New Developments in
Foreign Language Learning

Adrienne Murphy
Editor

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CONTENTS

Chapter 2

PEER-TO-PEER FOREIGN LANGUAGE E-LEARNING STIMULATED BY GAMIFICATION AND VIRALITY

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ABSTRACT

The chapter describes the results of an experiment in building an online platform for learning foreign languages that allows people to teach their native language without being professional instructors. This platform allows audio and video connections between the participants and includes an interface with pre-defined interactive lessons. The content is presented in the form of bilateral scenario cards. Each of the participants (the student and the teacher) follows their own version of the cards in the video chat. For each card presented to the student there is a corresponding card for the teacher containing step-by-step instructions for reading the text out loud or asking the student a question and showing the correct answer. The student can use prompts and translations if s/he does not understand the teacher. The teacher does not have to prepare for the lessons, because the system contains all the necessary teaching materials. This system allows separating the lesson material from the teacher. Thus, the teacher can be any native speaker. The main constituents of content development are: dual language prompts, repetition, comprehension and a dictionary. Four levels are implemented: preschool, beginner, intermediate, and advanced. Four languages are currently supported: English, Spanish, German, and Russian.

In addition to the system description, gamification and viral mechanics are also discussed. Relationships between virality (viral involvement of users) and retention parameters as measurable metrics are calculated and discussed using real examples. Virality and monetization can be both competing and complementary mechanisms for the system growth. The F-growth factor, which combines both virality and retention, is proposed as the metrics of the overall freemium system performance in terms of the user

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base growth. This approach can be tested using a small number of users to assess the system potential performance. If the F-growth factor is less than one, the product needs further development. If the F-growth factor is greater than one, the system retains existing and attracts new users, thus a large scale market launch can be successful.

Keywords: distance learning, foreign language, peer2peer, learning tools, open educational resources, social network, gamification, virality, retention, viral marketing, e-learning, edutainment, internet, online advertising, crowd funding, K-factor, freemium, free2play

1. INTRODUCTION

Students are interested in being able to speak when learning a foreign language. Studying conversational speech is very important for practical purposes, since language training based only on written language and books is not sufficient. As mentioned by Joseph Vendryes, a person who speaks like he writes leaves an artificial or abnormal impression. Foreign language education in the former Soviet Union was based on reading and text translation, and not on speech. Thus, the students were able to read, understand and translate text, but not communicate with live foreigners. There are multiple textbooks focused on the speech aspects of a foreign language (Kohonen et al. 2001).

The research objective of this study was to create a computer application to teach foreigners to understand fluent speech. Each language consists of the two essential parts. One is the written language, and the other is the spoken language. These two types are quite different from the linguistics perspective.

Spoken language skills can be acquired by watching foreign movies or reading novels. Book writers, cultural, political, education and religious leaders provide spoken speech standards. The rest of the society considers their language as a standard. However, casual conversation is the main spoken language characteristic. The term casual conversation is a psychological category. Casual conversation or speech cannot be prepared in advance, since it is used in the informal settings. There are certain attributes of the spoken language:

1) The number of participants: one, two, more than three, which is correspondingly called monologue, dialogue, polylogue. Dialogue is the main type of the spoken language conversation. It is characterized by changing the roles of the speaker and the listener, when both participants switch their roles periodically. Polylogue involves more than two participants. Polylogue, opposite to a dialogue, is characterized by the theme polyphony, since each of the participants talks about their business, leading the conversation, so to speak. It should be noted that polyphony can be present in a dialogue as well, as two people engaged in a conversation can jump from one subject to another.

2) Conditions of the conversation: contact (private conversation), distant (phone conversation, speaking from one room to another, etc.). During direct conversation participants can also use gestures and facial expressions as additional means of communication.

3) The main conversation theme as the basis of spoken communication, which is also called constitution. Wherein the spoken language is the participants' reaction to non-

verbal situation components, or is targeted towards available objects, enhancing the speech ellipticity and the role of pronouns.

4) Common non-perceptional base is essential for conversational speech construction. Preliminary information, based on the previous everyday experience, is the common non-perceptional base. For example, in the Lev Tolstoy's novel "Anna Karenina," Kitty and Levin, who are in love, perfectly understand each other and only use the first letters of the words in written correspondence.

The main form of conversational speech is oral; however, not every type of speech is conversational. For example, lectures, public performances, scientific talks, TV interviews and reports are not conversational speech. In general, mass media and public oratory use codified language, while conversational speech belongs to the private sphere of communications. This is personal communication mainly with friends and family. Connection between the conversational speech and the household subjects is proven by the fact that violation of this connection is used in the literature to create a comic effect. One type of situation-determined conversational speech is of particular interest: stereotypical and high-frequency repetitive idioms. Learning these question-response cues, or speech patterns, associated with everyday life, it is one of the important tasks of studying conversational speech. There are two types of high-frequency repetitive idioms: etiquette stereotypes and urban stereotypes. "At the store," "On the bus," "In the theater," "At the movies," etc. are examples of the urban stereotypes. The importance of distinguishing stereotypical and non-stereotypical situations is signified by highlighting them in textbooks intended for people studying a second language.

Elemental conversation is even more extensive and interesting area of the spoken language, not related to typical situations. This live speech, which is all around us, can be called free conversational speech, to distinguish it from the urban stereotypes. Its study has increased significantly in recent years.

Conversational speech standards have more variability than the codified language norms in words formation, nominative means, phonetics, etc. Language is regulated by several standards. One is the nationwide standard, which is used by the whole population.

Additionally, there are more particular forms. Thus, unwritten, but multiple mandatory standards play a special role in conversational speech. However, conversational speech is regulated not only by the standards adopted in a particular language community, but also by the etiquette conventions. Certain expressions cannot be used, as they can be perceived as impolite and violating linguistic etiquette. Thus, spoken language skills can be most effectively learned from live verbal interactions with native speakers. This is accompanied by acquiring skills that reflect conversational partner experience, including lexical and cultural verbal communication traditions in stereotypical and non-stereotypical situations.

An online application was developed for practicing spoken language skills with native speakers, which implements described provisions. It is based on the live video and audio connection between real people, where native speaker acts as a teacher. The system contains all the teaching materials in the form of the theme lessons for developing conversational foreign language skills (Benson, 2011). The main requirement for the native speakers is their ability to read, along with education and cultural competence. This can be achieved with a large number of system users.

Table 1. Newly registered users' distribution by the native language

New users by languages									
Month	01.12 - 31.12	01.01 - 31.01	01.02 - 28.02	01.03 - 31.03	01.04 - 30.04	01.05 - 31.05	01.06 - 30.06	01.07 - 31.07	01.08 - 31.08
Russian language, users	1069	3671	191	94	746	2186	3220	4329	1762
English language, users	178	746	68	25	295	978	4005	5582	2539
German language, users	15	22	3	3	6	22	29	38	14
Spanish language, users	17	43	12	3	79	760	903	1644	372

2. ONLINE FOREIGN LANGUAGES LEARNING AND TEACHING PLATFORM

Experiments were conducted using the users of the i2istudy system that utilized the service at their own will (Osipov et al. 2015a). To conduct the experiments the following advertising was displayed in Facebook social network: "Want to learn foreign languages for free, or teach your native language? Click here." Almost 40,000 users registered in the system from May through August 2014 as a result of the advertising. Most of the users wanted to learn English, 28,180, another 8,711 users wanted to learn Spanish, 1,028 Russian and 1,791 German. 14,943 users said that their native language is English, 20,673 Russian, 204 German, and 3,843 Spanish. Table 1 shows the newly registered users' distribution by the native language.

The primary research objective was to determine if two people unfamiliar with each other, one acting as a teacher, and the other acting as a student could jointly follow the pre-defined lesson scenario using the step-by-step peer-to-peer system (Benta, Bologa and Dzitac, 2014; Renié and Chanier, 2006; Koa, 2012). All registered users could find other users in the system present online, identified as students or teachers by pressing the corresponding "Learn X language" or "Teach Y language" buttons. This action sent requests to other selected users. Here, the words teacher and student refer to the user roles in the system. Each user can assume both roles as a teacher of the native language and as a student learning a foreign language. The users select the corresponding languages during the registration process, which can be changed later.

The recipient of the teaching or learning request sees the user sending this request, along with the language and selected lesson level. The recipient can either accept or reject the request. If the request is accepted, the interface window opens, where the teacher and the student see and hear each other, and use synchronized teaching materials. During the lesson the users not only see and hear each other, but jointly work with teaching materials divided into small portion (cards). Besides, the student can see prompts and translation in their understandable language. The teacher sees additional instructions, for example to ask the student to repeat words, etc. The lessons are following pre-defined scenarios using face-to-face communication, realized using the web real-time communication (WebRTC) technology (Osipov, 2014; Osipov et al. 2015a, b, and c). If the "teacher" accepts the "student" invitation and vice versa, a live audio-video session is established. Both users can hear and see each

other, along with the synchronized lesson materials. These materials include corresponding individual prompts for the participants in their chosen language. The system also tracks the lesson time for the billing purposes in terms of the game currency or real money (Marks 2012; Válek and Jašíková 2013). At the end of the lesson each participant rates the other party's corresponding quality of teaching or learning.

As a result of the test, it was established that two unknown people, who met in the developed online interactive system for the first time, could carry on a conversation in a foreign language and effectively help each other. Moreover, part of the users did not speak a common language, and communicated by using system prompts displayed in their respective native language. The average successful connection time was about 12 minutes (189,207 minutes or 3153 man-hours) divided by the 15,842 total successful connections. Any type of connection termination was accounted for, including finishing the lesson, participants terminating the connection within the system, or by simply closing the browser.

Regardless of the fact that the average connection time was not very long, this experiment showed that two unprepared participants, previously unknown to each other, could carry on a conversation for an extended period of time using the developed system. If the lessons duration was not too long, the users could finish them. Moreover, the average connection time continued to increase with the number of active users, reaching over 14 minutes by the end of the experiment in August 2014.

After registration the users were asked to select the role of student or the role of teacher and select a potential partner to start a dialogue, based on the step-by-step instructions. In the system, each phrase is displayed for the student and for the teacher with additional comments. The teacher and the student can see and hear each other in real time. They also see synchronized teaching materials. In addition, there is a chat window, which allows both parties to type instant messages to each other (Kötter, 2001; Kim, 2014; Farr and Riordan, 2014). About 20% of the registered users fully participated in the project (Table 2). The rest were intimidated by the other party, or rejected invitations of the other users to conduct the lessons. Moreover, some of the registered users could not properly configure the hardware (the camera and the microphone) for the live video and audio feed.

The system currently includes four levels: (1) Preschool; (2) Beginner; (3) Intermediate and (4) Advanced. Each user was given an option to select the foreign language level and the specific lesson theme. The most popular lessons for August 2014 are listed in Table 3. Thus, it is clear that the most popular level was the Beginner (8 lessons), followed by the Preschool (5 lessons), Intermediate (5 lessons), and Advanced (2 lessons).

Table 2. Newly registered users' involvement in the learning/teaching process

	Involvement								
Month	01.12 - 31.12	01.01 - 31.01	01.02 - 28.02	01.03 - 31.03	01.04 - 30.04	01.05 - 31.05	01.06 - 30.06	01.07 - 31.07	01.08 - 31.08
Number of just registered users who made a call in period	93	734	61	15	251	1026	2037	2072	722
Percent of just reg. users who made a call in period	7	16	22	12	22	26	25	18	15

Table 3. The most popular lessons for August 2014

Students count	Sessions count	Lesson title	Level
555	1881	i2istudy: Teach your native language!	2
407	1328	Nice to meet you!	2
299	1243	i2istudy: Find Friends All over the World	3
244	904	Hello!	1
208	670	If you get a job	3
195	358	The best day of the year	2
194	502	What time is it?	2
158	485	My family	1
136	402	Describing your city	3
103	185	At the airport	2
88	223	Steak: How to Cook it Yourself	3
88	341	i2istudy: Find Friends All over the World	4
79	205	At the airport	1
63	182	Have you ever...	4
60	86	At a party	2
59	113	Michael Jackson	3
46	114	On the airplane	1
35	69	Clothing store	1
35	72	Computers	2
31	52	At the Supermarket	2

2.1. Learning and Teaching Principles

The main learning and teaching principles of the i2istudy system are:

1. Adults can learn like children (Estes, 2014). This means that the language learning materials were created as a game. Adults, similar to children, can learn faster when information is logically presented in small portions, with increasing level of complexity, and most importantly, with pictures or video (Korkmaz, 2013; Codreanu and Celik, 2013). The aim is to attract people to spend 30-40 minutes at a time playing a computer game using i2istudy. At the same time they are reaching their ultimate goal of learning a foreign language.
2. No homework. Predefined learning materials are designed for the student to learn during the lesson, without homework, based on multiple repetitions (Erena and Henderson, 2011). The system allows better memorizing of new words, including their pronunciation. The student reads and hears the new word from the live native speaker, learning its possible uses. The student can ask the teacher any question during the lesson to better memorize the word and its use in oral speech (Gurkan and Yuksel, 2012).

3. No emphasis on grammar. The main task is to learn the spoken language. The lesson is structured to allow the student to learn grammar while communicating with the teacher, like children learn their native language (Estes, 2014).

4. All types of cognition. Three types of cognition are engaged: visual memory (pictures and video), auditory memory (direct live communication with the teacher) and motor memory (written tasks using the keyboard to type words in the chat). Typically, individuals are stronger in one type of cognition. Utilizing all types of cognition allows for learning the material more rapidly (Rinaldi, 2014).

