

## Participants

ID	M/F	Background	Field Expertise	Computer Expertise	Colorblind	Normal Vision	Involved in Design
1	M	Biomedical Engineer	High	High	no	yes	no
2	M	Medical Physicist	Very high	Medium	no	glasses	no
3	M	Physicist	High	High	no	yes	no
4	M	Physicist	Medium	Medium	no	yes	no
5	M	Physicist	High	High	no	yes	no
6	F	Medical Physicist	High	Low	no	yes	no
7	F	Medical Physicist	Very high	Medium	no	glasses	no
8	M	Medical Physicist	Very high	High	no	glasses	yes
9	M	Medical Physicist	Very high	High	no	yes	yes

All	T1			T2			T3			T4		
ID	effectiveness	efficiency	satisfaction	effectiveness	efficiency	satisfaction	effectiveness	efficiency	satisfaction	effectiveness	efficiency	satisfaction
1	4	4	4	4	4	5	3	4	4	5	5	5
2	4	4	4	4	5	5	4	4	4	5	5	5
3	5	5	5	4	5	4	5	5	5	5	5	5
4	4	5	4	4	4	4	4	4	5	5	5	5
5	5	5	4	5	5	5	5	5	5	5	5	5
6	5	5	5	4	4	4	5	5	5	5	5	5
7	5	5	5	5	5	5	3	3	3	5	5	5
8	5	5	4	5	4	4	5	5	5	5	5	5
9	5	5	5	5	5	5	4	5	5	4	4	4
mean	4.78	4.67	4.56	4.44	4.56	4.67	4.00	4.44	4.33	4.89	4.89	4.89
median	5	5	5	4	5	5	4	5	5	5	5	5
stdev	0.44	0.50	0.53	0.53	0.53	0.50	0.87	0.73	0.87	0.33	0.33	0.33
0.95CI - low	4.40	4.24	4.21	4.24	4.21	4.24	3.97	3.97	3.77	4.67	4.67	4.67
0.95CI - high	5.00	4.99	4.90	4.79	4.90	4.99	4.57	4.92	4.90	5.00	5.00	5.00

## Analysis based on involvement or not in the design

Involved	T1			T2			T3			T4		
ID	effectiveness	efficiency	satisfaction	effectiveness	efficiency	satisfaction	effectiveness	efficiency	satisfaction	effectiveness	efficiency	satisfaction
1	5	4	5	4	4	5	4	5	5	5	5	5
2	5	4	5	4	5	5	4	5	5	5	5	5
3	5	5	5	5	5	5	5	5	5	5	5	5
4	5	5	4	5	5	5	5	5	5	5	5	5
5	5	5	5	5	5	5	5	5	5	5	5	5
6	5	5	5	5	5	5	5	5	5	5	5	5
7	5	5	5	5	5	5	3	3	3	5	5	5
8	5	5	5	5	5	5	5	5	5	5	5	5
9	5	5	5	5	5	5	5	5	5	5	5	5
mean	5.00	4.50	5.00	4.50	4.50	5.00	4.00	5.00	5.00	4.50	4.50	4.50
median	5	4.5	5	4.5	4.5	5	4	5	5	4.5	4.5	4.5
stdev	0.00	0.71	0.00	0.71	0.71	0.00	0.00	0.00	0.00	0.71	0.71	0.71
0.95CI - low	5.00	3.52	5.00	3.52	3.52	5.00	4.00	5.00	5.00	3.52	5.00	3.52
0.95CI - high	5.00	5.00	5.00	5.00	5.00	5.00	4.00	5.00	5.00	5.00	5.00	5.00

  

Not Involved	T1			T2			T3			T4		
ID	effectiveness	efficiency	satisfaction	effectiveness	efficiency	satisfaction	effectiveness	efficiency	satisfaction	effectiveness	efficiency	satisfaction
1	4	5	4	4	5	5	3	4	4	5	5	5
2	5	4	4	4	5	5	3	4	3	5	5	5
3	5	5	5	4	5	4	5	5	5	5	5	5
4	4	5	4	4	4	4	4	4	4	5	5	5
5	5	5	4	5	5	5	5	5	5	5	5	5
6	5	5	5	4	4	4	5	5	5	5	5	5
7	5	5	5	5	5	5	3	3	3	5	5	5
mean	4.71	4.71	4.43	4.43	4.57	4.57	4.00	4.29	4.14	5.00	5.00	5.00
median	4	5	4	4	5	5	4	4	4	5	5	5
stdev	0.49	0.49	0.53	0.53	0.53	0.53	1.00	0.76	0.90	0.00	0.00	0.00
0.95CI - low	4.35	4.35	4.03	4.03	4.18	4.18	3.26	3.73	3.48	5.00	5.00	5.00
0.95CI - high	5.00	5.00	4.82	4.82	4.97	4.97	4.74	4.85	4.81	5.00	5.00	5.00
p (Involved - Not)	0.456	0.626	0.193	0.878	0.878	0.316	1	0.244	0.24	0.052	0.052	0.052

