areas where students are disengaged and offer tailored support.

Technology Integration:

- Address the technological divide by providing access to computers and the internet for students who currently lack these resources. Consider partnerships with community organizations or government initiatives to provide necessary tools for learning.

Extracurricular Activity Balance:

- Encourage more structured extracurricular involvement for students who are currently struggling to balance academic and extracurricular commitments. Offer programs that help students develop time management and productivity skills.

Classroom Resources & Environment:

- Investigate the poor ratings of the learning environment by students and consider upgrading classroom facilities and resources. Improving the physical and educational resources can enhance overall student satisfaction and academic performance.

Attendance Incentives:

- To address the attendance gap, introduce incentives for perfect attendance or provide additional support to students whose absenteeism correlates with poor academic

performance. This could include counseling, mentorship, or targeted academic interventions.

Stress & Anxiety Management Programs:

- Develop school-wide programs that address stress and exam anxiety, providing students with mental health resources, relaxation techniques, and counseling to manage academic pressures effectively.

Transition Support for Repeating Students:

- Offer focused support for students repeating key years (JS1, SS2, SS3) by creating transition programs to smooth the academic shift and ensure these students succeed the second time around.

Enhanced Study Resources:

- Provide study resources and structured study programs to increase the average weekly study time beyond the current 4.13 hours, with a particular focus on underperforming students who need additional academic reinforcement.