



Participant behavior and content of the online foreign languages learning and teaching platform



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ABSTRACT

The paper describes the results of an experiment in building an online platform for learning foreign languages that allows people to teach their native tongue 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.

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1. Introduction

The paper describes a newly developed open educational resource for learning foreign languages from native speakers, called i2istudy. The learning is achieved by using pre-defined educational materials through live online interaction between the teacher and the student. This is why the system is called i2istudy, “eye to eye”, based on the peer2peer principle (Benta, Bologna, & Dzitac, 2014; Hsu, Jub, Yen, & Chang, 2007; Osipov, Nikulchev, Volinsky, & Prasikova, in press; Osipov, Volinsky, & Grishin, 2015). This technology was constructed on a step-by-step methodology of learning a foreign language, patented in the US (Osipov & Prasikova, 2013).

Based on the Ambient Insight study, the worldwide demand for English online education has reached \$1.31 billion in 2011, and has been growing by 22% annually, reaching \$2.58 billion in 2016 (Adkins, 2014). The English language will account for 61.7% of the market in 2016. Thus, the overall foreign language online market will be \$4.18 billion. According to the same study results, which were presented on the website of the International

Consultants for Education and Fairs (2012), the main trends leading to such substantial growth are:

1. Consumer demand for online foreign language education products.
2. Recent explosive growth of mobile subscription value-added services in the foreign languages area.
3. Digitization efforts spearheaded by the leading academic institutions.
4. Digital migration of the international publishing houses.
5. Lack of offline language teachers (World wide web, 2012).

This study also shows that there is a growing demand for language courses from the middle class of the growing economies in the Southeast Asia, India and Eastern Europe due to the unprecedented growth of the smart phone and tablet markets. Global trends affected by the popularity of online foreign languages learning have been taken into account during the development of the technical system (Duman, Orhon, & Gedik, 2014). The shortage of professional native speaker teachers has been reflected in the system content development. As a result, bilateral cards have been developed for the student and the teacher, allowing any native speaker to teach his or her mother tongue to another person without special teaching skills or knowing the foreign language. This is

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Table 1

The list of the leading countries from which the users have registered with the corresponding number of the registered users.

Abbreviation	Country	Number of users
UA	Ukraine	7754
RU	Russian Federation	6204
PK	Pakistan	5715
KZ	Kazakhstan	3255
VE	Venezuela, Bolivarian Republic of	3124
PH	Philippines	2075
BY	Belarus	2035
EG	Egypt	1526
MX	Mexico	581
MD	Moldova, Republic of	479
US	United States	466
TR	Turkey	398
MA	Morocco	395
DE	Germany	338
CZ	Czech Republic	255
FR	France	231
GB	United Kingdom	215
CO	Colombia	192
AM	Armenia	175
KG	Kyrgyzstan	161
ES	Spain	158
IN	India	150
GE	Georgia	149
IT	Italy	148
SA	Saudi Arabia	143
DZ	Algeria	138
AZ	Azerbaijan	134
AE	United Arab Emirates	130
BO	Bolivia, Plurinational State of	122
RO	Romania	118
EE	Estonia	104
IL	Israel	88
UZ	Uzbekistan	88
PL	Poland	88
LV	Latvia	81
TJ	Tajikistan	79
SK	Slovakia	57
BE	Belgium	56
CN	China	55
HU	Hungary	52
GR	Greece	52
	Other	1286

the main competitive advantage of the developed system. The state-of-the-art in social networking language education, along with the available commercial systems with a short description are presented in [Appendix A](#). However, there is no other system, allowing two people to have a meaningful conversation in a foreign language without knowing a common language, except for the i2istudy.

In other words, i2istudy allows all native speakers, not necessarily professional teachers, to teach their native language in a network setting ([Buga, Căpeneacă, Chirasnel, & Popa, 2014](#); [Vick, Crosby, & Ashworth, 2000](#); [Zolfaghar & Aghaie, 2012](#)). Every user is the teacher and the student in this system at the same time. As a student, the person learns foreign languages, and as a teacher s/he teaches others their native language ([Howatt, 2006](#)). The system is based on the latest available web technology ([Girgin, 2011](#);

[Lee & Markey, 2014](#)). [Table 1](#) shows the list of the leading countries from which the users have registered in the i2istudy system, confirming the interest in online foreign language education in countries with developing economies. Users have registered from a total of 145 different countries, and the system has over 55,000 users as of April, 2015.

