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The Designing of Virtual Learning Environments for Authentic Proficiency Enhancement in Arabic

Introduction

Proficiency frameworks, such as the American Council on the Teaching of Foreign Languages (ACTFL) Proficiency Guidelines and the Common European Framework of Reference for Languages (CEFR), conceptualize *language proficiency* as the ability to use language to deal with several socio-communicative tasks (SCT) referring to various real-life situations in ways that emulate the linguistic behavior of native speakers. When we apply this concept to the Teaching of Arabic as a Foreign Language (TAFL) we are confronted with the fact that Arabic native speakers, in carrying out the various SCT suggested by proficiency guidelines, do not resort to just a single variety of their language. For example, when asking the price of an item in the marketplace they will use a colloquial Arabic variety (CA) whereas when writing an academic essay they will resort to standard Arabic (SA). To cope with the SCT envisaged by proficiency frameworks both SA and CA are essential, together with their interaction (i.e. varieties interaction). The inclusion of the CA in the teaching of Arabic is particularly problematic. In most universities, language centers, and schools, inside

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and outside the Arab world, «the teaching of Spoken Arabic [CA] still remains the exception rather than the rule» and «most students learn only the formal variety of Arabic [SA]» (Palmer, 2007: 111). This exclusion of CA from most Arabic curricula is related both to ideological factors such as the notion of language prestige associated with SA and practical factors such as the lack of standardization of CA, the great number of existing colloquial varieties, and the scarcity of adequate instructional materials (Younes, 2015: 27-28). Consequently, applying proficiency frameworks to TAFL implies not only the necessity of elaborating an approach that integrates both CA and SA but also of developing tools that allow the reproduction, inside and outside the classroom, of the complex varieties interactions at play in authentic linguistic contexts and that help to overcome some of the practical difficulties encountered in the teaching of CA.

The present contribution aims at illustrating how Information and Communication Technology (ICT) represents a unique means that enables the creation of a Virtual Learning Environment (VLE) where realistic linguistic inputs can be reproduced and learners can thus operate in ways that emulate native speakers' linguistic behavior in authentic contexts. In particular, we will illustrate how such VLEs allow the integration of language activities that, as it is the case in the real world, entail multiple skills, engage multiple senses, and involve multiple language varieties within a unified cognitive framework. This way VLE will be essential in supporting effective language acquisition and contributing to the enhancement of authentic proficiency in Arabic.

1. *Varieties interaction in the light of CEFR*

As seen above, one of the main challenges in the application of proficiency guidelines to TAFL is that of having to deal with more than one variety at once. The main difficulty behind that is to establish which variety or varieties should be introduced at different stages of the learning process and how. One way of tackling this problem is that of «trying to identify a default code for many contexts and communicative tasks» (Eisele, 2006: 200-01):

> «in pedagogical terms, this means that one must start out by distinguishing the different codes to be taught and to associate them with particular linguistic tasks.» (Ibid.: 216)

We can therefore follow the sequence of SCT envisaged by proficiency frameworks at each level and associate to each of them the language varieties to which native speakers would normally resort to in carrying out those specific SCT in real-life situations. This way, proficiency frameworks will serve as a trace for the development of our model of integration of CA and SA throughout the whole learning and teaching process. In the present study we will focus on CEFR as a reference framework (cf. Kallas, 1995; Wahba, 2006), although ACTFL Guidelines could be employed as well with a similar purpose (cf. Al-Batal, 1992; Eisele, 2006; Taha, 2008). In doing that, we will move from upper levels to lower levels. Thus we will first highlight the complexity of variety interactions that take place at advanced levels and which reflect the actual linguistic behavior of native speakers in authentic contexts and then move downwards through CEFR levels in order to show how in connection with the SCT envisaged at intermediate and lower levels we witness a more polarized division of tasks and varieties. Such polarization only exists at lower and intermediate levels and as a mere consequence of the nature of the specific SCT envisaged at those levels. It does not reflect per se the reality of the linguistic choices operated by native speakers in authentic contexts. Thus, although the ideal ultimate goal, for the learners, remains that of reaching a proficiency level at which they are able to fully mimic those choices, in order to reach that level they will have to start from CEFR levels where the SCT involved imply a more rigid distinction of CA and SA or a clear predominance of one variety on the other.

