Reimagining TABot:

Effectively Engaging Students

TEAM TENSIONFLOW

Road Map

TABot: A Smart Study Assistant

🔔 **Reminds** students about assignments & deadlines

📈 **Tracks progress** and provides insights

🤖 **Answers questions** via a built-in chatbot

👍 **Encourages engagement** through gamification

TABot helps students stay organized, but **does it truly enhance learning outcomes?**

Bridging the Gap

Challenges

Outcomes

Low Engagement

Develop strategies to keep students active

Limited Features

Optimize TABot's chatbot, leaderboard, and UI

Lack of Personalization

Tailor engagement based on student performance

Identifying Different User Groups

Metric Selection

Avg Final Score

Avg Submissions

Avg Test Score

On-Time Submission Rate

Avg Assignment Score

Canvas PageViews

GPA

1. *User and Non-User cohorts are created using IfRegister column in the provided dataset*
2. *Users with more than 34 (50th percentile) of Activity_All (total of all kinds of pageviews throughout the experiment) values have been grouped as 'Active' users*

Identifying Different User Groups

Metric Selection

Avg Final Score

Avg Test Score

Avg Assignment Score

GPA

Avg Submissions

On-Time Submission Rate

Canvas PageViews

Student Segmentation

Students

Non-Users

Users[1]

Active[2]

Inactive

1. User and Non-User cohorts are created using IfRegister column in the provided dataset
2. Users with more than 34 (50th percentile) of Activity_All (total of all kinds of pageviews throughout the experiment) values have been grouped as 'Active' users
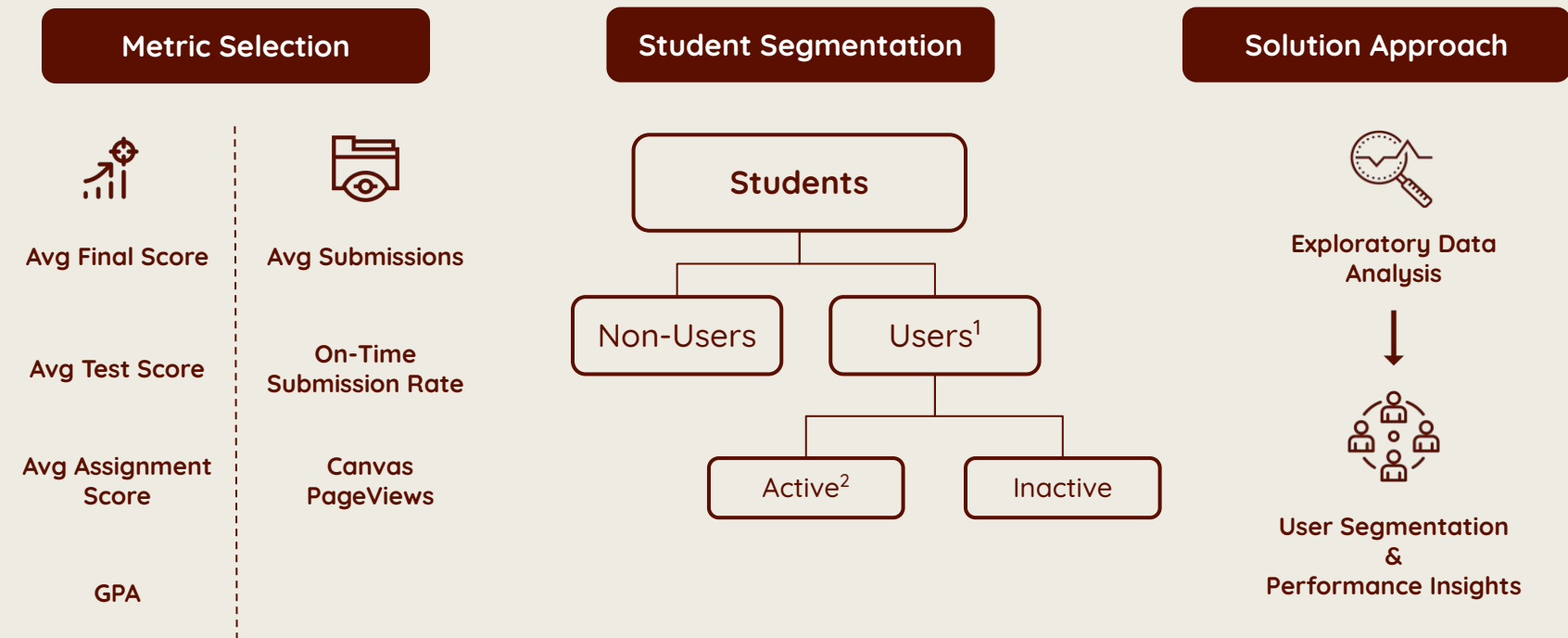
Identifying Different User Groups