1.1. Research objectives

The primary research objective is 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 ([Koa, 2012](#); [Renié & Chanier, 2006](#)). During the experiment, over 40,000 users registered in the i2istudy system. People registered as a result of advertising placed in the Facebook social network. The advertisement suggested registering in the i2istudy system and learning foreign language for free in exchange for teaching one's native language. This advertising was displayed in English and Spanish-speaking countries, Germany and Russia. As a result, 39,729 users registered in the system over the course of five months, and 28,180 users wanted to learn English, 8711 users wanted to learn Spanish, 1028 Russian, and 1791 German. Herewith, 14,943 users said that their native language is English, 20,673 Russian, 204 German and 3843 Spanish ([Table 2](#)).

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 ([Farr & Riordan, 2014](#); [Kim, 2014](#); [Kötter, 2001](#)). About 20% of the registered users fully participated in the project ([Table 3](#)). 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 4](#). Thus, it is clear that the most popular level is the Beginner (8 lessons), followed by the Preschool (5 lessons), Intermediate (5 lessons), and Advanced (2 lessons).

1.2. Learning and teaching principles

The main learning and teaching principles of the i2istudy 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, learn faster when information is logically presented in small portions, with increasing level of complexity, and most importantly, with pictures or video

Table 2

Newly registered users' distribution by the native language.

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
<i>New users by languages</i>									
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

Table 3
Newly registered users' involvement in the learning/teaching process.

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
<i>Involvement</i>									
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 4
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

(Codreanu & Combe Celik, 2013; Korkmaz, 2013). The aim is to attract people to spend 20–30 min at a time playing a computer game using i2istudy (Domínguez, Saenz-de-Navarrete, De-Marcos, & Fernández-Sanz, 2013). 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 & 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 all of 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 & 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. 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 list of the currently available commercial systems is presented in Appendix A. 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 (Monteiro, Carrillo, & 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 (Monteiro et al., 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 & Yelenevskaya, 2012).

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 Fig. 1 that shows an English lesson called "If you get a job" at the intermediate level, the reading task, card 22 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 (Fig. 1(a)).

2.2. Card description

Each lesson consists of 25–30 cards and lasts about 20–30 min. 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 (Fig. 1).

3. Interface description

3.1. Synchronized teaching materials

The i2study 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 paper). 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 (gray arrows on the card in Fig. 1(a)), which are also switched on the student's screen (Fig. 1(b)).

