

## Study 1 – Questionnaire 1

Questions	Open question	Likert scale	Answer values
Gender	x		
Height			In cm
Age			In years
Highest level of education	x		
Field of work	x		
Do you need an optical aid?			Yes, No
If so, what type do you currently wear?			Glasses, Contact Lenses, Nothing
Do you have a color vision defect?			Yes, No
Do you have spatial perception limitations?			Yes, No
Do you have a restriction of motion?			Yes, No
How often have you had experience with Augmented Reality in general, e.g. with Smartphone apps like Pokemon Go?		x	
How often have you had experience with head-mounted displays Augmented reality devices (e.g. HoloLens)?		x	
How often have you had experience with Virtual Reality (e.g. Oculus Rift, HTC Vive)?		x	
How often have you worked with information visualizations to analyze data?		x	
How tired are you feeling?		x	
How concentrated are you feeling?		x	
How motivated are you?		x	
Do you have a headache?		x	
Do you have dry or irritated eyes?		x	

## Study 1 – Questionnaire 2

Questions	Open question	Likert scale	Answer values
How tired are you feeling?		x	
How concentrated are you feeling?		x	
How motivated are you?		x	
Do you have a headache?		x	
Do you have dry or irritated eyes?		x	
What influence had the study session on a possible change of your state of health?	x		
TLX: Mental demand		x	
TLX: Physical demand		x	
TLX: Temporal demand		x	
TLX: Performance		x	
TLX: Effort		x	
TLX: Frustration		x	
The presentation of the visualization in a real environment irritated me.		x	
The real-world background did not influenced me.		x	
I was able to suppress the real-world background.		x	
What areas of the visual background caused the most difficulties?	x		
How did you approach solving the tasks?	x		
Are there any more details that made the solving more difficult?	x		
To what extend did you notice the background during the tasks?	x		
How well did you generally perceive the lines?		x	
How well did you generally perceive the axis labels?		x	
How well did you generally perceive the task description?		x	
How much did the background affect the perception of the lines?		x	
How much did the background affect the perception of the axis labels?		x	
How much did the background affect the perception of the task description?		x	
Where there any other influences that distracted you in the study environment?	x		
If so, to what extent where you distracted through these influences?	x		

Which of the four shown backgrounds do you perceive as the one with the highest disturbance factor?

