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# Proseminar Medieninformatik SoSe 2011

Influence of display factors and input devices on collaborative work

Benjamin Eder, 07.06.2011

<http://www.efg.med.uni-muenchen.de/universitaeten/unimuc/index.html>

[http://www.heise.de/heisejobs/anzeigen/genzentrum-systemadministrator\\_1/index.html](http://www.heise.de/heisejobs/anzeigen/genzentrum-systemadministrator_1/index.html)





## Exploring Display Factors that Influence Co-Located Collaboration: Angle, Size, Number, and User Arrangement (2005)

*Kori Inkpen, Kirstie Hawkey, Melanie Kellar, Regan Mandryk,  
Karen Parker, Derek Reilly, Stacey Scott, Tara Whalen*

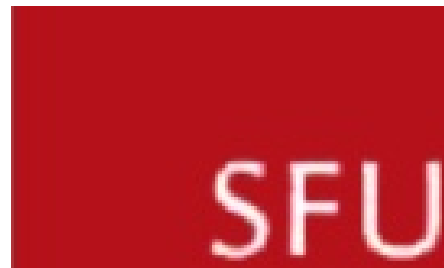
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# Display Factors

Display angle, user arrangement, display size, number of displays

<b>Manipulation</b> <b>Display Factor</b>	<b>Display Angle</b>	<b>User Arrangement</b>	<b>Display Size</b>	<b>Number of Displays</b>
<b>Display Angle</b>	<b>Horizontal</b> <b>Vertical</b>	Horizontal	Horizontal	Horizontal
<b>User Arrangement</b>	Side-by-side	<b>Side-by-side</b> <b>Face-to-face</b> <b>Right angles</b>	Side-by-side	Side-by-side
<b>Display Size</b>	Large (33")	Large (33")	<b>Small (17")</b> <b>Large (33")</b>	Large (33")
<b>Number of Displays</b>	Single shared	Single shared	Single shared	<b>Single shared</b> <b>Multiple (one per user)</b>



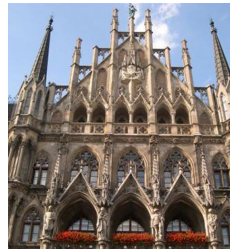
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# Experimental Task

*route planning with subway map*

## 1. Touristic activity



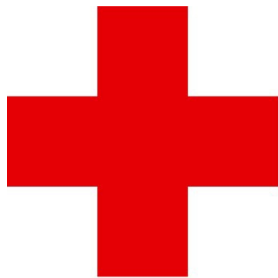
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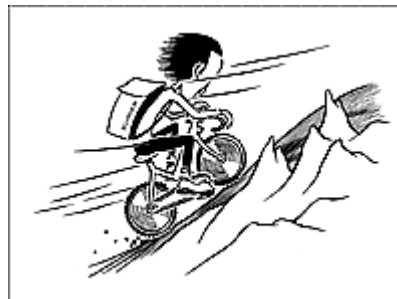
<http://www.fcb-kirchweidach.de/photos/Arena.jpg>



[http://www.viatoura.de/images/fotoalbum/fotoalbum4/01\\_muenchen\\_hofbraeu\\_schild.jpg](http://www.viatoura.de/images/fotoalbum/fotoalbum4/01_muenchen_hofbraeu_schild.jpg)



