23-06-2025

PROJECT VIII

ED-TECH STUDENT ENGAGEMENT

Prepared by :
Ananya Jha

Tools Used: Microsoft Excel & Power BI
Dataset Source: EdTech Engagement Data Collected from kaggle.com

OVERVIEW

EdTech Engagement Data is a simulated EdTech platform dataset offering various scales of digital learning services such as Basic and Premium subscription plans and understanding user behavior, satisfaction, and retention, as these are very critical for refining the business model. This project aims to uncover key behavioral trends, identify potential pain points, and provide actionable recommendations to enhance engagement and improve retention.

Using a dataset of 500 users, this analysis evaluates subscription types, user satisfaction, churn behavior, and engagement metrics such as time spent on the platform. The insights generated serve as a foundation for data-driven decisions that could improve customer experience and long-term profitability.

PROJECT OBJECTIVE

The objective of this project is to conduct a detailed performance analysis of Edtech Engagement Data in order to:

- Understand the difference in behavior between Basic and Premium users
- Identify satisfaction and engagement trends across subscription types
- Analyze churn patterns and retention metrics
- Provide strategic recommendations to improve user satisfaction and reduce churn

TOOLS USED

1. Microsoft Excel for Data Preparation
2. Power BI for Visualisations

STAKEHOLDERS

This analysis is intended for the following internal stakeholders:

1. Product Manager - Understand how different user types engage and how to improve product stickiness
2. Customer Success Team - Identify at-risk users and reduce churn through proactive engagement
3. Marketing & Growth Team - Find patterns in satisfaction and signup behavior to optimize targeting and campaigns
4. Leadership / Founders - High-level trends to support business strategy and long-term monetization

DATA PREPARATION

The original dataset contained 500 user records across the following key fields:

- Sub_type (Basic or Premium subscription)
- Signup_date, Enrollment_date, Cancellation_date
- Time_spent_avg (average engagement level)
- Satisfaction_score (self-reported rating from 1-10)

Key Data Cleaning Steps:

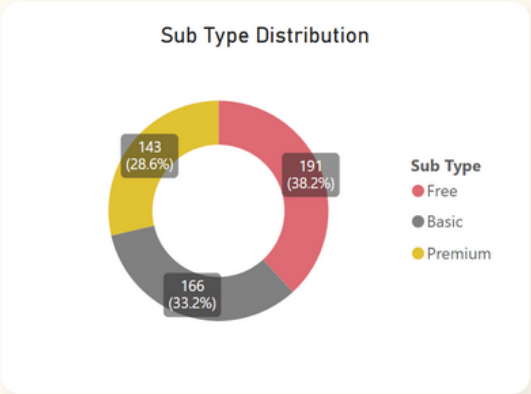
- Fixed inconsistent date formats (e.g., 03/22/2022 vs 22-03-2022)
- Calculated derived columns such as:
  - Retention Days = Days between enrollment and cancellation
  - Churn Flag using the formula '=IF(D3="null", "Active", "Churned")'
- Replaced invalid values like "NA" and "Not Cancelled" with blanks in retention fields

The cleaned data enabled creation of six visualizations in Power BI for trend identification, correlation analysis, and user segmentation.

KEY VISUALIZATIONS AND INSIGHTS

User Distribution by Subscription Type

- Tool: Power BI
- Type: Doughnut Chart

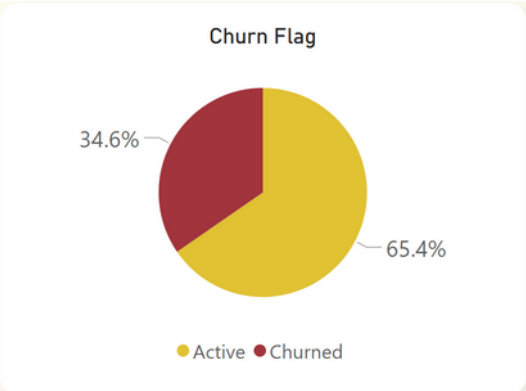


Insight:

- Majority of users are enrolled under free plan (38.2%).
- Premium users have the smallest segment (28.6%).
- Better offers under premium category is required to attract consumers.

