WCG 2019: Why Curved Monitors Matter to Gamers

The World Cyber Games (WCG) returned to Xi’an, China between the 18th - 21st of July. The event featured a competition between esports players from 34 different countries, China’s first ever TED Talk event, and an esports conference. We visited the festival to discover how curved monitors are benefiting gamers.

Must-have Monitors Exhibited

As we know, curved monitors are a hugely popular display trend. For gamers, the curved monitor is quickly becoming an essential item.

Showcasing displays and their benefits, attendees could discover how curved monitors provide immersive gaming, better viewing angles, and reduce eye strain. At the gaming experience zone, keen gamers could also try out the experience for themselves.

Samsung Display exhibited curved monitors of different sizes, all of them with high refresh rate and optimized curvature. The models on display were 27” FHD (16:9, 1,500R, 240Hz), 34” QHD+(21:9, 1,500R, 144Hz), 43.4” Dual WU (32:10, 144Hz), and 49” Dual FHD (32:9, 144Hz).

Improving Performance with Curved Monitors
At this year’s esports conference, Professor Yungkyung Park from Ewha Women’s University delivered a presentation, discussing how curved monitors can improve players’ performances.

Professor Park highlighted that the monitor is one of the most significant pieces of hardware in esports, using evidence from her recent study. During this study, players were tasked with playing a game (League of Legends, Need for Speed, or Battleground) for five minutes in a dark room with four different displays by random rotation. The research team recorded the real time playing with an eye-tracker and selected an intersection of a minute to analyze, specifically looking at head movement, viewing distance, and velocity of gazing points.

When playing games, the gazing speed for flat displays requires 1.6~1.8 times more speed than a 1200R curved display in the same amount of time playing. This implies that users with a curved display can scan the full screen faster with less eye/head movement. Because of this, curved monitors provide a better viewing experience with less eye strain, which in turn, leads to less in-game errors and improves players’ performances.

In order to investigate the effect of the increase of the viewing angle due to the curvature on the visual performance, this study conducted another visibility experiment using flat display and 1800R curved display with the same features (size:31.5inch, ratio:16:9, resolution:3840x2160).
In conclusion, Professor Park found that the error rate was less for curved display users, with those users having an error rate of 27% compared to the flat display users at 38%. Furthermore, the reaction time of the 1800R curved display was about 20% faster than the flat display. This result seems to be influenced by the fact that the 1800R curved display at 40cm viewing distance can display a viewing angle of 90° or more, unlike the flat display.

This confirmed that the expansion of the viewing angle of the curved display enables more accurate and faster identification of more complex stimuli. It was also confirmed that a curved display of a smaller size could have the same or higher visual performance as a larger size flat display, as the viewing angle of the 27 inch curved display is similar to that of the 31.5 inch flat display.

Curved display expands the viewing angle and enhances the efficiency of information acquisition on the ends by the tilted angles towards the viewers. Therefore, curved display can be useful to develop more precise and faster gaming skills in addition to decreasing eye fatigue.

As we saw at WGC 2019, curved monitors are not just an aesthetic trend for gamers - they are an important tool that improves performance. With curved monitors wowing attendees and Professor Park proving their benefits, this display type looks set to continue growing in popularity.