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

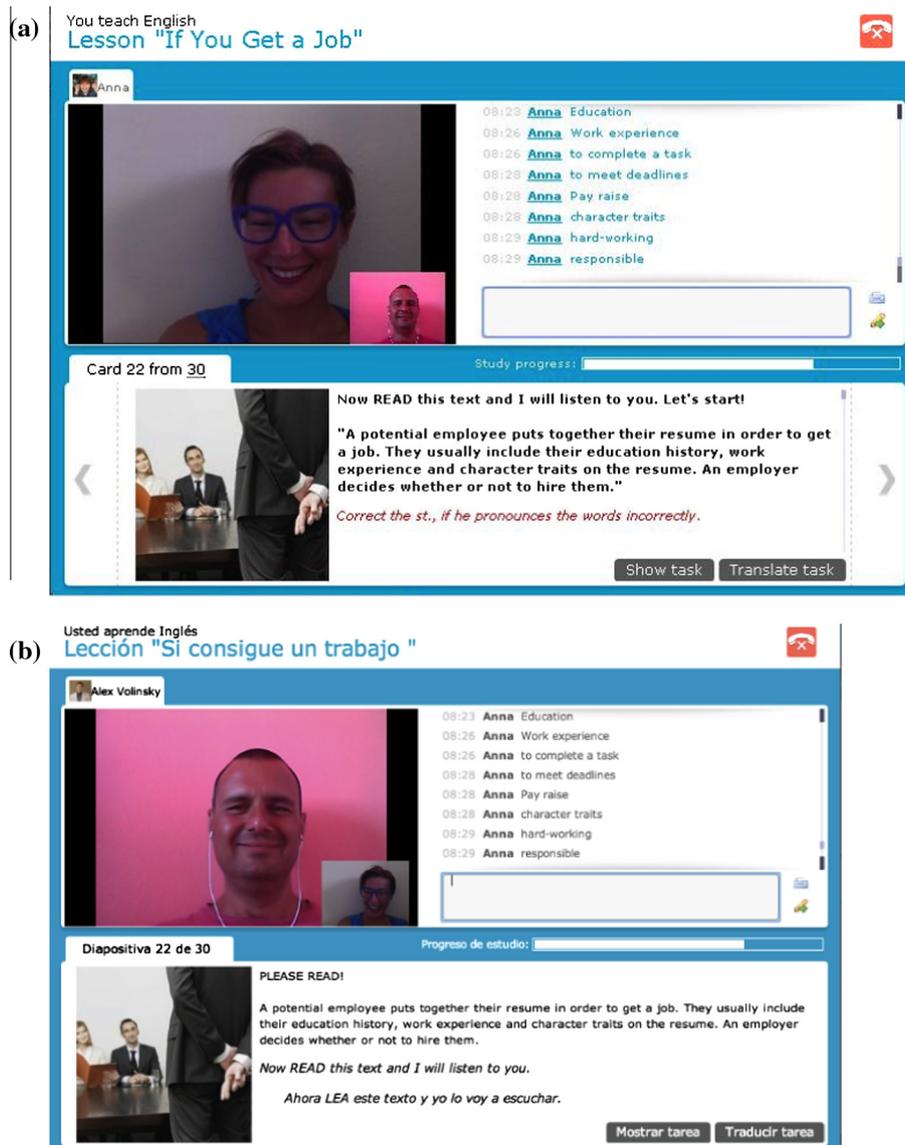


Fig. 1. English lesson called "If you get a job": (a) Teacher interface in native English; (b) Student interface in native Spanish.

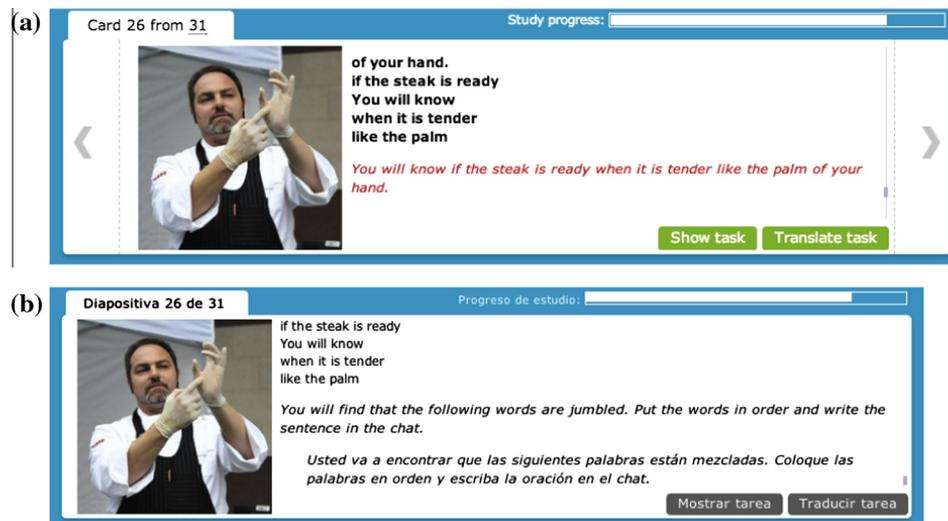


Fig. 2. Writing practice card displayed for: (a) the teacher and (b) the student.

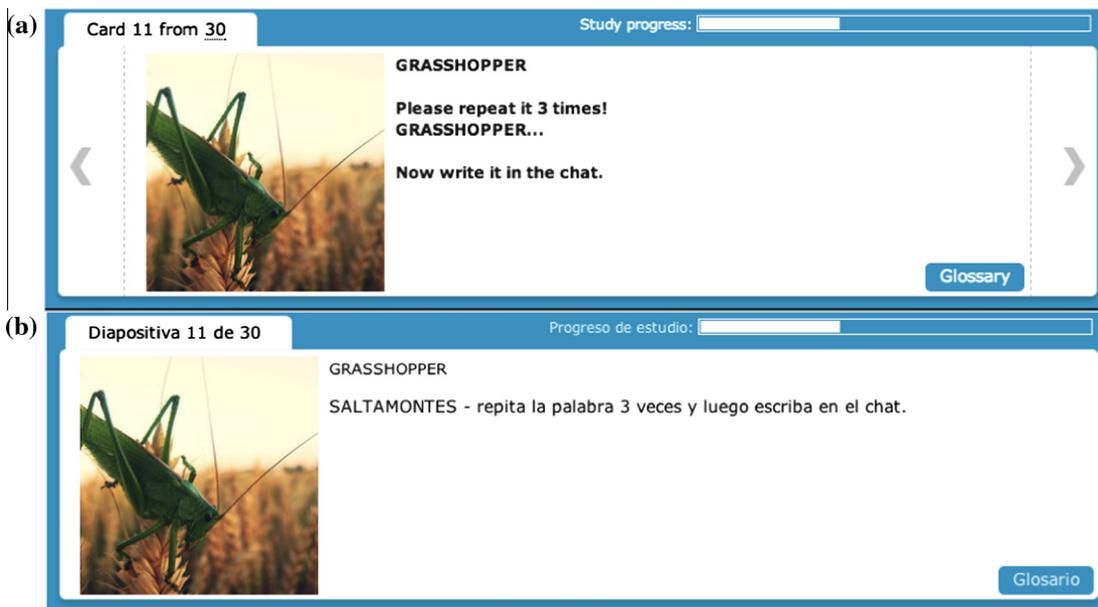


Fig. 3. Words learning card displayed for: (a) the teacher and (b) the student.

doesn't understand the teacher, the hints can be turned on by pressing the "Show task" button (Fig. 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 (Fig. 2(b)).

