Speaking Practice tool

Experiment Analysis

Experiment Design

- Hypothesis: We believe the Speaking Practice tool will result in an increase in revenue and conversion in the variant group due to the enhanced learning experience it offers to students

- Hit logic: Users enter the test when they buy a trial language lesson

- Sample size:
  - Control: 964
  - Variant: 954

- Goal metrics:
  - Primary metric: Average revenue per user (ARPU)
  - Secondary metrics: Payer penetration, conversion rate

- Minimum detectable effect (based on conversion rate of 31% and 95% confidence level):
  - 6.0%

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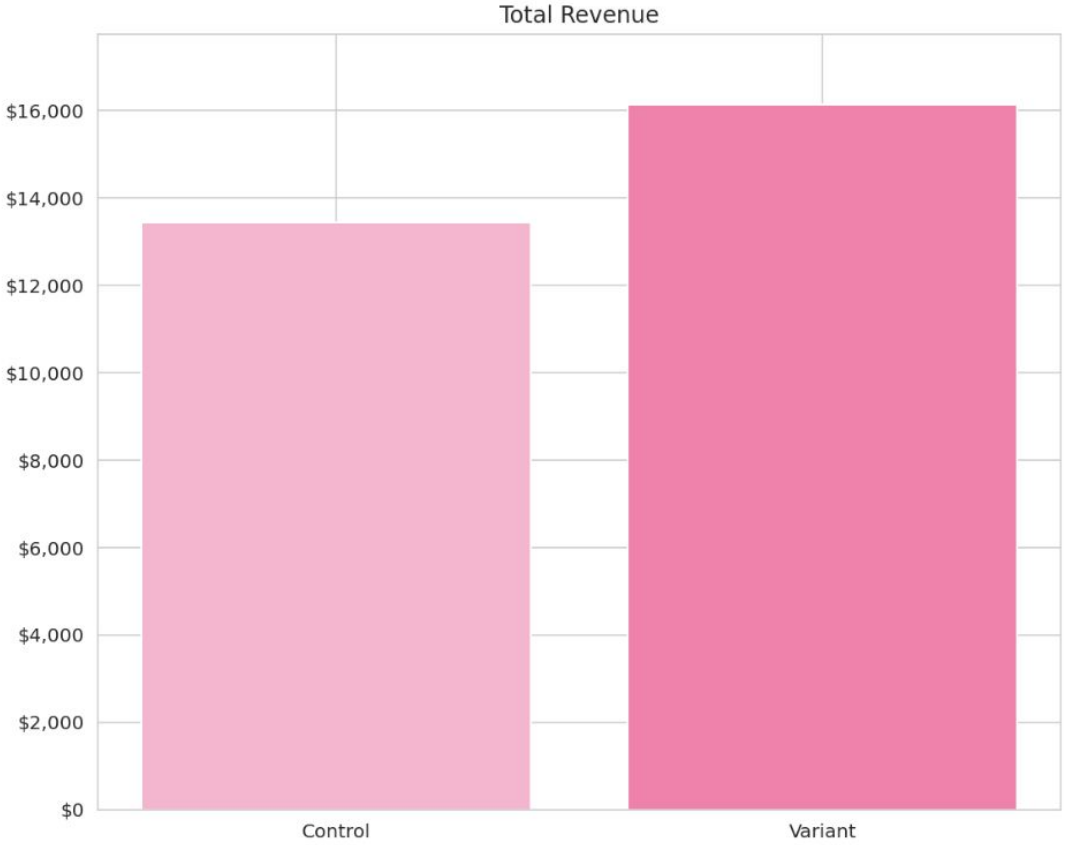
Experiment Results: Variant group outperformed with $2,600 uplift in revenue