We can follow CEFR general overview of proficiency levels (Council of Europe, 2001: 24) as a guideline to establish an association of CA and SA with SCT at various CEFR levels. At level C2, the SCT listed in CEFR general overview require CA and SA in equal proportions. Thus learners can switch between CA and SA to convey «finer shades of meaning precisely» (ibid.: 27) and to produce different socio-pragmatic effects. Some of the tasks may require CA alone, SA alone, or a mix of CA and SA. At level C1, SA and CA are also fairly balanced but SA prevails over CA. Many of SCT involved at this level imply the resort to SA in relation to formal «social, academic and professional» situations or to the production and understanding of written texts that include «specialised articles and longer technical instructions» or «expressing points of view at some length [...] about complex subjects» (ibid.). Some SCT involved at this level may imply the resort to CA or to a mix of CA and SA alongside the use of SA alone. Learners may be confronted with written texts presenting a

mixture of CA and SA or may use a mixture of CA and SA when using language «for social, academic and professional purposes» (ibid.: 24). At level B2, SA becomes clearly predominant over CA that reaches its minimum representation throughout CEFR six levels (see Fig. 1). Texts at this level include «both concrete and abstract topics, including technical discussions [...] [in one's] field of specialization» and 'detailed' texts «on a wide range of subjects and explain a viewpoint on a topical issue giving the advantages and disadvantages of various options» (ibid.). Thus Level B2 is mostly associated with SA and to a minor extent to CA in relation with SCT that imply the interaction «with a degree of fluency and spontaneity that makes regular interaction with native speakers quite possible without strain for either party» (ibid.). At this level some tasks may also be carried out by using a mix of CA and SA. At level B1 both varieties are, as at level C2, used in equal proportions. Level B1 envisages SCT such as dealing with «matters regularly encountered in work, school, leisure» and «most situations likely to arise while travelling» (ibid.) which require a complementary use of both CA and SA to be carried out. Other SCT tasks such as the production of «personal letters describing experiences at impressions» (ibid.: 26) or giving «reasons and explanations for opinions and plans» (ibid.) are almost exclusively associated with respectively SA alone or to CA alone. At level A2, CA prevails over SA. SCT tasks are either associated with CA alone or with CA and SA. SCT include routine tasks that are normally associated with CA and other SCT like understanding «advertisements, prospectuses, menus and timetables» (ibid.: 26) that are normally written in SA. Eventually at level A1, CA appears clearly predominant over SA. The almost totality of SCT require CA and are represented by very basic tasks such as 'introducing oneself' or using 'very basic phrases aimed at the satisfaction of needs of a concrete type'. Alongside these SCT there are also a few SCT that require SA like filling in «forms with personal details, for example entering» one's «name, nationality and address on a hotel registration form» (ibid.: 26).

We can visualize the distribution of SA and CA throughout CEFR six levels described above by means of following figure.
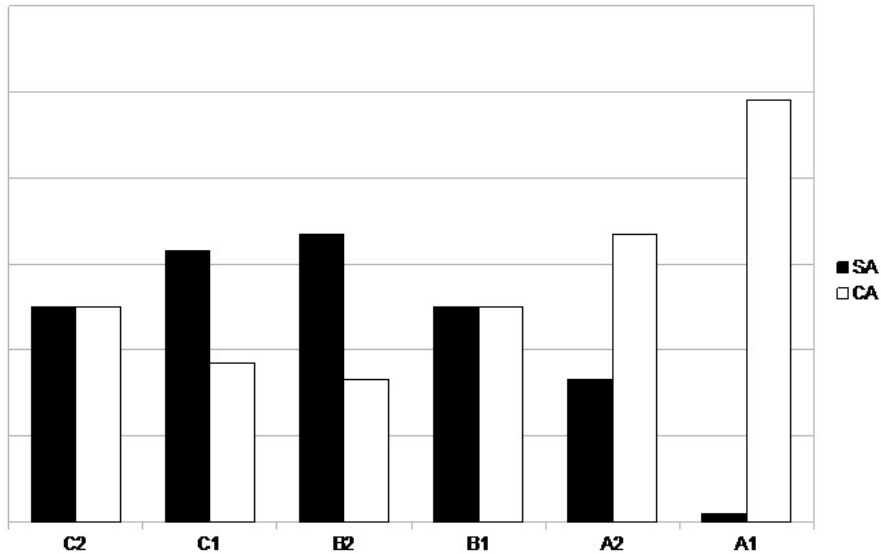
Fig. 1. Distribution of SA and CA within CEFR six levels

