



DynaLearn Usage Guide

Updated for DynaLearn ILE 1.0.5 (2013/09)

Running DynaLearn

1. If you do not want to use the Virtual Characters, then go to step 3.

Start the Mary TTS Server, either from the location you indicated above or from the start menu:

- a. On Windows: Start > Programs > OpenMary > Mary Server
- b. MacOSX: double-click Applications/MARY TTS/bin/maryserver

2. **Before you continue, wait until the server has started.** There will be a notification in the Mary server window, 'started in XX.XX s'. The server will continue running in the background, even after DynaLearn is closed. So basically, you only need to start it once and not every time you want to use DynaLearn.

3. In your DynaLearn folder, run `startup.pl`. You may of course create a shortcut on your desktop or another convenient place.

On Linux/MacOSX start a terminal, go to the DynaLearn directory and run `swipl -f startup.pl`

Alternative DynaLearn startup modes:

- Conceptual modeling only: `cm_only.pl`
- Teachable Agent only: `ta_only.pl`

Setting the Virtual Characters

Since DynaLearn 0.9.0 the Virtual Characters can be assigned to different tasks. This is done by changing the `dynalearn.conf` configuration file (found in the DynaLearn directory).

```
<Characters>
  <BasicHelp>teacher</BasicHelp>
  <Quiz>quizmaster</Quiz>
  <Diagnosis>mechanic</Diagnosis>
  <Feedback>boy2</Feedback>
</Characters>
```



Figure 1: The names for the Virtual Characters, as used in the DynaLearn configuration file.

“textonly” means that there will be no character at all for the respective role. Instead, only speech bubbles will appear.

As an example, if you wanted the Basic Help role to be performed by the girl and the Diagnosis by no character at all, the corresponding section in your `dynalearn.conf` file should look like this:

```
<Characters>
  <BasicHelp>girl</BasicHelp>
  <Quiz>quizmaster</Quiz>
  <Diagnosis>textonly</Diagnosis>
  <Feedback>boy2</Feedback>
</Characters>
```

Working with the Teachable Agent

The Teachable Agent (TA) is one of the virtual characters who can help a learner in better understanding their model and helping them advance in the direction of an expert model built supplied by the course facilitator. The assignment should be focused on this target model. At the moment, the TA is only available on use level 2.

Configuring and starting the Teachable Agent

1. The facilitator should supply an expert model. This must be a model on use level 2 and it must be marked: Support-> Mark as Teachable Agent Expert model. Of course, save the model after this step. This expert model can be supplied to the student in two ways: it can be uploaded to the repository, or given in another location. *(Note that in the latter case the student will be able to normally open the file and inspect the model if he wants to. The facilitator should provide clear instructions on how to open the file as a TA file)*
 - a. First option: Supply the expert model via repository:
 - i. Make sure that the expert file is loaded (and marked).
 - ii. Log in: Support -> Log in to repository. If no credentials with teacher role are known use:
Username: demo-teacher@dynalearn.eu, Password: te@cher
 - iii. Upload : Support -> Save current model to repository
 - b. Second option: Supply the expert model directly or via a public folder: Use regular methods of distribution.
2. The student should open the expert model. This will generate a new model and start the Teachable Agent. The initialized model will have the terms from the expert model available to the learner.
 - a. First option: open from repository:
 - i. Log in: Support -> Log in to repository. If no credentials with student role are known use:
Username: demo-student@dynalearn.eu, Password: student
 - ii. Download: Support -> Open file from repository. (If the list of models appears empty, close the repository browser and try again.)
 - b. Second option: open direct from file: File -> Open TA model from file.
(NB. A 'Windows Security Alert' may be displayed as DynaLearn uses TCP communication. This MS Windows blocking of some functions will not affect the DynaLearn software as it only communicates locally on the machine, and it can therefore be accepted without consequences.)

Configuring the Teachable Agent to use a language other than English

Since DynaLearn 0.9.0, facilitators have the option to run the TA in a language other than English. As of now, the only other available language is Portuguese.

To do this, you will need to make an additional change to the **expert model** before supplying it to your students (see Step 1 above). While the model is open, choose Settings-> Translations and you will see the Language Editor window.

