



COACH BOT

“Modular e-course with virtual coach tool support”

**LIFELONG LEARNING PROGRAMME
LEONARDO da VINCI**

Coordinated by FOR.COM

DEV (14) VIRTUAL COACH (Guidelines to visit the product)

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1. Introduction

Deliverable 11 (Virtual Coach technology report) describes the technology behind the virtual assistant and in particular how the natural language interface is able to help and motivate the e-learning user experience.

Deliverable 12 (COACH BOT Technological report) focuses the attention on the interactions between the learning management system and the virtual assistant because the virtual assistant 'lives' and 'thinks' only within the LMS' environment.

Deliverable 13 (COACH BOT e-course platform - Guidelines to visit the product) shows how to access the E-Learning platform and follow the learning activities as planned by the didactic strategy.

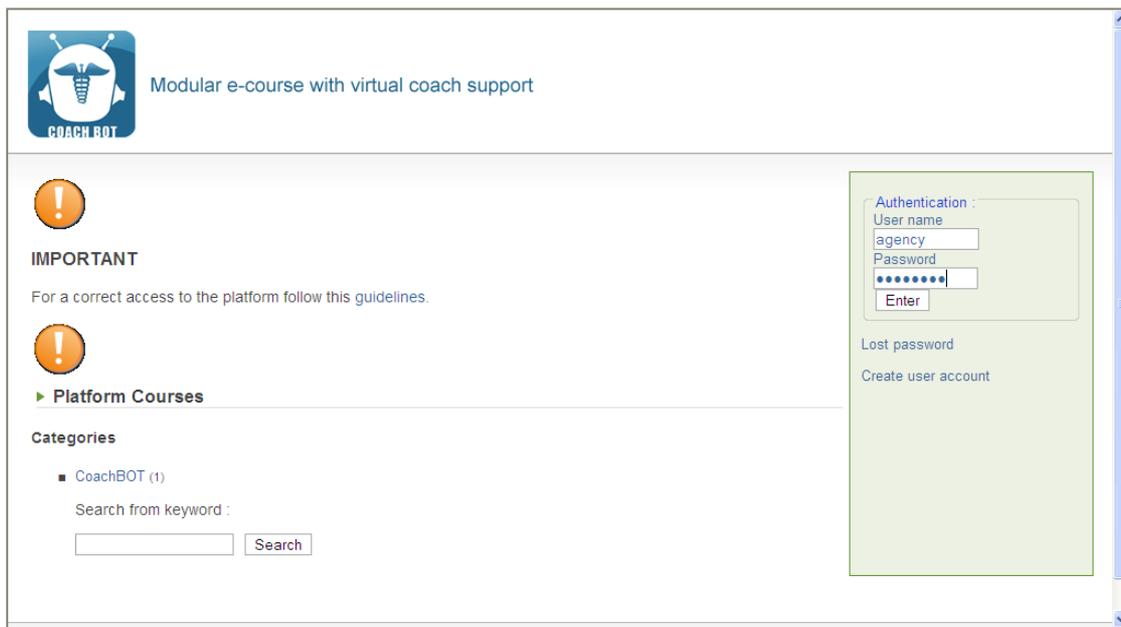
The aim of the present document is to show how the virtual assistant interacts with the user within the E-Learning platform (deliverable 14). To do so instructions on how to access the course for the experimental group are provided. The workflow of the course is similar to the one described in deliverable 13 for the control group, that's why we focus our attention only on the interactions between student and virtual assistant.

2. Access to the online course for the experimental group

To access the E-Learning platform please do the following:

- Type <http://coachbot.eu> in the address bar of your browser to access the public website,
- Click on '**course**' on the menu and then on 'course online' in the correspondent submenu,
- Click on '**Experimental course**' to access the online course delivered to the experimental group.

Type your **user name** (“agency”) and **password** (“leonardo”) in the corresponding fields and press Enter.



Modular e-course with virtual coach support

IMPORTANT

For a correct access to the platform follow this guidelines.