As we can see as we move down from upper to lower levels the two varieties that are initially balanced start diverging with SA prevailing over CA at level C1 and B2. Then at level B1 both varieties are again equally represented. In the passage from intermediate to lower levels, CA starts prevailing over SA and level A1 shows a clear predominance of CA at the expenses of SA. Moreover at lower levels SCT tend to be associated to one variety at a time whereas at upper levels alongside SCT that require either CA or SA we find tasks that must be carried out by a mixture of CA and SA. Thus as the level decreases (C2>C1>B2>B1>A2>A1) we witness a shift from a situation where the distinction between varieties is less marked and more vague to a situation with a more static and clearly identifiable distinction between purely CA-tasks and purely SA-tasks. As already mentioned the dichotomy between varieties that we observe at lower levels does not represent per se the linguistic reality of the Arabic language in authentic contexts and as the levels progress learners will become more and more aware of the extreme variability of the Arabic language and of the complex varieties interactions that take place in real-life situations.

In order to understand the constraints that determine the distribution of SA and CA illustrated so far, we will try to analyze the SCT envisaged by CEFR on the basis of the basic language skills, listening (L), speaking

(S), reading (R), writing (W), associated with them at each level. As done above we will follow CEFR general overview of proficiency levels (ibid.: 24) as a trace to establish the association of SCT at various CEFR levels and the basic language skills. We will group the four basic language skills into two sets of skills by virtue of the communication channel involved: written skills, i.e. listening & speaking (L/S), and oral skills, i.e. reading & writing (R/W). We can visualize the distribution of written and oral skills throughout CEFR six levels by means of following figure.
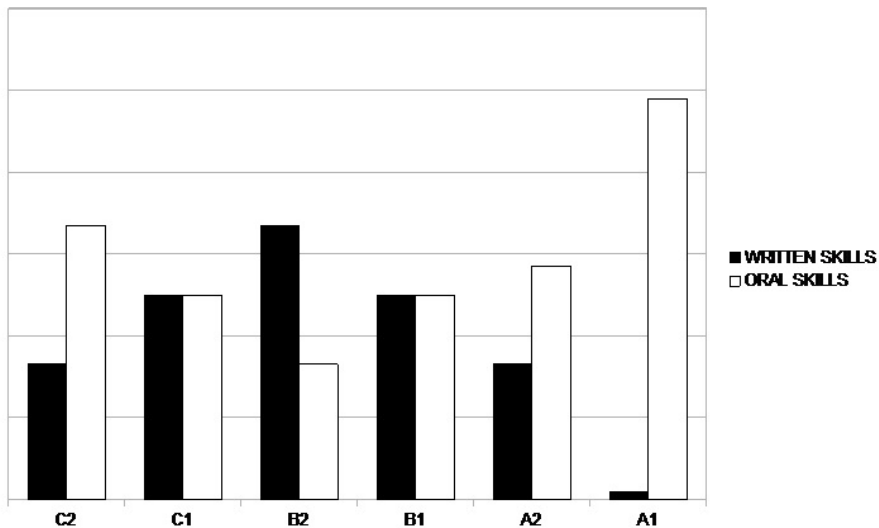

Fig. 2. Distribution of oral and written skills within CEFR six levels

As we can see at level C2, oral skills prevail over written skills as at this level some SCT, typically associated with full proficiency, such as expressing oneself «spontaneously, very fluently and precisely, differentiating finer shades of meaning even in the most complex situations» (ibid.) require L and S skills. At level C1 oral and written skills are perfectly balanced. At level B2 oral and written skills diverge again and this time written skills prevail over oral skills and reach their maximum representation throughout CEFR six levels. At level B1 skills are again equally represented. At level A2 oral and written skills diverge again with oral skills prevailing over written skills and at level A1 oral skills reach their maximum representation throughout CEFR six levels. Like SA and CA, oral and written skills are not equally distributed throughout CEFR six levels. We can try