4. Initial system testing

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 Fig. 3(a).

GRASSHOPPER
Please repeat it 3 times!
GRASSHOPPER...
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 he or she is supposed to teach the word "grasshopper" to the student, which the student is supposed to repeat three times and then write it in the chat window. The initial version was: "Grasshopper – 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 "GRASSHOPPER..." followed by the ellipsis produced the desired result of the teacher learning the word with the student. Tests showed that the student strictly



Fig. 4. Hello card displayed for: (a) the teacher and (b) the student.

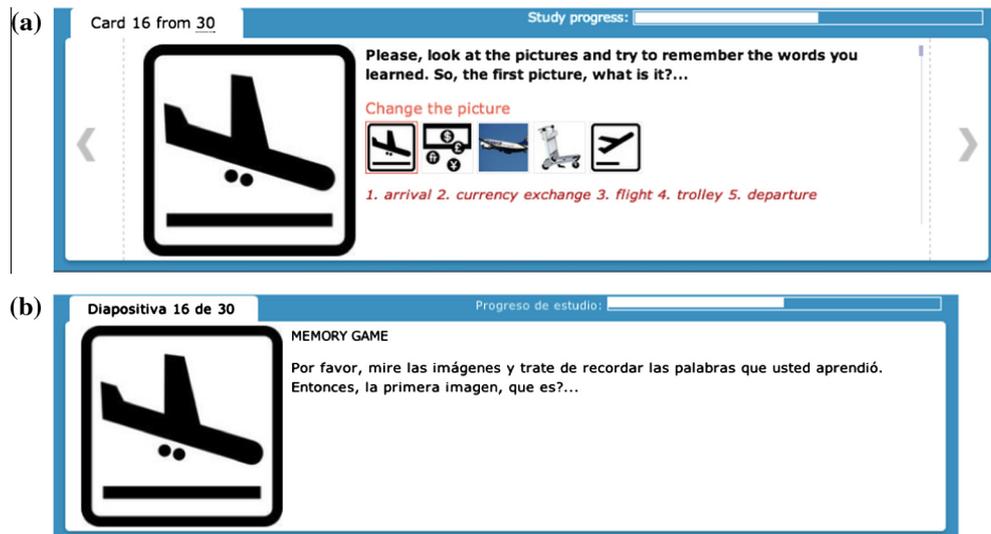


Fig. 5. Memory game displayed for: (a) the teacher and (b) the student.

follows the teacher's instructions. Even if the task is displayed in front of the student, he or she 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 (Fig. 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.

4.2. Lesson duration

There has to be a clear distinction between the on-line and the off-line lessons. Tests showed that it is hard for both the teacher

and the student to study for more than 30 min at a time. The ideal online lesson duration is 15–20 min. Initial lessons contained 100 cards and 20 new words to be learned. The lesson lasted for 1.5–2 h, depending on the past 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 min 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 min (since the tasks are simple), and 30 min at the advanced level.

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:

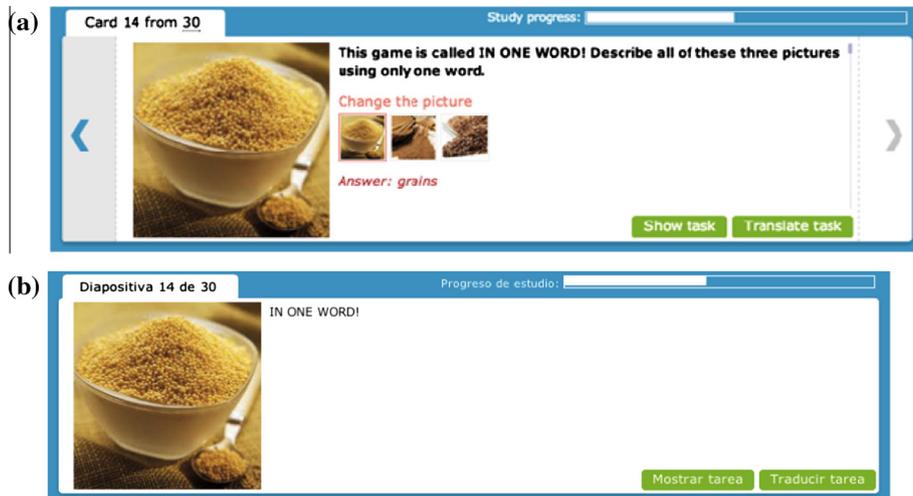


Fig. 6. In one word game displayed for: (a) the teacher and (b) the student.