Metric Selection

Avg Final Score

Avg Submissions

Avg Test Score

On-Time Submission Rate

Avg Assignment Score

Canvas PageViews

GPA

Student Segmentation

```
          Students
             |
    ┌────────┴────────┐
 Non-Users          Users[1]
                       |
               ┌───────┴───────┐
            Active[2]        Inactive
```

Solution Approach

Exploratory Data Analysis

↓

User Segmentation & Performance Insights

1. User and Non-User cohorts are created using IfRegister column in the provided dataset
2. Users with more than 34 (50th percentile) of Activity_All (total of all kinds of pageviews throughout the experiment) values have been grouped as 'Active' users

Road Map

TABot Users Outperform Non-Users

Metrics	Users	Non-Users
Student Count	473	141
Avg Final Score	89.8	86.8
Avg Test Score	83.9	80.8
Avg Assignment Score	94.0	91.4
On-Time Submission Rate	68.0%	61.8%
Avg Canvas PageViews	1,336	1,013

*Statistical analysis **corroborates our hypothesis**, confirming significant performance differences between Users and Non-Users across all of the metrics*

Road Map

High Activity Users Perform Better

On-Time Submission Rate

62%

Inactive
Users

79%
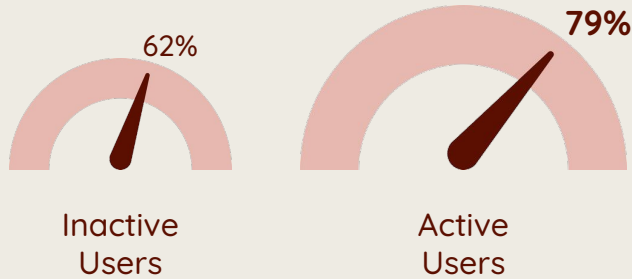
Active
Users

Avg Number of Submissions
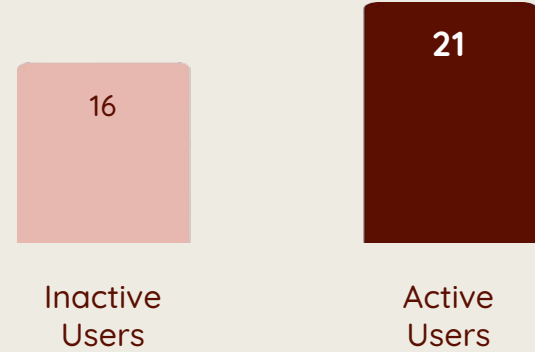
16

Inactive
Users

21

Active
Users

*Statistical analysis **proves significant performance** differences active and inactive users across both metrics*