To facilitate this process 1) a special *methodological system* was designed, including 2) a *unique interface*, which allows users to understand each other without speaking a common language. The system was developed based on 3) *initial testing* using common people as students and teachers, along with professional foreign language teachers. Based on the numerous tests, 4) *four levels of language learning* were identified, which the user is capable to determine individually without additional testing. Each of these four elements of the process is described further in detail.

2.2. Methodological System Description

Despite the wide variety of different online learning systems, none of them combine live audio and video communication with unique teaching materials. The i2istudy platform was designed to facilitate the teaching process by native speakers who are not experts in teaching. In other words, while people can speak their native language, they don't know how to teach other people.

Professional foreign language tutors developed two-way cards for the student and the teacher. While communicating using video and audio live feed (Caws, 2013), the student and the teacher follow their own version of the cards. Online interaction between the teacher and the student is facilitated by the interactive materials and prompts, presented in the language that the person understands (Monteiroa, Carrillo and Aguaded, 2010). Cards follow a certain sequence, based on the lesson topic. Imagine a live dialogue between the teacher and the student. What would the teacher ask, and what would be the student's response? The lesson is logically structured this way. It also contains a pre-defined set of instructions for the teacher (Monteiroa, Carrillo and Aguaded, 2010). The teacher should follow these instructions, but not strictly, making the lesson more interesting for the student. However, the lesson should follow the main theme. There is no homework in the system, so the student learns the material during the course of a lesson. This positive learning experience makes them want to come back and learn more (Tal and Yelenevskaya, 2012).

2.2.1. Sequence of Cards
Teaching materials are presented as a sequence of information cards with text and pictures or video. The sequence of cards reflects the whole educational process:

1. Introduction and getting to know each other
2. Introductory questions
3. New material

4. Repetition
5. Oral and written tasks
6. Games, dialogues and quizzes
7. Summarizing the lesson and saying good bye to the student

After the lesson the student takes a multiple choice test based on the newly learned material without the teacher. An example where the teacher speaks English, and the student speaks Spanish is found in Figure 1 that shows an English lesson called "The New 7 Wonders of the World" at the intermediate level, the reading task, card 14 out of 30. Cards represent a logical sequence of the whole lesson, dividing it into small steps, i.e., word, sentence and small text. Based on this step-by-step process, a non-professional teacher is able to conduct a lesson by reading the instructions written on each card in the black font (Figure 1(a)).

2.2.2. Card Description

Each lesson consists of 25-30 cards and lasts about 20-30 minutes. Cards are logically connected, reflecting the theme of the lesson. Each card presents 1-5 sentences, accompanied by an image or video related to the text for its visualization. Both the teacher and the student see the lesson for the first time. The teacher is expected to grasp the card in a matter of seconds and read the task out loud. This is why the text should be short, accurately reflecting the task. In a sense, this is a task for both the teacher and the student, since both see the same card; however, they see their own version (Figure 1).

Lesson "The New 7 Wonders of the World"

(a) You teach English

Ilya Osipov   🔒 Add to blacklist

Connecting with WebRTC
Connecting video with WebRTC
Videoconnect WebRTC established

Keyboard

Card 14 from 30   Study progress:

Now READ the text and I will listen to you. Let's start!

"Machu Picchu, located in Peru, is an ancient Inca city, which was inhabited for only 100 years. The inhabitants of Machu Picchu had mysteriously disappeared in the XVI century AD. It is surprising that the city of Machu Picchu was only discovered in 1911."

Correct the st., if he pronounces the words incorrectly.

Show task   Translate task

Figure 1. (Continued).

Figure 1. English lesson called "The New 7 Wonders of the World": (a) Teacher interface in native English; (b) Student interface in native Spanish.

2.3. Interface Description

2.3.1. Synchronized Teaching Materials

The i2istudy technological platform is based on the two ways of presenting information:

1. Live audio and video connection between the teacher and the student;
2. Synchronized teaching materials displayed to the teacher and the student.

The learning process consists of establishing audio and video connection between the teacher and the student (the process of finding the teacher and the student is outside the scope of this chapter). The teacher and the student are presented with the same card, but it contains customized information. The teacher sees the materials as an aid to the teaching process. The student sees the materials needed for the learning process. The teacher conducts the lesson by switching the cards (grey arrows on the card in Figure 1(a)), which are also switched on the student's screen (Figure 1(b)).

2.3.2. Interface Hints for the Student

The teacher communicates with the student based on the predefined teaching materials, adding his or her own comments as necessary (Yousefi, 2014). These predefined teaching

materials allow the teacher to stay on the topic of discussion. If the student doesn't understand the teacher, the hints can be turned on by pressing the "Show task" button (Figure 2 (a)), which displays the phrase pronounced by the teacher in the foreign language to the student. If the student still does not understand, the teacher can display the translation of the phrase by pressing the "Translate task" button (Figure 2 (b)).
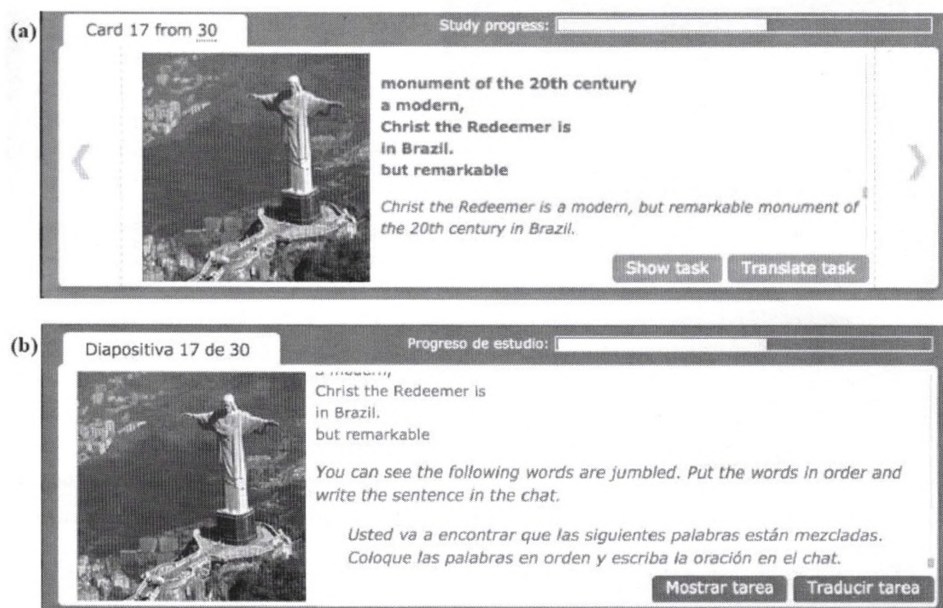
Figure 2. Writing practice card displayed for: (a) the teacher and (b) the student.
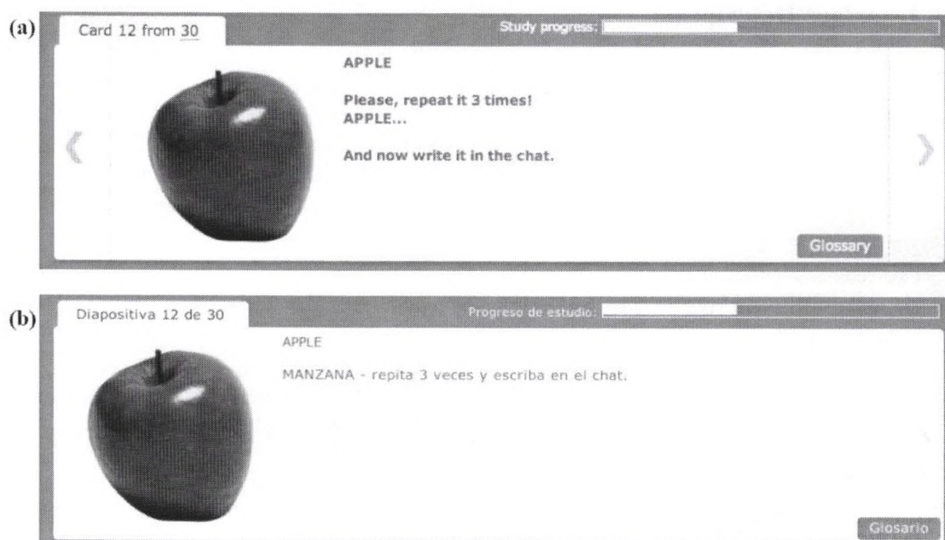
Figure 3. Words learning card displayed for: (a) the teacher and (b) the student.

2.4. Initial System Testing

2.4.1. Template Phrases Creation

All template phrases for the student and the teacher, like description of a game, manners, hints, the need to encourage the student, and so on, have been tested many times to make sure that both the teacher and the student understand exactly what to do (Laborda, 2009). Tests showed that if a person sees a card for the first time, he or she is capable of reading one or two short sentences. Let's consider the template example shown in Figure 3(a).

APPLE
Please repeat it 3 times!

APPLE...
Now write it in the chat.

This template is the result of numerous tests that demonstrate that it works. After reading the template, the teacher understands that s/he is supposed to teach the word "apple" to the student, which the student is supposed to repeat three times and then write it in the chat window. The initial version was: "Apple - please repeat it 3 times and write it in the chat." While it looks shorter, the teacher simply read this text, but the student did not repeat the word and did not write anything in the chat. As a result, the percentage of the material learned by the student was quite low. Writing the word to be learned using caps, adding the second word "APPLE..." followed by the ellipsis produced the desired result of the teacher learning the word with the student. Tests showed that the student strictly follows the teacher's instructions. Even if the task is displayed in front of the student, s/he will conduct the task only when asked by the teacher. Although the task of repeating the word three times is written in the student's native language (Figure 3(b)), the student repeated the word only one time. After changing the text for the teacher, the student started to repeat the word three times and write it in the chat.

It took about 20 test lessons to tweak all template phrases and captions. These tests were conducted with people who saw the i2istudy system for the first time. Both the student and the teacher were sitting in separate rooms, watched by the developers. Only after the tasks were understood by both the teacher and the student, this testing was finished. The tests involved professional foreign language teachers and students from the Linguistics University of Nizhny Novgorod, Russia.

2.4.2. Lesson Duration

There has to be a clear distinction between the on-line and off-line lessons. Tests showed that it is hard for both the teacher and the student to study for more than 30 minutes at a time. The ideal online lesson duration is 15-20 minutes. Initial lessons contained 100 cards and 20 new words to be learned. The lesson lasted for 1.5-2 hours, depending on the paste of the teacher and the student proficiency in the foreign language. As a result, both participants got tired, losing the desire to repeat this experience. The lessons were then shortened to 45 cards, however, further tests showed that even 45 minutes is too long for on-line live human interaction. This is why 20-30 cards are optimal. If the teacher is following the cards, without

adding any comments and tasks, at the beginner's level the lesson takes 20 minutes (since the tasks are simple), and 30 minutes at the advanced level.

2.5. Four Levels of Language Learning

Based on the predefined materials, it is possible to teach foreign language from the zero preschool level. Students can continue at the beginner's level, improve to the intermediate level, and then progress to the advanced level. The user determines the level individually by reading the level descriptions:

Preschool - I have never learnt this language, can't read, don't know a word

Beginner - I can read, know the basic words and expressions

Intermediate - I have a reasonable vocabulary and understand written text, but I am not very good at understanding oral speech

Advanced - I have a large vocabulary and experience in communicating with native speakers, but lack speech practice

Multiple tests showed that people can determine their level of foreign language proficiency without additional testing.

2.6. Examples of the Tasks at Different Levels

As mentioned earlier, the lessons were created by imagining the live dialogue with the student. Based on this idea, the sequence of cards was designed, reflecting the whole educational process, using all the steps outlined in the *Sequence of cards* section. Following the lesson flow, specific examples of the tasks are given that get more complex, depending on the level. The preschool level is different than the other three, and is not described here.

Introduction (1 card) is the same for all levels, where the participants introduce themselves and get to know each other. Initial testing showed that the teacher tried to continue the lessons themselves by coming up with their own questions, not having a clue what to do next, until the following sentence was added: "After the answer click the slide" (Figure 4(a)). Before this change, the student continued to see the same card (Figure 4(b)). A simple comment provided for the teacher solved this problem. The teachers were quite surprised to see that all the teaching aids have already been created for the whole lesson.

Memory game (2 cards). The student is supposed to remember the learned words based on the pictures shown. The teacher shows five pictures, corresponding to the learned words (Apple in Figure 3, for example) in sequence without displaying the words. It is desirable to choose words that are easy to remember when looking at the corresponding picture. The objective is to repeat the newly learned vocabulary. Memory game from the beginner level lesson "Happy Birthday" is shown in Figure 5 as an example. The teacher sees the correct answers, shown in Figure 5(a), so that the teacher does not have to remember them. The student only sees the picture shown by the teacher in Figure 5(b) with understandable instructions in the native language.

(a)

Card 1 from 30   Study progress:

Hello, my name is _____ ,
What is your name?

How are you today?

After the answer click the slide.

If the student doesn't understand you, click THE GREEN BUTTONS.

Show task   Translate task

(b)

Diapositiva 1 de 30   Progreso de estudio:

HELLO!

