

## Issues on user management system

1. One user can play only one question at a time, because there's no saving mechanism to store the mapping of user, question and jsession, i.e. there is only one jsession saved in asp.net MVC session. Jsession is the key to use QTIEngine RESTful web services. The coordination information will be stored in a certain session on QTIEngine side with a specific jsession id. So we still need a jsession id management system in order to play multiple questions at the same time, or they will use the same jsession id to connect to QTIEngine web services, which will result in the mix the different question contexts.
2. Category structure is not complete. We only allow two levels of question category, root level and the one below the root level. When we display the category tree, there are only two levels. All the algorithms related to question category are also based on this fact. It's not quite proper.
3. You cannot add or delete a question category.
4. The function to delete a question is not available. What you can do is to delete the question from database. What's more, we don't have a trigger to delete the user-answer information about the question once the question is deleted, i.e. no cascading.
5. Users are automatically registered as student. You can't register yourself as a teacher unless you use asp.net configuration tool in VS 2008.
6. Sometimes a question item will go with an image. But currently there's no way to upload the image. We can only upload the item xml file or test file.

## Issues on QTIEngine RESTful Web Services

1. (Not important) Still use jsession to manage all connections. Jsession has been proved to be unsafe.
2. The return xhtml page is not flexible. Actually, this is a problem of QTI-Render package. It only returns a xhtml that can be played locally. We can change the paths of some resources, such as javascript file paths, css file paths and java applet code base, by replacing the xhtml string. But this is not flexible and may cause various problems. The "action" field of form always points to the current page (`<form action=""></form>`)
3. There is no way to upload a picture when you try to play an item. What you can do is to save the image on user management system and specify the image url as http request parameter. The web service will replace the image src with this image url.
4. (Important!) QTI Engine uses java applet developed in ASDEL R2Q2 project. If the java applet needs a background image (like hotspot interaction) and you are playing an item (not test package), the image won't display. Because in BoundedGraphicalApplet.class, the background image is taken from applet's getImage() method. The R2Q2 developer uses java applet's codebase as part of the image path. So if the image is not located on the same server as the java applet, the image won't display. Due to this issue, the background image of hot

spot interaction won't display when you play an item.

5. I have defined a structure of the xml that should be returned. But I don't write an xml schema to describe this xml structure. In addition, the xml structure may be not proper. It still needs a careful design.