High Activity Users Perform Better

Avg Assignment Score

92
Inactive
Users

95
Active
Users

Avg Number of Canvas Pageviews

1,012
Inactive
Users

1,659
Active
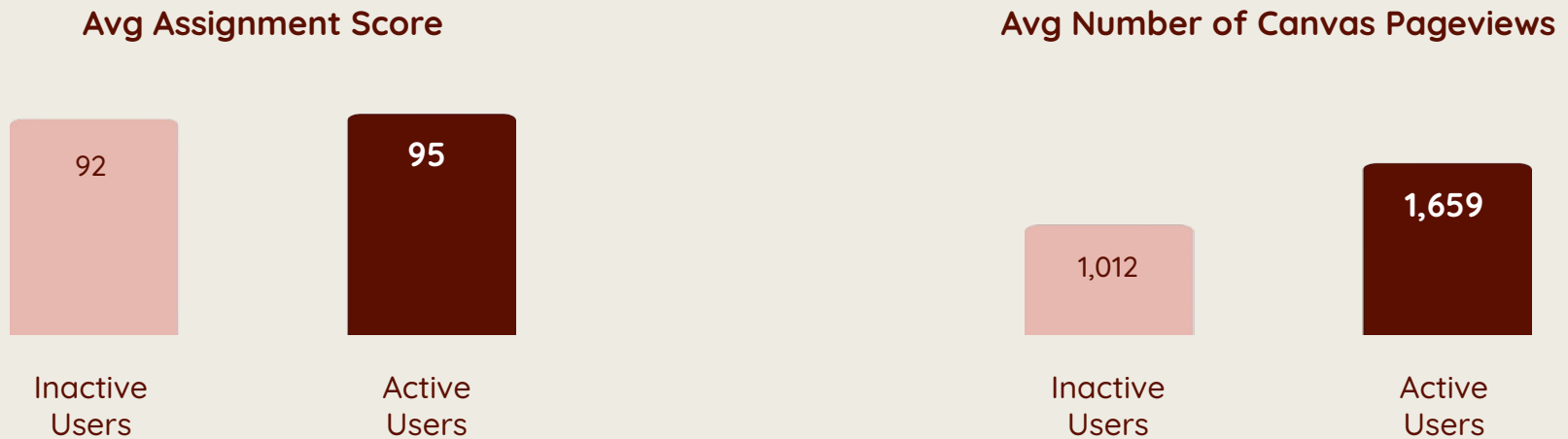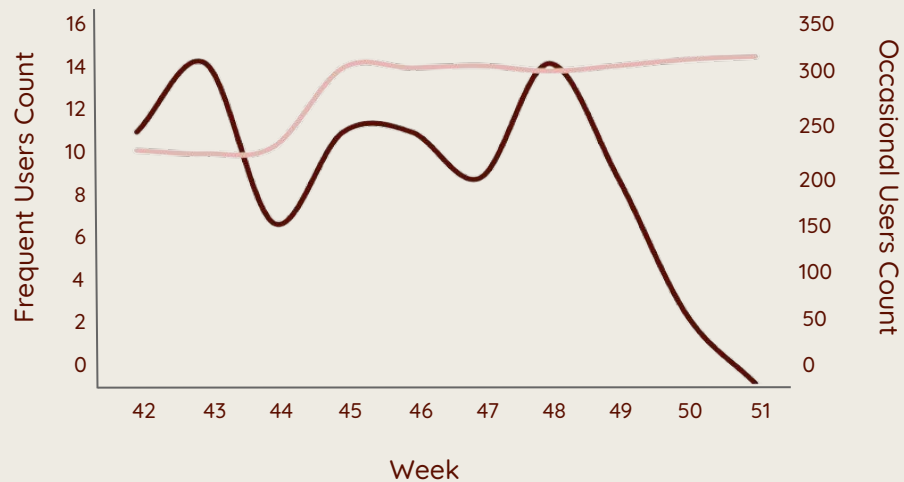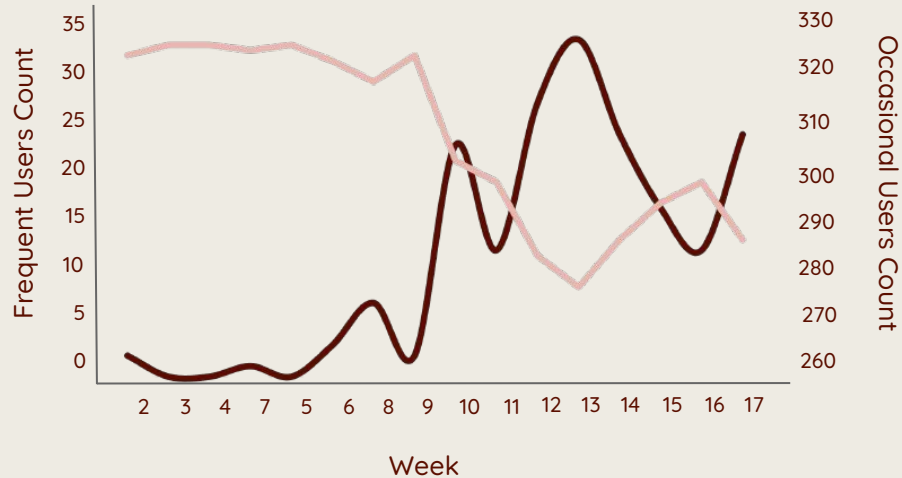Users