to establish a correlation between the resort to SA or CA and the carrying out of oral or written skills by comparing their respective distribution. The following figure visualizes the distribution of SA and CA and of written and oral skills throughout CEFR six levels.
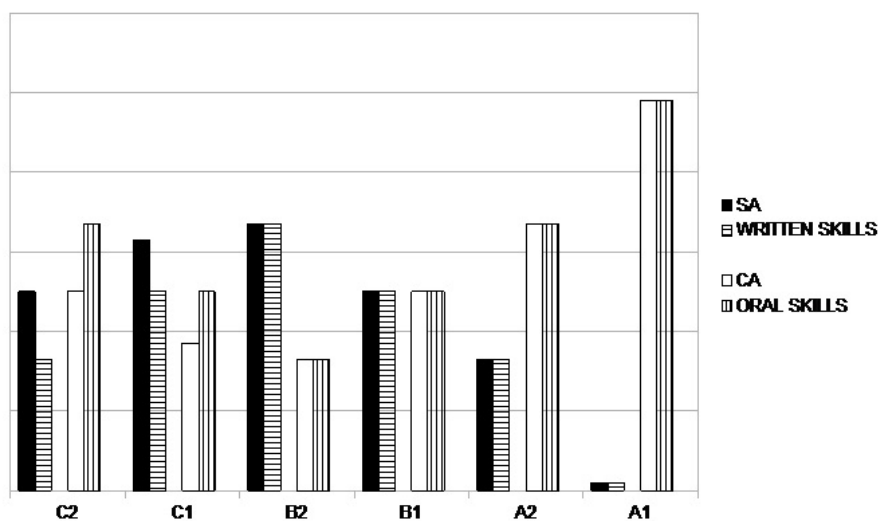

Fig. 3. Distribution of SA/CA and of written/oral skills within CEFR six levels

As we see, at advanced levels (C2, C1) the distributions of respectively SA and written skills and CA and oral skills diverge. The distribution of SA prevails on that of written skills and that of oral skills prevails over that of CA. This can be explained by the fact that at these levels SCT such as using «language flexibly and effectively for social, academic and professional purposes» or summarizing «information from different spoken […] sources, reconstructing arguments and accounts in a coherent presentation» (ibid.) may require the use of SA for oral purposes (as well as that of CA and of a mixture of SA and CA). Conversely, at intermediate (B2, B1) and lower levels (A2, A1) SA tends to be predominately associated with written tasks and CA to oral skills and therefore we observe a clear concordance between the distribution of respectively SA and written skills and CA and oral skills. This is extremely significant in that it allows us to identify a strong correlation (at these specific levels) between the execution of SCT based on the use of written and oral skills and the resort respectively to SA and CA. What we can conclude from the analysis of Fig. 3 is that at advanced levels,

that reflect the linguistic behavior of native speakers in authentic contexts, although we can observe a certain correlation between CA and oral skills and SA and written skills, this correlation is not particularly strong and binding and both CA and SA can be associated with both oral and written skills. Mixed uses of CA and SA to carry out some SCT are very common and this generates complex varieties interactions. At intermediate-lower levels the correlation between the resort to CA or SA on one side and the tasks based on the use of respectively oral or written skills on the other becomes clearer and more binding.

2. *The role of ICT*

The above CEFR-based description of the distribution and relation of CA/SA and oral/written skills has shown that, although at different levels the two varieties are represented in different proportions and combinations, both CA and SA are essential in dealing with the SCT envisaged at each CEFR level. Reproducing the complexity of a similar linguistic situation inside the classroom appears extremely problematic for a series of reasons:

» «there is only one *Fuṣḥà* [SA] but many *ʿĀmmiyya* [CA] varieties so if one needs to introduce a *ʿĀmmiyya* [CA] variety, it is difficult or impossible because there are so many» (Younes, 2015: 27);

» *«Fuṣḥà* [SA] is the language of education and writing of all kinds» therefore «instructional materials, particularly written materials, are much more readily available in *Fuṣḥà* [SA] than in the *ʿĀmmiyya* [CA] varieties» (ibid.: 28);

» «as the living language of the Arabs, *ʿĀmmiyya* [CA] is in a constant state of change» therefore «one can see the difficulty of having to provide grammars and develop instructional materials in *ʿĀmmiyya* [CA] when materials are readily available in a related and stable form of the language» (ibid.).