Churn Distribution

- Tool: Power BI
- Type: Pie Chart

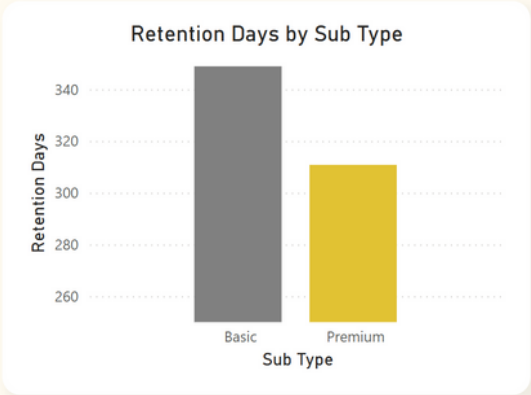


Insight:

- 65.4% of the users still remain active.
- Only 34.6% of the users are churned.
- Though the user engagement is stable, retention strategies would be useful.

Average Retention Days by Subscription Type

- Tool: Power BI
- Type: Clustered Column Chart

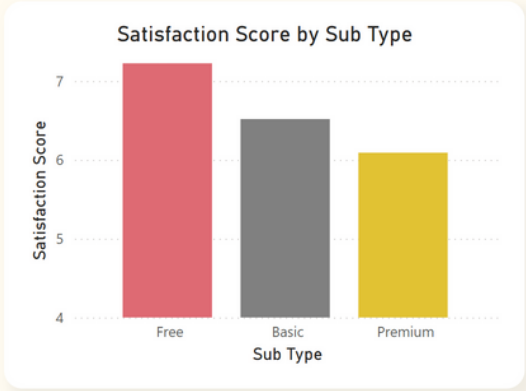


Insight:

- Basic users stay on the platform for almost 350 days.
- The premium users stay for relatively lesser days - 310.
- This highlights that premium users aren't satisfied with the value.

Average Satisfaction Score by Subscription Type

- Tool: Power BI
- Type: Clustered Column Chart

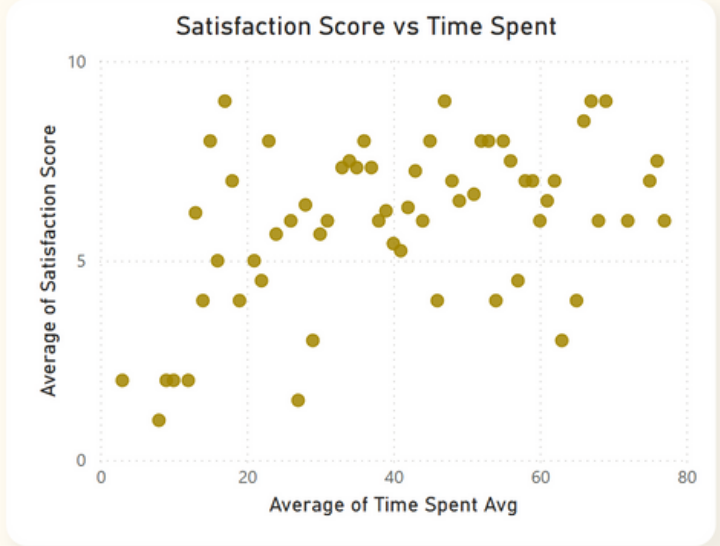


Insight:

- Free users had 7.23 satisfaction score, being the most satisfied group.
- The least satisfaction score of 6.09 was provided by premium users.
- This highlights the irony of premium users being the least satisfied ones.

Time Spent vs Satisfaction

- Tool: Power BI
- Type: Scatter Plot



Insight:

- No strong overall correlation between average time spent and satisfaction score.
- One key pattern - lower times led to lower satisfaction
- Mere time spent is not a reliable predictor of satisfaction.