Mostrar tarea   Traducir tarea
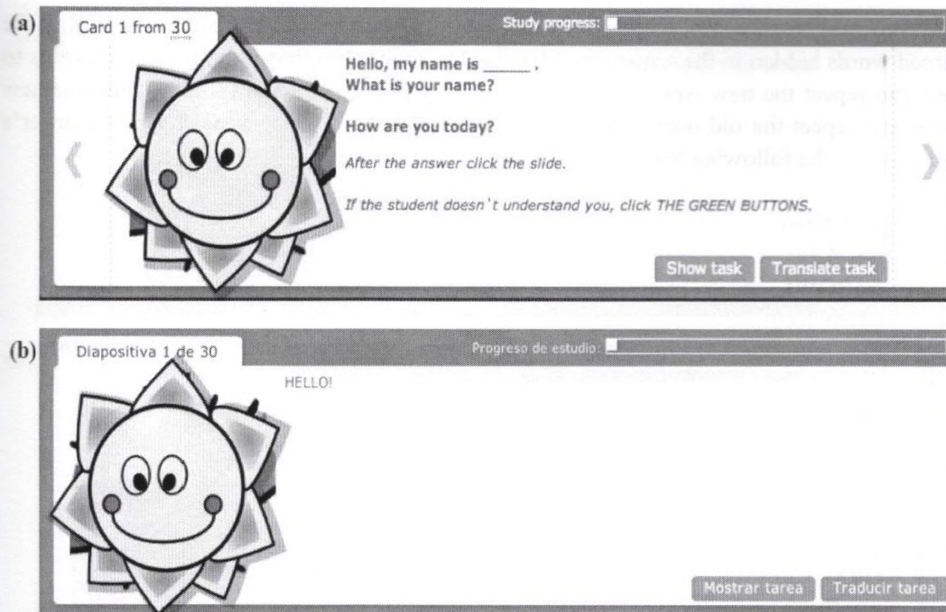
Figure 4. Hello card displayed for: (a) the teacher and (b) the student.

(a)

Card 16 from 30   Study progress:

Please, look at the pictures and try to remember the words you learned. So, the first picture, what is it? ...

1. to give a gift 2. to get gifts 3. to congratulate 4. weekdays 5. weekend

(b)

Diapositiva 16 de 30   Progreso de estudio:

MEMORY GAME

Por favor, observe las imágenes e intente recordar las palabras que usted aprendió. Entonces, que es la primera imagen?

Figure 5. Memory game displayed for: (a) the teacher and (b) the student.

Word Search game for the beginner level (1 card). The student is supposed to find the learned words hidden in the sequence of letters. The main objective at the beginner level is to learn and repeat the new words. The main task at the intermediate level is to learn the new words and repeat the old ones. For example, in the lesson "Making pancakes" the teacher's card contains the following text:

1. wEGGwo
2. fGLASSt
3. froBOWL
4. CRACKeq
5. FRYiekk

Student's card:

1. WEGGWO
2. FGLASST
3. FROBOWL
4. CRACKEQ
5. FRYIEKK

In one word game for the intermediate level (1-2 cards). The task is to describe three pictures using only one word. The answer should be from the practiced vocabulary. For example, Figure 6 shows the lesson "My free time" at the intermediate level, where outdoor activities, picnic and calendar are described with one word, "weekend."

Memorize the picture game for the advanced level (2 cards). At the advanced level the tasks should be interesting, since the student already understands the teacher and can ask questions if they don't understand something. The objective here is more complex than just learning the new words. This game develops attention, and is also entertaining for the people who are already fluent in a foreign language. The task is to remember all the picture details and then read the description without seeing the picture, and detect any discrepancies in the description. For example, the lesson "Our environment" shows the picture and the description in Figure 7. As already noted, people fluent in a foreign language can easily speak the language, but are struggling to repeat the text from memory or can not hold their attention for too long, since other mental processes are involved (Ilgaza, Altunb and Aşkarc, 2014). It is important to use simple words for the distorted description, like describing color, size and specific objects, so that the answer would immediately come to mind.

The quiz (1-2 cards). The quiz contains intelligent questions, based on the lesson theme. The student should always have three options for the answer, so that the student does not get intimidated by not knowing the answer. Typically, a person is capable of selecting the correct answer out of three options. The question can be quite complex and interesting, but the actual language implementation depends on the level (Wang, 2008). Example of the level-based questions and answers are given in Table 4.

Pictures in the quiz should reflect the question rather than the answer. For example, the question about Benjamin Franklin should show his picture, and not the picture of the books (Table 4). This exercise should encourage the student to think, and the picture should not provide an obvious clue.

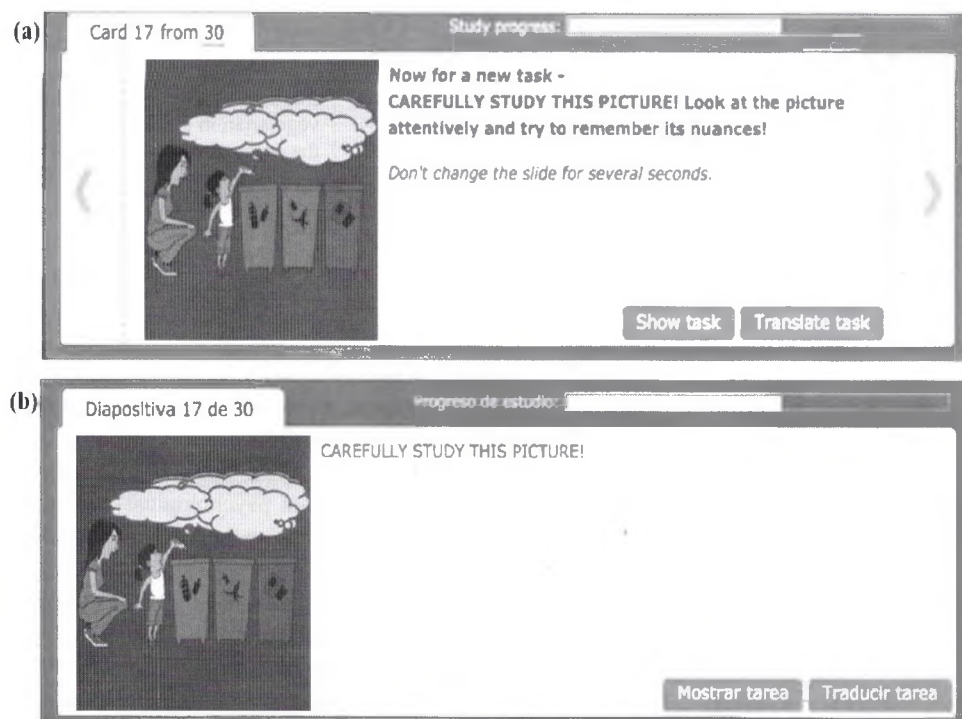Figure 6. In one word game displayed for: (a) the teacher and (b) the student.
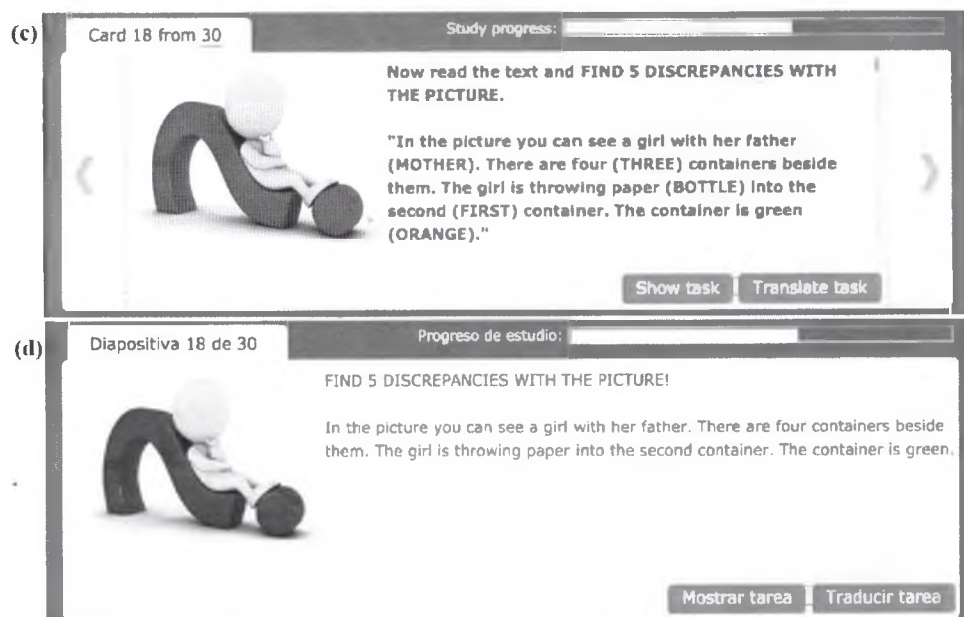

Figure 7. (Continued).

(c) Card 18 from 30 — Study progress:

Now read the text and **FIND 5 DISCREPANCIES WITH THE PICTURE.**

"In the picture you can see a girl with her father (MOTHER). There are four (THREE) containers beside them. The girl is throwing paper (BOTTLE) into the second (FIRST) container. The container is green (ORANGE)."

Show task   Translate task

(d) Diapositiva 18 de 30 — Progreso de estudio:

FIND 5 DISCREPANCIES WITH THE PICTURE!

In the picture you can see a girl with her father. There are four containers beside them. The girl is throwing paper into the second container. The container is green.

Mostrar tarea   Traducir tarea

Figure 7. Memorize the picture game displayed for: (a), (c) the teacher and (b), (d) the student.

Table 4. Level-based questions and answers

Beginner level	Intermediate level	Advanced level
Who discovered America: • Vasco da Gama, • Marco Polo, • Christopher Columbus? Answer: Christopher Columbus	Michael Jackson was really fond of this cartoon series. He even wrote two singles for it. What is it? • The Simpsons • Futurama • The Flintstones Answer: The Simpsons	Benjamin Franklin became a vegetarian in order to spend the extra money he saved... • on books, • on milk, • in his old age? Answer: on books

Summary and good bye (1 card). The last card is the same at all levels. The teacher is finishing the lesson and informing the students to take the test at the end of the lesson on their own (Figure 8). After the lesson the student takes a multiple choice test consisting of 9 questions without the teacher to repeat what was learned and to assess how the material was learned. The student gets a grade. Passing the test is an important psychological step, since the student realizes what s/he actually learned (Laborda, 2009). A sample test at the beginner level is shown in Table 5.

These are examples of the specific tasks, while the system contains many more tasks and examples. However, the lesson specific steps have been clearly outlined using the discussed examples: introduction and getting to know each other; introductory questions; new material repetition; oral and written tasks; games, dialogues and quizzes; summarizing the lesson and saying good bye to the student. All lesson materials have been specifically designed for the i2istudy project and are unique.

Table 5. Example of the multiple choice student test at the end of the lesson "At the supermarket," beginner level

1	**What is the title of our lesson today?** At the supermarket At the cash-desk Buying food Answer: 1
2	**Choose the correct answer!** BASKET. It is: 1) Precio 2) Pan 3) Cesta Answer: 3
3	**Choose the correct answer!** MINERAL WATER. It is: 1) Agua mineral 2) Jugo 3) Leche Answer: 1
4	**Choose the correct answer!** TO PAY. It is: 1) Pagar 2) Comprar 3) Agarrar Answer: 1
5	**Choose things that you can buy at the supermarket:** 1) cheese 2) meat 3) dog 4) juice 5) table 6) basket 7) apple 8) computer 9) fish Answers: 1, 2, 4, 7, 9
6	**What is wrong?** PORK. This is: 1) meat 2) beef 3) food Answer: 2
7	**Complete this sentence:** At a cash desk you can pay by cash or _____ . 1) money 2) by credit cart 3) not pay Answer: 2
8	**Complete this sentence:** _____ is made of milk. 1) fruit 2) bread 3) cheese Answer: 3
9	**Complete this sentence:** Fish has more calories than _____ . 1) oranges 2) pork 3) beef Answer: 1
10	Test result is displayed.
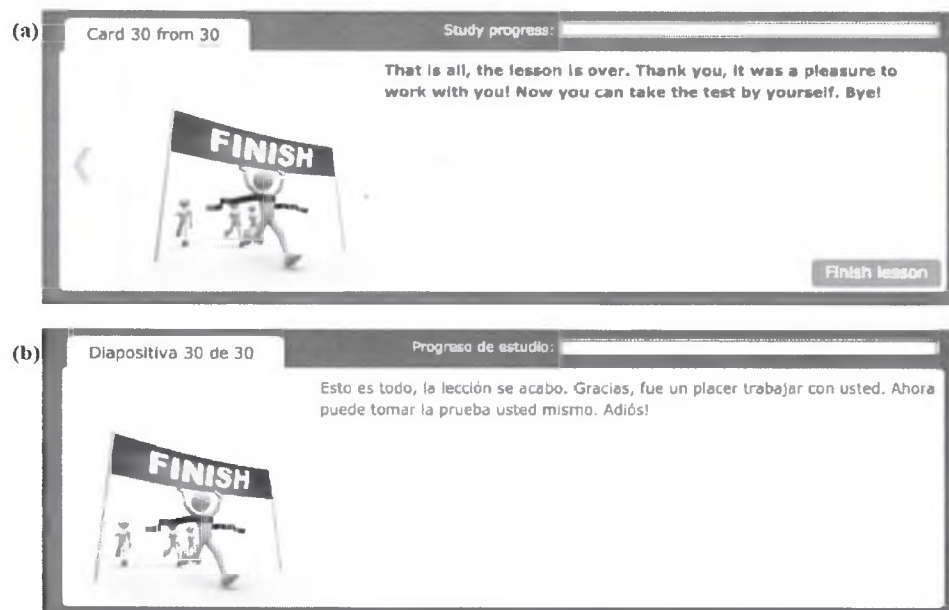
Figure 8. Last summary card displayed for: (a) the teacher and (b) the student.

2.7. Research Results

As a result of the conducted experiments, two strangers that met in the i2istudy system for the first time can have a dialogue in a foreign language, effectively helping each other learn. Now imagine that you are meeting this person for the first time. What would you talk about? The main achievement of the i2istudy system is allowing two strangers to carry on a conversation for over 15 minutes in a foreign language. Most users had no problems talking to a stranger online (Kim, 2003). This conclusion is based on the average lesson duration registered by the system. The end of the lesson is based on all different registered scenarios, from completing the task to closing the browser. Table 6 lists successful connections in minutes for each month.