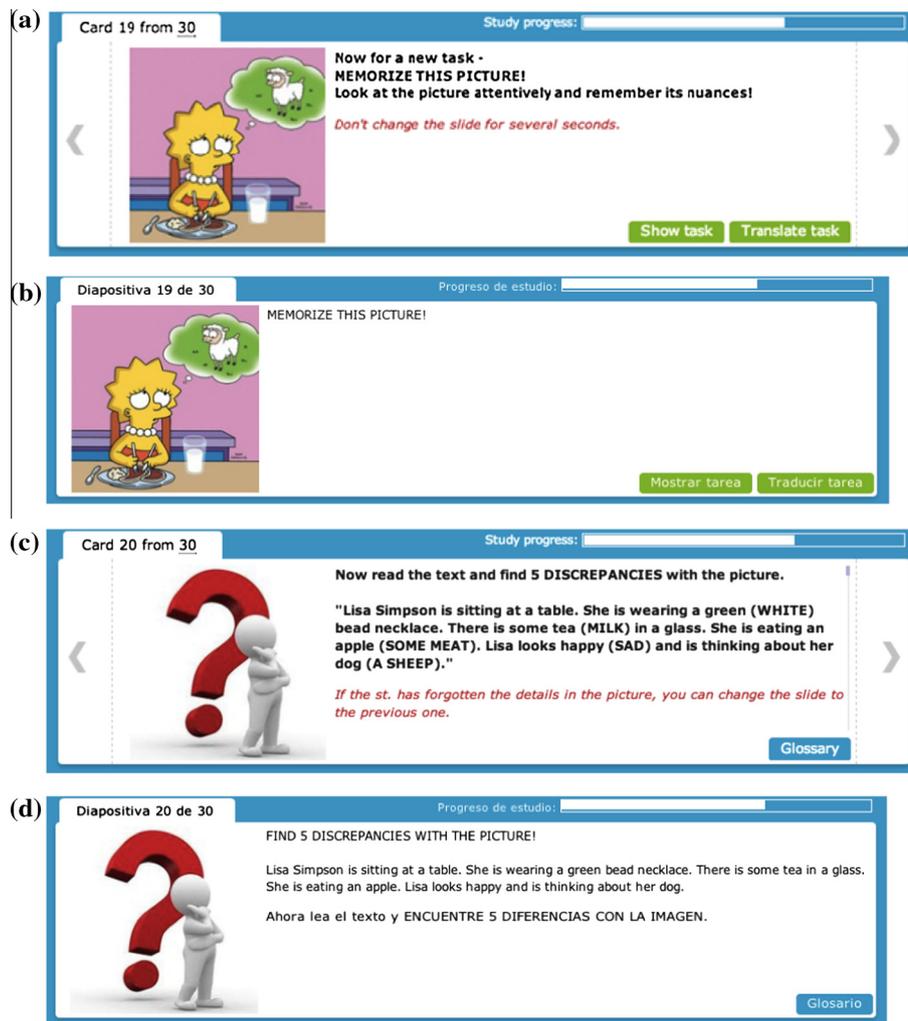


Fig. 7. Memorize the picture game displayed for: (a and c) the teacher and (b and d) the student.

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.

Table 5
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



Fig. 8. Last summary card displayed for: (a) the teacher and (b) the student.

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.

5.1. 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 Section 2.1. Following the lesson flow, specific examples of the tasks are given that get more complex, depending on the level. Preschool level description is outside the scope of this paper. Tasks development for the students that can't read is fundamentally different and is the subject of another publication.

5.1.1. Introduction (1 card)

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 next slide" (Fig. 4(a)). Before this change, the student continued to see the same card (Fig. 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.

5.1.2. 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 (Grasshopper in Fig. 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 "At the airport" is shown in Fig. 5 as an example. The teacher sees the correct answers, shown in Fig. 5(a), so that the teacher does not have to remember them. The student only sees the picture shown by the teacher in Fig. 5(b) with the understandable instructions in the native language.

5.1.3. 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

Table 6

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? 1) At the supermarket 2) At the cash-desk 3) 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) Comprir 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.