Metric	Control	Variant	Uplift
Revenue	$13,446	$16,127	$2,681

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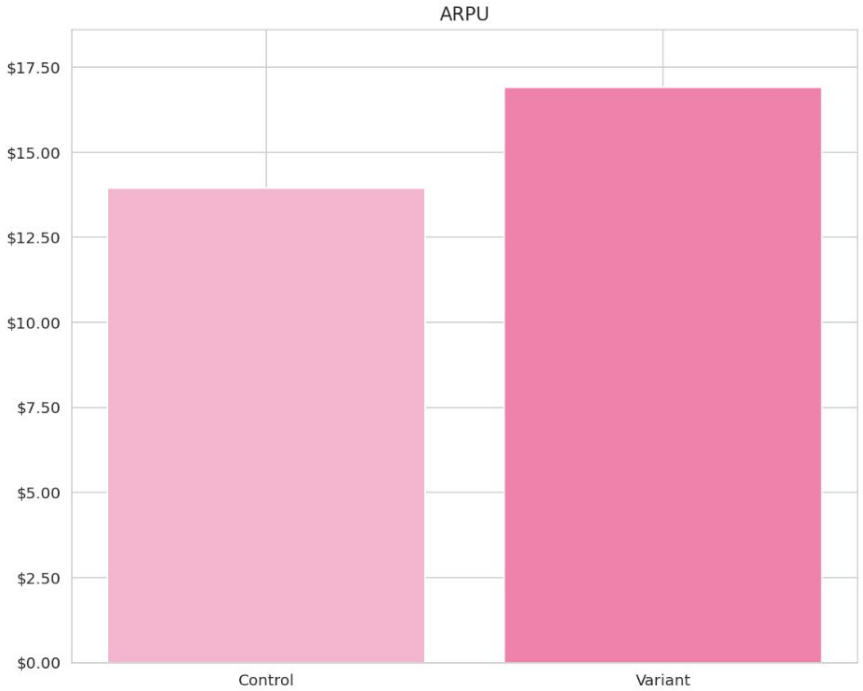
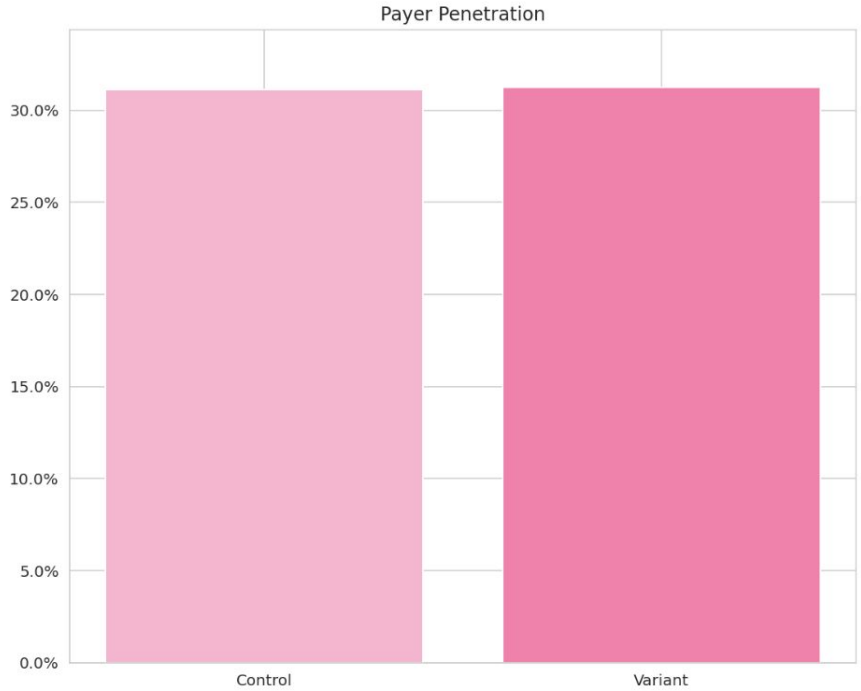
Experiment Results: Revenue results are not statistically significant





