

# A Time-Based Language Exchange Solution

## Introduction

Have you ever used language exchange apps like HelloTalk? These apps connect people who want to learn each other's languages. For example, if I want to learn Spanish, the app connects me with a Spanish speaker who wants to learn Italian so we can practice together.

## The Current Approach: Advantages and Flaws

The current approach has one big advantage: it allows for informal practice and cultural exchange without the need to pay professionals, making language learning both accessible and immersive. However, this approach also has two major flaws:

1. **Asymmetric Connections:** The connection is not symmetric. It's difficult and somewhat awkward to set specific durations or times for when each language should be practiced. Learners often have to switch between languages without a clear structure, which can be frustrating.
2. **Limited Connection Variety:** The current system requires that the person who speaks your target language must also want to learn your native language. For example, if I want to practice Spanish, I can only connect with people who want to learn Italian. This limitation leads to unusual connections with people who may not share your interests. It's even worse if you want to practice specific topics (e.g., finance vocabulary), as you would need to find someone who speaks Spanish, wants to learn Italian, and wants to discuss finance. This makes it nearly impossible to find the perfect match for your needs.

## Introducing Time as a Currency

Adding time as a currency solves both of these problems while keeping the app free (profitability will be discussed later).

The existing language exchange approach can be thought of as a barter system, while my proposed approach introduces a time-based currency, similar to a monetary transaction.

### From Barter to Currency

In a barter system:

- If you had cows but needed wheat, you first had to find someone who had wheat and also wanted cows.

With money, you can sell cows to anyone who needs them and use the currency to buy wheat.

Similarly, introducing time as a currency allows learners to have more flexibility and choice in language exchange.

## How the Time Currency Works

You can participate in a call in one of two roles:

- **Native Speaker:** You are matched with someone who wants to learn your native language, and you converse in your native language.
- **Learner:** You are matched with someone who speaks your target language as their native language, so you can practice it.

If you are in the native speaker role, you act as a "teacher" and earn time (there will be specific multipliers, but these are not essential to understand at this point). The person speaking with you in their target language, as a "learner," will be spending time.

**Important:** The teacher and learner do not need to want to learn each other's native languages.

For example, I can earn "time" by speaking with someone from Russia or an Arabic speaker who wants to learn Italian. I can then use that earned time to practice Spanish with a Spanish speaker, even if that person has no interest in learning Italian.

## Solving the Flaws of the Current System

Using time as a currency eliminates problem (1) because it provides an objective way to determine how much practice each person deserves.

It also solves problem (2), as matchmaking now focuses only on shared interests rather than mutual language exchange. If possible, other interests in common are also considered. This way, users are more encouraged to exchange ideas and have meaningful conversations with people all over the world about topics they both enjoy.

## Features to Keep Users Engaged

### Preventing Bypassing the App

To avoid people bypassing the time currency by moving to WhatsApp video calls once the connection is established, we have implemented useful features in our unique video chat:

- A **help button** with a quick AI assistant to answer questions, mainly quick translations, to avoid awkward silences or moments of panic when you don't know how to express yourself.

- **Instant, simultaneous subtitles** for the video call, with an option for real-time translated subtitles. (We have already contacted Translate, a Pi School partner, who can provide this service.)
- **Safety:** Real-time AI moderation will ensure that no illicit activities take place on the platform, both in chats and video calls.
- **Chats:** During the matchmaking process, you will be matched with people who want to discuss similar topics. You can start a chat with them to arrange a schedule to speak together.

## Profitability

The app is free to use; however, users can buy time in the store to instantly practice their target language without first earning time by helping others. Users can also buy **time multipliers** to earn 3x or 5x time when acting as a teacher.

## User Rating System

Tick-Talk integrates a **user rating system** to maintain high standards of interaction quality. After each session, users rate their conversation partner, fostering a community where respectful, engaging communication is encouraged and valued.

This system ensures that all participants contribute positively, making language practice enjoyable and constructive for everyone. High ratings can offer rewards, while consistently low ratings may prompt feedback or lead to restricted access, promoting a safe and welcoming environment.

## Gamification

To make the app highly engaging, we will implement features like **streaks** (similar to Duolingo). The longer your streak of consecutive practice days, the higher your rewards (alternatively, rewards can be purchased in the store). For example, every day you log in, you receive 10 free minutes to use that day. If you log in and have a call for 7 consecutive days, you earn a free multiplier or additional time that you can use in the future. We will also include **leaderboards** featuring users with the most accumulated time, as well as **leagues** to foster a sense of competition. Essentially, we will adapt Duolingo's successful gamification system to our app.

Technology	Purpose	Learning Focus
JavaScript	Core logic and interactivity	Basics of programming, async operations
React	UI structure and components	Components, state, props, JSX
Firebase	Backend services (auth, database)	Firebase setup, Firestore, real-time updates
HTML	Structure of UI	Basic tags and attributes
CSS	Styling	Selectors, Flexbox/Grid for layouts
WebRTC	Real-time video calling	PeerConnection, signaling, media streams