Classic Tobii Gaze Interaction Software (TGIS): Calibration

PCEye Mini

Introduction
Tobii Dyanvox has various eye gaze devices (hardware) on the market. The PCEye Mini is USB plug in device that allows eye tracking to be used as an access method for students with physical limitations. Through eye gaze students are able to access communication software, curricular software and desktop control, with any Windows (64-bit) 7, 8.1 or 10 operating system. Tobii Dyanvox has different software available (Classic Tobii Gaze Interaction Software (TGIS) and Windows Control) that change the way the eye trackers function on the computer (that the PCEye Mini may be plugged into). This tutorial focuses on TGIS, otherwise known as Windows Control Classic

Learning Objectives
Completion of this tutorial will give you experience with the following:

- Calibrating eye gaze access a Tobii Dynavox PCEye Mini (hardware) using Windows Control (software).

This tutorial assumes

- That you have a Tobii Dynavox PCEye Mini device, plugged into a Windows 10 laptop or tablet.
- That you have TGIS installed.

Case Study
Conor is a grade 6 student with Cerebral Palsy. He is using his PCEye Mini to communicate his wants and needs, using Communicator 5 software. He is on a medication regime, which includes Baclofen and this changes his pupil size over the course of the day. As a result, his team are finding they need to re-calibrate after lunch.
How to Calibrate on a Tobii Dynavox PCEye Mini Device using Classic Tobii Gaze Interaction Software (TGIS)

1. Open Gaze Interaction Settings, by double clicking on the red eye icon

2. Click Calibration in the left menu

3. Click Track Status
   The Track Status Box should appear.
Ideally, two white dots should appear, that represent the user’s eyes. If they do not appear, move the **device** to suit the position of the user.

The red-yellow-green bar on the right of the track status box is a distance meter. The white triangle should fall in the green (middle of the meter), and the two white dots should be centered, when optimal user distance has been established.

To assist with the positioning process, click and drag the **Top Bar** of the **Track Status Box**. This will move the track status box to any location on the screen. Resize the Track Status Box by hovering your cursor over the **edge of the box** until the double arrow appears, and drag to desired size. To remove all visual distractions for the user, double click on the **Top Bar of Track Status Box**, and it will expand to full screen.

Click **Close** when you have positioned the device suitably for the user.
5 Adjust the calibration settings by clicking **Settings**.

6 Change elements of calibration procedure, such as the number of calibration points, the stimulus type colour etc. by clicking on each drop down menu.

   Click the double arrow to return to the calibration menu.

7 Click the **Calibrate** button
The screen will change to the calibration process. Look at each target until the target disappears. Try not to anticipate where the target will move next. Wait until it appears before changing your gaze.

<table>
<thead>
<tr>
<th>Automatically, a colour scheme of red, yellow or green will appear. It indicates the quality of calibration.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red = low quality</td>
</tr>
<tr>
<td>Yellow = good quality</td>
</tr>
<tr>
<td>Green = high quality</td>
</tr>
</tbody>
</table>

All three colours are the result of a successful calibration.

Also, the closer the lines are within the calibration point, the better the precision and accuracy of the calibration.

You can calibrate one eye only, following your first calibration attempt, by clicking the **Track only this eye for Gaze Interaction** check box, under Left or Right Eye Calibration Result box.
After calibration you can improve one or more points if there are areas of the screen that are inaccurate (lines extending outside the circle).

Select the points you want to improve under **Calibration Result**.

Click the **Improve Point(s)** button to start the calibration for the selected points.

Remove calibration points that are consistently poor by selecting each point under **Calibration Result**.

Select the **Remove Point(s)** button.

To finish the calibration process, in the bottom right corner, click **Apply** and then click **OK**.