For all the above mentioned reasons, many scholars see the realization inside the classroom of a learning environment that reflects native speakers' behavior in authentic situational contexts as an almost impossible task:

«Most of those involved in Arabic pedagogy agree that the ideal situation would be one that can replicate native-speaker performance in the classroom, but they also acknowledge the restricted nature of the classroom, which cannot accommodate this ambitious goal.» (Alosh, 2000: XXIV)

In the present section we will try to illustrate how ICT can help overcoming some of the limitations imputed to the traditional learning environment, i.e. the classroom, and allow the realization of a virtual learning environment (VLE) where learners can engage in tasks that mimic the great variability of the contemporary Arabic linguistic situation. More specifically ICT can be used to produce a VLE in which language varieties can be *mixed together*, *integrated*, or *separated* according the various modalities of distribution and interaction of CA and SA at the different CEFR levels. Such a VLE can also accommodate the management of multiple colloquial varieties which represents one of the greater challenges in traditional teaching (Younes, 2015: 27). Moreover a similar VLE allows the integration of complex learning activities involving multiple skills, multiple senses, and multiple language varieties within a unified cognitive framework all elements which are essential for effective learning (Netten and Germain, 2012: 100-02; Gilakjani, Ismail, and Ahmadi, 2011: 1325; Balboni, 2010: 44).

In order to understand how such a VLE can be realized we will first have to consider the way in which the four basic skills are related to ICT. In human-computer interaction (HCI) each of the two sides (i.e. humans and computers) produces outputs and receives inputs and what is produced by one side as an output is received by the other as an input. Humans' productions (speaking and writing) take the form of oral or written outputs and reach computer machines as inputs that are received through computer input devices (microphones, keyboards, touchpads, etc.). Computers' productions take the form of aural and visual outputs and reach humans as inputs received through human perceptive systems and interpreted by means of their perceptive skills (listening and reading). Thus computers' aural outputs are related to humans' listening skills and computers' visual outputs to humans' reading skills. The consequence of that is that ICT by using different output channels (audio vs. video) allows the separation of activities involving listening skills from activities involving reading skills. Distinguishing activities involving different skills and different language varieties by means of distinct output channels is essential when dealing with a multiple varieties linguistic environment, such as that of the contemporary Arabic, where oral conversations are very often associated with colloquial varieties that are not normally written. Thus ICT can provide us with instructional materials in the forms of audio (or audio&video) outputs that reproduce authentic oral language uses in real-life situations including uses of CA exclusively, of SA exclusively, and mixed uses of CA and SA. Moreover once such instructional materials are realized for diffe-

rent colloquial varieties they can be easily stored in digital form and used by teachers and learners that can select specific samples in the particular colloquial variety or varieties that they are interested in on the basis of their peculiar needs. This flexibility in the choice of the colloquial variety or varieties can represent an important contribution of ICT in response to the problems outlined above of the current limited availability of printed resources on colloquial varieties and of the existence of many colloquial varieties As far as written texts are concerned, ICT allows their reproduction in the form of visual outputs displayed through screens, monitors, etc. Not only ICT enables the use in the teaching and learning practice of an impressive number of written texts extracted from digital libraries but permits the exposure to contemporary written digital texts presenting various uses and combinations of SA and CA such as those encountered on Facebook, Twitter, WhatsApp, Snapchat, and other instant messaging digital applications. Furthermore, through ICT, listening activities and reading activities can be integrated into more complex activities in order to accomplish tasks that involve the use of both oral and written skills. As we will see in the following section, through ICT we can design digital activities that integrate both oral and written skills by managing oral and written tasks through distinct channels and devices. We can thus realize complex realistic and meaningful learning activities that integrate multiple tasks and multiple skills, involve multiple senses and body human systems, and require the use of multiple language varieties.

3. *VLE activities*

As a consequence of the present stage of development of ICT only perceptive skills (listening and reading) can directly be addressed and effectively exercised through in HCI. Productive skills (speaking and writing) can directly be addressed and exercised through HCI only to a limited extent and as long as the vocabulary used is restricted to circumscribed domains (Dix, Finlay, Abowd, and Beale, 2004: 70 e 139). For this reason in the present section we will mainly focus on digital activities involving listening and reading activities. As an example, we will illustrate how VLE activities work in connection with different phases of the acquisition process such as:

1. the learning of basic communication skills, at lower levels, where ICT enables the separation of varieties (*code-separation*);

2. the achievement of an independent use of the language, at inter-
    mediate levels, where ICT enables the integration of varieties (*co-
    de-integration*);
3. the attainment of the mastery level, at advanced levels, where ICT
    reproduces (and in some cases produces) the merging of varieties
    (*code-merging*) enabling a unified and intertwined development of
    varieties and skills (that reflects the complex varieties interactions
    that we witness in real-life linguistic contexts and native speakers'
    linguistic behavior).