Average Satisfaction Score by Subscription Type

- Tool: Power BI
- Type: Visual Cards

Insight:

- Average time spent on the Edtech was nearly 40 hours daily.
- The average of satisfaction score was only 6.67.
- The total time spent on the platform was over 20 thousand.

ROOT CAUSE ANALYSIS

Insight 1: Low Satisfaction for Users Spending <10 Minutes

- Tool: Canva

"Users who spend <15 mins per session rate 1-3 stars"

5 WHYS ROOT CAUSE CHAIN

WHY 1:
Because they didn't find immediate value in the platform

WHY 2:
Because on-boarding didn't guide them properly or show "what to do next"

WHY 3:
Because there's no personalized journey or interactive intro content

WHY 4:
Because the system treats all users the same, regardless of needs or goals

WHY 5:
Because there's no segmentation or behavioral trigger design in place

Root Cause: Poor on-boarding and generic first experience drive new users away before they discover value

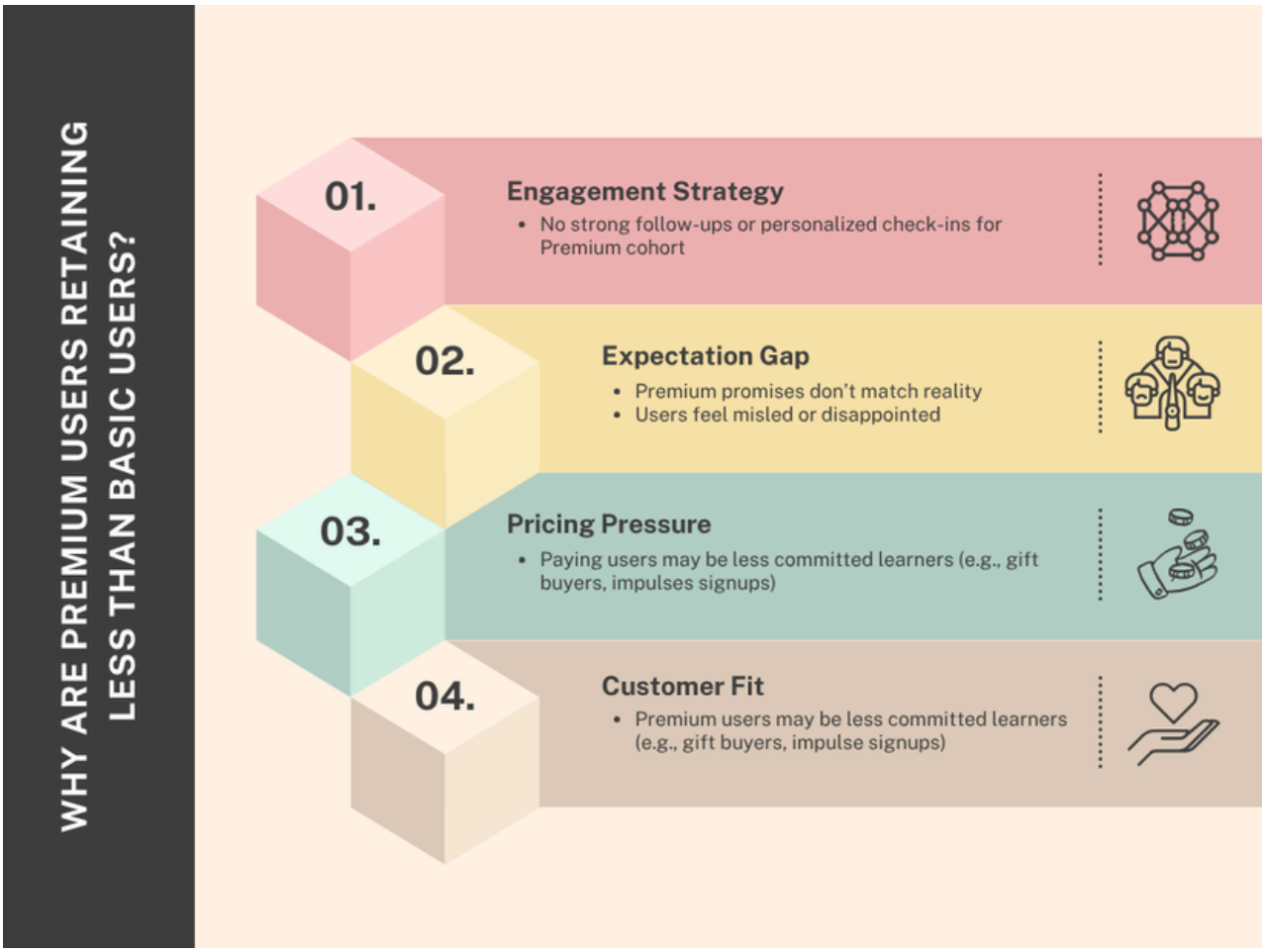
Solution:

- Design "First 7-Minute Experience" journeys
- Trigger nudges after 3 mins inactivity or 1 session exit
- Personalize landing dashboard based on user intent

ROOT CAUSE ANALYSIS

Insight 2: Lower Retention Among Premium Users

- Tool: Canva



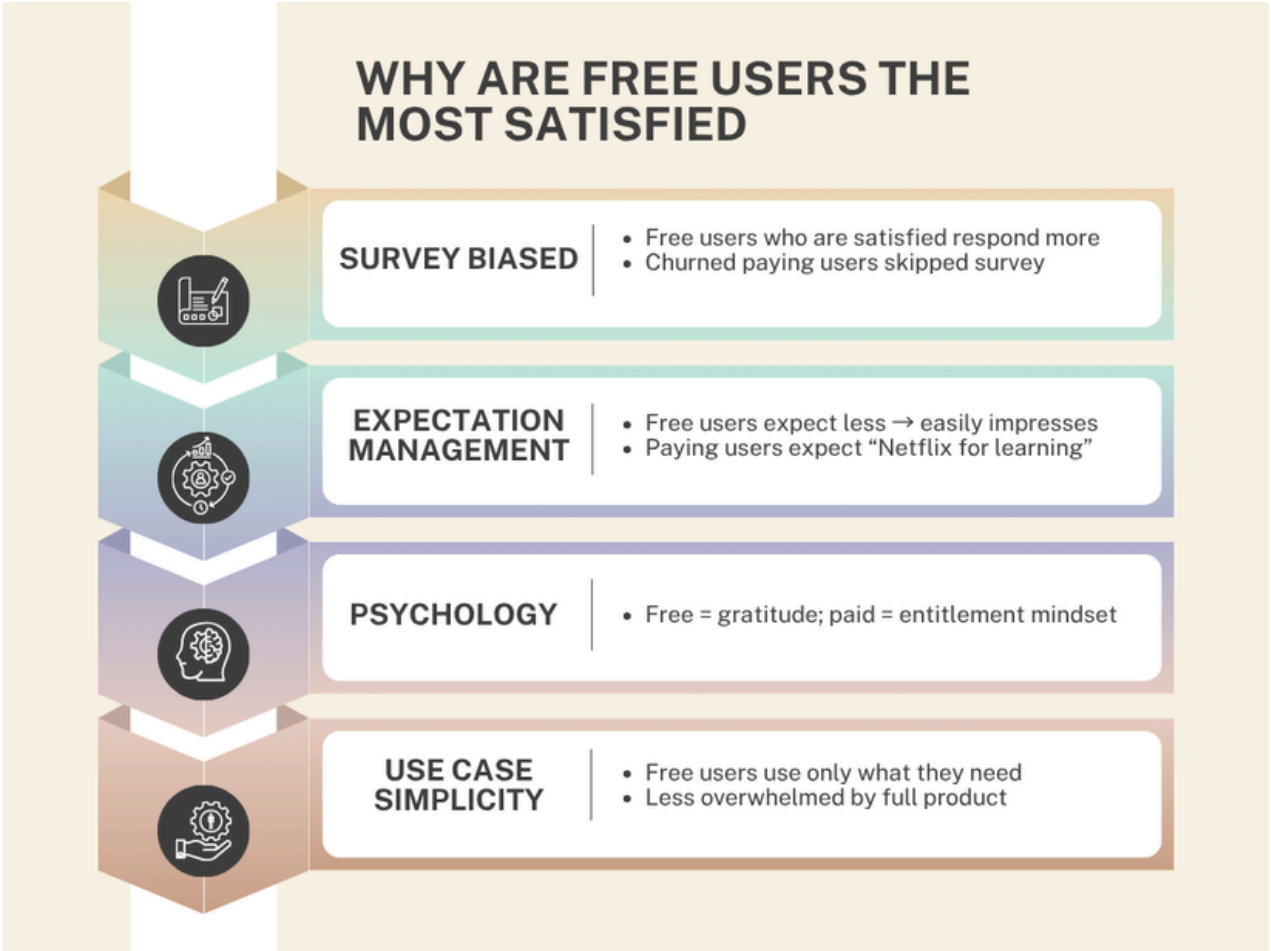
Actionable Fixes:

- Add a 30-day success journey just for Premium users
- Send automated feedback forms at 7 and 14 days
- Simplify the UI for advanced tools to reduce friction

ROOT CAUSE ANALYSIS

Insight 3: Free Users Report Higher Satisfaction Than Paying Users

- Tool: Canva



Actionable Fixes:

- Add satisfaction checks at multiple points for Premium/Basic
- Don't just measure score - measure satisfaction drivers
- Use Net Promoter Scale (NPS)-style questions for deeper satisfaction understanding

CONCLUSION

This analysis of the Edtech platform user data revealed surprising yet valuable trends that challenge conventional expectations in user behavior. Despite investing in premium features, Premium users displayed lower retention than Basic users, and Free users surprisingly reported the highest satisfaction levels. These counterintuitive insights point toward expectation mismatches, possible on-boarding or content quality issues at higher tiers, and under-optimized engagement strategies.

Additionally, the analysis confirmed that extremely low engagement correlates with dissatisfaction, even though no strong linear trend was found between time spent and satisfaction. This suggests that quality and relevance of initial user experiences are more impactful than just increasing time on the platform.

Overall, the project demonstrates the importance of combining behavioral metrics, satisfaction data, and retention patterns to form a 360-degree understanding of user experience — especially in a competitive EdTech market.

CLOSING STATEMENT

By combining data visualization with root cause analysis, this project provided actionable insights that any EdTech platform could use to reduce churn, refine its offerings, and build a more user-aligned product experience.

SELF-REFLECTION

Working on this real-world EdTech case study gave me one of the most insightful experiences in my Business Analyst learning journey so far. What seemed like a simple analysis of satisfaction and retention quickly turned into a deep dive into user psychology, product expectation mismatches, and the complexity of real human behavior.

I initially expected Premium users to outperform others across all metrics — higher satisfaction, higher retention, and more time spent. But the data told a different story. It reminded me that analytics isn't about proving a hypothesis right — it's about learning what the data is truly saying, even if it goes against expectations. That's where the real business value is uncovered.

This time out, I also created my best dashboard on power BI, which further enhanced my skills in building dashboards and making them deliver the message. Building the root cause analysis (including the 5 WHYS) pushed me to think like a problem-solver, not just an analyst. I also recommended a few actionable fixes at the end of each root cause analysis.

Most importantly, I realized how important context is — Free users might seem happiest, but are they your best customers? Premium users churned faster — but is it the price, or the experience?

This project strengthened both my technical confidence and my strategic thinking. I feel better prepared now to not only read a dataset but to extract business meaning from it — a critical skill for any Business Analyst aiming to create real impact.