Table 6. Successful connections, based on the duration and quantity for each month

Real connects									
Month	01.12 - 31.12	01.01 - 31.01	01.02 - 28.02	01.03 - 31.03	01.04 - 30.04	01.05 - 31.05	01.06 - 30.06	01.07 - 31.07	01.08 - 31.08
Successful connects duration, min	151	10835	5021	3645	6202	37037	47140	54974	38202
Number of successful connects	19	1228	492	131	587	3093	3868	3763	2661

Table 7. System leaders, based on the teaching time spent in the system

Successful tutor's connects duration, min			
Duration, min	**User ID**	**Name**	**Email**
352	19131	L. M.	l.....@mail.ru
298	18418	j. b.	d.....@outlook.fr
277	15433	Л. Д.	h.....@mail.ru
276	18573	H. A.	
260	28516	j. s.	m.....@gmail.com
254	391	A.	p.....@yandex.ru
216	22144	S. R.	s.....@gmail.com
213	20378	R. K.	m.....@gmail.com
200	1552	ح.ب	p.....@yahoo.com
145	29776	A. S.	a.....@yahoo.com
137	25718	Z. R.	z.....@hotmail.com
130	17253	R. M.	m.....@hotmail.com
126	26034	L.	s.....@yahoo.com
122	41271	A.	a.....@mail.ru
122	20179	D. V.	v.....@mail.ru
105	40693	E.	r.....@mail.ru
98	25965	A. M.	a.....@yahoo.com
98	40252	f. s.	f.....@yahoo.com
95	457	A. V.	b.....@yahoo.com
94	17364	A. H	a.....@gmail.com

The average lesson duration was 11.94 minutes (189,207 minutes, or 3153 student-hours divided by the 15,842 number of successful connections). At a first glance, this is not an outstanding result. However, it shows that with the help of the i2istudy system two strangers can carry on a conversation in a foreign language for 12 minutes. Besides, the average lesson duration increased to 14.35 minutes in August 2014. Also, very active loyal users, who spent many hours teaching the same lessons, appeared. Table 7 lists the most active users, based on their teaching duration for August 2014.

2.8. Conclusion for System Description

In the i2istudy system the teaching methodology is independent of the individual's knowledge. Thus, any person without professional teaching skills can be a teacher in the i2istudy system. The only requirement is the ability to read and communicate in the native language. Based on the hints, even a student at the preschool level can communicate with a native speaker. The system interface allows adding any number of languages by simply translating the existing lessons. There is no need to recreate new lessons. The system currently supports English, Russian, German and Spanish languages. All the user needs to do is select the native language and the language to be learned, and learn from native speakers.

Recalling the study mentioned in the beginning, the following foreign language resources are currently available online:

1. Interactive language resources for self learning
2. Digital textbooks
3. Individual lessons using Skype
4. Mobile educational applications
5. Mobile value-added services

All these models have both advantages and serious drawbacks, such as lack of the live interaction and the guarantee of the quality of teaching materials. The described platform allows combining high quality lessons, since these lessons have been custom developed specifically for the platform by the professional teachers and live human interaction with the native speaker. The system also facilitates individual tutoring, the most expensive service in the World, without involving real exchange of money, based on the language training barter between the teacher and the student.

It is clear that the system sparks an interest in a large number of the users, allowing them to carry on a conversation in a foreign language. This experience enhances communication and spoken foreign language skills. The authors concluded that the system should be developed further to better facilitate spoken language learning, based on retention and viral user attraction.

3. RETENTION AND VIRAL USER ATTRACTION

3.1. The K-Factor

Figure 9 shows the Wikipedia write-up about the K-Factor in marketing. Certainly, in theory the information provided by Wikipedia is correct in Figure 9. However, this is just an eye-brow theory. In real life, this K-factor should be calculated during the entire lifetime of a project, from the launch until the closure. This formula corresponds to the "global" K-factor, which nobody really needs, aside from the security service of a venture capital trying to find out why this or that startup has gone dead.

In real life, what we are interested in is the "local" K-factor (the term is borrowed from "Freemium Economics" by Eric B. Seufert, 2013), i.e., the value calculated during a certain period of time. For example, within our approach, we use weekly factors, i.e., the "weekly K-factor." Moreover, in our case the statement that the project grows or collapses exponentially, if the value of the K-factor exceeds or falls short of unity, respectively, is wrong!

However, Richard Fond, the author of the Bliss Drive blog, and the Wikipedia entry, and even Harry Harrison in his story called "The K-factor" fail to allow for many factors. Borrowing the term blindly from nucleonics and epidemiology, they assume that merely "infecting" a newcomer is sufficient to expand the user database. In reality, how a project retains existing users is more important than how fast it grows. Also, the ways, which are used to retain users, should enter the formula.
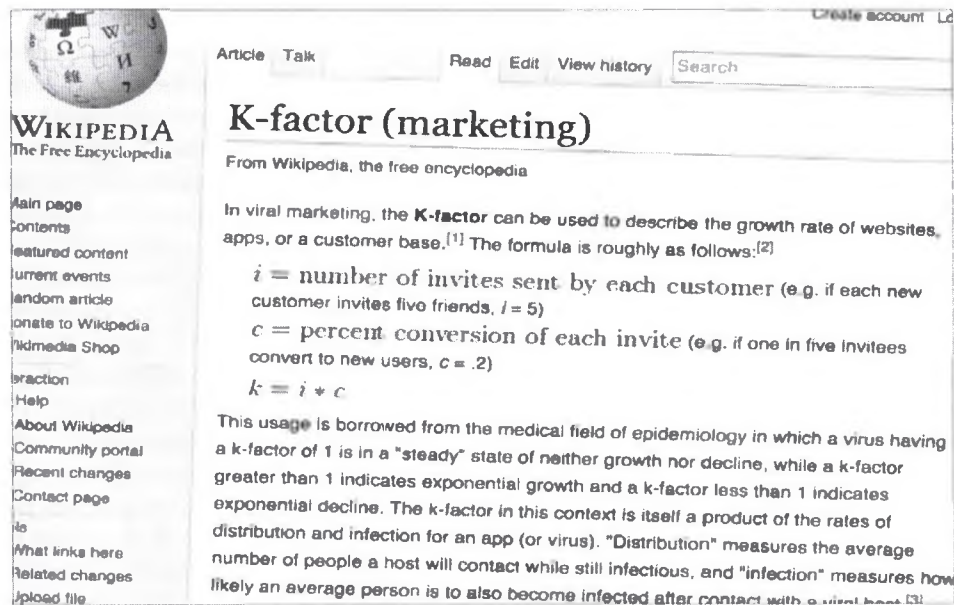
Figure 9. "Wikipedia" write-up about the K-Factor in marketing.

K-factors of actual projects rarely exceed unity, for long periods of time, anyway. A normal current value of the K-factor for a successful and growing project at any given time is equal to 10%, 20%, or 30%, and the project is thriving at that, despite the fact that it should collapse, according to the classical formula. But why? Because it is not a nuclear explosion or a plague in a population of mice, where the death rate of the infected animals is 100%. The thing is that in the normal project, the "infected" users continue using the project and even attract new customers in the following time period.

This can be regarded as a different factor, namely, K-retention, being the ratio of the number of the users, who use the service repeatedly during the current period, as compared with the previous period. This parameter will always be less than unity, since some users will be lost anyway. Even in such environments as a prison or North Korea, this factor fails to reach unity due to release of inmates, mortality, and escapes.

The real, "fundamental" coefficient, which shows the natural dynamics of the project, is the sum of the above-specified factors, specifically, K-factor and K-retention. If the total exceeds 1, the project grows, if it is less, the number of loyal users decreases.

Additionally, we call for using only "active" users when calculating these factors, i.e., those who, rather than being just passive visitors, perform some purposeful actions typical of the project, game or service under consideration. For example, for a drawing service, it is creation and saving of a new sketch, for a game, playing through at least one level, etc. Only then we will obtain unbiased evaluations of the parameters.

For instance, if we create a virtual prison, we should count only the prisoners who have real prison terms, rather than adding all their relatives, guards, controllers, investigators and lawyers. The latter are random factors in this game.

Fair and equitable calculations will show that for a good project, the K-factor will be equal to about 10% (if it is higher, accept our congratulations!), and the K-retention, to about 90%. The sum of these parameters will yield the sought-for value of 1, the stability level, when the project neither grows, nor withers away. The only thing to be done here would be to increase at least one of the parameters by 1% to make the project increase by 1% daily or weekly. It is known that the daily growth rate of 1% yields a 37-fold increase per year. We call the sum of the above-said two factors the "F-growth."

3.2. Gamification, Virality and Retention

There are numerous products utilizing the freemium model, such as mobile applications, SaaS solutions, software, web applications and others (Seufert, 2013). However, the freemium model is not as simple as it may seem. The author analyzed the statistics of the users' behavior in the educational collaborative platform available to everybody as shareware and through the freemium model (Osipov, Volinsky and Prasikova, 2015). The platform is a web site for learning foreign languages, described in the previous section, with users from all over the World. The main idea of the system is based on the fact that regardless of all the grammar learned in college, students are lacking live interactions with the native speakers to increase their spoken language skills (Osipov, Volinsky and Prasikova, 2015). Finding a native speaker is not an easy task, which typically also requires paying for the tutor lessons. The authors noticed, based on the students studying Spanish, that professional teacher is not required to learn basic communication skills. What's needed is a partner, who's ready to help using already prepared materials, a Spanish native speaker. Spanish native speakers are eager to learn English in exchange for teaching Spanish.

Freemium, which is a combination of the words Free and Premium, business model assumes the maximum product market distribution, along with the capture and retention of the largest possible number of users. Part of the users, which for various products varies from 3% to 10%, takes advantage of the premium features, allowing the creators not only to pay for the entire system upkeep, including free parts, but also to make a profit (Mäntymäki and Salo, 2011).

Figure 10 shows typical cycles of the freemium application. Arrows indicate main user and information flow, including the 4 main cycles:

1. The in-app cycle – the main application cycle, the core cycle, the basic function for which the user decided to use the application (in our case it's learning foreign language with native speakers).
2. The monetization cycle (denoted by the small dollar sign $ in Figure 10). This is an additional cycle, which attracts the most venturous people involved in the process, representing additional features. This cycle is smaller, since it is not available to all participating users (especially in the freemium business model).
3. The retention cycle is when users leave and subsequently return into the system. To successfully return and retain the users in the system, special means are utilized, from e-mail notifications, social networks and other communication channels reminders of the events, which occurred during the user absence from the system, to gamification.

4. The viral cycle when existing users invite new users from the external environment (e-mail, social networks, blogs, forums, personal websites, applications, and other communication channels), including the new users accommodation.

Besides, the diagram in Figure 10 also shows different user flows into the web application, including organic "word of mouth" users, bookmarks, search engines, motivated and purchased users, along with the invited users (Ellis and Brown, 2014). The downward arrow shows users lost directly from the web front page, as well as from any other of the mentioned cycles. It should be noted that the app cycles: the core, viral, retention and monetization cycles are antagonistic, as they are competing for the user attention, which is always lacking. The system developers must understand which cycles have priority.
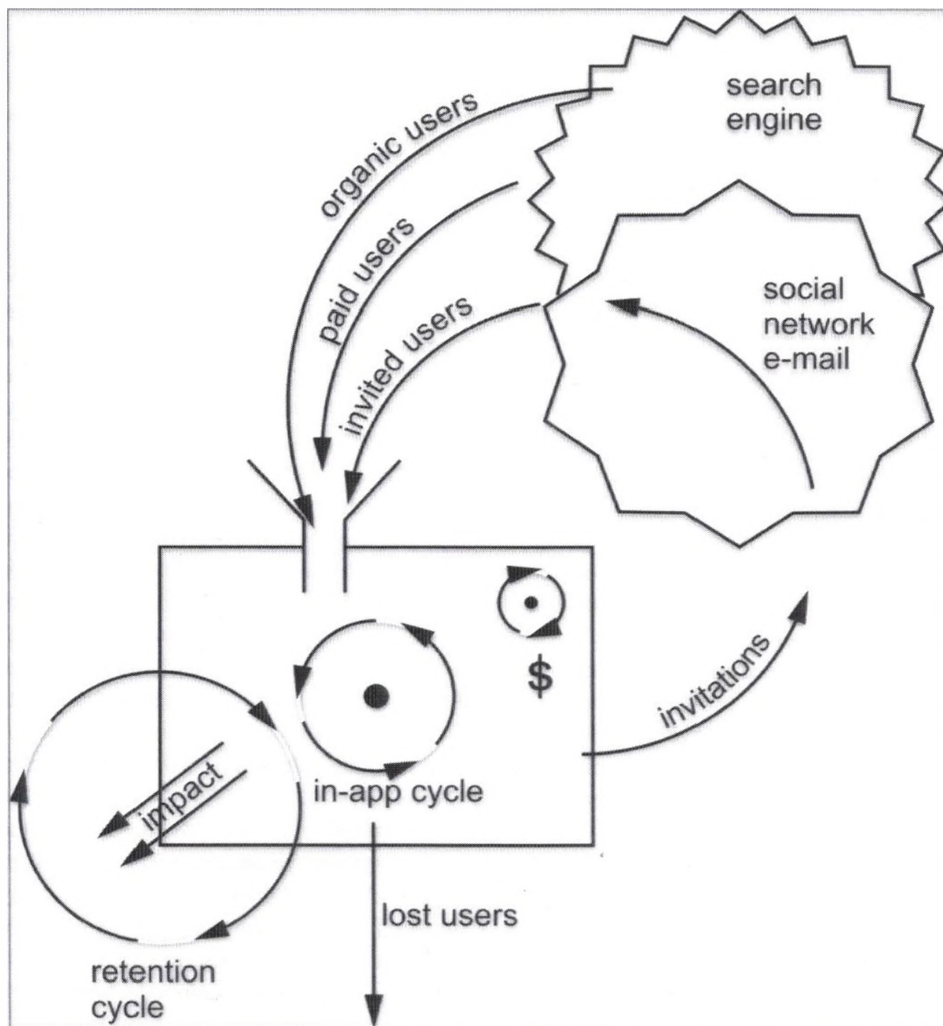

Figure 10. Typical cycles of a freemium application.