Platform Courses

Categories

- CoachBOT (1)

Search from keyword :

Authentication :

User name
agency

Password
●●●●●●

[Lost password](#)

[Create user account](#)

After the login there are two possibilities:

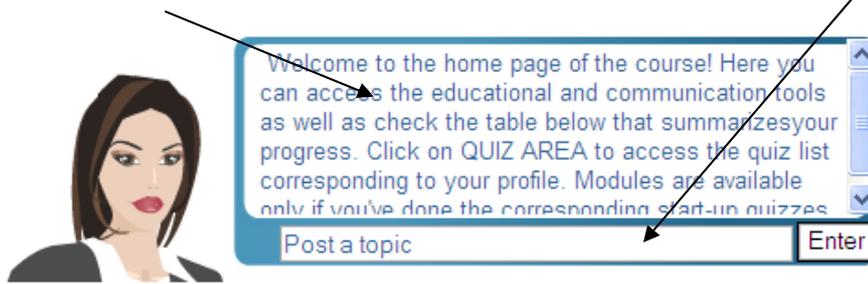
- The virtual assistant has not profiled you yet, then she asks you to answer some questions in the guidance interview.
- The virtual assistant has already profiled you, then you can access the course home page and all the contents corresponding to your profile are available.

3. Clara

The virtual assistant, called “Clara”, is embedded in the header of the E-Learning platform, always present and communicate with the student verbally and by means of gaze and facial expressions.

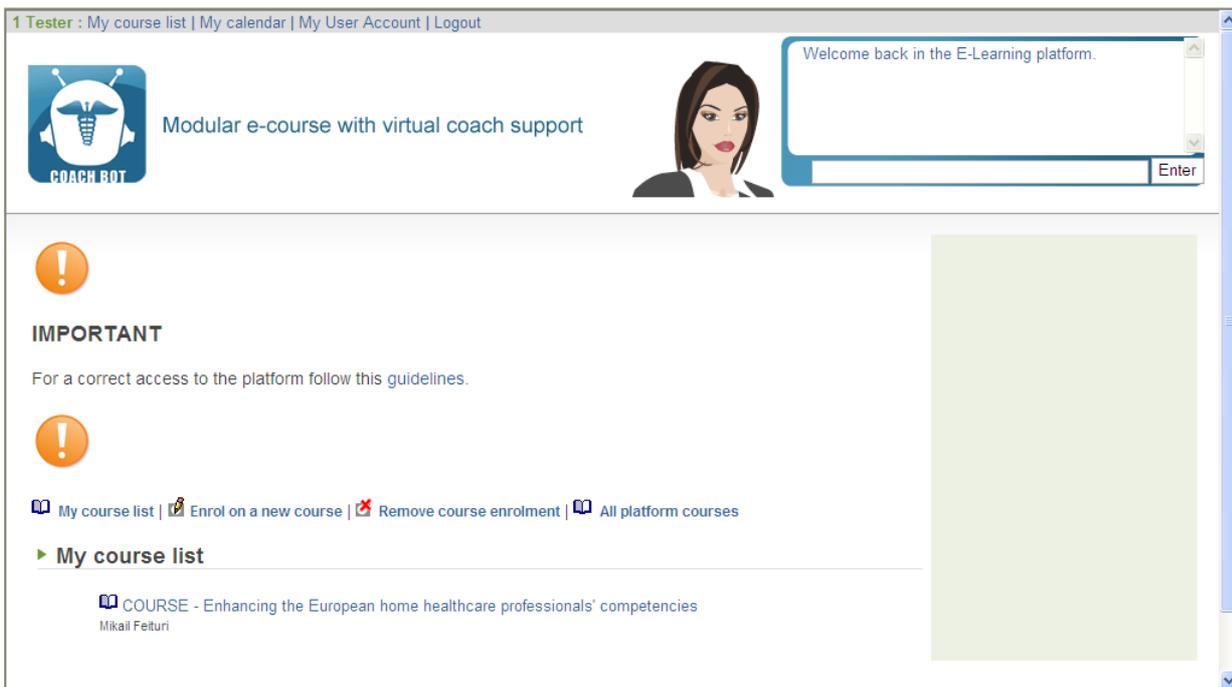
Avatar text box

Student text box



Clara is able to communicate with the student in 2 ways:

- Providing automatic and contextual messages that depend on the user's actions and learning progress in the E-learning platform.
- In natural language thanks to the conversational engine developed in AIML as explained in deliverable 11.