## 2. Emergency situation

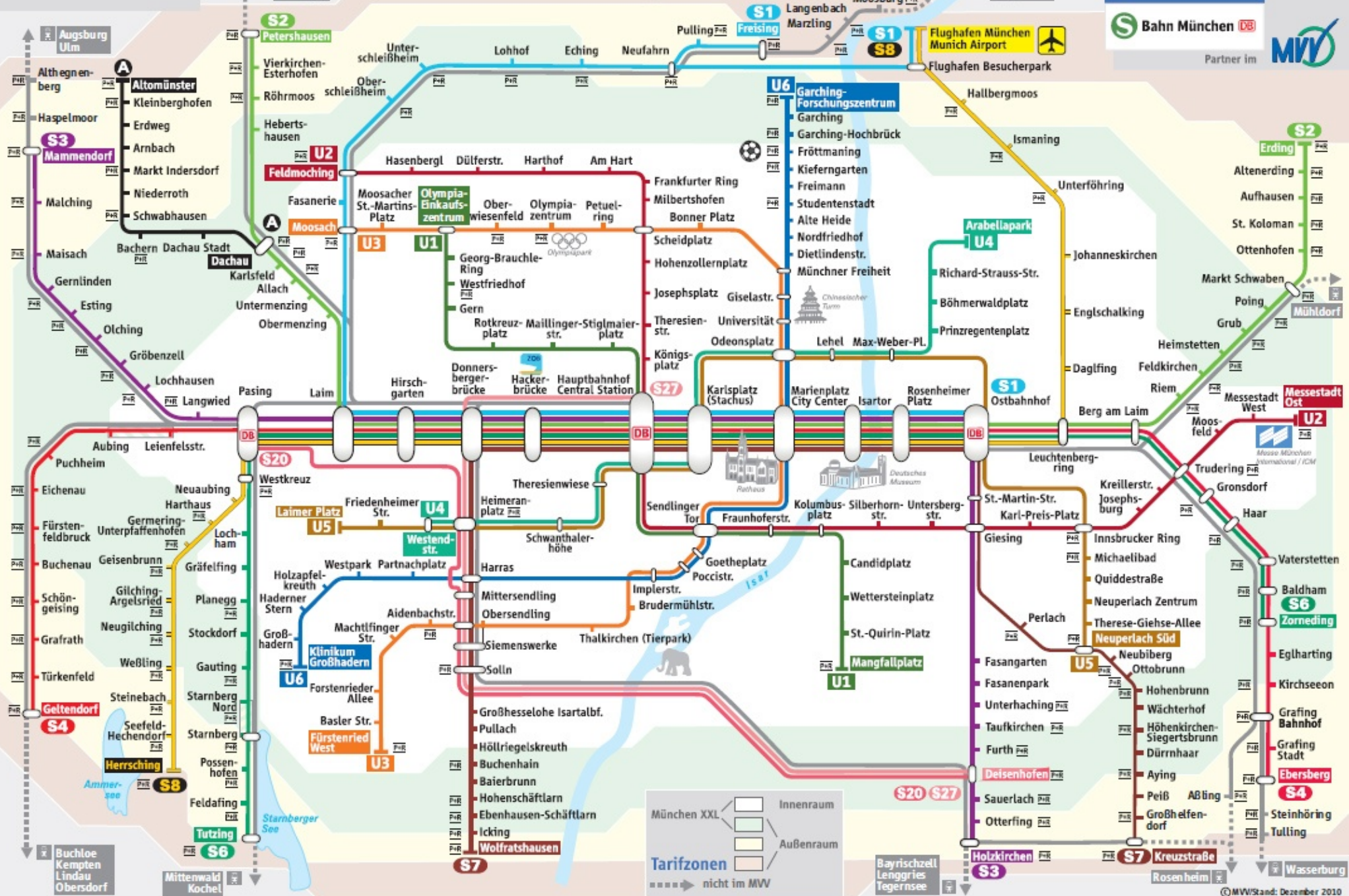


## 3. Courier scenario

<http://cms.hsa-networks.de/stb-moeller.de/files/6-fahrradkurier.gif>



# Schnellbahn- und Regionalzugnetz



# Display angle

## Horizontal

- Several possibilities of user arrangement
- Flat surface for placing objects



<http://www.michaelsampson.net/blogimages/20110329reflected.jpg>

## Vertical

- All user same perspective
- Holistic view



<http://www.ivci.com/images/smart-whiteboards-photo-01.jpg>



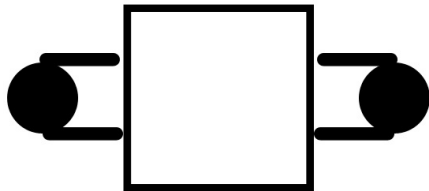
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# User arrangement

