# ICT aided steps in the learning of segmental phonetics

Daniela L. Martino<sup>1</sup>

#### Introduction

The different perspectives that aim at explaining how pronunciation in a foreign language is acquired are key to developing activities that foster effective learning. In an attempt to explain the struggles faced by students when it comes to pronunciation in a foreign language, special attention has been given to the first language and the way it might interfere with the acquisition of L2/FL sounds. Polivanov (1931, 1964) and Trubetzkoy (1939, 1969) focused on the effect of speech perception on phonology arguing that sounds in a second language are perceived through the phonological system of the first language and failing to articulate a certain sound was the result of perceiving it erroneously. In this way the authors pointed out that inexact L2 production is the result of erroneous perception, suggesting that L1 operates as a phonological filter through which the L2 sounds are processed. In the

<sup>&</sup>lt;sup>1</sup> Profesora en Lengua y Literatura Inglesas y Traductora Pública en Lengua Inglesa (Universidad Nacional de La Plata, Buenos Aires, Argentina). Es Especialista en Educación Superior y TIC (Ministerio de Educación de la Nación) y se encuentra actualmente cursando la Maestría en Procesos Educativos Mediados por Tecnología (Universidad Nacional de Córdoba, Argentina). Se ha desempeñado como docente de inglés como lengua extranjera en diferentes niveles durante veinte años y se ha dedicado a la enseñanza de Fonética y Fonología desde 2009 en niveles terciarios y universitarios. Su interés relativo a la investigación incluye la integración de tecnologías de la información y la comunicación en programas educativos, particularmente en la enseñanza de las características segmentales y suprasegmentales de la lengua oral. UNLP; Instituto Superior de Formación Docente 97. Correo electrónico: dlmartino76@gmail.com.

same line, Dupoux (2002, p. 172) described the "phonological deafness" that learners suffer from as they strive to discriminate sounds in a foreign language using a "processing apparatus specifically tuned to their maternal language" bringing about a lot of difficulty "in dealing with sound structures that are alien to the language they heard as infants". Flege (2003) proposes the speech learning model (SLM) which posits that the L1 and L2 phonetic subsystems influence each other as a result of coexisting in a common phonological space leading to L1 and L2 sounds either merging into category assimilation or shifting away from each other (category dissimilation). The need to lay particular emphasis on learners' perception becomes evident from the previously mentioned theories. It is interesting to note that L2 learners might be able to discriminate the acoustic difference between phones used to realize two categories on an auditory basis but may fail to do so phonetically. Therefore, perceptual awareness of categorical distinctions would seem to take place before the ability to implement such distinctions, with time and practice as key to establishing "the motor control patterns needed for producing new phones in an L2" (Flege, 1987, p. 290). This explains the practice stage that should follow the work on perception. In connection to the motor control referred above, the concept of proprioception --internal kinesthetic awareness of the position and movement of our muscles and parts of the body– takes on paramount importance. Listen and repeat exercises on their own fail to help students develop "proprioceptive or kinesthetic intelligence that can gradually liberate the learner from the oral and aural grip of their mother tongue pronunciation habits" (Underhill, 2012). Pronunciation, being a physical and muscular activity -a motor skill-, should not be taught on a purely cognitive basis. The research done on the acquisition of L2/EF pronunciation serves as framework for the design of a set of stages and activities that can help learners advance from controlled to automatic processing (Celce-Murcia, Brinton & Goodwin, 2006). The advance of technology provides learners with an array of tools that can not only aid but also accompany learners in such process.

# Stages and activities in the teaching of pronunciation

The theories described above make evident the need to provide students with a variety of activities that lay emphasis on recognition and perception but then move forwards to production, from controlled understanding of