Metric	Highest Performing Cohort	P-Value	Significance?	Percent Difference
ARPU	Variant	0.2807	✘	21.2%
PP	Variant	0.9561	✘	0.4%

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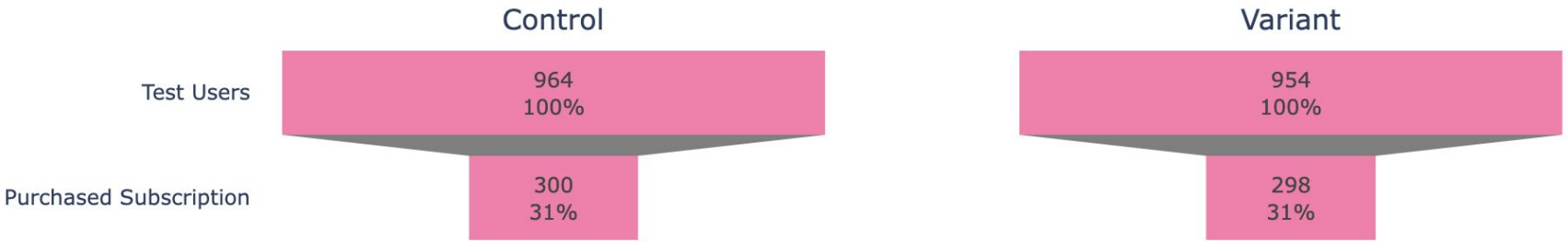
Experiment Results: Crucial steps missing in user funnel



Ideal user funnel

Test users → Started lesson → Completed lesson →

Used library tools → Used Speaking Practice tool (variant only) →

Started payment → Completed payment

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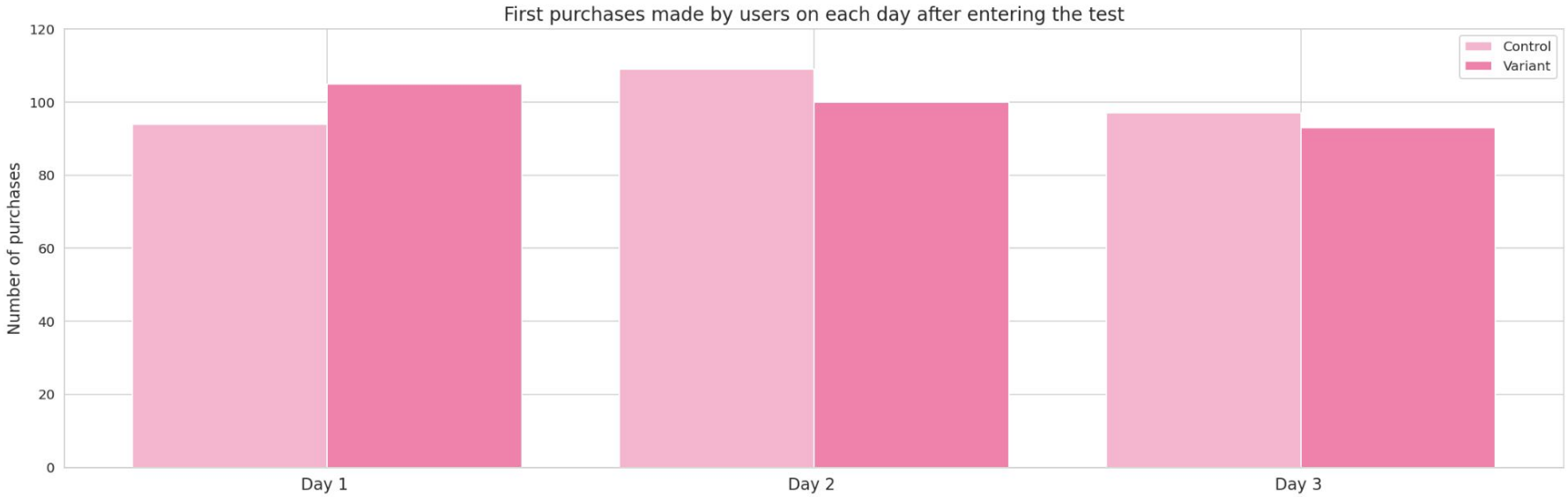
Experiment Results: Variant more likely to purchase 24 hours after test entry but unclear why with the current hit logic



