EdTech Learner Dropout & Engagement Analytics

10K
Total_students

3K
Total_dropouts

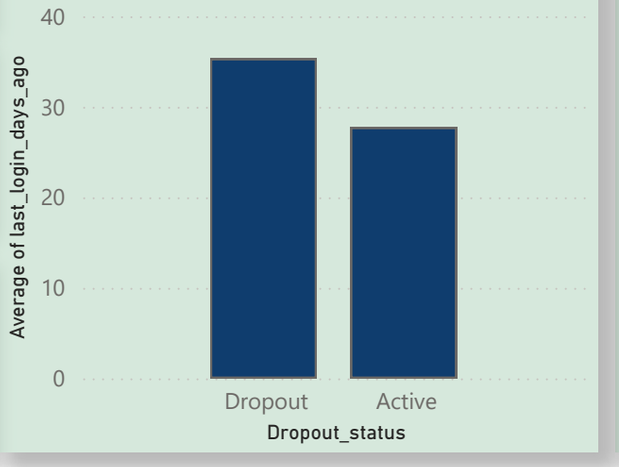
29.63
Dropout_Rates

22.77
High_Risk%

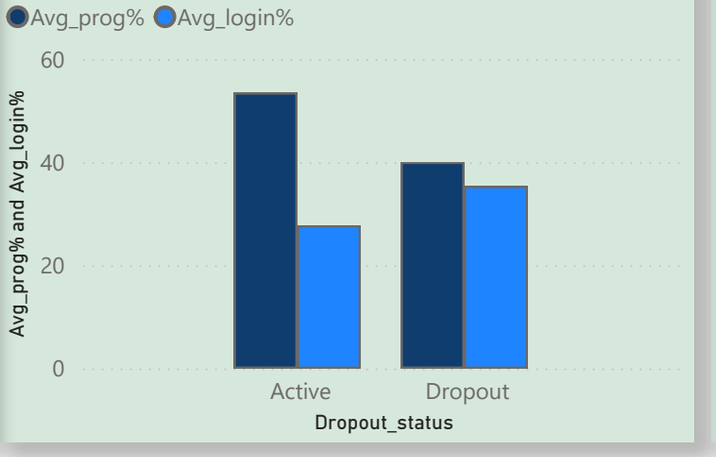
Filter out
- Advanced
- Beginner
- Intermediate

Dropout_status	Active		Dropout		Total	
education_level	Inctive_learners	Active_learner	Inctive_learners	Active_learner	**Inctive_learners**	**Active_learner**
Diploma	1257	736	623	736	**1880**	**736**
PG	1264	727	604	727	**1868**	**727**
School	1272	764	635	764	**1907**	**764**
UG	1257	719	605	719	**1862**	**719**

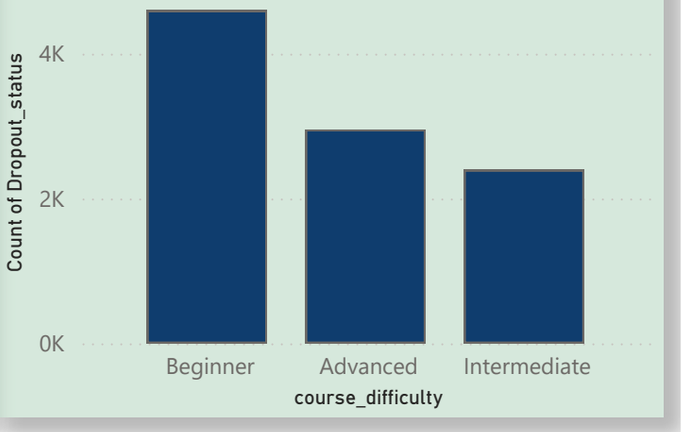
Inactivity Impact



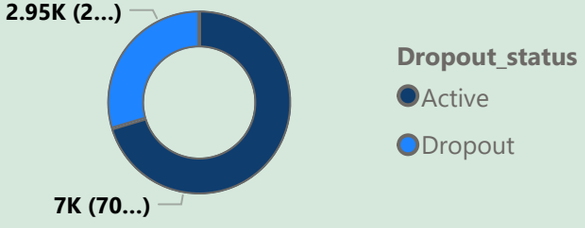
Engagement vs Dropouts



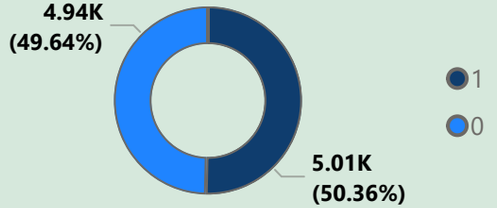
Dropouts vs Course difficulty



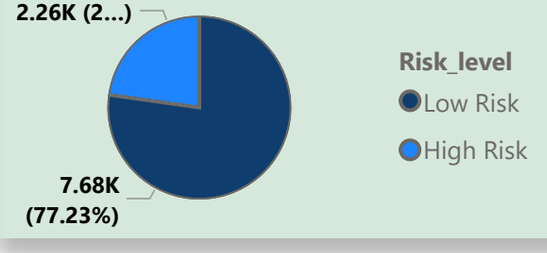
Dropout_Status



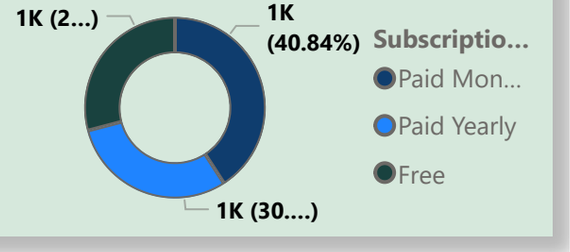
Time & consistancy signals



Dropout vs Risk level



Dropout vs Subscription type



📌 **Aim of the Analysis**

The objective of this project is to **identify the key factors influencing learner dropouts in an EdTech platform**, understand **behavioral and engagement patterns**, and propose **data-driven strategies to reduce dropout rates**.