The e-learning platform with Clara

4. Guidance interview

The guidance interview can be considered the first contact between the conversational agent and the student. The user begins to be familiar with the virtual agent who starts a

friendly conversation in natural language in order to create a sort of empathetic relationship.

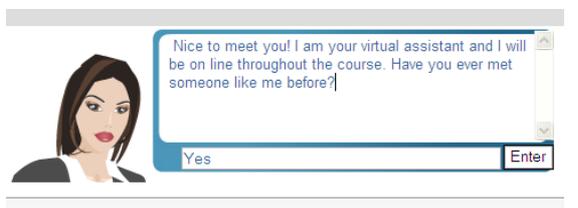
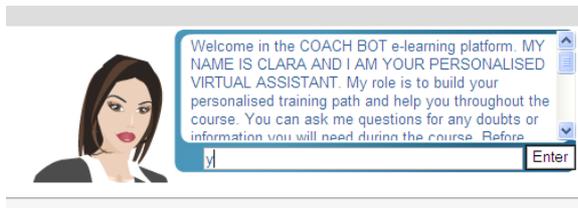
The final goal is indeed to define a professional profile and consequently a learning path that fit better the student. We remind that in the case of the online course for the control group the student's profiling is predefined 'manually' and not automatically like in this case thanks to the virtual assistant.

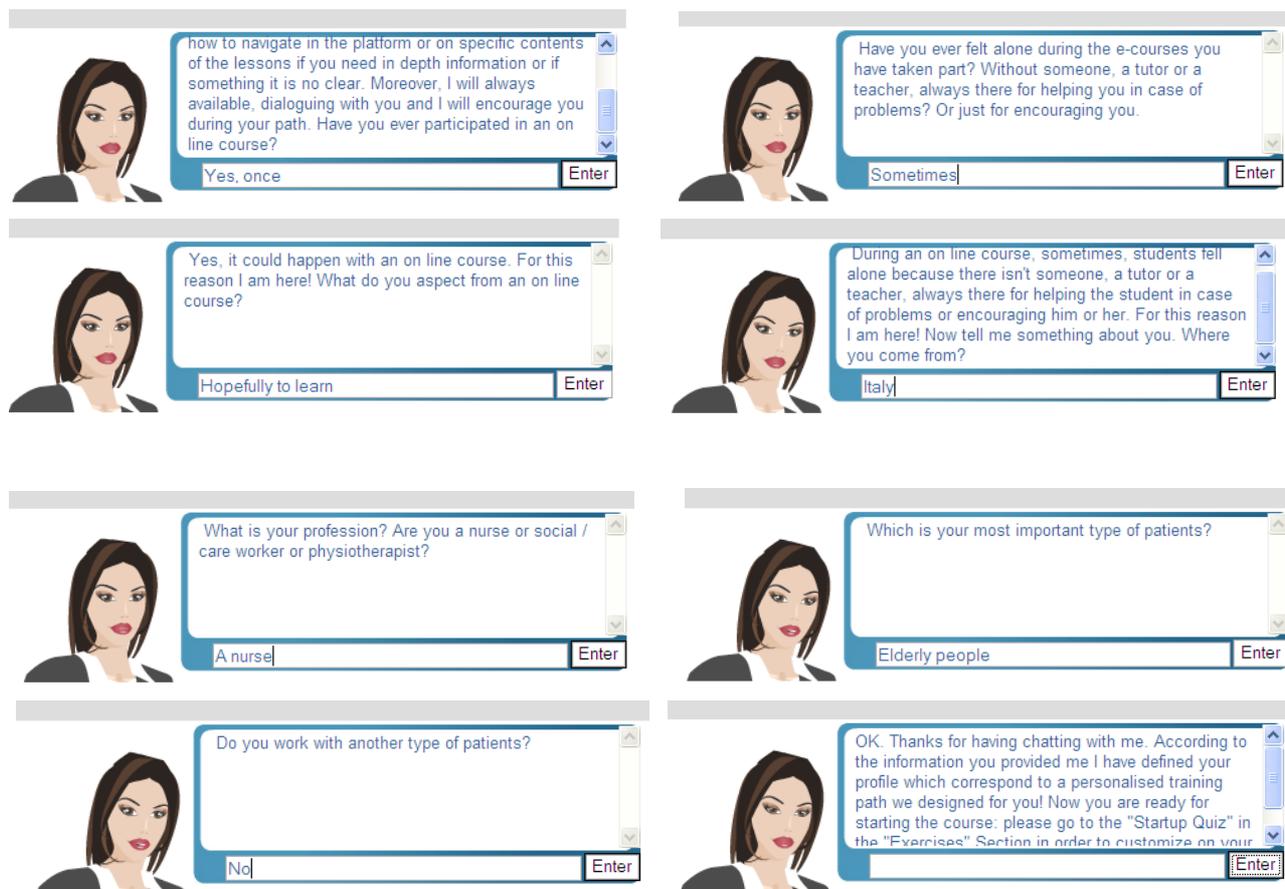
The conversational agent asks also more general questions concerning student's expectation and professional ambitions and, in that sense, the agent behaves more like a mentor who try to understand the user's emotional aspects.