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Experiment Results: Recommendations

We currently do not have sufficient evidence to support the roll out of the Speaking Practice tool as there is no evidence to suggest we are improving the experience for learners

Experiment design
- Hit logic should include users who start their trial lesson

Data
- Additional data are required to cover engagement with library tools, engagement with Speaking Practice tool and retention in addition to revenue metrics

Next steps
- Work with engineers to ensure tracking is in place for engagement metrics
- Re-run the experiment with updated hit logic and evaluate based on engagement and retention metrics

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Evaluating the effectiveness of AI-enhanced learning and tutoring initiatives

AI Effectiveness: Measurement framework

Quantitative measures

- **Model effectiveness (accuracy and precision)**: can be used for AI tools that provide translations, grammar correction or pronounciation feedback
- **Fluency improvement**: can be measured through speaking assessments with feedback provided by both the AI tool and the tutor
- **User engagement and retention**: e.g. active users, time spent with tool and frequency of use. Higher engagement would indicate that learners find the tool valuable which could contribute to better learning outcomes
- **Business health**: an effective AI tool that improves learner experience should result in an increase in subscription revenue

Qualitative measures

- **User satisfaction surveys**: can focus questions on ease of use, perceived value and overall satisfaction with the tool
- **Tutor assessments**: can be used to monitor progress over time

AI Effectiveness: Providing users with high quality learning materials

- **Content curation**: ensure language learning tools come from reputable sources (textbooks, language courses, authentic texts, and multimedia resources). Ensure language covers all language skills (listening, speaking, reading, writing) and levels of proficiency (beginner, intermediate, advanced)
- **Quality assurance**: ensure language materials are accurate, relevant, culturally appropriate and align with learning objectives. Language experts can be brought in to help with this
- **Continuous updates**: ensure models are updated regularly to keep them relevant and remove outdated material
- **Adaptability**: design language learning materials that can adapt to learners' needs, preferences and proficiency levels
- **Accessibility**: ensure materials are accessible to all, including those with disabilities and special needs
- **User feedback**: use feedback from users to determine effectiveness of learning tools. Can be via surveys, ratings, reviews or user testing sessions

AI Effectiveness: Enhancements for learners, tutors and the business

Students and tutors

- **Personalised learning path**: create personalised learning paths by analysing proficiency levels, learning style, strengths and weaknesses
- **Adaptive learning platforms**: these would dynamically adjust the difficulty and content of lessons based on the learners' performance and feedback
- **Language assessments**: assessment tools can evaluate a learners' language skills in terms of grammar, vocabulary, reading comprehension, and speaking proficiency
- **Insights for tutors:** provide AI generated insights to tutors on student progress, learning patterns and areas of difficulty

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- **Sentiment analysis**: based on tutor feedback. This will enable the business to adapt quickly if tools are not performing as well as expected
- **Churn prediction**: predict which users are likely to churn and target them with promotions. This should result in increased retention and revenue

Conclusion

We should **collaborate** with engineers to improve tracking of the Speaking Practice tool. The experiment should be rerun and **perfected** if we want to achieve our **ambition** of creating **value for learners.**

Our measurement framework for AI tools should be **bold** and focussed on **clear goals** that cover both quantitative and qualitative metrics. The proposed framework should enable us to quantify our **impact** and set us up for **success**.

We should always strive to provide learners with high quality learning materials. Keeping learners engaged through effective learning tools allows them to achieve their **ambitions** which can be **life changing**.

We should adopt a **growth mindset** and continually enhance and improve our AI toolkit for both learners and tutors. If an AI initiative fails, we should **dive deep** into the data to find out why.

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Questions