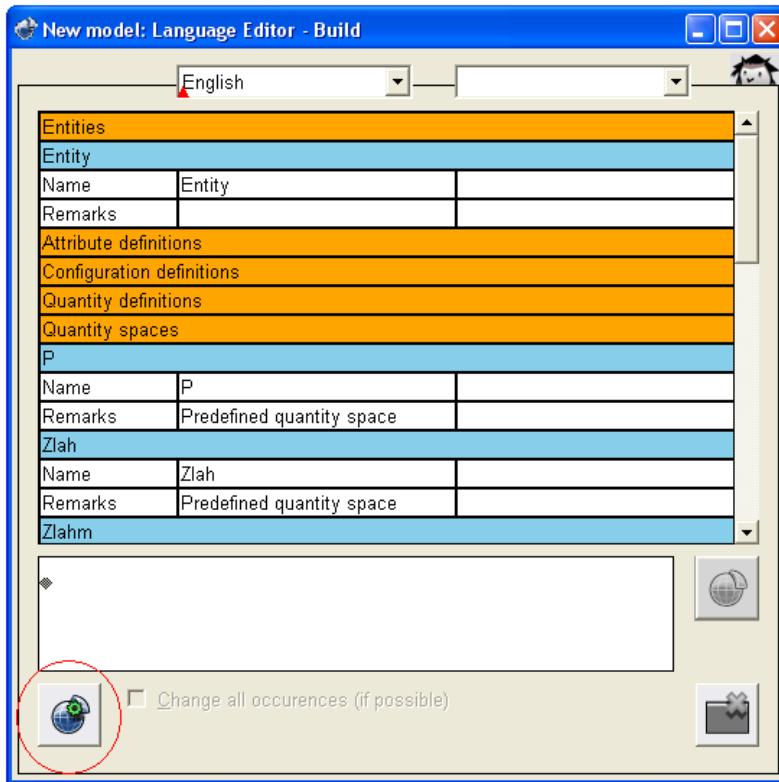


Figure 2: The Language Editor window

Click the button on the lower left. This will open another window, the Language Settings.



Figure 3: The Language Settings window

First, select the desired language from the “Activate language” drop-down list and press the respective go-Button. After that, the language should be selectable from the “Set current language” list and pressing go will make it the current language. Close both windows and save the model.

Once your students open the expert model in TA mode as described above, the characters will now use the selected language.

Using the Teachable Agent

Interaction with the TA is possible through the buttons above its head. A learner can also drag and drop the TA to a more convenient area on the screen or hide it with the respective button.

1. Ask: As the learner is building his or her model causal diagram, he or she can ask the TA questions about it. The TA will answer them according to how it understands the diagram.
2. Explain: The character can also explain all the steps of its last answer in detail.

3. Repeat: The last answer or explanation can be repeated.
4. Challenge: Learners can also send their TA to take a quiz about the current model. The agent's knowledge and thus his answers in the quiz will come from this model. The questions posed by the quizmaster, however, are generated from the expert model which is supplied beforehand. After the TA has taken the quiz, learners will be presented an overview of their agent's performance. At this moment, the quiz can be taken as often as desired without any penalty.
5. Review results: Learners can review the quiz results via a button above the quizmaster's head.

Teachable Agent Notes

All quantities and entities in the expert model will be supplied to the learner. Therefore the task can be made easier by informing the learners that every term should be used and no other terms. On the other hand the task can be made harder by not sayings so and adding extra entities and quantities to the expert model that have no causal relations. These 'distractors' will appear in the learner term lists, but will not be questioned in the challenge and should therefore not be chosen by the learner.

In TA mode derivatives cannot be assigned in the model by the learner. In a way, questioning replaces simulation.

To exit TA mode or change to a different expert model, restart the DynaLearn software.

Working with the Quizmaster

The quizmaster asks questions about the current model and offers a playful way of exploring it. Please note that the quiz only works for models of learning spaces 4 – 6!

1. Open a model and run a full simulation on it
2. Select Support -> Do a multiple choice Quiz
3. The Quizmaster will appear and ask questions
4. The quiz can end in one of three ways:
 - a. The quizmaster runs out of questions.
 - b. The quizmaster is satisfied with the learner's performance.
 - c. The learner selects "quit" from the quizmasters speech bubble.