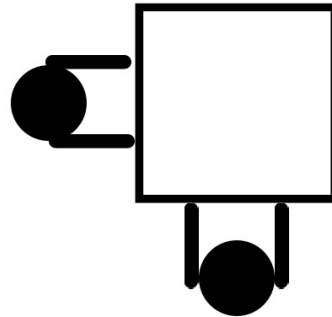
## Face-to-face

- Opposing perspective
- Less ergonomic difficulties
- More partner gaze



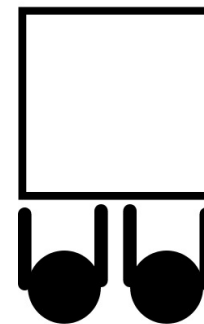
## Right angle

- Compromise
- Range of perspective



## Side-by-side

- Less direct eye contact
- Same perspective



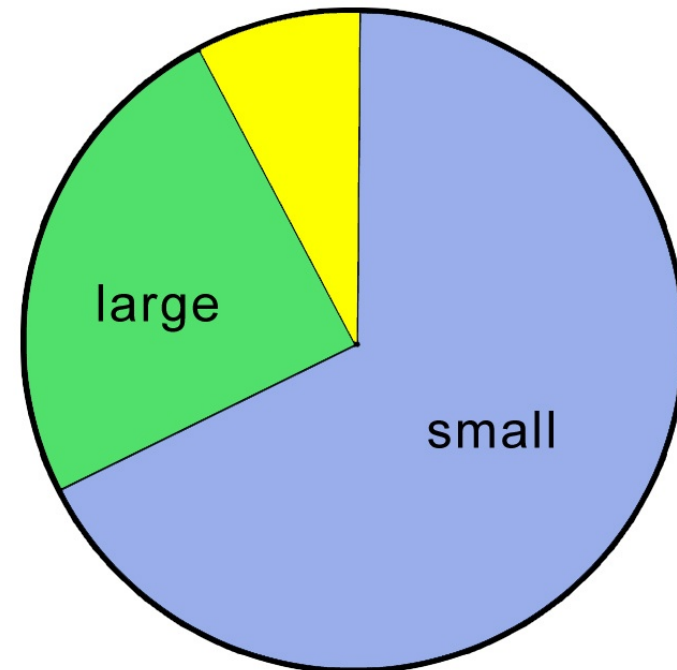


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## Display size

- No significant differences
- Preference to small size

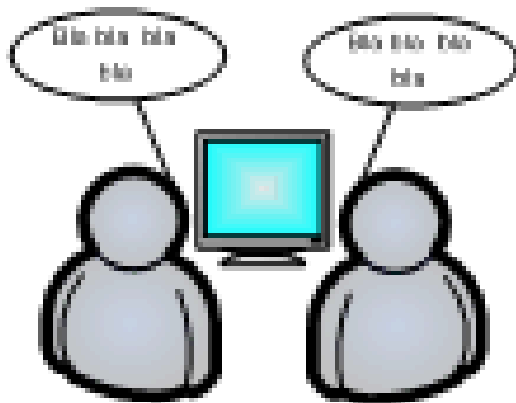




# Number of displays

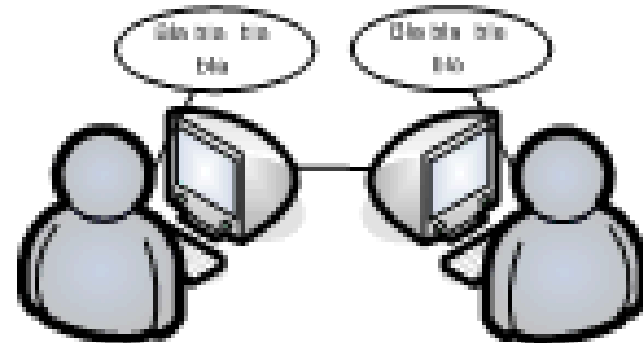
## Shared display

- More on-task conversation
- Partner sit closer together



## Multiple displays

- Personal workspace
- Equitable distribution





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## Direct Intentions: The Effects of Input Devices on Collaboration around a Tabletop Display

Tara Whalen<sup>†</sup>, Vicki Ha<sup>†</sup>, Kori M. Inkpen<sup>†</sup>, Regan L. Mandryk<sup>‡</sup>, Stacey D. Scott<sup>‡‡</sup>, Mark H. Hancock<sup>‡‡</sup>

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# Experimental design

- Tabletop display
- Face-to-face
- Three studies
- Indirect vs. direct devices



[http://www.winhelpline.info/forum/attachments/microsoft-news/4801-wireless-laser-mouse-5000-neue-microsoft-maus-fuer-links-und-rechtshaender-laser\\_mouse\\_5000.jpg](http://www.winhelpline.info/forum/attachments/microsoft-news/4801-wireless-laser-mouse-5000-neue-microsoft-maus-fuer-links-und-rechtshaender-laser_mouse_5000.jpg)