*Statistical analysis **proves significant performance** differences active and inactive users across both metrics*

Students End Up Losing Interest

Weekly User Count for Semester 1

Weekly User Count for Semester 2

Frequent Users — Occasional Users

Road Map
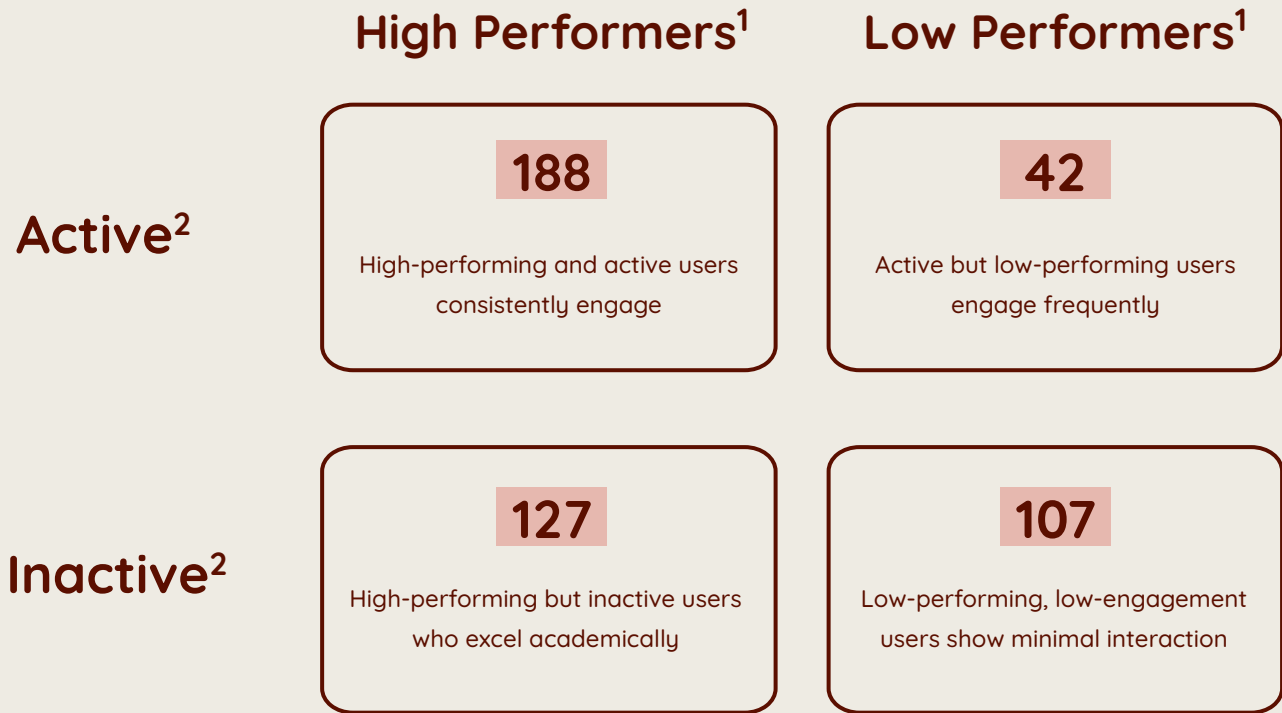
Introduction

Users vs Non-Users: Performance Breakdown

Users Utilization Assessment   &   Segmentation

Recommendations

User Segmentation & Performance Insights

	High Performers[1]	Low Performers[1]
Active[2]	**188** High-performing and active users consistently engage	**42** Active but low-performing users engage frequently
Inactive[2]	**127** High-performing but inactive users who excel academically	**107** Low-performing, low-engagement users show minimal interaction

1. High Performers and Low Performers Group have been identified using user(student) segmentation based on their assignment submissions, GPA and test scores
2. Users with more than 34 (50th percentile) of Activity_All (total of all kinds of pageviews throughout the experiment) values have been grouped as 'Active' users