When creating freemium products, there are two main business approaches:

1. Purchasing and other paid users (traffic) attraction. Part of the traffic can be monetized by selling additional premium services and attracting new users by spending the money earned. The key factor in this approach is money, thus a successful monetization model is required to involve a significant percentage of users in the pay mechanics to maintain the balance. The positive balance is achieved between the revenues from the existing customers minus the cost of attracting new users. Moreover, the cost of attracting new users can be substantial, and there is a risk not to recover this high cost from monetization. Pluses of this approach include fast money earning, and that the K virality factor (K-factor, Reichheld, 2003) can be less than one (discussed below).

2. Involving existing users into the product promotion through virality. It is necessary to ensure that the virality coefficient (the K-factor) is significant, which for a number of products is difficult and even unattainable. The volume of users with this approach is growing exponentially until it reaches saturation (Cohen, 2014). The product can contain features from both approaches, with the emphasis on monetization and on expanding the user base. However, given the limited user's attention, one of the approaches must be dominant.

3.2.1. Viral User Base Expansion

Let's consider the second approach, which we call freemium with an emphasis on virality. David Skok (2009a), successful venture capitalist, wrote about the freemium virality-emphasized products: "…in a typical business the single biggest expense is sales and marketing, and recognize that offering a free product/service is an extremely smart way to acquire customers at a low cost that can then be monetized in a different way." "Another powerful effect of using the free strategy is that it usually results in a far larger customer base using the free products, who become proponents for your company. This expanded footprint or market share can have a huge effect on the price that acquirers or investors are willing to pay for your company, as they recognize that even though these customers have yet to be monetized, they represent a great potential for future monetization. Twitter and Facebook are two perfect examples of this." "Another way of looking at the importance of footprint or marketshare is to recognize the importance of market leadership. In the tech industry, market leadership is usually self-reinforcing unless the company does stupid things to annoy its customers. Even if you have gained market leadership by giving away a product/service for free, the financial markets and acquirers realize that market leadership is worth a significant premium over niche players that may have more revenue."

However, the strategy of viral user attraction can not be utilized forever. Seufert, the author of the book Freemium Economics (Seufert, 2013) presents a concept where the system reaches saturation in terms of the number of users. All efforts invested in the virality mechanics will not bear fruit when the market niche is already saturated, and all potential users either already use the product, or know about it, but prefer not to use it. Obviously, this is the best time to refocus the product and change the user's attention to monetization, which we discussed as the strategy number one.

3.2.2. Virality Realization Methods (Invitations)

The viral marketing requires several components: the sender, the message and the medium for dissemination, including recipients, along with the context in which the message is received.

There are two ways for the user to invite new users:

Open invitations - is the viral mechanism, where the user places invitations in social networks, blogs, personal web pages, etc. addressing an undefined set of individuals.

Direct personal invitations initiated by the existing users to the potential new users using different means of communication by e-mail, personal communication, social networks, SMS, etc. Typically it is hard to account for all open invitations. The author used simplified statistics by calculating how many people were invited by this method, and how many people were able to use this method to initiate invitations. The system calculates how many open invitations were made by each user (via built-in instruments), and how many new users joined as a result (including open invitations initiated by the user and not generated by our system). Table 8 lists the number of published invitation links (open invitations) and how many users post these links on the weekly basis. Statistics reflects only built-in invitation publication mechanism.

Table 9 lists the number of the newly joined users invited trough the open links, including all types of invitations. Personal direct invitations allow calculating all parameters and quantifying all steps of the viral cycle. The system accounts for how many users make personal invitations, how many invitations are generated per each user, how many invitations reach the addressee, how many recipients come to the service, and how many register and get involved in the learning/teaching process.

Table 10 lists the number of individual invitations and the number of users that sent such invitations, while Table 11 lists the number of personal invitations per week.

Let's define the metrics parameters. The user means registered and authorized user of the service.

dU stands for daily users;

dNU are daily new users;

dAU are daily active users (users who spent more than 5 minutes in the system);

U is the total number of all users;

IU is the number of invited users;

D_i is the total number of invitations per day;

A_iPSU is the average number of invitations per spreading user

(A_iPDSU is the same per day);

A_iPU is the average number of invitations per user;

DIU is the number of daily invited users;

IP_i is the ratio of people who accepted an invitation to the number of invitations sent (conversion percentage).

Table 8. The number of published invitation

Week:	21.04 - 27.04	28.04 - 04.05	05.05 - 11.05	12.05 - 18.05	19.05 - 25.05	26.05 - 01.06	02.06 - 08.06	09.06 - 15.06	16.06 - 22.06	23.06 - 29.06	30.06 - 06.07	07.07 - 13.07	14.07 - 20.07	21.07 - 27.07	28.07 - 03.08	04.08 - 10.08	11.08 - 17.08	18.08 - 24.08
Publishes total						10	17	7	19	23	12	15	7	7	12	33	14	15
Published users total						8	8	3	10	11	9	10	5	5	10	28	13	10

Table 9. The number of the newly joined users invited trough the open links

Week:	21.04 - 27.04	28.04 - 04.05	05.05 - 11.05	12.05 - 18.05	19.05 - 25.05	26.05 - 01.06	02.06 - 08.06	09.06 - 15.06	16.06 - 22.06	23.06 - 29.06	30.06 - 06.07	07.07 - 13.07	14.07 - 20.07	21.07 - 27.07	28.07 - 03.08	04.08 - 10.08	11.08 - 17.08	18.08 - 24.08
Invited by public link		21	15	7	11	13	47	81	70	10	26	29	25	28	30	35	40	15

Table 10. The number of individual invitations

Week:	21.04 - 27.04	28.04 - 04.05	05.05 - 11.05	12.05 - 18.05	19.05 - 25.05	26.05 - 01.06	02.06 - 08.06	09.06 - 15.06	16.06 - 22.06	23.06 - 29.06	30.06 - 06.07	07.07 - 13.07	14.07 - 20.07	21.07 - 27.07	28.07 - 03.08	04.08 - 10.08	11.08 - 17.08	18.08 - 24.08
Requests total	44	156	212	32	618	438	942	595	1494	838	1073	3029	5823	2693	2732	3156	1129	1683
Requested users total	2	22	14	4	17	37	41	36	90	44	80	127	103	73	52	83	40	24

Table 11. Total number of personal invitations

Week:	21.04 - 27.04	28.04 - 04.05	05.05 - 11.05	12.05 - 18.05	19.05 - 25.05	26.05 - 01.06	02.06 - 08.06	09.06 - 15.06	16.06 - 22.06	23.06 - 29.06	30.06 - 06.07	07.07 - 13.07	14.07 - 20.07	21.07 - 27.07	28.07 - 03.08	04.08 - 10.08	11.08 - 17.08	18.08 - 24.08
Personal invited total	1	7	5	9	21	35	131	170	66	90	174	119	110	138	145	132	69	58

The K-factor conceptually is the average number of additional users introduced to the product by each user (Seufert, 2013, Chapter 7, p. 170). For practical purposes we calculate the K-factor as the ratio between the users attracted through viral methods in a certain time period, to all active users in this time period (Skok, 2009b). Theoretically, we should have used the previous time period, setting it equal to the duration of the viral cycle. However, the length of the viral cycle is difficult to establish, since the reaction to the invitation timeline is very short in our system. In a typical case, sending invitations and accepting them gets completed in one day. For calculating the K-factor, only new users (dNU), or all users in a certain time period (dU) can be used, along with the active users in a certain time period (dAU). The author used active users (not considering uninterested users, who spent very little time in the system) as the base, as it gives the most accurate results in our estimates. For practical purposes some sources used only new users (dNU) as a base, comparing all users attracted viraly, to all types of new users. The authors believe this is not quite correct, since all active users contribute to virality and not only new users, thus:

$$Local\ K_{factor} = \frac{dIU}{dAU} \tag{1}$$

The term K-factor comes from epidemiology, "in which a virus having a K-factor of 1 is in a "steady" state of neither growth nor decline, while a K-factor greater than 1 indicates exponential growth and a K-factor less than 1 indicates exponential decline." (Lee, 2008). The K-factor, which is also called viral coefficient in the literature, can be calculated as the number of invitations sent by each user multiplied by the conversion percentage of the new users (Fong, 2014). For example, if the average number of invitations per user is 5, and 20% of the invitees register in the system, i.e., become new users, then the K-factor = 5*0.2=1. Time-independent K-factor averaged over the whole time of system operation the authors call the global K-factor, which is calculated in the following way. The conversion percentage, IP_i is the number of invited people, IU, divided by the number of invitations, i:

$$IP_i = \frac{IU}{i} \tag{2}$$

$AiPU$ is the average number of invitations per user, calculated as the average number of invitations per user, i, divided by the total number of users, U:

$$A_iPU = \frac{i}{U} \tag{3}$$

Then the global K-factor is calculated as the product of the average number of invitations per user, $AiPU$ (equation 3) and the conversion percentage, IP_i (equation 2):

$$Global\ K_{factor} = A_iPU \cdot IP_i \tag{4}$$

The K-factor dynamics reflects the users' mood swings, and how they react to the introduction, activation or deactivation of one or another viral mechanics, involving them in

the activities of inviting new users, and whether these mechanics are well accepted. Thus, for practical purposes the authors utilized the local K-factor, calculated daily. The authors call it the daily K-factor, dK-factor, which is based on the daily active audience, dAU. This daily K-factor is considered the most important parameter of the viral cycle, which was used in the construction of viral mechanisms of the project:

$$Daily\,K_{factor}, dK = dAU \cdot IP_i \tag{5}$$

Figure 11 shows the i2istudy foreign language educational platform K-factor dynamics in %. It is important to understand that if the K-factor is less than unity (e.g., 50%), in the absence of retention (when the loyalty of existing users is zero), the system growth attenuates. In the best scenario, such virality mechanism partially compensates the users' loss as a result of the normal loyalty retention cycle decrease. This K-factor increases the effectiveness of paid user attraction. For example, purchased 100 paying users get involved in the viral mechanics and invite additional 50 users, which reduced the average price of each user and saved the budget. If the K-factor is greater than 1 (say it is 200%), it leads to the geometric progression growth of the user base. For example, purchased 100 users attract 200 new people, and if K-factor remains the same, the new users will attract 400 new people, and so on. Virality works as long as the entire mass of potential users will not reach saturation in their social matrix and a given market.
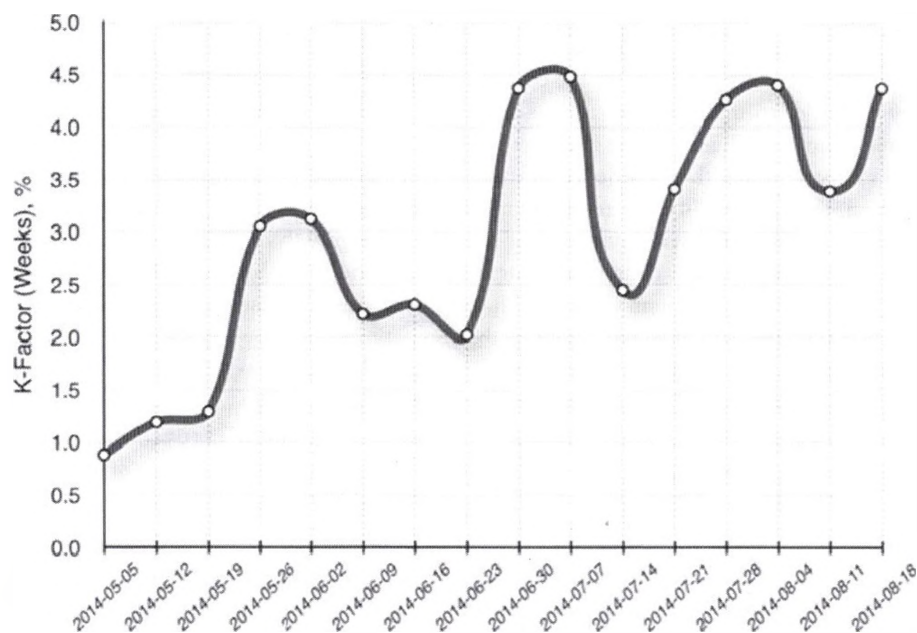

Figure 11. The i2istudy foreign language educational platform K-factor dynamics in %.

3.2.3. Virality, Retention and Monetization Relationship

In his book Freemium Economics, Eric Benjamin Seufert in the Virality and Retention section, on page 175 said: "Virality and retention exist on opposite sides of the acquisition threshold: virality describes how users are introduced to a product, and retention describes how long users remain with a product. But in essence, both sets of metrics measure the same general sense of delight users feel for a product, manifested in different ways. To that end, virality and retention generally exhibit a positively correlated relationship: products that users are inclined to return to over a long period of time are also likely to be products that users invite others to join."