what articulators do to such movements becoming automatised. To such end, Celce-Murcia (1983) refers to four distinctive stages in the teaching of pronunciation in an attempt to go beyond students' exposure to merely descriptive phonetics and to apply the Communicative Approach to the teaching of pronunciation. This four-stage strategy starts with the identification of a sound or contrast which appears to be problematic and continues with the finding of a context naturally abundant of such feature. Then, a set of communication-oriented tasks should be designed, and finally a further set of activities to recycle the teaching point periodically. A framework composed of a set of five steps is described later including: analysis, listening discrimination, controlled practice, guided practice and communicative practice (Celce-Murcia, 1996). Likewise, Pennington (1996) suggests a progression of tasks beginning with mechanical ones (e.g. repetition of minimal pairs) followed by contextualized tasks (e.g., repetition of key words in a listening passage); meaningful tasks (e.g., choice of correct word in a sentence or reading passage); realistic (e.g., a role-play of a situation similar to those that one may face in real life); and real (e.g., discussion of the students' real-life situation or concerns). A combination of both approaches has been adopted in the present paper in pursuit of an optimized learning process.

## **Step 1: Identification**

Having identified a problematic segmental feature for learners, students should be exposed to a text naturally rich in such feature. The finding of such text can be a daunting task. *Playphrase.me* is a multi-modal corpus-like website that allows the search of words or phrases that have been uttered in short video clips from popular TV shows, providing authentic input.



Figure 1: Playphrase.me search for "Would you like".

*Tubequizzard* provides a further option, enabling teachers to search for specific words or expressions in Youtube video subtitles. Once a word or phrase is typed in, Tubequizzard provides a number of suggested videos.



Figure 2: Part of *Tubequizzard* search for "Would you like".

Once the text has been chosen, this first step concentrates on understanding its context of interaction. The objective is first for students to grasp the gist of the audio material, a task that will guide them through the text to get a general understanding. A particular feature of segmental phonetics is then demonstrated in an authentic natural context and students are asked to recognize it.

## Step 2: Analysis

Views regarding this stage vary from the teacher providing oral, visual and tactile illustrations of how a feature is produced and where it occurs in order to raise learner consciousness to asking students to identify and explain certain features by themselves (Celce-Murcia, 1996; Celce-Murcia, Brinton, & Goodwin, 2006). Both approaches aim at systematising the teaching point of the lesson. This is a necessary step in the communicative teaching of any important pronunciation feature since accurate listening comprehension is necessary for ultimately achieving intelligible oral communication (Celce-Murcia, 1996). Underhill (2012, 2013) contends that pronunciation teaching should get out of the head and into the body, that by making sounds visible segmental features might become less challenging for learners to master. Likewise, Cauldwell<sup>2</sup> emphasizes the importance of providing students with both sight and sound shapes of words. Any sight shape version of a word —be it the transcript in ordinary spelling or the phonetic version in the dictionary— may misrepresent the sound shape in context. Having the audio immediately accessible with the text can be of invaluable help. *Sonocet's Audio Notetaker* is software that allows teachers to place sound and sight substance together. The following is an exercise based on a short extract from the film *An education*. It focuses on some features of connected speech.

Figure 3: Activity designed with Sonocet's Audio Notetaker



The first column —the reference pane— contains questions and instructions, focusing on a particular teaching point. The second column —the text pane— provides the sight shape of the audio, which students can hear as many

<sup>&</sup>lt;sup>2</sup> See Speech In Action, Listening Cherries 29, Two substances <u>http://www.speechinaction.org/</u> listening-cherry29-two-substances/

times as needed by clicking on the third column —the audio pane. It is interesting to note that students can use the speed control in the tool bar, which goes from 1.0 (full speed) down to 0.5. Undoubtedly, this can make it easier for students to perceive different pronunciation features.

Another tool that allows teachers to play chunks in isolation for students to work on is *Aegisub*. Originally conceived for creating and modifying subtitles, it is an excellent way to have video, audio and the sight shape of words simultaneously, with students having the possibility of playing short chunks repeatedly. Subtitles can be timed, styled and built-in real time video.

Figure 4: Activity designed with *Aegisub*.



*Tubequizzard* is a Youtube-based service that makes it possible to create quizzes for any subtitled Youtube video. The quizzes expose learners to a certain feature for them to fill in the gaps in the transcript. This same service finds videos naturally abundant in a certain feature and then allows teachers to create tailor made exercises.

