

Tocky Talk: A Mobile Phone Application to Help Address Communicative Problems of Engineering and Technical Graduates in the Philippine Context

Samantha Jade SADURAL^a, Kathleen Gay FIGUEROA^a, Noel Nicanor II SISON^a, Francis Miguel QUILAB^a, Alain Andrew BOQUIREN^a, Kiel GONZALES^a, Janelle TAN^a, Mario CARREON^a, Celine SUGAY^b
^a*University of the Philippines, Diliman*
^b*Ateneo de Manila University, Philippines*
*mtcarreon@dcs.upd.edu.ph

Abstract: Communication problems in English, particularly among Engineering and Technical graduates, are causing unemployment in a field that has a surplus of unfilled positions in the Philippines. Initial surveys and focus group discussions show that respondents from the targeted group seem to share similar communication problems in the following areas: being in interviews and conducting presentations. To address these issues, we developed Tocky Talk, an Android mobile phone application. Tocky Talk contains lessons and activities that would help the user improve their performance in job interviews and presentations as well as improve their English grammar and comprehension. A gamification strategy was also implemented to help motivate users to continue to use the application. Effectiveness testing showed that Tocky Talk significantly improved the presentation and interview skills of its users, with the motivational elements of gamification particularly effective. The Tocky Talk application is now available for download on the Google Play Store.

Keywords: English education, Mobile Application Development

1. Introduction

Engineering and Technical graduates' lack in English communication skills makes it difficult for them to be hired in today's job market. In a 2010 study by the People Management Association of the Philippines, up to 40% of fresh graduates do not immediately get hired because they lacked effective communication skills, along with two other key qualities (critical thinking and initiative) that employers look for in their job seekers (Rosero, 2012). This gap in the desired skill set is causing positions to remain unfilled, particularly in Engineering and Accountancy (Angara, 2014).

Tocky Talk is an Android mobile application that aims to address this deficiency by developing an engaging, interactive, and easy-to-use system that can teach such skills for various real-world communication contexts. A community-based participatory research approach was used during the implementation of the application to provide an application relevant to the target community of students (Hacker, 2013). In this paper, we provide a short background on the development of the application and provide the results of our effectiveness testing.

2. Methodology and Results

2.1 Initial Survey Results and Focus Group Discussions

Participants of the study were students, graduates, and Human Resource managers from the University of the Philippines, Diliman, MFI Polytechnic Institute, and the Philippine Council for

Industry, Energy, and Emerging Technology Research and Development of the Department of Science and Technology (DOST-PCIEERD).

Students have indicated that they mostly speak in Tagalog or Taglish (a code-switching mix of English and Tagalog). Straight English is rarely spoken. This lack of practice seems to be the cause for other communication problems, such as stuttering and slow responses to difficult questions in conversations and presentations. The graduates share similar concerns with the students, but provide a context based on their own experiences in looking for a job and working in a company. Talks with the HR Managers showed that while companies do offer self-improvement seminars for their employees, attendance for them tend to decline when the seminar is not compulsory.

All in all, our preliminary work identified focus areas that the respondents seem to share similar communication problems: being in interviews and conducting presentations, with an additional need to motivate users to continue the lessons.

2.2 Tocky Talk

Tocky Talk is an Android mobile phone application designed to address the communicative issues stated by the shareholders. It consists of three learning modules: Interview, Presentation, and Comprehension. Lessons are primarily delivered through short three-minute learning videos.

After each video, users complete activities to test if the learning outcome was achieved. Some activities use unique testing strategies that leverage the features of mobile phones. These include listening comprehension tests, voice and video recordings for later self-evaluation, and a job interview over a simulated video conference.

Tocky Talk also explores gamification strategies. Finishing an activity provides a reward of coins which can be exchanged for items in the app's item shop. Figure 1 provides a few screenshots.