## Analysis based on experience

Very High	T1			T2			T3			T4		
ID	effectiveness	efficiency	satisfaction	effectiveness	efficiency	satisfaction	effectiveness	efficiency	satisfaction	effectiveness	efficiency	satisfaction
1	5	4	4	4	5	5	3	4	3	5	5	5
2	5	4	4	4	5	5	3	4	3	5	5	5
3	5	5	5	5	5	5	3	3	3	5	5	5
4	5	5	5	5	5	5	5	5	5	5	5	5
5	5	5	5	5	5	5	4	5	5	4	4	4
mean	5.00	4.50	4.75	4.50	4.75	5.00	3.50	4.25	4.00	4.75	4.75	4.75
median	5	4.5	5	4.5	5	5	3.5	4.5	4	5	5	5
stdev	0.00	0.58	0.50	0.58	0.50	0.00	0.58	0.56	1.15	0.50	0.50	0.50
0.95CI - low	5.00	3.93	4.26	3.93	4.26	5.00	2.93	3.31	2.87	4.26	4.26	4.26
0.95CI - high	5.00	5.00	5.00	5.00	5.00	5.00	4.07	5.00	5.00	5.00	5.00	5.00

  

High	T1			T2			T3			T4		
ID	effectiveness	efficiency	satisfaction	effectiveness	efficiency	satisfaction	effectiveness	efficiency	satisfaction	effectiveness	efficiency	satisfaction
1	4	4	4	5	4	5	3	4	4	5	5	5
2	5	5	5	4	5	4	5	5	5	5	5	5
3	5	5	5	5	5	5	5	5	5	5	5	5
4	5	5	5	5	5	5	5	5	5	5	5	5
mean	4.67	4.67	4.67	4.33	4.33	4.33	4.33	4.67	4.67	5.00	5.00	5.00
median	5	5	5	4	4	4	5	5	5	5	5	5
stdev	0.58	0.58	0.58	0.58	0.58	0.58	1.15	0.58	0.58	0.00	0.00	0.00
0.95CI - low	4.01	4.01	4.01	3.68	3.68	3.68	3.03	4.01	4.01	5.00	5.00	5.00
0.95CI - high	5.00	5.00	5.00	4.99	4.99	4.99	5.00	5.00	5.00	5.00	5.00	5.00

  

Medium	T1			T2			T3			T4		
ID	effectiveness	efficiency	satisfaction	effectiveness	efficiency	satisfaction	effectiveness	efficiency	satisfaction	effectiveness	efficiency	satisfaction
1	4	5	4	4	4	4	4	4	4	5	5	5
2	5	5	4	5	5	5	5	5	5	5	5	5
mean	4.50	5.00	4.00	4.50	4.50	4.50	4.50	4.50	4.50	5.00	5.00	5.00
median	4.5	5	4	4.5	4.5	4.5	4.5	4.5	4.5	5	5	5
stdev	0.71	0.00	0.00	0.71	0.71	0.71	0.71	0.71	0.71	0.00	0.00	0.00
0.95CI - low	3.52	5.00	5.00	3.52	3.52	3.52	3.52	3.52	3.52	5.00	5.00	5.00
0.95CI - high	5.00	5.00	5.00	5.48	5.48	5.48	5.00	5.00	5.00	5.00	5.00	5.00
p (3 exp groups)	0.598	0.975	0.995	0.975	0.7	0.129	0.553	0.891	0.771	0.802	0.802	0.802

## Analysis for experts involved in the design, before and after hands-on exploration

Inv - Before	T1			T2			T3			T4		
ID	effectiveness	efficiency	satisfaction	effectiveness	efficiency	satisfaction	effectiveness	efficiency	satisfaction	effectiveness	efficiency	satisfaction
1	5	5	5	5	5	5	4	5	5	4	4	4
2	5	5	5	5	5	5	4	5	5	4	4	4
mean	5.00	4.50	5.00	4.50	4.50	5.00	4.00	5.00	5.00	4.50	4.50	4.50
median	5	4.5	5	4.5	4.5	5	4	5	5	4.5	4.5	4.5
stdev	0.00	0.71	0.00	0.71	0.71	0.00	0.00	0.00	0.00	0.71	0.71	0.71
0.95CI - low	5.00	3.52	5.00	3.52	3.52	5.00	4.00	5.00	5.00	3.52	5.00	3.52
0.95CI - high	5.00	5.00	5.00	5.00	5.00	5.00	4.00	5.00	5.00	5.00	5.00	5.00

  

Inv - After	T1			T2			T3			T4		
ID	effectiveness	efficiency	satisfaction	effectiveness	efficiency	satisfaction	effectiveness	efficiency	satisfaction	effectiveness	efficiency	satisfaction
1	5	5	5	5	5	5	5	5	5	4	4	4
2	5	5	5	5	5	5	5	5	5	5	5	5
mean	5.00	5.00	5.00	4.50	4.50	5.00	5.00	5.00	5.00	4.50	4.50	4.50
median	5	5	5	4.5	4.5	5	5	5	5	4.5	4.5	4.5
stdev	0.00	0.00	0.00	0.71	0.71	0.00	0.00	0.00	0.00	0.71	0.71	0.71
0.95CI - low	5.00	5.00	5.00	3.52	3.52	5.00	4.00	5.00	5.00	3.52	5.00	3.52
0.95CI - high	5.00	5.00	5.00	5.00	5.00	5.00	4.00	5.00	5.00	5.00	5.00	5.00
p (Before - After)	no diff	0.423	no diff	no diff	no diff	no diff	<0.001	no diff	no diff	no diff	no diff	no diff