In our opinion, virality and retention are characteristics amenable to manipulation by the creators of the product. Even a weak product can successfully maintain good retention and virality performance, if appropriate mechanics and effects (impact, gamification) are well integrated into the product and successfully motivate users to these actions. This situation resembles a grocery store, where buyers are manipulated by the layout, marketing, branding, packaging and a discount system, and buy groceries that are not the best and healthy as a result (Glanz, Bader and Iyer, 2012).

Certainly all three parameters: virality, retention and monetization are related. Users with high product loyalty get increasingly involved in the mechanics of virality and monetization (Fields and Cotton, 2012). Despite competition for the user's attention, these mechanisms may spur one another, and all sorts of techniques, such as gamification, which is usually considered in the literature as part of retention, can serve monetization and virality.

Oddly enough, monetization, can also spur virality and retention. For example, premium paid services can be alternatively earned by participation in the viral and gamification programs. The dollar price of these premium options demonstrates their value to the users. For example, when the user knows the cost of acquiring new premium option for real money, it may be easier to motivate the user to earn these premium options by performing certain tasks and actions, such as inviting friends.

It is important that the experience of using the main basic functions of the product cause admiration, then the virality and retention mechanics come into play. If they are unbalanced, for example, with perfect virality and poor retention, the growth of the user base, caused by the successful virality, will compensate for the loss of the same base due to disloyal users. The opposite situation of poor virality with excellent retention leads to the product and its user base stagnation, and eventual defeat by the competitors.

Coefficient of the product audience growth, F-growth, can be expressed as a sum of the coefficients of the viral K-factor and the retention factor, K-retention:

$$F_{growth} = K_{factor} + K_{retention} \tag{6}$$

Equation (6) is the main formula of the freemium product growth, based on the viral spreading. It is clear that this formula does not take into account alternative methods of attracting users, such as paid users and organic users, who came through search engines, word of mouth, or due to the brand popularity. K-retention is always less than one over a long period of time, since no products can retain its audience 100% at all times.

$$Local\ K_{retention} = \frac{dU - dNU}{dU_{-1}}$$

(7)

where dU is the daily audience for a given day; dU_{-1} is the previous day audience and dNU are the new users for this time period. It's convenient to use only active audience for calculations, by taking into account only the new users that have become active, but not all registered users. Similar situation is with the new invited users, among which only active users are accounted for:

$$Local\ K_{retention_A} = \frac{dAU - dNU}{dAU_{-1}}$$

(8)

For example, if the viral K-factor is 20%, and K-retention factor is 90% (i.e., 9 out of 10 people are coming the next day), the growth coefficient will be $0.2 + 0.9 = 1.1$ and the system will grow on its own by 10% of its daily (or other accounting period) audience. Coefficient of the system self growth can be represented as:

$$F_{growth} = \frac{dAU_1 - dNU + dIU}{dAU_0}$$

(9)

This is the ratio of the audience from the next period of time without accounting for the new users, but accounting for the users invited by the viral techniques, divided by the audience from the previous time period. If dNU and dIU are equal, then all new users get involved through viral methods exclusively (there is no paid and organic traffic), and in this case:

$$F_{growth} = \frac{dAU}{dAU_{-1}}$$

(10)

Table 12 shows the data and corresponding parameters calculations for the i2istudy project. As a side note, it is necessary to take into account that the very properties of the product may be a barrier to its viral spread and reuse. For example, users absolutely don't want to advertise to their friends that they participate in dating services (Blackhart, Fitzpatrick and Williamson, 2014), which negates any virality efforts. On the contrary, the users promote their morning runs and other physical exercises, even without strong viral mechanics and ingenious motivations (Kamal, Fels and Fergusson, 2014; Loss, Lindacher and Curbach, 2014). An obstacle to the viral spread may be excessive annoyance of the viral mechanics, which can be negatively perceived by the existing users, and even considered as spam by the invitation recipients (Grimes, Hough and Signorella, 2007). In addition, it's a common mistake to promote business-to-business (b2b) services using virality methods, which usually gives poor results (Davidson, 2014), with the exception of individual cases (Grindeanu, 2014).

Table 12. Data and corresponding parameters calculations for the i2istudy project

|	21.04-27.04	28.04-04.05	05.05-11.05	12.05-18.05	19.05-25.05	26.05-01.06	02.06-08.06	09.06-15.06	16.06-22.06	23.06-29.09	30.06-06.07	07.07-13.07	14.07-20.07	21.07-27.07	28.07-03.08	04.08-10.08	11.08-17.08	18.08-24.08
Weekly Active Users *(wAU)*			297	801	867	979	1080	1213	1827	2126	1763	2624	2572	1924	1716	1810	1576	947
New Active Users *(wNU)*			239	575	572	643	695	776	1358	1464	1140	1881	1643	1129	998	1066	824	358
Invited Active Users *(wIU)*			5	9	10	32	54	81	85	41	73	68	52	65	77	78	52	42
K-Factor = *wIU/ wAU %*			0.88	1.19	1.29	3.05	3.12	2.22	2.31	2.02	4.37	4.48	2.45	3.41	4.26	4.4	3.39	4.37
K-Retention = xAU - xNU)xAU1, %				76	37	39	39	40	39	36	29	42	35	31	37	43	42	37
F-growth, %				70	38	42	45	48	46	38	33	46	37	33	42	38	44	40
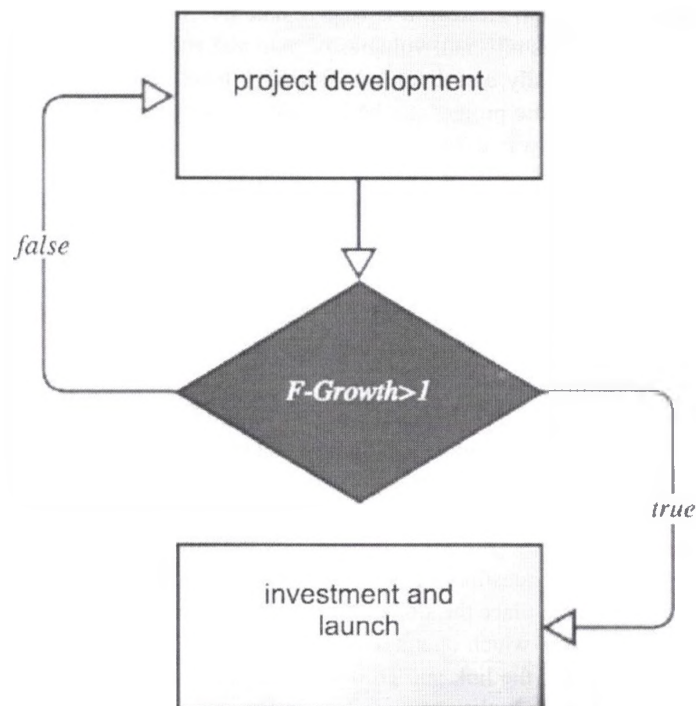
Figure 12. The freemium product development diagram in terms of the F-growth factor.

Figure 13. "Invite a friend, earn 30 minutes!" system interface.

If the F-growth factor is less than one, then the product cannot grow and loses users with all the consequences for the product and its team. However, if the team can achieve the F-growth factor greater than one, the product grows exponentially. It is the ultimate goal for the product team to achieve non-paid user base growth. This is necessary to achieve the project's capitalization exceeding the investment in the purchase of the user base.

Note that the positive F-growth factor can compensate for other shortcomings, such as the quality of the product itself. For the overall project development strategy, investment in virality and retention is an alternative to investments in advertising and public relations, which is often a cost-effective solution, compared with the cost of development (programmers salaries, etc.), marketing and associated staff costs. The freemium product development diagram in terms of the F-growth factor is shown in Figure 12.

When building a freemium product, it is wise to take it to the market and to work out the viral and retention mechanics on small volumes of paid audience, since these mechanics can be easily evaluated statistically and analyzed. Having a positive F-growth, venture capital funds can be attracted, and the project can be brought to a large market (Figure 12). As for our specific product, which was used to conduct these studies, we see that the value of F-growth varies slightly above 40% in Table 12, which is not satisfactory. As a result, the product has been improved, based on the partnership and monetization programs.

4. THREE SIMPLE WAYS TO MAKE A PARTNERSHIP PROGRAM WORK

The authors have launched a partnership program for the i2istudy project, which works at the intersection of communication and education, so that the existing users could involve their friends as newcomers to the project. Successful services use partnership actively and motivate their users to attract their friends on the win-win basis by giving away bonuses and gifts, both to invitees and inviting persons. We were fascinated by the idea and developed an interesting partnership program, but the question was how to attract our existing users to it.

The simplest idea was to place the slogan "Invite a friend, earn 30 minutes!" (Minutes are the internal system currency, which operates as a time bank). Having taken an interest in the proposal, a user would click the link and go over to a special interface with the instruments for posting of open referral invitations and sending of personal links (Figure 13).

This simply didn't work. Although there were some newcomers registered on the basis of referral links, and the users started to send out invitations, the number of invitees was minimal (less than 1%, i.e., the local K-factor was equal to approximately 1-1.5%). The i2istudy project serves the entire World. The authors paid attention to the fact that people react willingly when they are simply asked for help. As soon as one hears the sacred "Could you help?," s/he is ready to listen to you.

4.1. Method One: Request for Help

We changed the message and generated the following call to action: "Please help our project. We need your help!" Frankly speaking, we added this text just for the sake of an experiment. We were interested in how this concept would function. Recall that we are talking about the internal interface of the system, where we dealt with our registered and essentially loyal customers.

This phrase certainly needed an explanation, and we added a pop-up window with the following text: "Our project needs new users. We want to grow. We would greatly appreciate you inviting your friends to joint. Moreover, we add 30 minutes to your account and the account of the invitee who has accepted your invitation." The "Help the Project" button was located at the bottom of the window (Figure 14).

The window was not modal and had the closing cross in the top-right corner. Additionally, the window closed in response to a click at any point outside the window boundaries. It is curious that 26% of the customers responded to the "Help our project" call,

but simply closed the window upon seeing it. However, the local K-factor increased by almost one percent, i.e., in absolute terms, we started to attract almost twice as many new users. The authors decided to go on with the experiments.
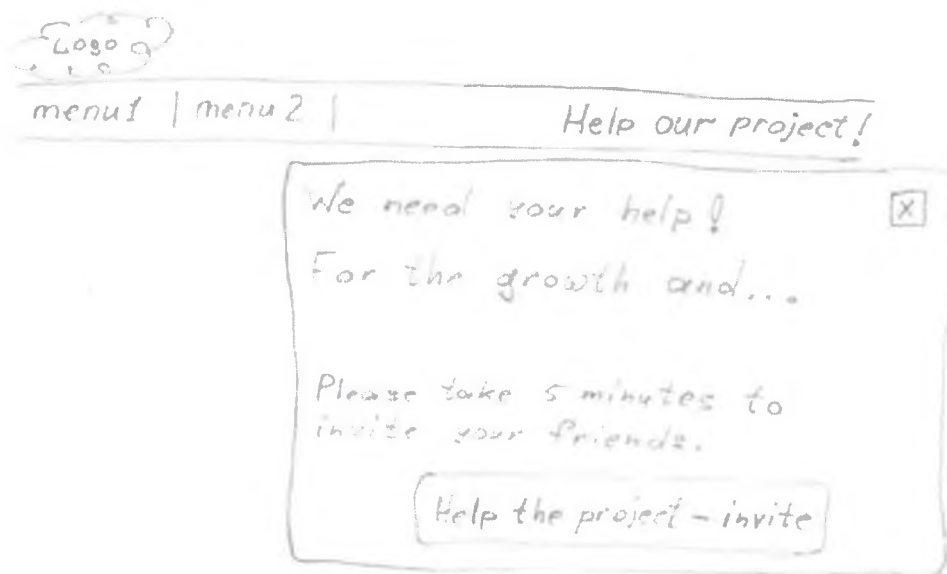

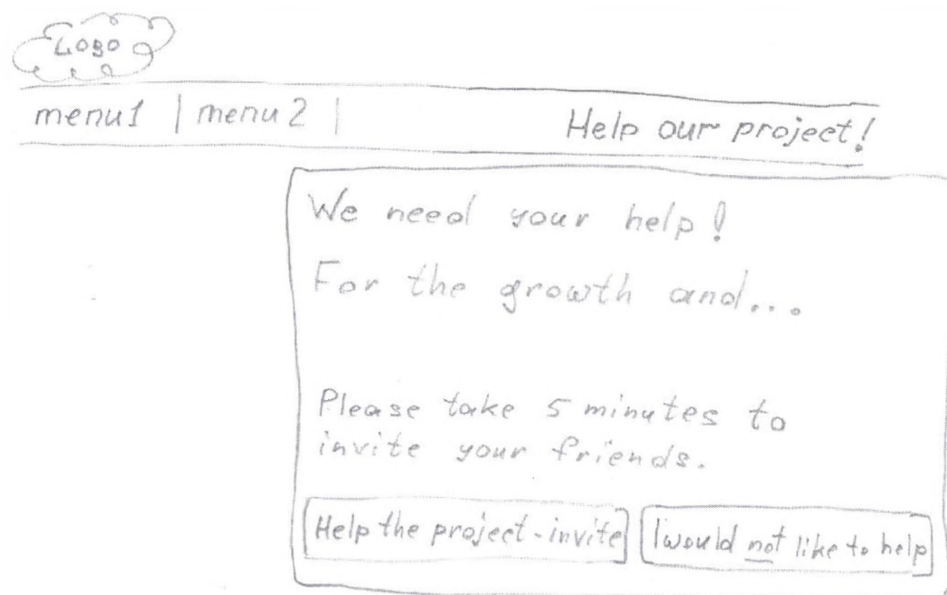Figure 14. User interface with the "Help the Project-invite" button.

