We describe Quizz, a gamified crowdsourcing system that simultaneously assesses the knowledge of users and acquires new knowledge from them. Quizz operates by asking users to complete short quizzes on specific topics; as a user answers the quiz questions, Quizz estimates the user’s competence. To acquire new knowledge, Quizz also incorporates questions for which we do not have a known answer; the answers given by competent users provide useful signals for selecting the correct answers for these questions. Quizz actively tries to identify knowledgeable users on the Internet by running advertising campaigns, effectively leveraging “for free” the targeting capabilities of existing, publicly available, ad placement services. Quizz quantifies the contributions of the users using information theory and sends feedback to the advertising system about each user. The feedback allows the ad targeting mechanism to further optimize ad placement.

Our experiments, which involve over ten thousand users, confirm that we can crowdsource knowledge curation for niche and specialized topics, as the advertising network can automatically identify users with the desired expertise and interest in the given topic. We present controlled experiments that examine the effect of various incentive mechanisms, highlighting the need for having short-term rewards as goals, which incentivize the users to contribute. Finally, our cost-quality analysis indicates that the cost of our approach is below that of hiring workers through paid-crowdsourcing platforms, while offering the additional advantage of giving access to billions of potential users all over the planet, and being able to reach users with specialized expertise that is not typically available through existing labor marketplaces.

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