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. This simple task is often used at the intermediate and advanced levels. Ironically,

educated people with high language proficiency perfectly know advanced vocabulary and complex expressions, but don't know simple words of the everyday life, such as “electric outlet”, or “a plumber”. Therefore, such words are often used in the advanced level lessons. For example, Fig. 6 shows the lesson “Who are vegetarians?” at the advanced level, where millet, wheat and buckwheat are described with one word, “grains”.

5.1.4. 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 “Who are vegetarians?” shows the picture and the description in Fig. 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 cannot hold their attention for too long, since other mental processes are involved (Ilgaza, Altunb, & 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.

5.1.5. 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 5.

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 5). This exercise should encourage the student to think, and the picture should not provide an obvious clue.

5.1.6. 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 (Fig. 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 6.

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

Table 7

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

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
<i>Real connects</i>									
Successful connects duration, min	151	10,835	5021	3645	6202	37,037	47,140	54,974	38,202
Number of successful connects	19	1228	492	131	587	3093	3868	3763	2661

Table 8
System leaders, based on the teaching time spent in the system.

Successful tutor's connects duration, min			
Duration, min	User ID	Name	Email
352	19,131	L. M.	l...@mail.ru
298	18,418	j. b.	d...@outlook.fr
277	15,433	J. J.	h...@mail.ru
276	18,573	H. A.	
260	28,516	j. s.	m...@gmail.com
254	391	A.	p...@yandex.ru
216	22,144	S. R.	s...@gmail.com
213	20,378	R. K.	m...@gmail.com
200	1552	محمد	p...@yahoo.com
145	29,776	A. S.	a...@yahoo.com
137	25,718	Z. R.	z...@hotmail.com
130	17,253	R. M.	m...@hotmail.com
126	26,034	L.	s...@yahoo.com
122	41,271	A.	a...@mail.ru
122	20,179	D. V.	v...@mail.ru
105	40,693	E.	r...@mail.ru
98	25,965	A. M.	a...@yahoo.com
98	40,252	f. s.	f...@yahoo.com
95	457	A. V.	b...@yahoo.com
94	17,364	A. H.	a...@gmail.com

to the student. All lesson materials have been specifically designed for the i2istudy project and are unique.

5.2. Research results

As a result of the experiments conducted, 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 (Miladinovic and Markovic, 2013). 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 15 min 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 7 lists successful connections in minutes for each month. The average lesson duration was 11.94 min (189,207 min, 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 min. Besides, the average lesson duration increased to 14.35 min in August 2014. Also, very active loyal users, who spent many hours teaching the same lessons, appeared. Table 8 lists the most active users, based on their teaching duration for August 2014.

6. Conclusions

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 pre-school 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.

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Appendix A. Online language educational systems and mobile applications

The following projects, listed in the alphabetical order, compete with the i2istudy system, offering different and similar functions. The main difference of the i2istudy is the live spoken language practice using audio and video feed with the synchronized cards to aid the conversation. The system is based on the volunteer teachers, who don't charge for the lessons, but still participate in the spoken language exchange. Besides, i2istudy is an integrated solution, which does not use external resources, programs and software. The projects most closely related to the i2istudy are: Italki.com, Fluentify, Myngle, Colingo, Verbling and Lingueo. Other projects either don't allow users to see and hear each other, or use it as a secondary function and an additional service to other teaching methods. For example, the market leader Busuu, which has about 50 million users, allows establishing video connection between the users in the chat, but does not define the roles of the participants as the teacher and the student, does not offer teaching materials, and does not contain any assessment tools at the end of the conversation session. Italki only acts as the marketplace for the teacher and the student to find each other, and then employs Skype or other voice over IP software. Fluentify, Myngle, Colingo, Verbling and Lingueo offer only individual tutoring, but only for money, based on the pre-defined schedule. In all fairness,

it should be mentioned that Verbling allows free lessons, but currently targets small groups and individual tutoring with professional teachers. The authors were not able to find another project targeting non-professional teachers and allowing them to conduct lessons based on the synchronized bilingual cards for free, combined with the video chat. Besides, no other project uses the time banking principle.

A.1. Current online projects

Babbel (<http://www.babbel.com/>) offers self-study lessons, based on reading and writing exercises, listening and pronunciation. Proper pronunciation is the key Babbel's concept, which uses real time speech recognition, thus the users get instantaneous feedback of their success. Babbel also allows connecting with other users from foreign countries. There is user's profile, bulletin board and internal messages (<https://en.wikipedia.org/wiki/Babbel>). The system is premium with the full access cost between \$6.65 and \$11.95 per month (<http://techcrunch.com/2009/11/10/babbel-dumps-freemium-for-language-learning-it-just-doesnt-work/>, <http://techcrunch.com/2010/06/23/babbel-introduces-speech-recognition-to-aid-language-learning/> and <http://techcrunch.com/2009/11/10/babbel-dumps-freemium-for-language-learning-it-just-doesnt-work/>). The system has about 20 million users.