Figure 15. User interface with the "I would *not* like to help" button.

4.2. Method Two: Refuse to Refuse

The authors removed the cross from the window of the corner and made the window modal, i.e., it stopped disappearing in response to clicks outside the window. Moreover, such clicks became nonfunctional, but we added an extra button "I would *not* like to help" in Figure 15. Thus, a visitor saw only two options now: s/he could either help, or refuse to help us. The catch was, though, that his or her refusal was explicit and obvious. There was no way to skirt the request. It worked! It turned to be a psychological trap, which we drove the user to. They either refused to help, or helped. Few people choose the dark side in real life and we got 73% of positive answers.

Certainly, most of them stopped at the next step, when they saw the interface window for inviting their friends and just did not use it. Nevertheless, the K-factor after this modification was equal to 4%, i.e., we doubled the number of newly attracted users. This is an amazing result for a minor interface trick!

4.3. Method Three: A Perfectionist's Progress Bar

After a user has invited somebody or just has sent out some invitations, it would be inappropriate to continue asking them to help. However, we implemented the VIP status progress bar, where the user could see the number of joined friends (Figure 16).

Unfortunately, the authors could not determine how this trick increased the level of engagement in the invitation process, since there was no reference to compare the data with. As a tentative appraisal, we can quote this increase as 1000%, since before we used this tool, we had not used the support from people who had helped already. Nevertheless, we measured the local K-factor regularly, and it reached 6.5%.

Remember that the K-factor (virality factor) is the ratio between the number of new users, who are invited by existing users, and the number of the existing users. We calculate the local K-factor for specific time periods, i.e., weeks. With no natural drain of users, the positive K-factor characterizes the viral growth of the system. More detailed information about the virality factor and its interrelation with the drain and retention of users can be found at toptal.com (http://www.toptal.com/data-science/growing-growth-perform-your-own-cohort-analysis/). Figure 17 shows cohort analysis calculations results from the site.
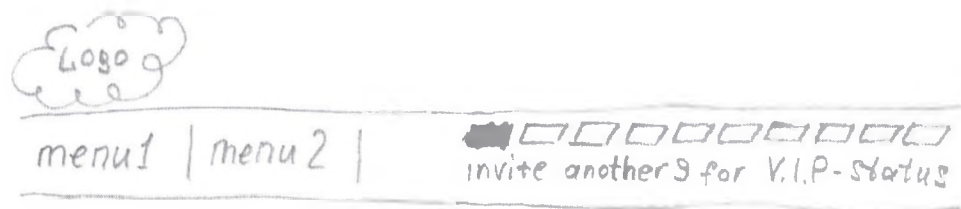

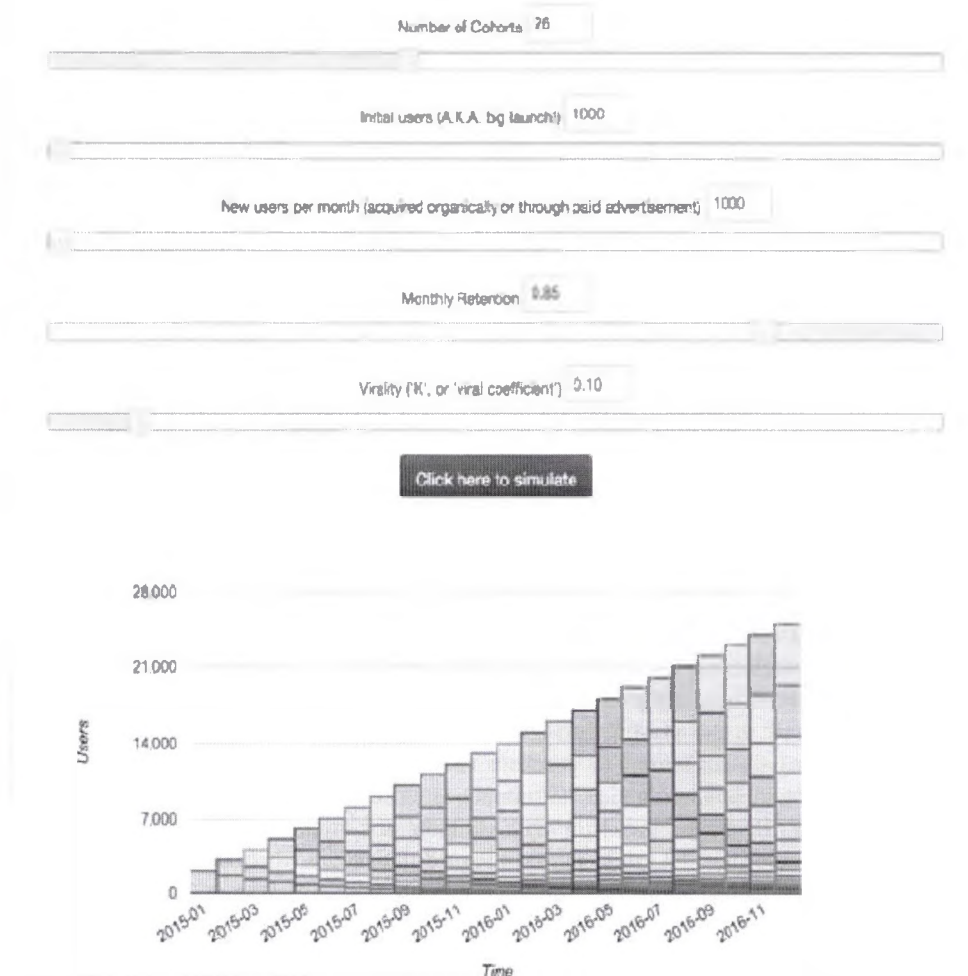Figure 16. The VIP status progress bar.

Figure 17. Cohort analysis calculations results.

5. MONETIZATION AS GROWTH MOTIVATOR

Viral growth and monetization can be both competing and complementary mechanisms for the system growth. The i2istudy system, which grew to over 40,000 users, was used to conduct reported experiments and measure corresponding parameters. The user behavior was affected by changing online software system parameters to maximize the number of the system users (Eyal, 2014). Despite the fact that the platform was envisioned as a free application, some monetization elements were stipulated (Skok, 2009a). These paid features are used by a small percentage of users needed to maintain the system.

The authors have studied the statistics of the user behavior in the developed shareware pseudo-free system. While paid features of a typical freemium application are used by 3-10% of users, statistics collected in the i2istudy system was different. From the control standpoint,

freemium application is an open system consisting of users and centralized software, which controls human behavior in the system. Herewith, the users are free to participate in the system mechanics or refuse to participate anytime. In our case the purpose of control and optimization is to maximize the impact of several parameters, which characterize the system. These parameters are the growth of the system user base, reflected by the K-factor, average user time spent in the system over a certain period of time (retention) and system monetization (percentage of paying users and how much they spend).

It is clear that trying to maximize several parameters simultaneously is not a correct approach. Thus, the first objective is to grow the system in terms of the daily or weekly active user and the virality in terms of the K-factor, which reflects how existing users invite new users. The second objective is the system monetization at later development stages when there are enough users. However, the author decided to implement monetization during the system initial growth to study if the existing audience is ready to pay for the premium features.

Time in minutes available to learn foreign languages from native speakers is the system internal currency. Figure 18 shows the diagram of the system before monetization, where users could only earn minutes in the system by inviting friends and teaching other users. The system consists of the user interface and the users. A new feature was added to positively affect user behavior. The hypothesis was that some users would utilize the new feature. If a large percentage of users utilize the new feature by willingly purchasing minutes, the system is monetized quite well. If this percentage is low, the experiment was unsuccessful.

The control mechanism was realized by changing the interface and some programming algorithms to motivate users by a new function. As a result, the system was changed from the state I in Figure 18 to the state II in Figure 19, which includes additional branch of the possible user behavior algorithm to purchase minutes. As mentioned by Seufert (2013), factors, such as virality, gamification and monetization can enhance each other, increasing user involvement, or be antagonistic and compete for user attention. Thus, different behavioral scenarios, labeled A, B, C and D in Figure 19 can either help or interfere with each other, depending on the situation.
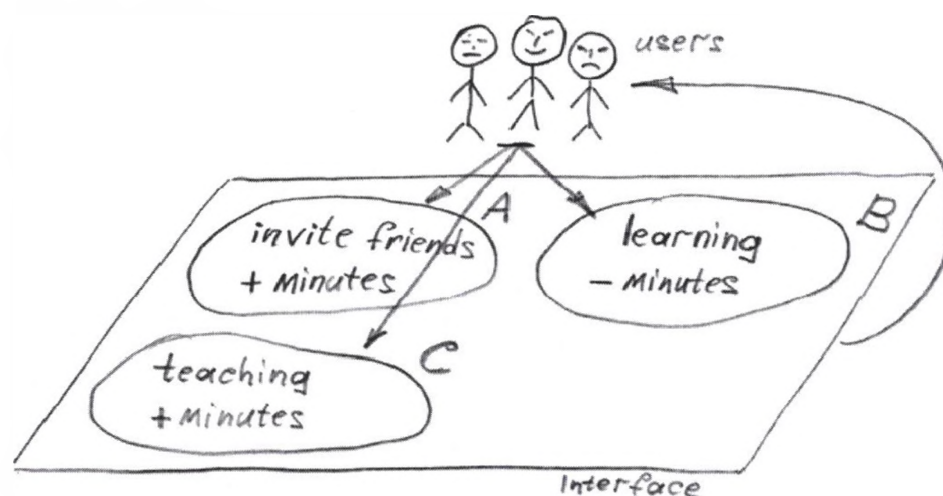

Figure 18. Initial state of the system and mechanisms for spending and getting minutes.
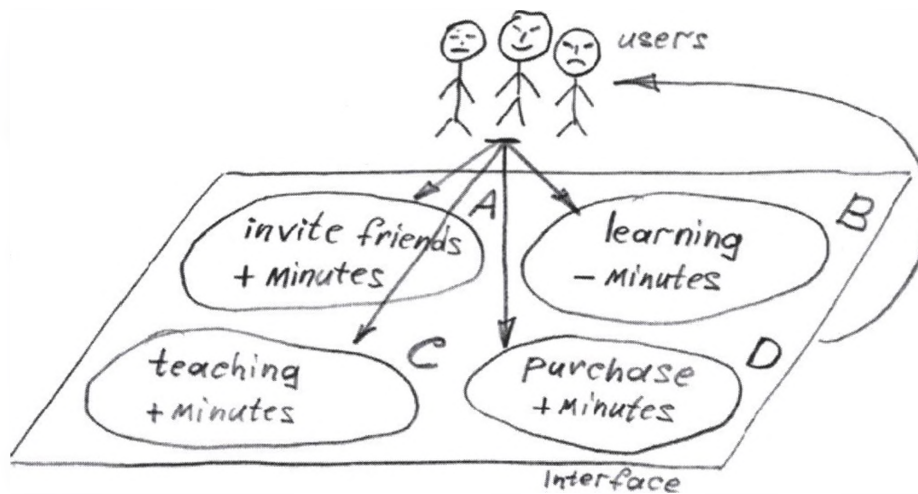
Figure 19. Additional option to purchase minutes.

In our case, the system interface was utilized to attract user attention to scenarios A, B and C to improve user involvement in the process. Besides, scenarios B and C represent the core cycle of the application, where users spend most of the time teaching and learning from each other. Scenario A is the part of the interface where users can invite friends to expand the user base and receive bonuses (gamification elements to motivate users to certain actions). Curiously enough, monetization (scenario D) can drive virality and retention in terms of acquiring premium features, also available for money, by participating in viral programs to invite friends. The price of these features reflected in real valuable dollars is encouraging users by clearly demonstrating their value. User motivated by the value of the new function reflected in dollars can be easily encouraged to earn it by performing certain actions of inviting friends, for example.

5.1. Monetization Implementation

To test this hypothesis the author added monetization during the second month after the system launch. Users could now purchase minutes in the system using real money in addition to earning minutes by teaching or inviting friends. This new feature was supposed to motivate users to earn more minutes in the system by teaching their native language and inviting friends. These are two available options A and C in Figure 19 to earn system minutes without spending real money. On the other hand, the new feature should have caused real sales, allowing the developers to earn money (Park, 2011). As mentioned earlier, statistics of successful freemium application sales shows that 3-10% of the users purchase premium features (Ellis and Brown, 2014).

However, since the real money feature implementation, only two $10 sales took place. This is regardless of the fact that about 24,000 users were registered in the system at the time,

and 36% of them were involved in the process of spending and earning virtual system currency, minutes (not all user activity in the system results in spending or earning minutes). Thus, only two users were involved in monetization, which is by no means satisfactory for a freemium product. Please keep in mind that the option to purchase minutes was actively marketed. In particular, special prompts were added to the system interface, along with informing all users of this new feature by email (Cohen, 2014).

However, regardless of the lack of the virtual currency sales, the demand for other ways to earn minutes increased significantly. In particular, users started to send invitations to their friends more actively. They were offered 30 minutes of bonus system time for each invited registered user. User involvement in the teaching process also increased. Additional 8% of the users indicated that they are willing to teach their native language. Before this profile parameter was filled by 47% of the users. This monetization approach resulted in 55% of the users involved in the teaching process. Thus, adding the option to purchase minutes indirectly improved system parameters of virality and retention, but had no effect on monetization.

