

While learning names can be challenging, especially in larger classes, it is possible even for large audiences (Chambliss, 2014). Teaching international students is even more challenging due to cultural differences and pronunciation obstacles (Huelsbeck, 2016). However, using student names is linked to academic performance in some studies (Kenney, 1994). Faculty have been using various techniques of acquiring student photos (Middendorf & Osborn, 2012). When such photos are submitted by students they may not be useful for identifying students due to quality and content within the picture.

### **Technical Implementation**

The software is implemented as a Blackboard Building Block. The pictures are delivered to a specific directory in the Blackboard Learn system, defaulted to `/usr/local/blackboard/content/PHOTOS/`. This location can be modified in `config.jsp` file. However, the file location must be shared across all application servers in a clustered Blackboard Learn deployment, therefore the base directory should be at least `/usr/local/blackboard/content/`.

The picture size will vary based on options available in the ID system. If the default picture size is too large to be rendered quickly for a large course, it is possible to deploy thumbnails. The thumbnails directory should be a child directory of the picture base directory called `thumbs`. The `thumbs` directory will be used for rendering group listings, while the base directory will be used for the pictures as they are selected by the course instructor.