See Fig.1

Further comments

x

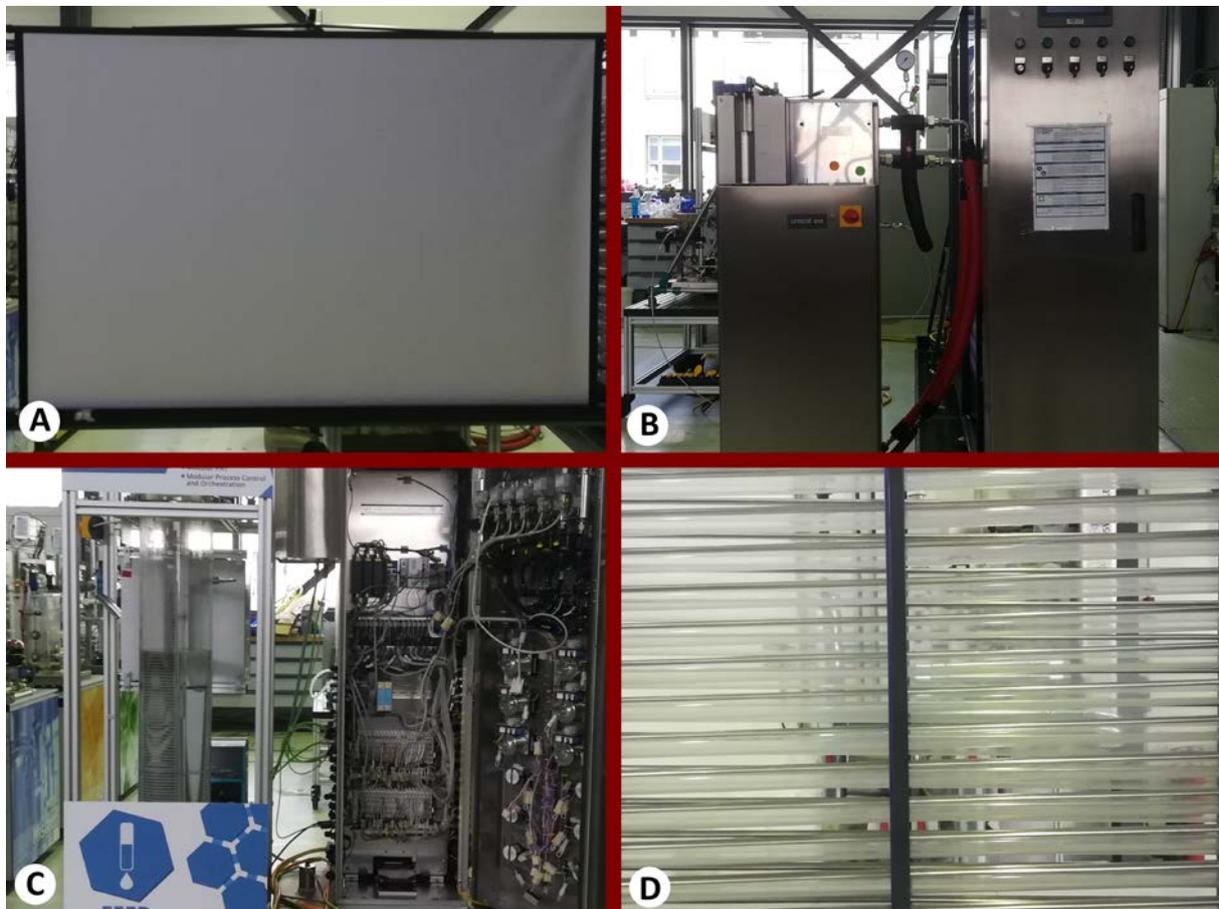


Fig. 1 Backgrounds shown for one of the questions. The feature congestion values are as follows: (A) 1.65, (B) 2.53, (C) 2.63, (D) 3.36

## Study 2 – Questionnaire 1

Questions	Open question	Likert scale	Answer values
Gender	x		
Height			In cm
Age			In years
Highest level of education	x		
Field of work	x		
Do you need an optical aid?			Yes, No
If so, what type do you currently wear?			Glasses, Contact Lenses, Nothing
Do you have a color vision defect?			Yes, No
Do you have spatial perception limitations?			Yes, No
Do you have a restriction of motion?			Yes, No
Fill in the given numbers accordingly to the shown parts of the visualization.			See Fig.2
How often have you had experience with Augmented Reality in general, e.g. with Smartphone apps like Pokemon Go?		x	
How often have you had experience with head-mounted displays Augmented reality devices (e.g., HoloLens)?		x	
How often have you had experience with Virtual Reality (e.g. Oculus Rift, HTC Vive)?		x	
How often have you had experience with working and reading visualizations like line or bar charts?		x	
How tired are you feeling?		x	
How concentrated are you feeling?		x	
How motivated are you?		x	
Do you have a headache?		x	
Do you have dry or irritated eyes?		x	

## Study 2 – Questionnaire 2

Questions	Open question	Likert scale	Answer values
How tired are you feeling?		x	
How concentrated are you feeling?		x	
How motivated are you?		x	
Do you have a headache?		x	
Do you have dry or irritated eyes?		x	
What influence had the study so far on a possible change of your state of health?	x		
The presentation of the visualization in a real environment irritated me.		x	
The real-world background did not influenced me.		x	
I was able to suppress the real-world background.		x	
Have you noticed the background while you solved the tasks?	x		
If so, to what extend where special areas or properties of the background problematic?	x		
How much did the background affect the perception of the lines?		x	
How much did the background affect the perception of the axis labels?		x	

## Study 2 – Questionnaire 3

Questions	Open question	Likert scale	Answer values
How tired are you feeling?		x	
How concentrated are you feeling?		x	
How motivated are you?		x	
Do you have a headache?		x	
Do you have dry or irritated eyes?		x	
What influence had the study so far on a possible change of your state of health?	x		
The visualization in front of a real-world background was irritating.		x	
The real-world background did not influenced me.		x	
I was able to suppress the real world background.		x	
Have you noticed the background while you solved the tasks?	x		
If so, to what extend where special areas or properties of the background problematic?	x		
How much did the background affect the perception of the lines?		x	
How much did the background affect the perception of the axis labels?		x	
TLX: Mental demand		x	
TLX: Physical demand		x	
TLX: Temporal demand		x	
TLX: Performance		x	
TLX: Effort		x	
TLX: Frustration		x	
The additional observation task for the background made it harder for me to solve the main task.		x	
The additional observation task for the background let me took longer to answer the questions.		x	
The additional observation task for the background made my answers for the tasks less precise.		x	
The additional observation task for the background needed a great portion of my attention.		x	
The additional observation task for the background made it harder to suppress the background.		x	
How did you approach solving the tasks?	x		
Are there any more details that made the solving more difficult?	x		
To what extend did you notice the background during the tasks?	x		

