

Hearing touch in ball games

Catch, pass, catch, shot, goal! Which crucial information is lost for children with blindness in ball games? And how could that information best be provided?

For children with blindness, ball games can be very challenging. Most ball games depend on quick simultaneous perception of many things — for example the ball’s whereabouts and whether a co-player receives a pass or not — things which are by people with good vision usually perceived through vision. The currently available aids for making ball games more accessible for people with blindness — most in the form of balls that have bells inside — leave room for improvement.

In the master’s thesis *Touch sensing audible ball to improve the ballgame experience for children with blindness*, a new concept is developed that is aimed at making the ball game experience better for children with blindness. The concept is based on equipping the ball with electronic sound and providing audible feedback from a touch sensor on the ball. The ball constantly outputs sound so it can always be located by hearing — unlike a bell ball which stops sounding as it rolls slower. However, it outputs different sounds depending on whether anybody is touching the ball or not. This means that the players in a ball game, say handball, can *from the sound of the ball* know whether the ball is being passed, caught or is just lying on the ground. For people with blindness, this audible feedback means that they can be more aware about what happens in the game, and thus be more involved in it.

A working prototype (Figure 1) of the concept has been tested in ball games with five children with severe visual impairment or blindness, who were all very positive about the new features. The tests were conducted in groups consisting of a child with visual impairment together with two to six sighted classmates. Several of the children with visual impairment asked eagerly about ”When can I get a ball like that?” and one child with visual impairment expressed that ”This is my favorite ball!”. The sighted children were also positive about the prototype, claiming that it made them, too, feel more aware about the ball’s whereabouts and what happens in the game.

This concept should be further developed and realised in a reliable consumer product, as such a product does not exist on the market, but indeed seems to provide means for a better ball game experience for children with blindness.

Olov Björk



Figure 1: The prototype.