3.1. *Lower levels*

An illustrative activity for lower levels can be found in the prototype for
the designing of digital activities integrating oral and written skills (avai-
lable at http://arabicintegrationsamples.blogspot.it/) that we realized for
the companion website to the volume *Arabic as One Language* (Al-Batal
ed., 2018). In this activity a foreign traveler arrives at the airport of an
Arab country where he has to answer some routine questions. After doing
that he is asked to fill in a form with personal details. In the activity liste-
ning and reading skills are separated through different output channels
(audio for listening and video for reading). Moreover in accordance with
the general separation of varieties at lower levels, described above, CA and
SA are also separated by associating the first to listening activities and the
second to reading activities. Despite the fact that varieties and skills are
processed via different channels the whole activity is presented to the lear-
ners within a unifying framework. This is done by introducing the activity
with a general description of the situational context and accompanying
that by pictures. The general description has the purpose of activating «the
right hemisphere of the brain» and of using «strategies such as the ma-
ximum exploitation of text redundancy» (words and images), to stimu-
late «the formation of socio-pragmatic hypotheses that are based on the
person's own knowledge of the world» (Balboni,2007: 44). This way the
activity follows the model of an acquisition unit as illustrated by Balboni:

> «Acquisition occurs through a global perception at first, followed
> by a phase of analysis, and it ends with a synthesis, where the mind
> fixes what it has observed and analysed. The psychological (more
> precisely: psycho-didactic) model of the acquisition unit can be vi-
> sualised as follows:

Global, contextual perception > Analysis of the context and of the text > Synthesis and reflection» (Balboni, 2010: 44).

After looking at the pictures and reading the presentation, the learner listens to the conversation by clicking on 'Listen to the conversation'. Then he or she checks the form, by clicking on 'Fill in the form' and ticks off the elements correspondent to the conversation. A multiple choice quiz is used to represent the form to be filled in. Thus the learner will first be exposed to a conversation in CA (via the audio channel: headphones/speakers) and then to a written text in SA (via the video channel: screen). This reflects the actual distribution of varieties related to these specific SCT in real-life situations. The following table describes the division of tasks, varieties, and channels in the illustrated activity.

Skill	Variety	Task	Computer channel
listening	CA	understanding the conversation	audio (speakers/headphones)
reading	SA	understanding the form	video (screen/monitor/etc.)

Tab. 1. Skills, varieties, tasks, channels at lower levels

As we can see, in this first activity, the role of ICT is critical in enabling code-separation via different output channels thus reproducing the very clear association of CA with oral skills and SA with written skills that is typically related to lower levels. The following table summarizes the distribution and correlation of CA/SA and of oral/written skills and the role of ICT at lower levels.

Distribution of CA/SA and Oral/Written Skills	Correlation of CA/Oral Skills and SA/Written Skills	Mixed Use of CA & SA	Main role of ICT
divergent	strong	low	code-separation

Tab. 2. The role of ICT at CEFR lower levels

3.2. *Intermediate levels*

On the same website, as an example of digital activities specifically conceived to enhance language proficiency at intermediate levels, we proposed an activity in which a foreign student goes to a real estate agency in an Arab country to rent a flat. After having a short conversation with the agency employee about the terms of the rental of an available flat, the student is presented with a copy of the lease agreement which he has to check it in order to verify its correspondence with the terms previously discussed. Again, as it is the case in real life, the oral conversation is carried out in CA and the lease agreement is written in SA. As in the example above by using different output channels (audio vs. video) tasks related to listening skills and associated with CA are separated from tasks related to reading skills and associated with SA. For the reasons illustrated above this activity too is introduced by a general description of the situational context accompanied by pictures with the aim of activating global and contextual perception. After reading the presentation, the learner listens to the conversation by clicking on 'Listen to the conversation'. Then he or she checks the lease agreement, by clicking on 'Check the lease agreement' and ticks off the elements correspondent to the conversation. A multiple choice quiz is used within the digital activity to represent the lease agreement. The following table describes the division of tasks, varieties, and channels in this second activity.

Skill	Variety	Task	Computer channel
listening	CA	understanding the conversation	audio (speakers/headphones)
reading	SA	understanding the agreement	video (screen/monitor/etc.)