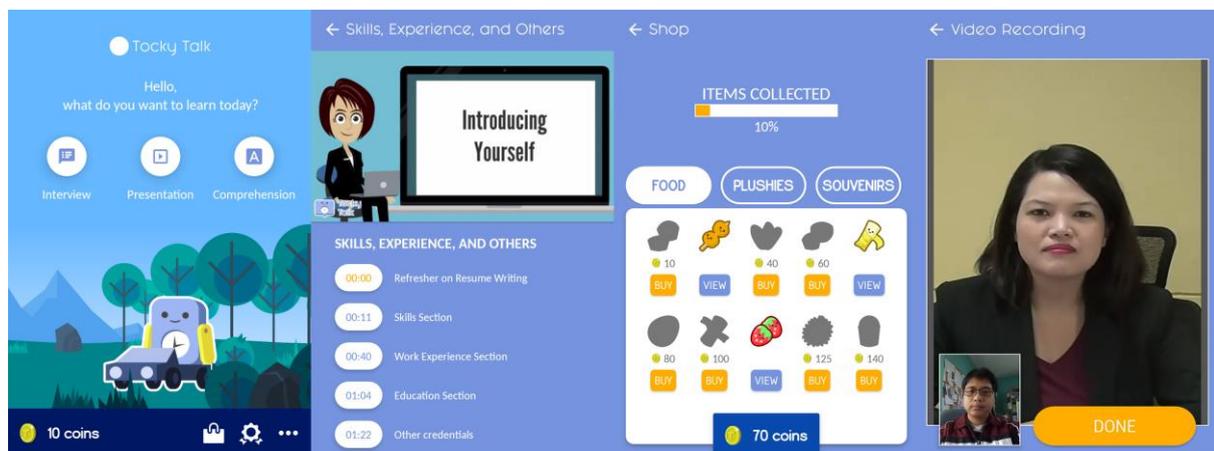


Figure 1. Screenshots of the Main Menu, Learning Video, Item Shop, and Simulated Job Interview

2.3 Effectiveness Testing

To test the effectiveness of Tocky Talk, an experiment with a 2x3 mixed factorial design was conducted with 24 students. Participants took a pre-test consisting of a mock job interview, a presentation on a pre-selected topic, and an English comprehension exam. Rubrics were used by a three-person panel to evaluate their interview and presentation on a scale of one to eight. The comprehension exam consisted of a 50-item paper-and-pen test which also included listening activities.

All students were randomly assigned to three groups; the Gamified Group (G), Non-gamified Group (NG), and Control group (C). Members of the Non-gamified group were given a version of the application with all gamification features disabled. This is to test its ability to motivate students to use the application. Except for the control group, all testers were asked to use the application regularly for over a two-week period. A post-test following the same format was performed at the end of this period. Table 1 lists down the results.

Table 1

Pre- and post-test scores mean and standard deviation (in parenthesis)

Group	n	Interview		Presentation		Comprehension	
		Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
G	8	5.21 (0.78)	6.07 (0.56)	5.35 (1.33)	5.76 (0.89)	28.35 (8.39)	29.75 (8.51)
NG	10	4.09 (0.63)	5.12 (0.78)	3.79 (1.07)	4.61 (1.06)	23.10 (7.43)	25.60 (7.36)
C	6	4.90 (0.81)	5.48 (0.71)	4.90 (1.17)	5.11 (1.10)	30.01 (3.01)	30.33 (3.44)

The results show that there is a significant increase in interview scores during post-test [$F(1.00, 21.000) = 29.963, p = .000$]. This is particularly true for those who used the Gamified version of the app ($M = 5.21, SD = 0.78$). Those who used the Non-Gamified version of the app improved the least ($M = 5.48, SD = 0.71$).

For the presentation module, a significant difference [$F(1.00, 21.000) = 13.56, p = .001$] among the three groups was observed for pre-test scores ($M=4.58, SD=1.33$) and post-test scores ($M=5.12, SD=1.09$). All in all, participants' scores improved during the post-test phase, with the Gamified group and Non-Gamified group showing the most and least improvements respectively.

There was no observed improvement in participants' scores for the comprehension module [$F(1.000, 2.000) = 0.607, p = 0.205$]. Several factors may have contributed to this. First, the two-week timeframe may not have been enough to learn additional skills in comprehension. Another factor may be that comprehension assumes a strong foundation in the language being used. This includes sufficient knowledge in grammar and vocabulary.

In the short group discussion after the post-test activities, the gamified group reported using the application more than their peers as they particularly found the implemented gamification features motivating. Shopping for items was an often remarked upon feature.

3. Concluding Remarks

Tocky Talk is a mobile phone application created to address the communication problems of engineering and technical students and graduates. Using a community-based participatory research approach, the researchers were able to create an application that is usable by target community.

Although improvements in English comprehension were inconclusive, Tocky Talk was shown to increase the performance of students in the interview and presentation aspects, with the gamified group having the most improvement.

Tocky Talk is now available for download at the Google Play Store. With promising initial results, we hope that this application can indeed be used to improve the communicative aspects of not only engineering and technical students, but also of the public.

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