Working with the Basic Help – What is?

The Basic Help character offers detailed descriptions on model ingredients.

1. Open a model
2. Select any model ingredient
3. Select Support -> What is ...?
4. The Teacher will appear and describe the selected ingredient
5. In the teacher's explanation, there are two kinds of links: Green ones are follow-up question about other ingredients and purple ones further explain terms by linking to the glossary.

Working with the Basic Help – Why?

The Basic Help character offers detailed help on simulation results.

1. Open a model
2. Run a simulation
3. Open the value history and choose a value trajectory to display
4. Select a single magnitude/derivative node from the trajectory
5. Select the 'Support' menu, item 'Why...?'
6. The Teacher will appear and answer the question

- In the teacher's explanation, there are green links you can click to ask a follow-up question.

Alternative:

- Open a model
- Run a simulation
- Select a state from the state graph
- Select the 'Support' menu, item 'Why ...?'
- The Teacher will appear and answer the question
- In the teacher's explanation, there are green links you can click to ask a follow-up question.

The Why? functionality also works from within the transition history, the quantity values dialogs and the causal model.

Working with the Basic Help - How To?

The Basic Help character offers detailed descriptions on how to use the interface.

- (optional) Open a model
- (optional) Select any model ingredient
- Select Support -> How to ...?
- Select the remaining elements of your question (available menu items are context-dependent)
- Follow the teacher's instructions

The Repository and Grounding functionality

The Repository is a central database for teacher and student models.


The grounding functionality allows you to ground modeling elements using a common vocabulary.





Working with the repository

- Log in to the repository using: Support -> Log in to repository.
- Upload your model using: Support -> Save current model to repository
- Download a model using: Support -> Open model from repository

Working with the grounding dialog

- Make sure you are logged in to the repository.
- Open the grounding dialog: Support-> Grounding.
- Choose your grounding type: single term grounding (default) or full model grounding. The former retrieves grounding options per term, the latter does this for the whole model at once, this may take some time.
- Choose the tab containing the modeling element(s) you wish to ground: Entities, Agents, Quantities, Configurations, or Attributes.
- Select the element you wish to ground
- Select a grounding: read the description for the selected grounding. Now you have several options:

<i>Action</i>	<i>Button</i>	<i>Remarks</i>
Save Grounding		Use this option if you have found an appropriate grounding for your modeling element.

Cancel changes		Do not use this option yet. Under construction.
Introduce a custom grounding		Use this option if you have not found an appropriate grounding and want to add a new definition to the common vocabulary.
Delete current grounding		Use this option to undo a set grounding for the selected element. (At the moment the checkmark may remain visible until updating.)
Refresh grounding list		Use this option to update the list of possible groundings in case you suspect someone else has contributed a new definition in the vocabulary.

The ontology-based feedback functionality:

The ontology-based feedback functionality allows you to get feedback on your model based on a reference model in the repository. It shows an overview of the difference between your model and the reference model.

Working with the feedback dialog.

The feedback dialog can be accessed in the 'Support' menu through the 'Get feedback on current model' option. It will ask you to log in to the repository if you have not done so already.

1. The repository browser will be shown. Select the model that you want to compare your model to and click the 'Open' button.
2. The feedback dialog will be shown. At the top of the dialog there are two rows of buttons:
 1. Select the types of elements that you want to compare using the left button bar. Select at least one.
 2. Select the types of feedback that you want to display using the right button bar. Select at least one.
3. The leftmost field will display a list of differences grouped by element type. Select one.
4. The middle display will show you the element from your model under 'User element' and the corresponding element from the reference model under 'Reference element'. Directly under this display the differences between the elements will be enumerated.
5. The bottommost display will enumerate some general statistics about the compared models.
6. Close the dialog using the close button on the bottom left.

Feedback with the Critic character.

If you would like the feedback to be presented by the Critic character, select Support->Get feedback on current model (VC) instead. The feedback window will open and you can work with it as described above. In addition, whenever an item is selected in the menu on the left side, the Critic will comment on it.