

Web Based Interactive Platform for Learning by Hearing

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ABSTRACT: Purpose: To implement a user-friendly web based interactive platform to teach subjects requiring voice or audio illustrations such as teaching English or any language, radio animation, music, poetry, Koran recitation or learning by hart, or developing oral communication skills. Method: Several technologies (Php5, Codeigniter, html5, Css3, Jquery, Java, Flex, Ajax, ...) are used to implement the web based interactive user-friendly interface for learning by hearing and repeating. The learner may be a naïve user in terms of Internet and computer use. He/she needs only to click on a link and to enter as a regular or invited learner. It also may be used by visually impaired people. The teacher conducts the course and gives rights to the learner to talk individually or simultaneously. The platform should be implemented in a modular way so that one can augment it by new modules or by existing tools such as forums. Results: The platform has been conceived for several applications. Particular attention has been given to learning Koran by hart. The teacher pronounces a verse, or a segment of it, once or twice by rigorously respecting the rules of Koran recitation (Tajwid). To help the visually non-impaired learners learn verses by hart, verses are displayed on the screen and then masked progressively until all learners can recite the verses by hart. Discussion: The experiment has been conducted successfully. The platform presents several advantages with respect to VoIP tools which are not dedicated to learning by hearing and repeating.

Keywords: Web Based learning, Language Learning, VOIP Tools

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1. Introduction

The motivation behind this work is the fact that several initiatives have been taken to teach Arabic and Koranic sciences through the Internet. For Tunisians and Libyans, who are both concerned by Riwayat Kaloun (Koran), these initiatives came up suddenly and abundantly just after the revolution in Tunisia and Libya since people do not face anymore persecution and repression. The author himself made his Koranic rooms in Facebook [1], Skype [2] and Paltalk [3] accessible by public only after January 14, 2011, since some of his students have been persecuted and/or tortured during the 90s and 2000's, and his family in Tunisia has been mistreated and harassed during his 21 years of exile. However, the used tools, especially Paltalk and Skype, face limits and do not offer desired features for Arabic and Koran learning. The idea originates from January 14, 2011 and work started on that day in Canada.

There are plenty of tools for Voice over IP (VoIP) like Skype, Paltalk, ooVoo [4], GoogleTalk [5]. However, these tools are not dedicated for teaching and learning, and therefore face limits when using for educational purposes. There are also communication tools, such as Vyew [6], that may be used for teaching by sharing the teacher's screen. However, these tools are not dedicated for learning by hearing and repeating.

2. Method

Several technologies (Server side: Php5, Codeigniter, Mysql, Client side: Html5, Css3, Jquery, Sound transfer: Java, Red5, Flex, Chat: Ajax, UML: Visual Paradigm for UML Entreprise Edition) are used to implement the web based interactive user-friendly interface for learning by hearing and repeating. The learner may be a naïve user in terms of Internet and computer use. He/she needs only to click on a link and to enter as a regular or invited learner. It also may be used by visually impaired people. For this purpose, a voice based human machine interface is offered. Chatting is also possible. Rising hand to ask for permission to speak

	Permission	Actors		
		Administrator	Teacher	Learner
1	Consult the public rooms	√	√	√
2	Chatting (textually)	√	√	√
3	Listen	√	√	√
4	Talk / Request to speak	√	√	√
5	Generate an invitation link and send	√	√	√
6	Leave the room	√	√	√
7	Reporting a learner	√	√	√
8	Access to Forum	√	√	√
9	Create an account in the Forum	√	√	√
10	Delete own account from the account	√	√	√
11	Delete messages from the chat	√	√	
12	Choose / change a resource in the container plugins (image (s) / pdf file)	√	√	
13	Select areas to hide / unhide	√	√	
14	Exclude a learner temporarily or permanentl	√	√	
15	Send sound to all participants	√	√	
16	Enable / mute a learner's mic	√	√	
17	Provide a teacher with administrative privileges	√	√	
18	Provide a teacher with administrative privileges	√		
19	Consult private rooms	√		
20	Connection	√		
21	Manage administrator account	√		
22	Manage (create/delete) rooms	√		
23	Manage (add / remove) existing resources	√		
24	Access to statistics	√		
25	Manage the Forum	√		

Table 1. List of tasks and persons involved in the tasks

is also offered. Playing an audio, of a Koran recitor for example, is also offered. Images (only in few cases) and videos are not used to optimize the use of the bandwidth. The teacher conducts the course and gives rights to the learner to talk individually or simultaneously. The teacher also may transform an invited learner into a regular one. The platform should be implemented in a modular way so that one can augment it by new modules. It should also integrate other tools such forums for the learners to discuss timing, to evaluate the platform, to suggest features, etc. It also should be multilingual. It also should enable opening several rooms for teaching different subjects or different groups with a common subject. Evaluation of learners should also be available.

3. Results

The platform has been conceived for several applications. Particular attention has been given to learning Koran by hart. The teacher pronounces a verse, or a segment of it, once or twice by rigorously respecting the rules of Koran recitation (Tajwid). Then the distant learners repeat with him/her several times before moving on to the next segment and then binding them together. The process of learning by hart consists in repeating a segment until being learned by hart and then repeating it with some previous segments (binding segments). If the learners do not master yet the synchronization of recitation (pronounce each letter at the same time and with the same length), the teacher may make them mute so that they recite without disturbing one another. The teacher may decide to hear one or some of them when needed during repeating. The teacher may teach the rules of recitation during the sessions of learning Koran by hart. The teacher may give the global possible meaning of verses learned by heart. To help the visually non-impaired learners learn verses by hart, these verses can be displayed on the screen of each learner as an image. The latter is divided into rectangular cells and the teacher masks the cells progressively until all cells are masked and all learners reached the level of reciting the verses by hart.

4. Discussion

The experiment has been conducted successfully. The platform presents several advantages with respect to tools such as Skype which are not dedicated to learning by hearing and repeating. The author is himself a Koran teacher 20 years, including one year teaching for public by using Skype and Paltalk at the same time since Skype is limited to a small number of learners. First, this tool (Skype) does not include all desired features required for group Koran recitation and learning by hart. Second, it is limited to 24 users (learners), however in Koran learning it is frequent to have hundreds of learners. Third combining tools such as Skype and Paltalk together causes constraints and sudden interruptions of the sound. Fourth, it needs local installation, which is not doable by naïve users. It is worth noting that according to the author's experience most of the on-line Koran learners are women who prefer to learn at home, dressed with home clothes (no camera), and find difficulties to go to the mosque since they have to do home duties. Some learners are families, friends or classmates who are used to be together doing some activities or spending evenings. Fifth, Skype does not offer sharing a screen and progressive masking of the displayed verses. Sixth, this tool has no human machine interface for visually impaired people.

In perspectives, first, we intend to optimize the use of the bandwidth so that to accept more learners. Second we intend to add the possibility to see the teacher's face when he/she wants to show to the learners how to pronounce letters or words correctly. Third, we also intend to add some signal features (signal itself, its spectrum, ...) to see the signal properties of letters and what happens when a letter is badly pronounced. Fourth, we intend to offer to the learner the possibility to record a course or a part of it for the purpose of practicing later on alone. For example, the learner may record a small video of the pronunciation the letter "Dhad" by the teacher including the way he/she moved his/her mouth.

References

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