All this information is stored for further statistics and to allow to enrich and personalize next conversations between the student and the agent.

The student should read carefully the messages provided by Clara , and answer following her instructions using the apposite text area and confirm by clicking on 'Enter'. She starts asking the student's name, his or her expectations, what does he or she thinks about online course, ... But the more important questions for the student's profiling are of course the profession, the main patients and the country as already described in deliverable 13.

Following an example of guidance interview between Clara and a student.





5. Start up and final quizzes

After the student's profiling the user is allowed to access the *exercise area* of the E-learning platform as already described in deliverable 13.

The virtual agent will present the quizzes, their meaning and will comment the results. From the student viewpoint, the virtual agent behaves like a teacher who tests the previous pupil's knowledge and assigns the learning objects to be studied compulsorily.

It is worth to say that these customizations depend on the modifications done on the E-Learning platform's source code, but, from a user viewpoint is as if the virtual agent has defined the personalized learning path describing it in real time and in an exhaustive way.

Moreover the tracking system of the LMS has been improved to allow the virtual agent to memorize in details the student performance on the quizzes and, to behave consequently.

The kind of messages Clara provides to the student depends on his or her learning progress. Following a table with the messages Clara can provide to the student and their description.

Description	Message
First time in the quiz area	Welcome in the Assessment Area. In this section you will find some quizzes that will allow me to assess your entry level knowledge and to identify which topics will be compulsory for your personalised course, and which topics will be optional. I remind you that there is one quiz for each module and that you can do it just once. Moreover, I invite you to benefit from the correspondent lesson just after having done the initial quiz. Afterwards, within this area you will also find the final quizzes for the compulsory modules of your profile. But they will be visible only after benefiting sufficiently from the lessons. Good work!
Not the first time in the quiz area	Welcome back in the assessment area. I remind you to keep on doing the start up quizzes and follow the corresponding didactic modules, in particular the ones that are compulsories. Final tests will appear after being sufficiently study the corresponding mandatory modules.
Not finished all the start up quizzes and already available final quizzes	Welcome back in the assessment area. It seems that you have not finished all the start up quizzes that I provided you but you've already have some final tests available. Please, finish all the start up quizzes in order to complete your customized didactic path.
Only final quizzes	Welcome back in the assessment area. Final tests corresponding to the compulsory modules you studied sufficiently are available. I remind you that it is possible to perform this kind of quizzes more than once in order to check your improvements.
Answer correctly to all the start up quizzes	Welcome back in the assessment area. You answered correctly to all the start up quizzes corresponding to your profile. Consequently, your learning path is completely

	facultative and you don't need any final assessment.
No start up nor final quizzes	Welcome back in the assessment area. There are no final tests as you can see. Please study sufficiently the mandatory modules.

The following table show the verbal feedback provided by Clara depending on the student's performance.

Description	Message
Excellent	Congratulation! you performed very well.
Good	There you go! good performance!
Sufficient	Your performance is fair
Failed	You performed poorly. Please, revise these topics.

► Enhancing the European home healthcare professionals' competencies
 COURSE - Mikail Feituri
 # Claroline > COURSE



Modular e-course with virtual coach support



:(You performed poorly. Please, revise these topics.