<http://i2.expansys.com/img/b/165485/sony-ericsson-isp-70-g702-phone-stylus.jpg>



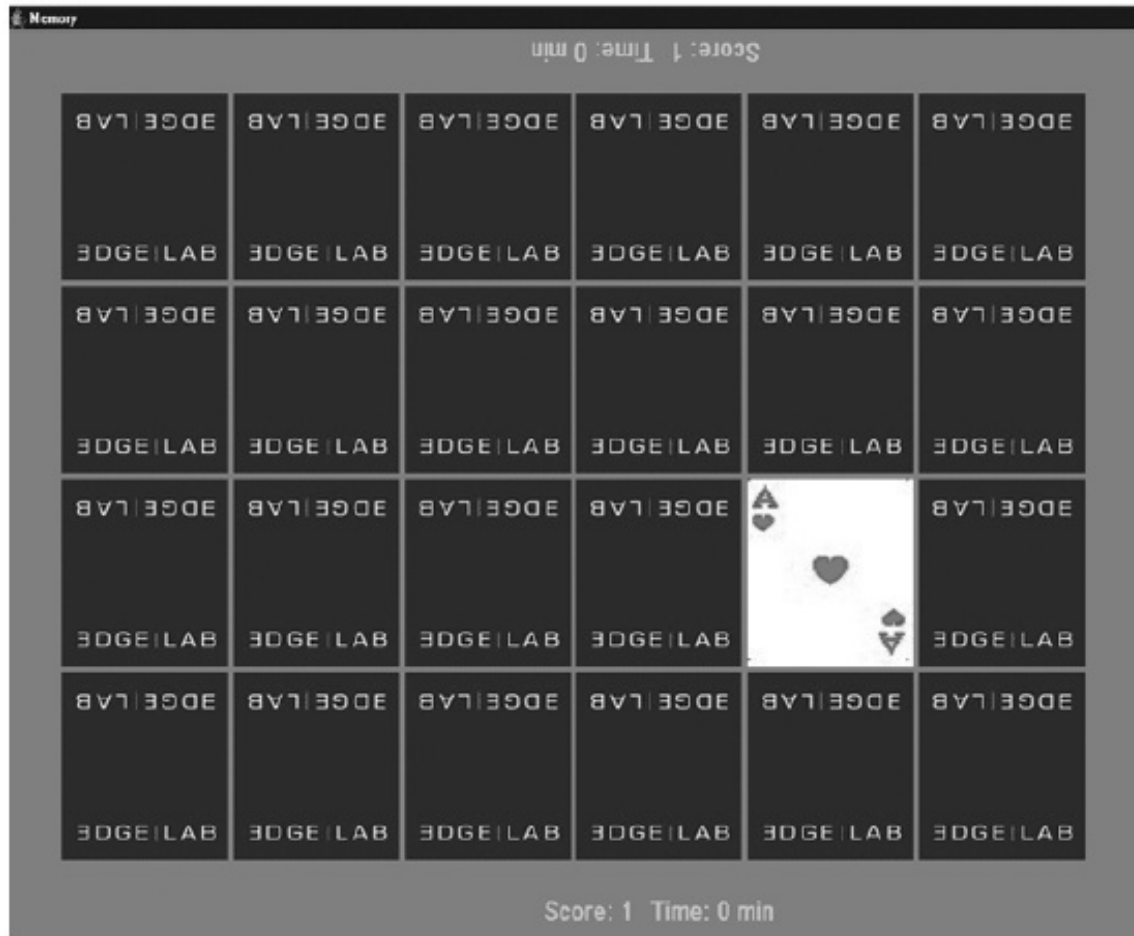
[http://www.telepresenceoptions.com/images/Teliris\\_TouchTable\\_Ig.jpg](http://www.telepresenceoptions.com/images/Teliris_TouchTable_Ig.jpg)