Road Map

Recommendation 1: Data-Driven Personalization

High Performers

Low Performers

Active

188

High-performing and active users consistently engage

42

Active but low-performing users engage frequently

Inactive

127

High-performing but inactive users who excel academically

107

Low-performing, low-engagement users show minimal interaction
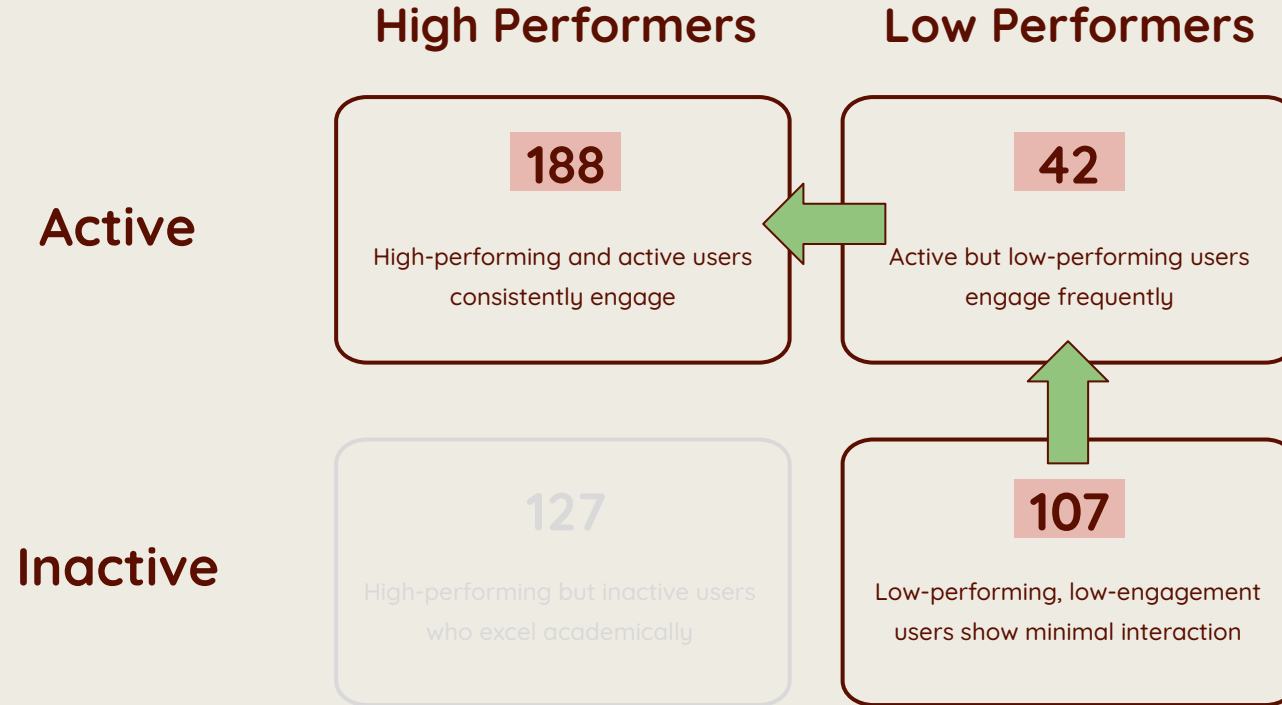
Nudge The Right Students The Right Way