Busuu is one of the largest social networks for learning languages. Through online apps, the system offers free and premium audio-visual courses in 12 languages. The users can enroll to study one or more languages. The study materials for a language are typically broken down into around 150 units. Units consist of multiple-choice questions, speaking and writing assignments. Users act as both students and tutors, correcting each other's work. They can converse via a chat window, an audio or a webcam connection. Grammar units and some of the multimedia functions, such as video units, voice recordings, and podcasts, are available only to premium members (<https://en.wikipedia.org/wiki/Busuu>). The system has more than 50 million users globally (<https://www.crunchbase.com/organization/busuu>). This is a freemium product.

Colingo (<http://colingo.com/>) offers small groups (3–5 students) learning through video calls, and is based on Google Hangouts. This is a premium service with a free 7 days trial period. After the 7 days free trial, there is a \$50 per month subscription, which offers students unlimited access to the platform. Those looking for more personalized, one-on-one instruction can opt into the "Personal Teacher" plan, which costs \$150 per month (<http://techcrunch.com/2013/11/20/with-2-4m-from-atlas-500-startups-more-colingos-live-online-school-aspires-to-teach-the-world-english/>). The number of users is unknown.

Duolingo (<https://en.wikipedia.org/wiki/Duolingo>) provides extensive written lessons and dictation with speaking practice for advanced users. It has a gamification tree, where users can progress, and a vocabulary section, where learned words can be practiced. It is claimed that the project is absolutely free to users, since it charges companies for translating texts by the community members (<https://www.crunchbase.com/organization/duolingo#sthash>). The system has over 10 million users.

English, baby! (<http://www.englishbaby.com/>) contains several thousand English lessons with content from celebrities. The lessons use TV series and reality shows. Most lessons include grammar instruction, quizzes and vocabulary words. Paying users can get support from live teachers and ask them questions. There is a system to search for international friends. The system is freemium, where most of materials are available for \$5 per month fee. The number of users is unknown (http://en.wikipedia.org/wiki/English_baby!)

EnglishCentral is a language tutorial site, which uses popular videos from movies and news clips to help people around the world learn English. Students watch a captioned video, and then try to repeat the phrases by speaking into a microphone and recording their attempts. Speech-to-text software tries to make sense of their pronunciation (<http://techcrunch.com/2009/12/21/englishcentral-raises-3-5-million-google-ventures/>). The system is based on the freemium model. Free users can watch as many videos as they want, but learn and practice their speech with 2 videos every month. The number of users is unknown.

Fluentify (<https://www.fluentify.com/>) is the platform and the marketplace to find teachers and to study. The system uses 30 min paid lessons. Every native speaker can become a teacher after their skills test. Users don't need to use any third party software and platforms, such as Skype or Google Handouts. The entire user experience from selecting the tutor to online conversations takes place on the same site. The system has over 700 registered teachers with the unknown number of users. The price varies from \$16 to \$60 per hour. Fluentify collects 30% commission (<http://techcrunch.com/2014/03/31/fluentify-angel/>).

Immerse Learning (Languagelab, <https://immerselearning.com/>) uses virtual reality to create real life situations, like at the airport, at the grocery store and so on. Users are assigned specific roles and communicate by conversations. The system, which is currently being tested, requires installing special software. One can apply for beta testing. Immerse Learning is a provider of live online training in immersive 3D environments for organizations (<https://www.crunchbase.com/organization/immerse-learning>).

Italki.com is a marketplace where students and teachers meet. It has teachers' rating system by the students. It also has professional teachers verified by the system, along with volunteers. Teachers post their own rates and use their own teaching materials. Skype is used for the video chat. The system collects 15% commission (<http://venturebeat.com/2009/03/25/italki-launches-marketplace-for-language-tutors/>). It allows users to post their own teaching materials in the wiki-type format (<http://mashable.com/2008/05/06/italki-language-textbooks/>). The system has about half a million users. It requires adding money to the account to study with professional teachers (the premium model: <https://angel.co/italki>).

Languagelab.com is based on the internal research and development programs, led by Dr. Rajendran, involving testing a range of teaching models with students from more than 50 countries. The system is based on the immersive learning. The idea is that all lessons should be taught contextually and virtual environments are used to recreate the scenarios where interactions would take place in the real world. Experts believe that virtual worlds and immersive learning are more effective for studying higher order cognitive lessons, compared with the traditional classroom-based systems, which are using abstraction (https://en.wikipedia.org/wiki/Immerse_Learning).