Where there any other influences that disturbed you in the study environment?

x

If so, to what extent were you distracted through these influences?

x

What background was more noticeable when answering the questions?

x

Why did you pick this background?

x

Further comments

x

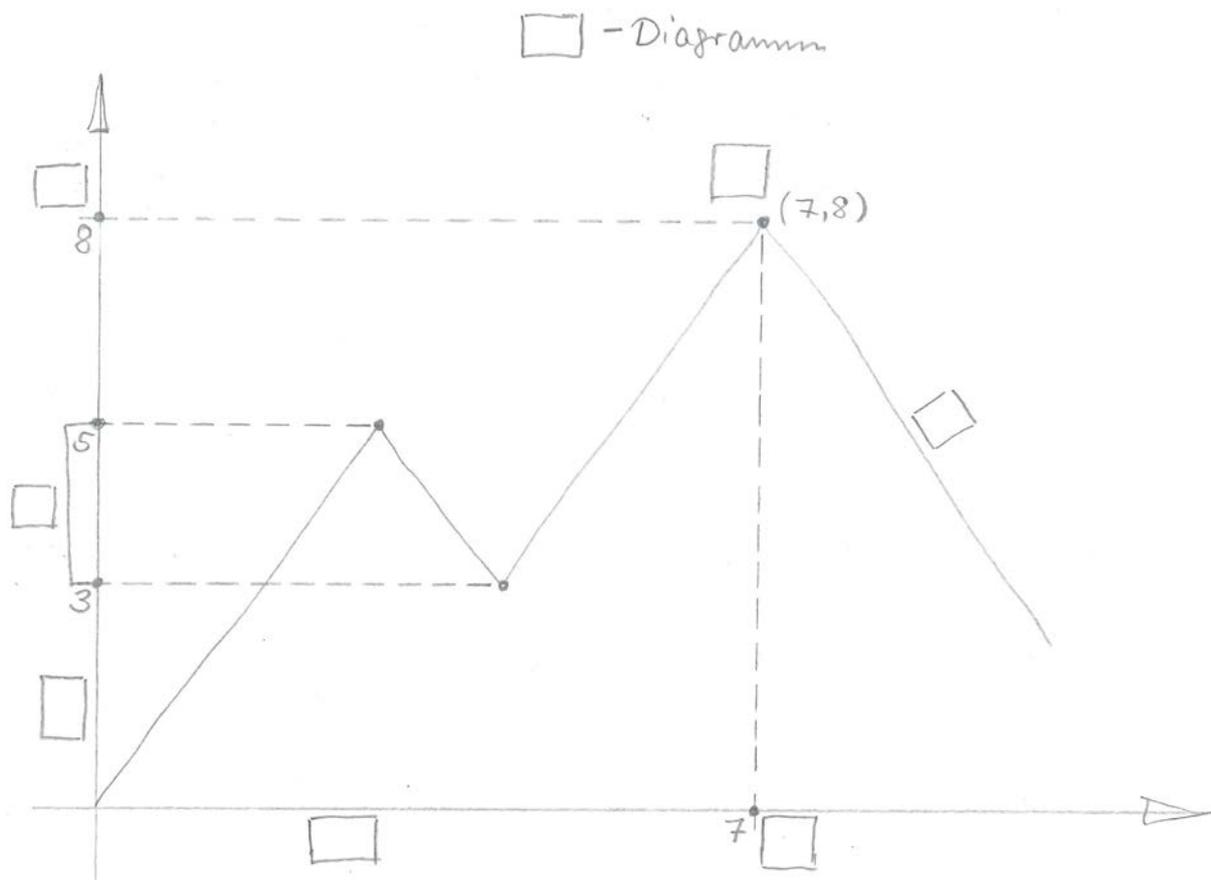


Fig. 2 The subjects had to fill in the following phrases: (1) X-Axis, (2) Line (for "line" chart), (3) Y-Axis, (4) Value Range (3 - 5), (5) Y-Value, (6) Line, (7) X-Value, (8) Data Point