Enter

- ☰ Course description
- 📅 Agenda
- 📁 Documents and Links
- 📝 Quiz area
- 📁 Modules
- 🗣️ Forums
- 💬 Chat
- 🗺 Meeting room

Module title	Start up quiz done?	Module finished?	Final quiz	Score
Support Individuals to access and participate in recreational activities	YES	YES	AVAILABLE	FAILED
Support individuals in their daily living	YES	OPTIONAL	-	-
Communication with elderly people	YES	YES	AVAILABLE	FAILED
The relationship with patients family	NO	-	-	-
Establishing an help relationship	NO	-	-	-
Introduction to the main Home Healthcare Worker EU legislation	NO	-	-	-
Nurse: professional code and ethical aspects	NO	-	-	-
Cultural differences in help relationships	NO	-	-	-
Self instruction and continuing learning	NO	-	-	-


 COACH BOT e-course "Enhancing the European home healthcare professionals' competencies" by

6. Learning path

The standard tracking system has been enhanced in order to allow the virtual agent to memorize, for a particular user, what learning object is compulsory together with the number of time and the duration he or she studied a particular learning object.

This kind of information are useful for the virtual agent to invite a student, after a certain delay of time, to invite him or her to attend compulsory learning objects. In that sense, the virtual agent is behaving like a tutor.

Clara also provides messages to guide the student within the learning path as shown in the following table.

Description	Message
No module activated	Welcome in the learning path area. I remind you to do the start up quizzes I provided you in order to activate the corresponding didactic modules.
Module list	Welcome in the learning path area. The list below shows modules which have been activated by the corresponding start up quizzes you've already done. Click on a module title to access the learning object list.
Learning object list	This is the learning object list. Compulsory audio lessons are marked with a green dot while facultative ones are marked in orange. Click on the learning object title to start the lesson. Good luck studying!

The screenshot displays a web application interface. At the top, there is a navigation bar with links: '1 Tester : My course list | My calendar | My User Account | Logout'. Below this, the main heading is 'Enhancing the European home healthcare professionals' competencies', followed by 'COURSE - Mikail Feituri'. A breadcrumb trail reads '# Claroline > COURSE > Module list'. On the left, there is a 'COACH BOT' logo (a blue robot head) and the text 'Modular e-course with virtual coach support'. To the right, there is a chat window with a message: 'Welcome in the learning path area. I remind you to do the start up quizzes I provided you in order to activate the corresponding didactic modules.' Below the chat window is a 'Module list' section with a table containing three items: 'Support Individuals to access and participate in recreational activities', 'Support individuals in their daily living', and 'Communication with elderly people'. At the bottom, there is footer information: 'Manager(s) for COURSE : Mikail Feituri', 'Powered by Claroline © 2001 - 2008', and 'Administrator for Claroline : Mikail Feituri'.

1 Tester : My course list | My calendar | My User Account | Logout

Enhancing the European home healthcare professionals' competencies

COURSE - Mikail Feituri

Claroline > COURSE > Module list > Modules

 Modular e-course with virtual coach support



This is the learning object list. Compulsory audio lessons are marked with a green dot while facultative ones are marked in orange. Click on the learning object title to start the lesson. Good luck studying!

Enter

Modules

Support Individuals to access and participate in recreational activities

Status	Audio - Lessons
	 The Care Environment - What types of activities are suitable and possible
	 Assess what an individual wants and needs
	 Promote Activity

Manager(s) for COURSE : Mikail Feituri

Powered by Claroline © 2001 - 2008

Administrator for Claroline : Mikail Feituri

7. Help Desk

The goal of the Help Desk area is to provide the user a detailed help on the LMS functionalities or tools.