Data-Driven Personalization
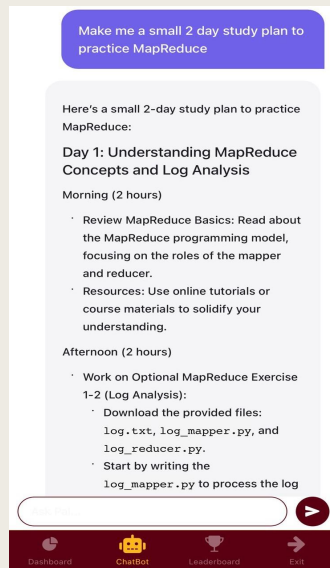

Tailored Notifications & Messaging

- Frequent reminders, goal tracking, and assignment alerts to **activate low performers**
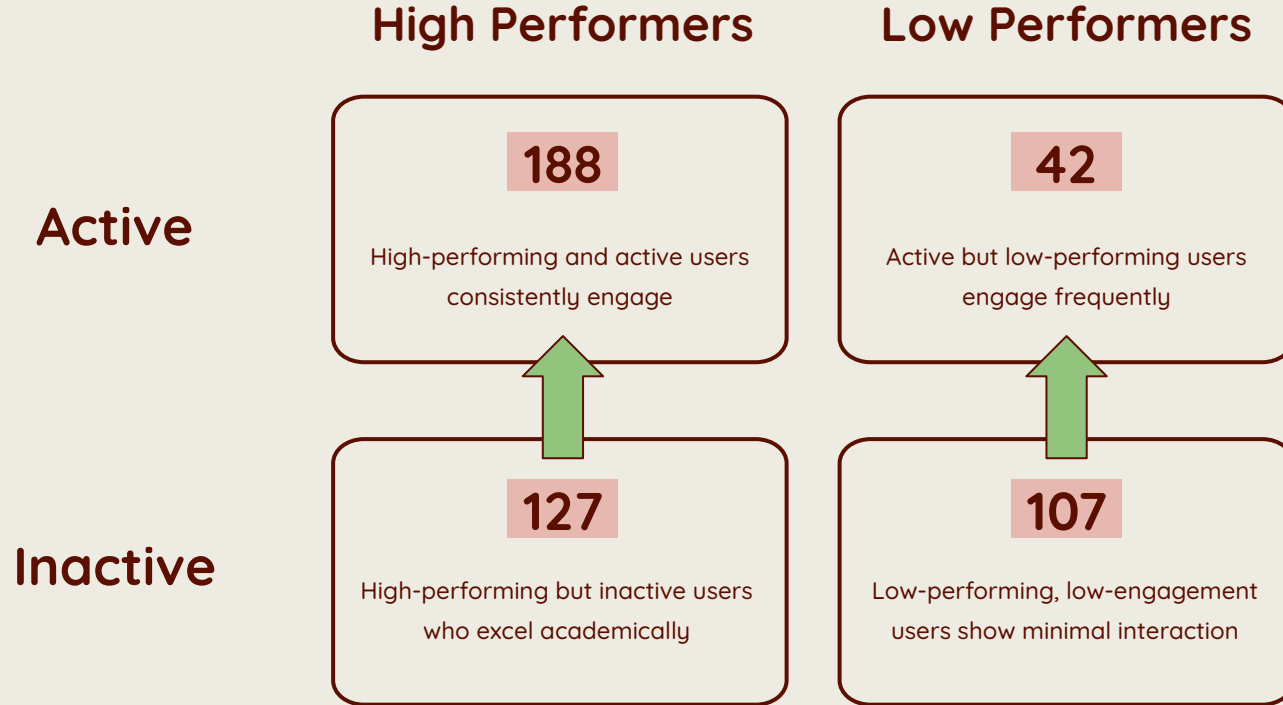- Personalized emails highlighting TABot's value to **engage non-users**

Custom Study Plans

- Leverage Canvas data to **identify weak areas** and offer personalized study plans
- TABot can already provide learning roadmaps at this moment as well, but only when explicitly requested.
- **Guide low performers** with structured learning paths for steady improvement

Make me a small 2 day study plan to practice MapReduce

Here's a small 2-day study plan to practice MapReduce:

Day 1: Understanding MapReduce Concepts and Log Analysis

Morning (2 hours)

- Review MapReduce Basics: Read about the MapReduce programming model, focusing on the roles of the mapper and reducer.
- Resources: Use online tutorials or course materials to solidify your understanding.

Afternoon (2 hours)

- Work on Optional MapReduce Exercise 1-2 (Log Analysis):
  - Download the provided files: `log.txt`, `log_mapper.py`, and `log_reducer.py`.
  - Start by writing the `log_mapper.py` to process the log

Dashboard   ChatBot   Leaderboard   Exit

Making Learning Addictive (In a Good Way!)