Tab. 3. Skills, varieties, tasks, channels at intermediate levels

As in authentic situational contexts this activity cannot be accomplished without an integrated use of both varieties. It is therefore a particularly instructive activity in that it helps learners to reach the awareness that without an integrated use of CA and SA they will not be able to cope with many SCT involved at this critical stage of the learning process which is very significantly considered the 'survival' level. The following table summarizes the distribution and correlation of CA/SA and of oral/written skills and the role of ICT at intermediate levels.

Distribution of CA/SA and Oral/Written Skills	Correlation of CA/Oral Skills and SA/Written Skills	Mixed Use of CA & SA	Main role of ICT
fairly balanced	quite strong	quite low	code-integration

Tab. 4. The role of ICT at CEFR intermediate levels

3.3. *Advanced levels*

For advanced levels we proposed an activity in which a journalist working at an editorial office of an Arab newspaper has to sum up in an article the content of an interview with a prominent figure. The journalist watches the registration of the interview and then writes a short summary. The learner has to check the summary in order to verify its consistency with the content of the interview. This activity presents the resort to a mixed use of SA and CA for the listening part and to SA for the reading part. The first part involving listening skills is presented in form of audio-and-video output while the second part dealing with reading skills in form of visual output. After reading the general presentation of the situational context (text and pictures) the learner watches the interview by clicking on 'Watch the first 5 minutes of the interview'. Then he or she checks the summary, by clicking on 'Help the host to sum up the main points' and ticks off the elements correspondent to the conversation. The summary is represented by a multiple choice quiz. During the interview the host and the guest resort to a mixture of CA and SA and adopt various code-mixing and code-switching strategies. The following table describes the division of tasks, varieties, and channels in this third activity.

Skill	Variety	Task	Computer channel
listening	SA&CA	understanding the interview	audio&video (speakers/screen/etc.)
reading	SA	understanding the summary	video (screen/monitor/etc.)

Tab. 5. Skills, varieties, tasks, channels at advanced levels

The activity represents a very clear example of how at advanced levels, the role of ICT in enabling code-merging is critical in reproducing the

modalities in which at advanced levels CA and SA mix up together and intertwine. The following table summarizes the distribution and correlation of CA/SA and of oral/written skills and the role of ICT at advanced levels.

Distribution of CA/SA and Oral/Written Skills	Correlation of CA/Oral Skills and SA/Written Skills	Mixed Use of CA & SA	Main role of ICT
fairly balanced	not particularly strong	high	code-merging

Tab. 6. The role of ICT at CEFR advanced levels.

4. *VLE and language acquisition*

As seen in the previous section through VLE learners can be presented with realistic and meaningful linguistic inputs and communicative tasks that reflect native speakers' linguistic behavior in authentic contexts. This has a fundamental role in enhancing the acquisition process as demonstrated by contemporary language acquisition theories based on neurolinguistic research.

> «Cognitive neuroscience has shown the complexity of the involvement of different centers in the brain, such as those related to motivation, when authentic communication takes place. For effective language acquisition, implication of these centers is required. [...] With respect to curriculum design, units are created based on communication situations that are as authentic as possible [...]. [Neurolinguistic research] also suggests that this use of language must not be simple repetition of learned sequences, but authentic language used for purposes of communication» (Netten and Germain, 2012: 100-02).

Thus ICT produces a VLE that represents a «pseudo-natural environment» (Gilakjani, Ismail, and Ahmadi, 2011: 1325) in which learners can operate in ways that emulate native speakers' linguistic behavior in real-life situations.

> «Language is not only a cognitive phenomenon, the product of the individual's brain; it is also fundamentally a social phenomenon, acquired and used interactively, in a variety of contexts for myriad practical purposes. Multimedia presentations can be an excellent means toward —re-constructing a pseudo-natural environment in which these negotiations of meaning that serve as the platform for second language acquisition can take place» (Gilakjani, Ismail, and Ahmadi, 2011: 1325).

A second important element of the digital activities presented above consists in the fact that they are based on multimodal learning, a term «which refers to the idea that the learner uses more than one sense modality» (Gilakjani, Ismail, and Ahmadi, 2011: 1325). Engaging different senses (sight, hearing, touch and body movement) within the teaching and learning process has, according to current research on the relation between multimodality and second language acquisition, a very positive impact on language acquisition.