The authors were particularly interested in how existing users invite their friends, which was assessed by calculating the K-factor. The K-factor is the ratio of the virally attracted new users and active existing users over a certain time. Kim (2000) identified five types of users: visitor, novice, regular, leader and elder. To calculate the K-factor, one could use only the new users (NU), all users during a certain period (U), or only active users (AU). The authors used only active users to get more accurate results, accounting for the users who passed the "membership ritual" (Kim, 2000). Some sources use only novice users as the base, comparing all virally attracted users with all types of users (Kim, 2000; Rigatuso, 2014). The author did not consider this approach, since all active users contribute to virality, not just the novice users. The weekly K-factor was calculated as (Reichheld, 2003):

$$K_{factor}^{weekly} = \frac{wIU}{wAU} \cdot 100\% \tag{11}$$

where wIU is the number of invited users and wAU is the number of active users in a given week.

Mass mailing informing users of the opportunity to purchase minutes in the system started on July 28th, 2014. This action caused a spike in the number of sent invitations to get extra 30 minutes in the system for each invited registered user, which affected the weekly K-factor in Table 13 and Figure 21. As seen in Figure 21, the weekly K-factor increased from 2.01±0.84% to 3.89±0.73% after the new feature announcement. The K-factor growth continued until the system was closed on September 1st 2014 for renovation.

To test the hypothesis whether the K-factor changed as a result of monetization, statistical analysis was utilized. The null hypothesis was that the weekly K-factor did not change. The K-factor data before monetization were used as the expected values. The actual K-factor data for comparison were taken after monetization. The calculated p-value was 0.01%, thus the hypothesis that the K-factor did not change as a result of monetization was rejected.

Table 13. Data for K-factor calculations for the i2istudy system

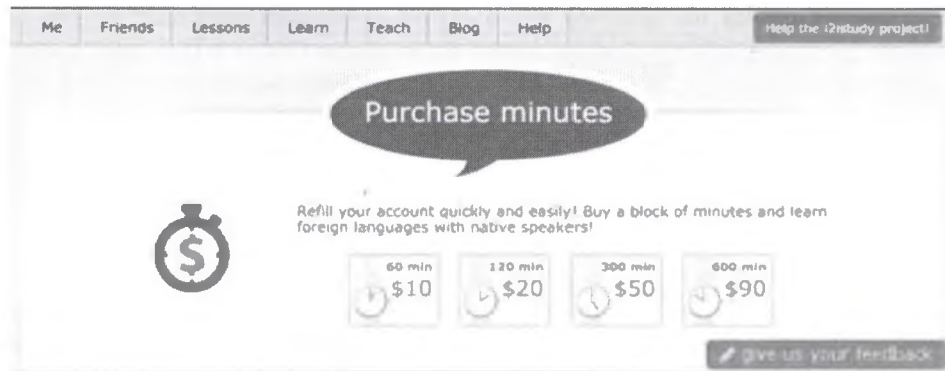| Week:	21.04 - 27.04	28.04 - 04.05	05.05 - 11.05	12.05 - 18.05	19.05 - 25.05	26.05 - 01.06	02.06 - 08.06	09.06 - 15.06	16.06 - 22.06	23.06 - 29.06	30.06 - 06.07	07.07 - 13.07	14.07 - 20.07	21.07 - 27.07	28.07 - 03.08	04.08 - 10.08	11.08 - 17.08	18.08 - 24.08
Weekly Active Users (wAU)			297	801	867	979	1080	1213	1827	2126	1763	2672	2572	1924	1716	1810	1576	947
New Active Users (wNU)			239	575	572	643	695	776	1358	1464	1140	1881	1643	1129	998	1066	824	358
Invited Active Users (wIU)			5	9	10	32	54	81	85	41	73	68	52	65	77	78	52	42
K-Factor = wIU/wAU, %			0.88	1.19	1.29	3.05	3.12	2.22	2.31	2.02	4.37	4.48	2.45	3.41	4.26	4.4	3.39	4.37

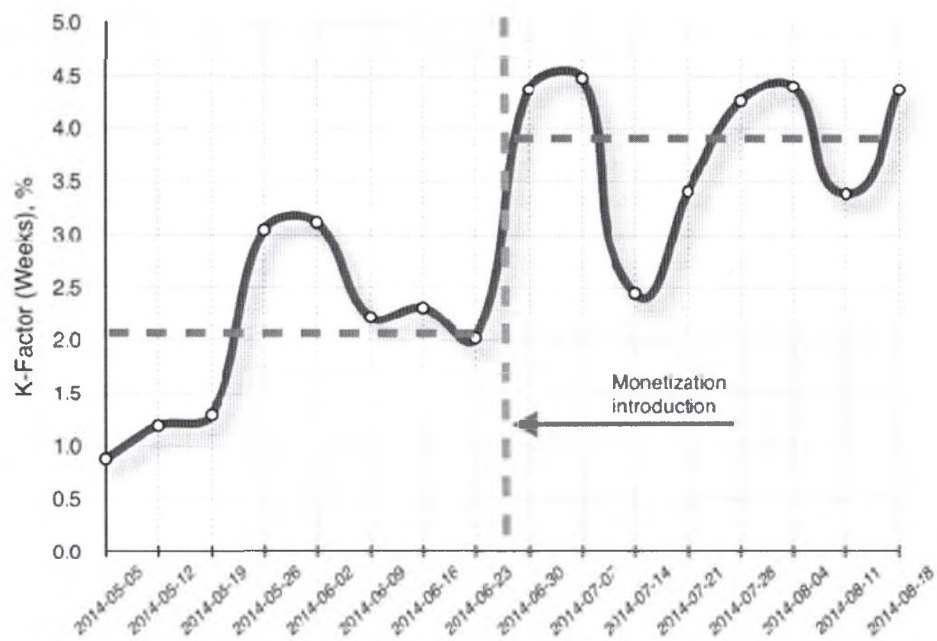Figure 20. User interface with the option to purchase minutes.

Figure 21. Weekly K-factor changes.

5.2. User Feedback and System Development

It is understandable that the offered monetization model did not work, although it positively affected the system overall. The authors decided to leave this monetization available, but only as the motivating factor for users to earn virtual currency by other means. For real monetization the authors plan to utilize other methods. For example, in addition to

the virtual system currency in minutes, there will be user accounts with real money, along with the option to learn and teach for real money, based on the user preferences.

In the event that users will choose the option to teach and learn for money, real money will be credited to the teacher account and debited from the student account. The system will take a commission in this case. The opportunity to teach for money will only become available to teachers after a certain number of teaching hours for virtual system "minutes." The teacher will also have to have a good ranking generated from the student assessments at the end of each lesson.

These conclusions were reached after asking the system users. The site contains the red sticky button "Give us your feedback" on the bottom of the screen (Figure 20), which is actively utilized by the users. In 6 months the users left 1824 messages in 4 languages. We analyzed the feedback by dividing it into the following groups (Seufert, 2013; Mäntymäki, 2011):

36% contained praise and thank you messages, such as: "Thank you, this is cool";

24% asked about how the system works, or had specific questions about the interface;

18% related to technical issues with configuring the hardware (the microphone and the camera) and/or inability to establish audio-video connection with other users;

11% contained negative feedback in terms of the complaints connected with other users' behavior, or requests to close their account;

8% contained ideas related to teaching only for money and unwillingness or inability to participate in the language teaching time exchange;

4% specific suggestions for system development typically associated with adding other languages: Arabic, French, Italian and Ukrainian;

35% other unclassified feedback.

Analysis of this feedback and personal communication with the system users lead to a hypothesis that the majority of users prefer to pay for learning languages due to various reasons. They did not want to participate in the time exchange, which looked so appealing to the system developers. Thus, the developers decided to implement real monetization, reflecting natural organic user needs. There are 8% of users who prefer to pay for their studies due to the unwillingness to teach or lack of demand for their native language. These 8% also include users who want to teach their native language for profit, even small. As a result there was a decision made to add the second currency into the system in terms of the real money and allow users to tech for profit. The system will allow adding real money to the system, and getting paid as well.

The initial attempt to monetize system by changing the user interface and adding a new feature affected the system in an unexpected way. Adding the option to purchase internal system currency (minutes) using real money did not result in significant sales, but motivated users to utilize alternative ways to earn this virtual currency. It was expected that the users would either utilize or not utilize this option without changing the system performance parameters. However, this resulted in the unexpected growth in viral mechanics of inviting friends. The rate of attracting new users increased as a result of the offer to purchase virtual currency. Thus it was observed that direct motivation for the certain action within the system was ignored, but changed other indirect parameters (system growth in this case). It is quite clear and obvious that given several alternatives to obtain the virtual currency, the users

choose the most advantageous and simple ones for them. However, the viral system parameters improvement just due to the unrealized option to purchase minutes is an interesting and ill studied effect.

CONCLUSION

The authors have developed and implemented freemium real time e-learning system for practicing foreign language speaking skills with native speakers. The idea that two unfamiliar with each other people can carry on a conversation without knowing a common language, guided by a computer program, turned out to be viable. The described platform allows combining high quality lessons and live human interaction with the native speaker. These lessons have been custom developed specifically for the i2istudy system by the professional teachers. The system also facilitates individual tutoring, the most expensive service in the World, without involving real exchange of money, based on the language training barter between the teacher and the student.

Developed application is of interest for the majority of users, and allows maintaining a prolonged dialogue between the users in a given language. This definitely allows developing speech communication skills in a foreign language. Regardless of the stereotype that quality foreign language education can only be provided by the professional teacher, the developed system demonstrates that it is also convenient for users to study together. In this case, similar to the teaching materials presented in a text book, or interactive recorded media, professional teacher is recruited to develop teaching materials, while users can use these materials for training and practice. However, it is more interesting and encouraging doing this with others, since the social effect also gets employed. Based on the conducted experiments, users not only spend more time in the system, but invite their friends to join them.

The authors suppose that similar ways of teaching could partially substitute individual tutoring and/or be used as training to improve oral communication skills. It is concluded that the system should be developed further and recommended as the speech improvement tool. At the same time it is clear that the system is not a good fit for every user, since some people are very shy and cannot communicate with strangers, even when provided with pre-defined communication scenarios.

Conducted studies present the new methodologies to assess gamification tools in the e-learning systems. The developed e-learning system not only allows conducting quality training, but presents an opportunity for statistical analysis of different parameters, contained in the log files, to assess the effectiveness of technical and pedagogical tools. Application popularity with users and growth of the number of users both act as assessment for the system motivation elements and tools.

When building a freemium product, it is wise to take it to the market and to work out the viral and retention mechanics on small volumes of paid audience, since these mechanics can be easily analyzed and statistically evaluated. After achieving adequate F-growth factor, venture capital funds can be attracted, and the project can be brought to a large market.

APPENDIX. A FEW WORDS ABOUT THE I2ISTUDY SYSTEM

What Is i2istudy?

This is an international club where people learn foreign languages from each other. i2istudy is the newly developed open educational resource for learning foreign languages from native speakers. The learning is achieved using pre-defined educational materials through live interaction between the teacher and the student. This is why the system is called i2istudy, "eye to eye," based on the peer-to-peer principle. The method is based on the patented technology, which allows learning basics of the foreign language from scratch, or enhance foreign language proficiency in a short period of time.

Let's ask a question: What does every person know and use every day? The answer is obvious - their native language. Thus, every person can be called an expert in his or her native language. However, can any native speaker teach other people? At a first glance, the answer is no, since: a) the teacher needs to know how to teach and b) the teacher needs to know a foreign language to communicate with the student. The i2istudy allows native speakers to teach others without knowing how to teach and without knowing foreign languages. In other words, i2istudy allows all native speakers, not necessarily professional teachers, to teach their native language in a network setting. Every user is the teacher and the student at the same time. As a student the person learns foreign languages, and as a teacher s/he teaches others their native language. The system is based on the latest available web technology.

Why Is the Service Currently Free?

Because i2istudy uses the principle of time banking. Here anyone can be a teacher or a student. As a student, you learn the foreign language. As a teacher, you teach your native language. It's barter! Besides, internal system currency in "minutes" is automatically tracked. It's like a computer game, which also offers entertainment. A housewife from Florida can teach a student from Argentina for 27 minutes, and then learn Spanish for 27 minutes in return. A man from Berlin can teach his friend from Moscow, who teaches a teenager from Cairo Russian and so on.

How to Learn and How to Teach?

"How to learn - it's clear! How am I going to teach my native language and prepare lessons? I don't know how to do it!" - this is the most frequent question that people ask.

You Do Not Need to be a Professional Teacher to Teach Your Native Tongue!

Since every lesson has been thoroughly written out in advance by professional teachers, all the assignments have been prepared, the pictures and videos - selected, the teacher doesn't need to prepare for the lesson, but simply read the information shown by the system and follow written instructions. That is why the lesson can be conducted by anyone, who speaks the language fluently! This is why only native speakers teach on i2istudy! Moreover, because

of the well thought-out system of hints, even a beginner can communicate with a native speaker!

How Can You Earn Money with i2istudy?

Some people say: "I don't have time for teaching. I only want to learn a foreign language!" or "Why learn other languages? I speak English. It's enough for me." If you don't want to share your time, you can just teach your native language and earn money!

Additional Information

The system interface allows adding any number of languages by simply translating the existing lessons. There is no need to recreate new lessons. All the user needs to do is select the native language and the language to be learned, and learn from native speakers. The system currently supports English, Russian, German and Spanish languages.

In conclusion, i2istudy is the platform, which competes with thousands of online offers to teach foreign languages through Skype.

Business model: users pay each other for learning foreign languages. The project provides a place to find a teacher/student, live communication aids (live audio and video), teaching and learning materials, and billing (time and $ tracking, paying and getting paid). The project takes commission from money transactions, similar to AirBnB or Uber, but in language education.

More info:
https://www.youtube.com/watch?v=6i_2GPKLEb4
https://www.youtube.com/watch?v=bbG7PHzBNf4
https://www.youtube.com/user/i2istudycom
http://www.i2istudy.com

ACKNOWLEDGMENTS

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