Lingueo.com is a social network with the aim to help users practice and learn foreign languages. The site connects people who wish to learn and practice foreign languages with suitable tutors all over the world. The courses are held directly on the website through videoconferences. Only premium service is available at \$20 per hour (<https://en.wikipedia.org/wiki/Lingueo>).

LinguaLeo offers users language learning in the form of a game with over 200 thousand materials, including news, business articles, papers, video clips, stories and jokes. The main social effect is in the results comparison with friends and mutual assistance. Gamification and retention mechanics are actively utilized for attracting and retaining new users (<http://en.wikipedia.org/wiki/LinguaLeo>). The system has about 10 million users. Freemium model is utilized with some free materials, but the rest require payment.

Livemocha (<https://en.wikipedia.org/wiki/Livemocha>) is a site with many lessons and a large community of over 16 million users. Users can support each other's learning by grading, providing tips and answering questions. The system is not specialized on video chat, but contains such an option. Livemocha was purchased by Rosetta Stone in 2013 (<http://www.forbes.com/sites/karstenstrauss/2013/04/02/rosetta-stone-acquires-livemocha-and-expands-its-reach-in-the-cloud/>). The system is based on the freemium model with mostly premium features.

MindSnacks games deliver "bite-sized" learning experiences and use social elements and game mechanics to engage users. Current apps (over 10) focus on language learning, and each mini-game addresses a specific need, such as vocabulary, spelling, grammar, and sentence construction (<http://techcrunch.com/2011/03/09/mindsnacks-raises-1-2-million-for-mobile-educational-games/>). This is a freemium system with premium majority of the apps. The number of users is unknown.

MyLanguageExchange (<http://www.mylanguageexchange.com/>) is a large bulleting board with users, who can find learning partners. Teaching plans are provided, along with individual or group chat. There is an option for live voice communication using external programs. This is one of the oldest projects in the field, which exists since 2000. This is a free project with over a million users.

Myngle (<http://www.myngle.com/>) is positioned as the premium and quality competitor of Livemocha and iTalki. All teachers are carefully checked. The system has social network elements, uses Skype for video connection with the teacher, and also specializes on the corporate services (<http://techcrunch.com/2009/03/12/plugg-wraps-with-two-very-capable-winnners/>). Myngle offers an ideal solution by providing students and teachers in different locations with a complete online language instruction platform, containing all the tools needed for synchronous e-learning. (<https://www.crunchbase.com/organization/>). It is completely premium service with high prepay for the students and unknown number of users.

OpenEnglish (<http://www.openenglish.com/>) is one of the largest projects in Latin America. Open English is using live online classes with native English-speaking teachers. The key is that students can access classes at any time from anywhere, or take as many live classes as they want over the duration of the 12 month program (<http://techcrunch.com/2012/07/26/open-english-43m/>). It is estimated that the project attracted the record \$120 million in venture capital (<http://www.wsj.com/articles/online-school-has-100-000-students-one-subject-1403050947>). The service is about \$80 per month and offers live online instruction around the clock in small group classes. The number of users is unknown.

SheredTalk (<http://www.sharedtalk.com/>) is the project launched by the Rosetta Stone company, which has group text and voice chat, user catalogue and a messaging system. The service is free with unknown number of users (https://en.wikipedia.org/wiki/Category:Social_networking_language_education_websites).

Verbling (www.verbling.com) Teaching is conducted in groups, or individually using Google Hangouts. Teachers undergo the certification process. The prices are fixed at \$3 for one class, 10 classes for \$19/month and unlimited classes for \$45 per month. The Verbling's tutoring platform allows teachers to set their own price. The system supports four languages (<http://techcrunch.com/2013/11/20/new-funding-in-tow-verbling-adds-live-study-groups-and-one-on-one-tutoring-as-its-spin-on-language-learning-begins-to-catch-on/>). The system is freemium with mostly premium features. Free lessons are available for inviting friends.

Voxy (<https://voxy.com/>) has two studying versions: self-study and live classes. Voxy is built on the principles of task-based language learning, and tailors every single course based on learners' daily performance, proficiency levels, personal goals

and interests. The system contains news articles, English songs, videos of people accomplishing daily tasks, and audio recordings of real-life situations. The platform includes live instruction through one-on-one tutoring sessions and group classes with certified teachers who provide real-time feedback. Voxy has pioneered numerous innovations in contextual learning, including the use of natural language processing tools and geo-location (<https://en.wikipedia.org/wiki/Voxy>). The system has over 3 million users. This is a premium service with the 7 days trial period.

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