A CONVERSATIONAL ASSISTANT TO SUPPORT IMMIGRANTS’ LEARNING OF ITALIAN AS L2: CPIABOT

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Migrant population in Italy

- Different origin
- Different mother tongue
- Different language skills
  - Presence of illiterate or weakly educated adults

- Language needs of adult immigrants in Italy
- Acquire communication skills to interact with the host community
- Pass language tests necessary for residence and citizenship

Public and private institutions for teaching Italian L2

Centri Provinciali per l’Istruzione degli Adulti (CPIA)
Provincial Centres for Adult Education

- Inconsistent frequency
- Situations of social isolation
- Heterogeneous classroom
Mobile Assisted Language Learning (MALL)

Features:
The devices allow new learning processes based on:

- Continuity
- Spontaneity
- Accessibility
- Interaction with different contexts of use (Kukulska-Hulme, 2008).

- Potential for learning autonomous and outside-classroom learning;
- App/chatbot as a complement and not a substitute for formal/institutional teaching;
- Hybrid formal and informal learning
Innovation in CPIAbot

CPIAbot characteristics

Conversational and multimodal interface

Support in accessing resources and services with a single command (expressed in L2)

Adaptive feedback and multi-turn dialogues

Support to teachers in assignment delivery to groups and single students

Contribution to MALL

- Language first tool
  - L2 as a means to interact with CPIAbot

- Teaching and learning assistant
  - Management of a hybrid educational action
CPIABOT: FUNCTIONAL ASPECTS OF EDUCATIONAL ACTIVITIES

Requirements for the match between technology and context’s needs:

- **Accessibility**
  CPIA students must be able to use CPIAbot from their own devices

- **Ergonomics**
  A multimodal and multi-level chatbot to support learning in heterogeneous classes

- **Adherence to the teaching approach**
  Interaction in natural language and possibility to use CPIAbot as a support for communicative activities

- **Hybridization of learning spaces**
  Possibility of CPIAbot to act as a link between the classroom lesson and the individual learning of the extra-school
CPIAbot - Features

Emphasis on:
- Conversation
- Natural language
- Multimodal and multimedia interface
  - IMAGES/VIDEO/AUDIO
  - TTS & ASR (TEXT/SPEECH)
- Multilevel UX
- Possibility of feedback to teacher and student
- Ergonomics of the learning process

Telegram instant messaging:
- Free of charge
- Open platform
- Privacy compliant

Telegram bot ecosystem:
- Bot API
- Multimedia capabilities
CPIAbot - Structure and resources

PRIMITIVE FUNCTIONS
Single turn (hit and answer)
Access to multimedia resources or services through an invocation in natural language

CONVERSATIONAL EXERCISES
- Exercise dialogues
- Listen and repeat
- Listen and write
- Read and repeat
- Guess the word
- Objectives concerning:
  - Reading - writing skills
  - Lexicon

DIALOGS
- Authentic situations
- Embedded in Learning Units
- Objectives concerning
- Lexicon
- Communication functions
CPIAbot - Single turn functions

Translate

Write

Syllabe
CPIAbot - Rehearsal exercises

Listen and repeat

Guess the word
CPIAbot - Simulated dialogues

Let’s shop!

Buonasera
Buonasera

Facciamo la spesa, Va bene?

Sì

Dove andiamo?
AI MERCATO o al SUPERMERCATO?

In questo luogo?

Sì

Vuoì comprare CAROTE o POMODORI?

Vuoì comprare CAROTE
Simulated dialogs have been implemented with NaifJs, a dialog manager we developed and we released as open-source: [github.com/solyarisoftware/naifjs](https://github.com/solyarisoftware/naifjs)
## CPIAbot - Technical issues

### SPEECH RECOGNITION
- Possible bias in L2 learners pronunciation recognition
- No syllabes recognition

### PUSH TO TALK
PUSH TO LISTEN
BUTTONS

If compared to smart speakers, CPIAbot/telegram interface requires a push-to-talk/push-to-listen action during the oral interaction

### LANGUAGE FIRST
FOR LOW EDUCATED
LEARNERS

Low educated and illiterate adults earners could face difficulties in interacting with a technology using the language they're learning
Teachers feedbacks

Since CPIAbot experimentation in classes has been postponed due to lockdown, teachers' feedbacks concern the (unplanned) use of the chatbot for total distance learning. In teachers representations, different elements emerged:

- CPIAbot as a useful tool for language learning
  - A good means for vocabulary learning, thanks to multimedial materials
  - A stimulus for the students in the learning activities

- Portability and flexibility of the chatbot as positive elements in teaching and learning support

- Availability of students activities reports as a support for the teaching process

- Need of a students pre-training in CPIAbot use, during the classroom time, before the autonomous interactions with the chatbot
Conference paper:

“A Conversational Agent for Mobile Assisted Language Learning CPIAbot as a tool for learning italian as a second language”

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