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Quiz collection	Train with your video	Search in subtitles	About	
See full search form				
Channel: Film4				
Suffragette   Official	Trailer			
🔊 go to all quizzes base	ed on this video or Q edit the	quiz ơ	Suffragette   Official Trailer	
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	check glasshouse laundry?			
1	check born there.			
Part-time washer	check Seve	n,		
full-time	check when I	check		
12.				
What would	check vote mean			
check	check ?			
Votes	check women.	check		
power is in your hands				
No one cares, love.				
Some	check us do, so shut y	our bleeding cake-hole!		

Figure 5: Activity designed with *Tubequizzard*.

This Analysis stage is of special relevance considering the importance given to perception as expressed in the introduction. Technology presents us with tools that simplify the task and aid the learner providing audio and visual input simultaneously.

#### **Step 3: Imitation**

Imitation in its wider sense covers different copying processes: mimicry (recreating a sensory experience); matching (producing an effect taken to be similar to the original); and emulation (achieving the observed end result, possibly by different means) (Messum, & Young, 2012). This third stage in the progression of a class involves the repetition of models to produce a certain feature accurately and confidently.

As a cognitive and motor skill, pronunciation is closely linked to the creation of suitable mental images of L2/FL inventories, and to the control of the movements of the muscles and organs of speech, which involves not only learning articulatory habits which are different from those in the learner's L1, but also, in many cases, "fine tuning" or "unlearning" previous habits, particularly when fossilization is operating (Cantarutti, 2015, p. 9). Proprioception plays an important role in this stage so that students feel their articulators and can become conscious of what they do. The use of mirrors –or cellphone front cameras–, cuisenaire rods and rubber bands (Young & Messum, 2011) has been widely suggested in the literature in an attempt to move away from simple Listen and Repeat exercises. Following Gattegno's silent way, learners prepare for production by thinking about the sounds in their minds before saying them as part of the process known as the Inner Workbench (Underhill, 2013). In this way, pronunciation is approached silently, with the teacher as coach instead of model, paving the way to the next stage involving controlled practice.

# Step 4: Controlled practice

This stage involves an array of activities from less contextualised ones to those that can be equated to realistic tasks. A most controlled technique which has proved effective is Shadowing (also called shadow reading or shadow listening), a technique where learners try to speak along in time with an audio text, sometimes with the transcript in front of them (Hamada, 2015). The main objective is in line with the connection referred before between sight and sound shapes since shadowing enables learners to polish such link between the phonological realisation of words in context and their written form and meanings. Students can record their productions and upload them in the platform *Soundcloud*, which provides an excellent tool to share, compare and get feedback. This last feature is of particular importance since pop up comments —with peer or teacher feedback— reinforce the immediacy of auditory and visual input. Activities in this stage should also include more communicative tasks of the type of information gap activities and cued dialogues that can enable the learner to monitor for the target feature.

Figure 6: A student's recording in *Soundcloud* with feedback provided.



#### Step 5: Communication practice

In this final stage, learners engage in less structured activities concentrating on content rather than on form, tasks that are real (Pennington, 1996) and help teachers to assess learner progress informally. Meaning-focused instruction leads learners to the automatisation of knowledge through tasks that resemble genuine exchanges of information (Ellis, 1996). Discussions, debates and activities of the sort, which students can carry out and record at the same time, can be included in this stage. Such recordings can also be socialised and commented on in platforms such as *Soundcloud*, *Edmodo* or *Audioboom*. Even everyday applications such as *Whatsapp* can serve the purpose of holding a conversation through audio messages, recreating a familiar context and a real negotiation of meaning.

# Conclusion

The different theories that attempt to explain the acquisition of sounds —particularly of L2/FL sounds— should provide the framework for designing activities regarding segmental instruction. A particular progression has been suggested aiming to successfully scaffold learners into achieving an automatised use of phonological features. It is worth noting that the time devoted to each step will be determined by class progress. Technology can aid learners in ways unknown before the rise of certain software, platforms and applications, most of which have not been particularly created with pedagogical ends in mind. The fact that technology is present in most of the stages allows for ubiquitous learning (Cope & Kalantzis, 2007) to take place, fostering learner autonomy at the same time. The effective integration of such tools can enhance learners' opportunities resulting in an improvement in students' oral proficiency.

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