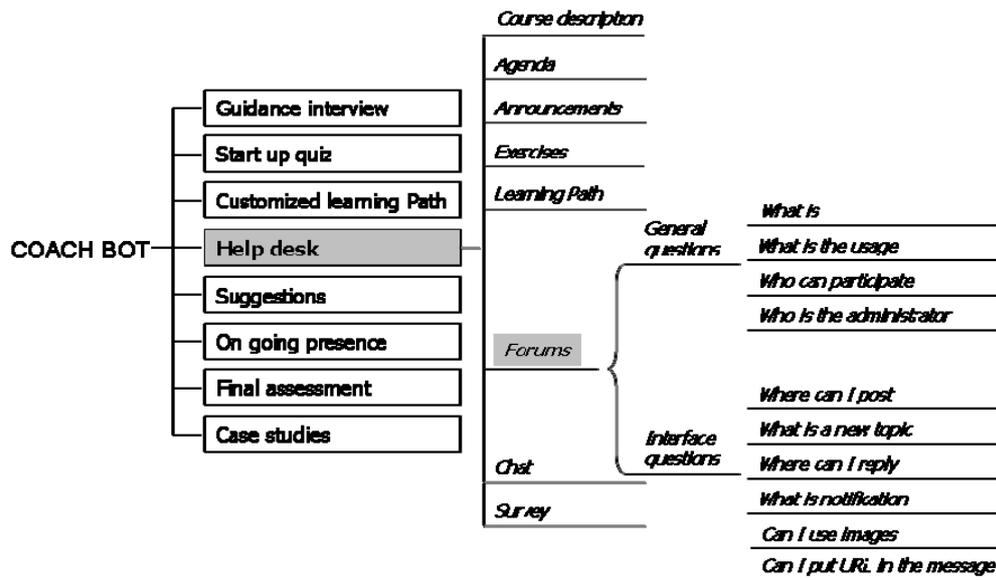
By using only natural language, the meaning of the different functionalities are well explained by the COACH BOT if a student asks for help. This user-friendliness allows learners to concentrate only on learning the course contents and allows people who are not experts (e.g. the elderly or first time users) in using a PC and/or learning management systems to effectively use the system.

Each tool is analyzed in detail to cover both the generic and specific (interface related) questions that a user can do. The forums area, for example, can be "exploded" to cover these questions. The virtual agent has to understand (and to answer) questions related to the "generic" forum usage ("Who can participate?", "What is a forum?", "Who is the forum administrator?" etc.). But also all the questions that can arise from the specific LMS user interface such as "What is a replay?", "Where can I search a text?", "Where can I post a new discussion?" and so on. The virtual agent behaves in this case as a technical tutor.

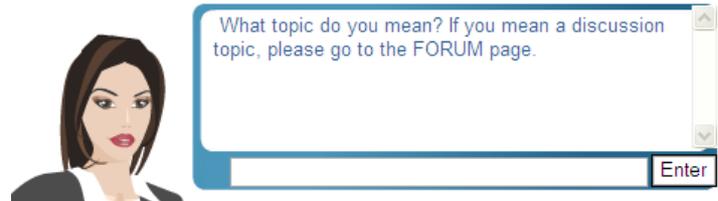
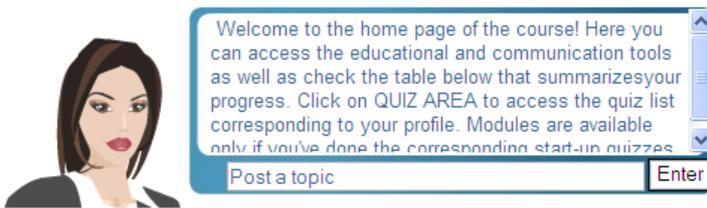
It is important to underline that the Coach Bot is not a normal FAQ but that it uses the natural language interface. This means that the user can write the question in different ways. For example the question "What is a forum?" can be expressed in these ways:

- What is a forum?
- Tell me about the forum.
- Describe me what a forum is.
- What is exactly a forum?
- Can you tell me what is a forum?
- What does it means forum?
- What is this? [while inside the forum page]
- Can you help me? [while inside the forum page]
- etc.