> «Learning is closely related to experiencing life and in life we employ all of our senses -not just vision. For learners to be engaged into a subject, they need to relate themselves and connect their everyday life to the learning material; in other words, they need to be situated. Such relationships could be generated by following an alternative approach to learning: one that incorporates learners' multiple modalities and the available instruments of the environment including the multiple representations provided by books or multimedia software. Such an approach is argued to be multimodal learning» (Gilakjani, Ismail, and Ahmadi, 2011: 1325).

Finally, according to neurocognitive studies aiming at understanding the neural mechanisms of code variation in general and more specifically the representation and processing of languages varieties in the brains of native speakers:

> «the subsystems of the two language varieties are interacting with one another in observable ways – directly and indirectly – during development and in adulthood. [...] distinct levels of representation [...] interact with one another in very circumscribed ways [...]. It could be the case that each language variety is represented at the lexical level as a distinct system, but that these interact with a syntactic component» (Khamis-Dawkar and Froud, 2012: 296-97).

Based on the above we can see how critical it is in terms of effectiveness of the acquisitional process being able to present learners with digital activities integrating oral and written skills that combine the use of both varieties and therefore how important the contribution of VLE to TAFL is in this specific respect.

5. Conclusions

In the present contribution we illustrated how several limitations of the traditional learning environment render the implementation of an approach to TAFL based on proficiency frameworks and on the integration of CA and SA a particularly problematic process. We suggested the importance of ICT vis-à-vis this challenging task. In particular we pointed out how ICT can be used to create a VLE that enables teachers and learners to overcome many of the limitations of traditional learning environments. In this respect we emphasized the crucial role of ICT in presenting learners with audio and video outputs reproducing the complex variety interactions that we witness in real-life situations and that are represented by the various SCT envisaged at advanced proficiency levels. This ability of ICT of re-creating complexity inside the classroom through VLE can be seen as the *condicio sine qua non* for an effective enhancement of authentic proficiency in Arabic. Nevertheless the role of ICT is not limited to that.

Although the ultimate goal, for the learners, lies in developing the ability of managing complex variety interactions in ways that mimic native speakers' behavior, in order to reach that level they will have to start from CEFR levels where the SCT involved imply a more rigid distinction of CA and SA or a clear predominance of one variety over the other. ICT plays a critical role also in this respect. At intermediate and lower levels, where we observe a more rigid separation of oral and written skills and a strict association of those skills with respectively colloquial and standard varieties, ICT enables the separate targeting of oral and written skills through different channels and output devices. Despite different tasks being separated via different channels at these specific levels, we illustrated how through ICT we can bring together distinct SCT within a unified cognitive framework and realize digital activities that entail multiple skills, engage multiple senses, and involve multiple language varieties. On the basis of current findings in second language acquisition research we clarified how effective such activities are in supporting effective learning by presenting meaningful tasks, allowing multimodal learning, and providing the global

cognitive framework needed to activate specific brain modalities that foster language acquisition.

The present study touched some very critical issues in contemporary Arabic language pedagogy such as the adoption of CEFR for TAFL, the integration of CA and SA, and the enhancement of authentic proficiency. Its main contribution lies in the attempt to tackle all these issues simultaneously from an original, coherent, and theoretically consistent perspective. It also argues that we have nowadays the technology to turn that perspective into practice.

The fortune of specific pedagogic approaches at some point in the past can be related to the concurrent diffusion in that particular period of technologies and learning tools that supported the implementation of those approaches. Thus, for instance, the implementation on a large scale of communicative methods, that emphasized the harmonious development of all four basic language skills through the exposure to different authentic materials, would not have been conceivable without the simultaneous availability of sound and video reproduction technologies (Chini and Bosisio, 2014: 238). Our hope is therefore that our variation-driven ICT-based approach for proficiency enhancement in TAFL may suggest Arabic teachers, pedagogues, and linguists alternative strategies and new pedagogic approaches to deal with the multiple contemporary challenges faced the discipline. In a very delicate historical phase, such as the one lived by the contemporary Arab world, where radical transformations of institutions and societies are revolutionizing many aspects of life including language practices, we deem that new technologies can play a decisive role in helping us to reproduce that complexity. At the same time, we are convinced that, in order for technologies to really make a difference, we first have to develop theoretical frameworks for complexity management, such as the one proposed here, that can provide us with a guideline for an effective and revolutionary application of those technologies. Only at this point we will be able to use ICT, and VLE in particular, to support the much desirable and long-awaited transition towards a variation-driven and proficiency-based paradigm for authentic proficiency enhancement in TAFL.

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