🔹 2. KEY QUESTIONS WE ANSWERED

1️⃣ **Do inactive learners drop out more?**

➡️ Yes — learners with higher inactivity (more days since last login) show significantly higher dropout rates compared to active learners.

2️⃣ **Does engagement reduce dropout risk?**

➡️ Yes — learners with higher engagement (videos watched, quizzes attempted, assignments submitted) have lower dropout rates and higher progress completion.

3️⃣ **Which course difficulty has higher dropouts?**

➡️ Beginner-level courses have the highest number of dropouts, mainly due to larger enrollment volume and low early engagement.

4️⃣ **Does subscription type affect retention?**

➡️ Yes — free users show higher dropout rates, while paid (monthly/yearly) subscribers demonstrate better retention and engagement.

5️⃣ **Can we identify high-risk learners early?**

➡️ Yes — learners with low engagement, high inactivity, inconsistent study behavior, and poor progress can be flagged early as high-risk.

🔹 3. INSIGHTS & CONCLUSIONS

🟦 Insight 1: Overall Dropout Health

Numbers

- Total learners: **~10,000**
- Total dropouts: **~2,950**
- Dropout rate: **~29.6%**

Conclusion (Numeric)

➡️ Nearly **3 out of every 10 learners drop out**, indicating a **high attrition risk** that requires intervention.

🟦 Insight 2: Inactivity Has a Strong Impact

Numbers

- Avg last login (Dropout): **~35 days**
- Avg last login (Active): **~27 days**
- Difference: **+8 days**

Conclusion (Numeric)

➡️ Learners inactive for **1+ extra week** have a **significantly higher probability of dropout**.

➡️ **Last login days** is a strong early-warning indicator.

🟦 Insight 3: Engagement vs Dropout

Numbers

- Avg progress (Active): **~55%**
- Avg progress (Dropout): **~40%**
- Progress gap: **~15%**
- Avg login % higher for active learners

Conclusion (Numeric)

➡️ Learners with **15% lower progress** are much more likely to drop out.

➡️ Engagement is **negatively correlated** with dropout.

🟦 Insight 4: Course Difficulty Matters

Numbers

- Beginner courses: **Highest dropout count**
- Advanced & Intermediate: **Lower dropout volume**

Conclusion (Numeric)

➡️ Majority of dropouts occur at the **Beginner level**, mainly due to:

- Higher enrollment volume
- Early disengagement

🟦 Insight 5: Subscription Type Effect

Numbers

- Free users: **~41% dropouts**
- Paid yearly users: **~29% dropouts**
- Paid users retain **~12% more learners**

Conclusion (Numeric)

➡️ Paid learners show **better retention** than free users.

➡️ Financial commitment improves accountability.

🟦 Insight 6: Risk Level Segmentation

Numbers

- High-risk learners: **~22%**
- High-risk share of dropouts: **Significantly higher**
- Low-risk learners: **Majority remain active**

Conclusion (Numeric)

➡️ Risk scoring can identify **1 in 5 learners** early who are likely to drop out.

➡️ Enables **targeted intervention** instead of blanket strategies.

4. FINAL BUSINESS CONCLUSIONS

From all insights combined:
Dropouts are primarily driven by **low engagement, inactivity, beginner-stage challenges, and lack of commitment**.
This means:

- Dropout is **predictable**
- Dropout is **preventable**

5. ACTIONABLE RECOMMENDATIONS

✅ Recommendation 1: Early Inactivity Alerts

Trigger :

- last_login_days_ago > threshold

Action :

- Automated reminders
- Push notifications
- Instructor follow-ups

✅ Recommendation 2: Beginner Course Redesign

Problem :

- Highest dropouts in beginner courses

Action :

- Shorter lessons
- Gamification
- Clear learning roadmap

✅ Recommendation 3: Engagement Boost Programs

Target :

- Low engagement learners

Action :

- Weekly challenges
- Progress badges
- Peer discussion prompts

✅ Recommendation 4: Convert Free to Paid Early

Observation :

- Paid learners retain better

Action :

- Limited free trials
- Early discount nudges
- Value-based upsell messaging

✅ Recommendation 5: High-Risk Learner Intervention

Using :

- Risk Level + Engagement Score

Action :

- Personalized mentoring
- Adaptive content
- Academic support

6. HOW THIS DASHBOARD HELPS BUSINESS

This dashboard enables stakeholders to monitor dropout trends in real time, identify at-risk learners early, and take data-driven retention actions to improve learning outcomes and revenue stability.

🎯 FINAL OVERALL CONCLUSION

This analysis confirms that learner dropout in EdTech platforms is primarily driven by disengagement and inactivity, especially among beginner-level and free-subscription users. Learners who log in less frequently, show inconsistent study behavior, and maintain low engagement scores are significantly more likely to drop out. By tracking early behavioral signals such as login gaps, engagement score, and course difficulty, platforms can proactively identify high-risk learners and intervene early, reducing dropout rates and improving long-term retention.

🎯 ONE-LINE EXECUTIVE SUMMARY

Dropouts in EdTech platforms are primarily driven by inactivity and low engagement, but early identification and targeted interventions can significantly improve learner retention.

1. I used SQL to validate data and identify engagement-dropout patterns, Power BI to visualize learner behavior, and DAX to calculate risk and engagement scores.
2. The dashboard not only explains why learners drop out but also provides clear actions to reduce churn - THANKYOU.