Conceptually it is possible to explode this semantic area by the following graph:

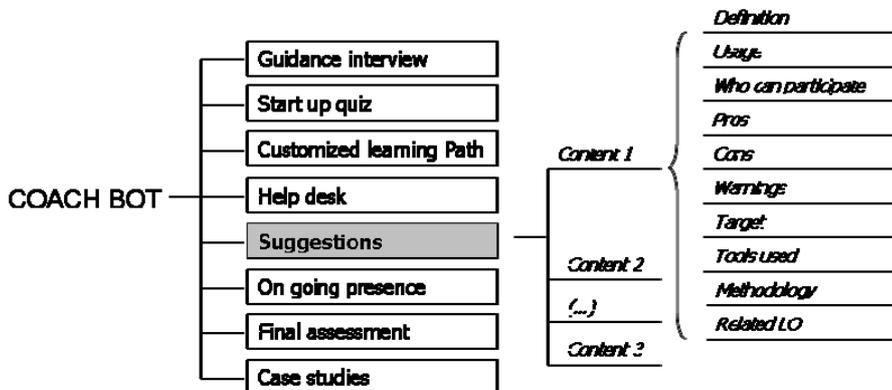


Where all the lines under the "Forums" are "exploded" like the "what is" line. And all the areas of the Coach Bot are "exploded" like the "Help Desk - Forums - What is" one. This natural language capture technique applies to all the Coach Bot structure and not only to the Help Desk semantic area.



8. Suggestions

The virtual agent is able to help the user also on the specific topics the course is dealing with. The virtual agent's area related with the course content is called Suggestions and it is illustrated in the figure.

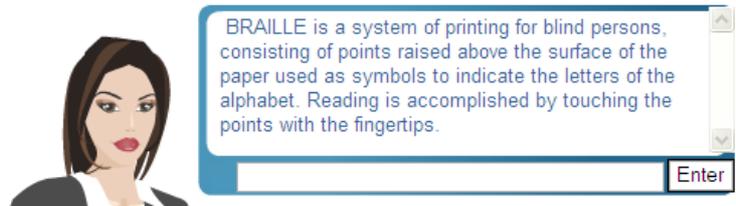
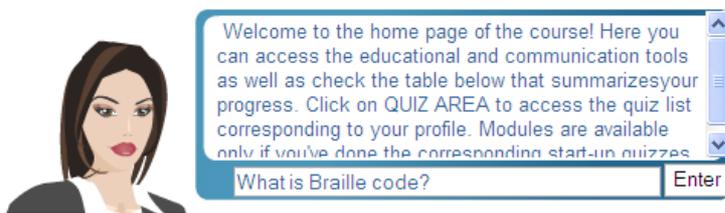


The lines Content 1, Content 2, etc. are related to keywords specific to the course that the LMS offers. The Virtual agent aim here is to act as a teacher and not, like in other areas, as a tutor. Each content keyword is related to a set of questions that in turn are related with particular aspects of the content. If, for example, Content 1 is "Catheters", the user can ask a definition (the operation of introducing a catheter), what is its usage, the pros and cons, what are the warnings of catheterize and son on. As in the Help Desk area, many different syntaxes that a user can supply are collected. For example the answer related with the definition can be activated by the sentences illustrated in the figure.

This virtual agent's area can be seen as a interactive glossary or a "quick answer teacher"

but doesn't have to substitute the main learning sources that are, and remain, the learning objects. When the user wants more information and deepening, the virtual agent will address her/him to the learning object that talks about the requested content.

Moreover the virtual agent provides the user a suggestion only on optional learning object topics or compulsories ones that have been studied sufficiently. Otherwise the virtual agent will ask the student to learn more the topic in the corresponding learning object of the course.



9. Ongoing presence

In order to maintain learners motivation the COACH BOT interacts with each learner during the entire course duration in different ways, providing ongoing verbal feedbacks on the study progress. So the learners can receive a positive feedback when he/she is proceeding well or can notice learners when for example he/she are studying too slowly or when he/she does not studying some fundamental lessons.

The didactic goal is to ensure that each student attends at least the 80 % of the compulsory learning material. This in turn depends on the performance provided by the student on the start-up quizzes.

Two thresholds has been fixed in order to trigger the virtual assistant interventions: 40 % of student participation at half of the course duration and 60 % at three quarter of the course duration.

Three possibilities and corresponding virtual assistant messages are envisaged:

If a student is above the threshold, the virtual assistant provides him or her a message of congratulation.

If a student is below the threshold but above half of that one, the virtual assistant provides him or her a message of warning but at the same time encourages him or her to make an effort.

If a student is below the half of the threshold, the virtual assistant provides him or her a message of concern. But of course in this case, a real tutor will intervene to understand why this lack of participation.