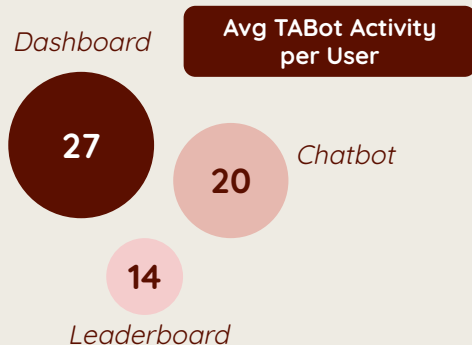## Engagement & Gamification

Boosting Activity Through Gamification

- Duolingo-style engagement mechanics → streaks, rewards, and interactive challenges
- Gopher Moods (a reactive avatar that reflects student activity, getting sad when the app is ignored) and instant quizzes (short extra-credit questions via notifications) **encourage frequent student engagement**
- In-app challenges & leaderboard progression tips → **increase retention**
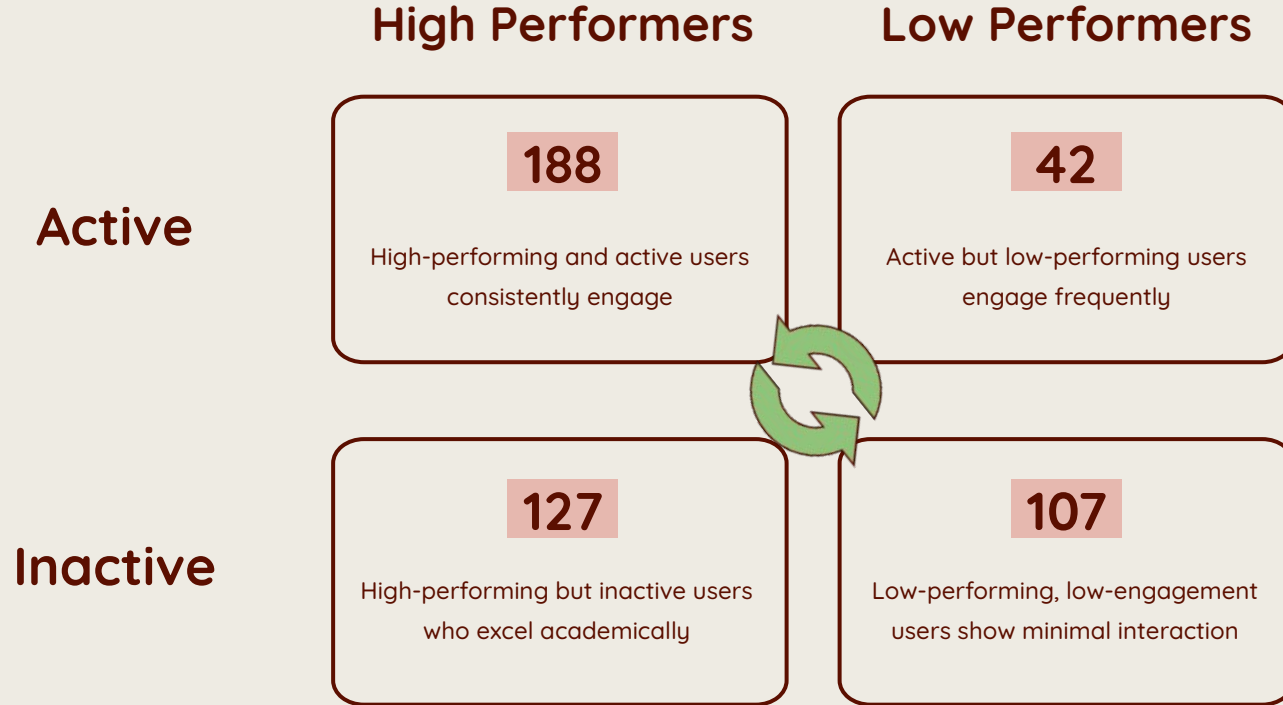
Optimizing Navigation & User Flow

- Leverage feature usage insights: Dashboard → Chatbot → Leaderboard
- Dynamically direct users to the most relevant tabs for their needs

Dashboard

Avg TABot Activity per User

27

20 *Chatbot*

14

Leaderboard

Recommendation 3: Improving UI/UX

High Performers

Low Performers

Active

188

High-performing and active users consistently engage

42

Active but low-performing users engage frequently

Inactive

127

High-performing but inactive users who excel academically

107

Low-performing, low-engagement users show minimal interaction

Looks Matter, Experience Counts!

Improving UI/UX

Enhancing Chatbot Performance

- Make chatbot faster & more context-aware by **improving response speed & relevance**
- Enable **adaptive conversations** based on student behavior

Refining the Dashboard

- Display **key insights upfront:** progress tracking, study recommendations, leaderboard ranking
- Ensure a **clear and intuitive UI** that promotes **habitual engagement**

Thank You!

Aurosikha Mohanty

Archita Vaje

Mayank Singh

Aditya Ravikrishnan

Harshal Sable

Aakash Patil

TEAM TENSIONFLOW