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# Memory Game

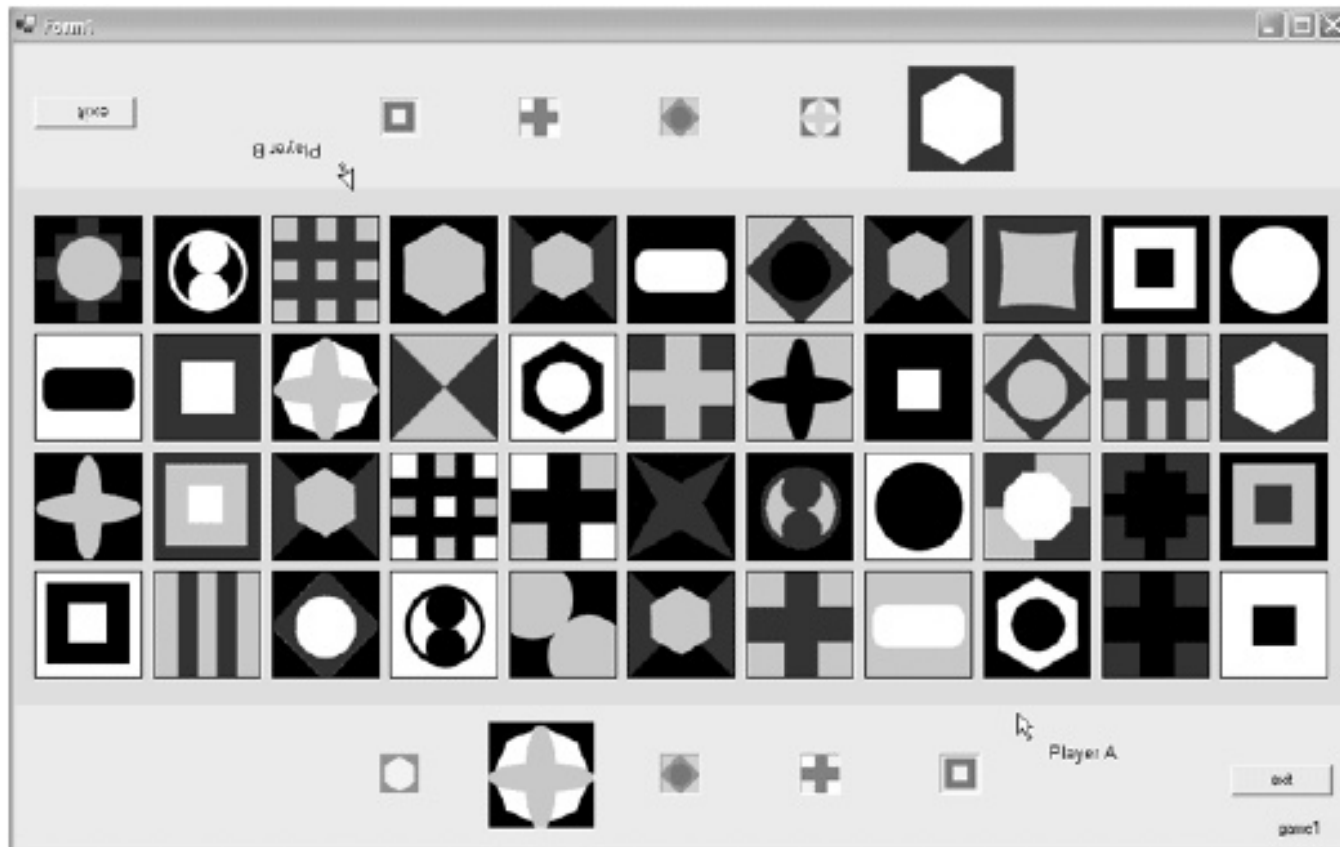




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# Search Game





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# Furniture for Collaborative Learning





# Quellen

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- Regan L. Mandryk , Stacey D. Scott, Kori M. Inkpen. Display Factors Influencing Co-located Collaboration
- Tara Whalen, Vicki Ha., Kori M. Inkpen, Regan L. Mandryk, Stacey D. Scott., Mark H. Hancock. Direct Intentions: The Effects of Input Devices on Collaboration around a Tabletop Display
- Sara Streng (2010). Effects of display types on collaborative processes



# Quellen

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- <http://www.smartdesks.com/collaboration-furniture-collaborative-conference-table.asp>
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- <http://www.ucalgary.ca/>
- <http://www.cs.dal.ca/>
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- <http://www.smartdesks.com/collaboration-furniture-collaborative-conference-table.asp>





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- <http://www.fcb-kirchweidach.de/photos/Arena.jpg>
- <http://cms.hsa-networks.de/stb-moeller.de/files/6-fahrradkurier.gif>
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- [http://www.telepresenceoptions.com/images/Teliris\\_TouchTable\\_lg.jpg](http://www.telepresenceoptions.com/images/Teliris_TouchTable_lg.jpg)
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