



Predictive Skill Inference Experiment

Role IQ Team



Some Background

WHAT IT IS

Predictive Skill Inference is a method of predicting a learner's Skill IQ score for assessment(s) they haven't taken yet

WHY WE EXPERIMENTED

- Wanted to figure out whether it made sense to build out Shan's skill inference model in production
- Prateek was the voice of reason - what's an easy way to test the model's impact before building out a full model in production?
- The Role IQ team decided to conduct an experiment to test a hypothesis related to the model within the Role IQ experience



Our Hypothesis

*Prompting a learner with their predictive level for a given skill within a role will increase the **number of assessments** they take within a role*



Key Metrics

TARGET METRICS

- Average # of assessments completed per user (who has completed at least one assessment) during the experimental timeframe
- % of users who took an assessment after viewing the experimental notification

COVARIATE METRICS

- # of views per notification category
- # of clicks per notification category



A/B Test

IN-APP NOTIFICATIONS

Notifications

Test copy

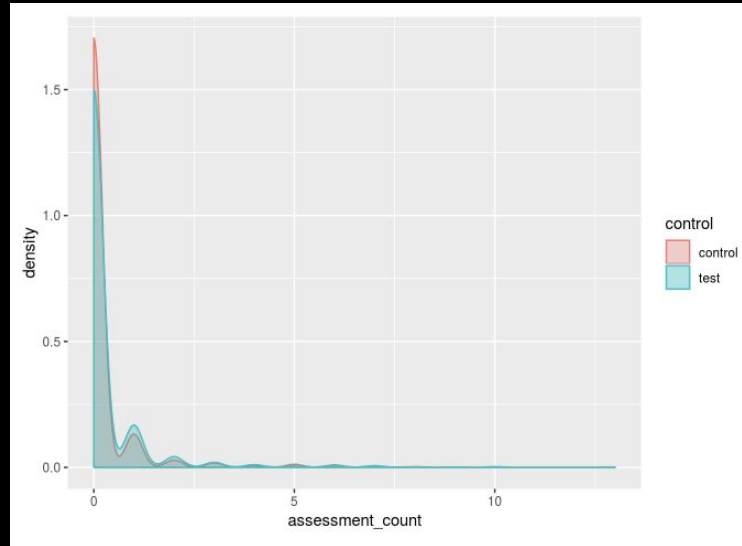
Interested in jumping back into your Vue Web Developer role? Based on your previous results, we predict that you are Proficient in JavaScript. **Assess your skill now**

Control copy

You've successfully completed 14% of your Vue Web Developer role and are on track to obtain your Role IQ. **Jump back in now**

Results

We found **no significant difference in the average number of assessments completed** by control versus test group users after viewing the experimental notification.





Results

We found **significant difference in the percent of control versus treatment users who took an assessment** after viewing the experimental notification.

Users were **more likely to take an assessment after viewing a notification containing a predicted skill IQ** than after viewing the traditional role engagement notification.

Users who took an assessment after viewing the notification

- **Treatment:** 203 users out of 1,337 – **15.2%**
- **Control:** 161 users out of 1,412 – **11.4%**



Lessons Learned

- Trim **scope**
- Craft a falsifiable **hypothesis**
- Prune your **metrics**
- Balance fighting confirmation bias with trusting **product intuition**



Next Steps

- Test more specific in-app notification variants
- Test other applications of skill inference within Role IQ
 - Encourage the learner to take additional assessments to validate inferred score within a role
 - Prompt the learner to watch additional courses before taking an assessment based on inferred score
 - Surface skill relationships based on inferred scores to provide insight into the next "best" skill to learn or measure within a role
- Test skill inference as an engagement tool for Skill IQ
 - Prompt learner to validate inferred score anywhere we surface skill assessments (All Skills page, Paths, Profile, etc.)
- Build a real skill inference model in production



Links

[Experiment write-up](#)

[Lab notebook](#)