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How do doctors view the use of augmented reality in medicine?

MANAGEMENT SUMMARY

01

Objective of the study: What do doctors think about augmented reality?

02

Augmented reality is no everyday technology in medicine yet.

03

This is why familiarization and operation have to be as easy as possible.

04

There is great confidence that this technology will be helpful in medicine.

05

The greatest concerns pertain to the cost-benefit ratio.

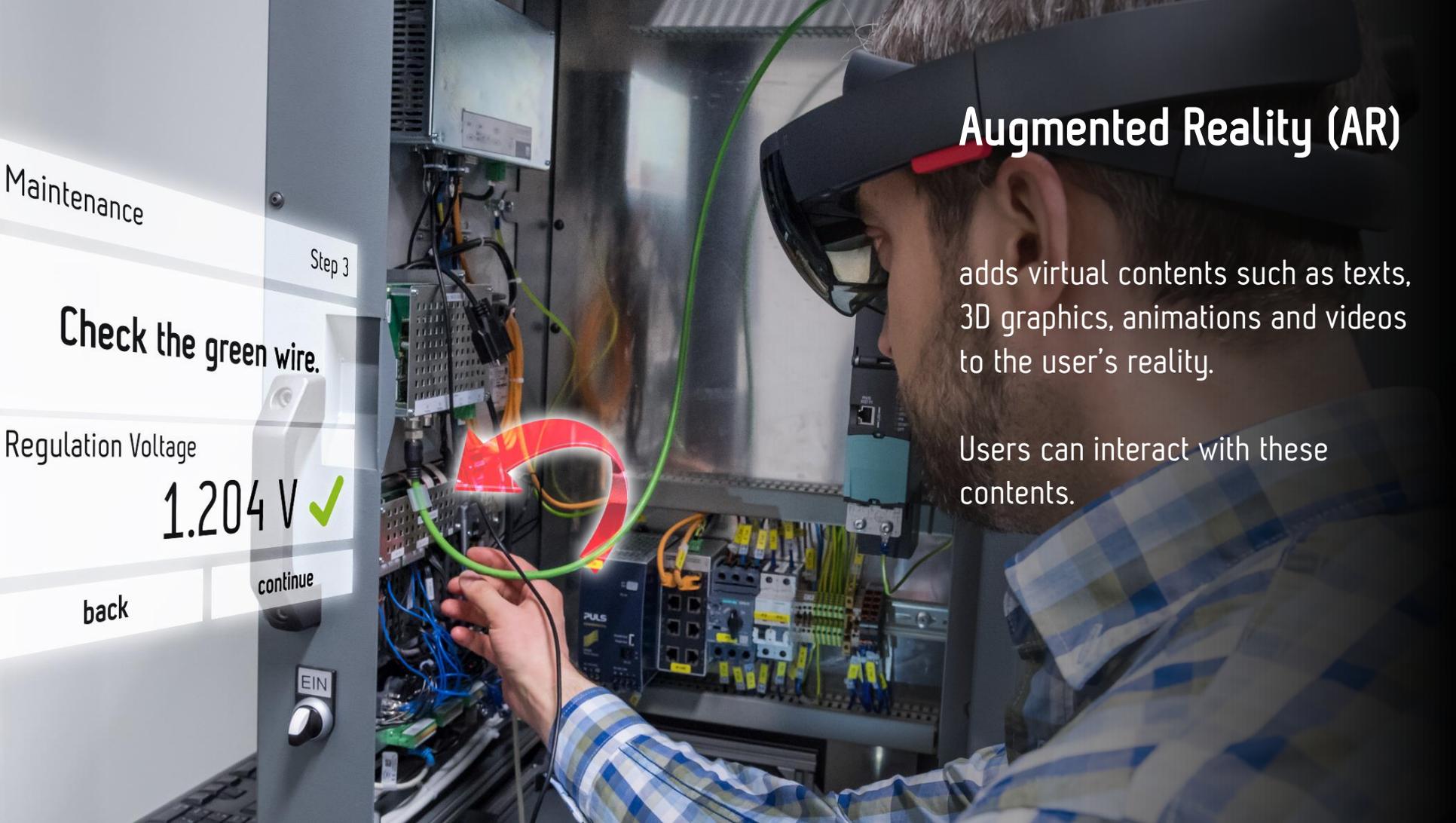
06

Where AR applications have added value, costs seem secondary.





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BACKGROUND INFO



Augmented Reality (AR)

Maintenance

Step 3

Check the green wire.

Regulation Voltage

1.204 V ✓

back

continue

adds virtual contents such as texts, 3D graphics, animations and videos to the user's reality.

Users can interact with these contents.



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In the research project an app that assists doctors in ventricular punctions using augmented reality (AR) is created.

Virtual CT or MRT images are projected on the patient's body using AR glasses, helping to find the right position for the catheter.

GEFÖRDERT VOM



Bundesministerium
für Bildung
und Forschung

BACKGROUND INFO ON THE STUDY

project phase

The study is part of the exploration phase. Its purpose is to provide a larger picture of augmented reality and its use in medicine.

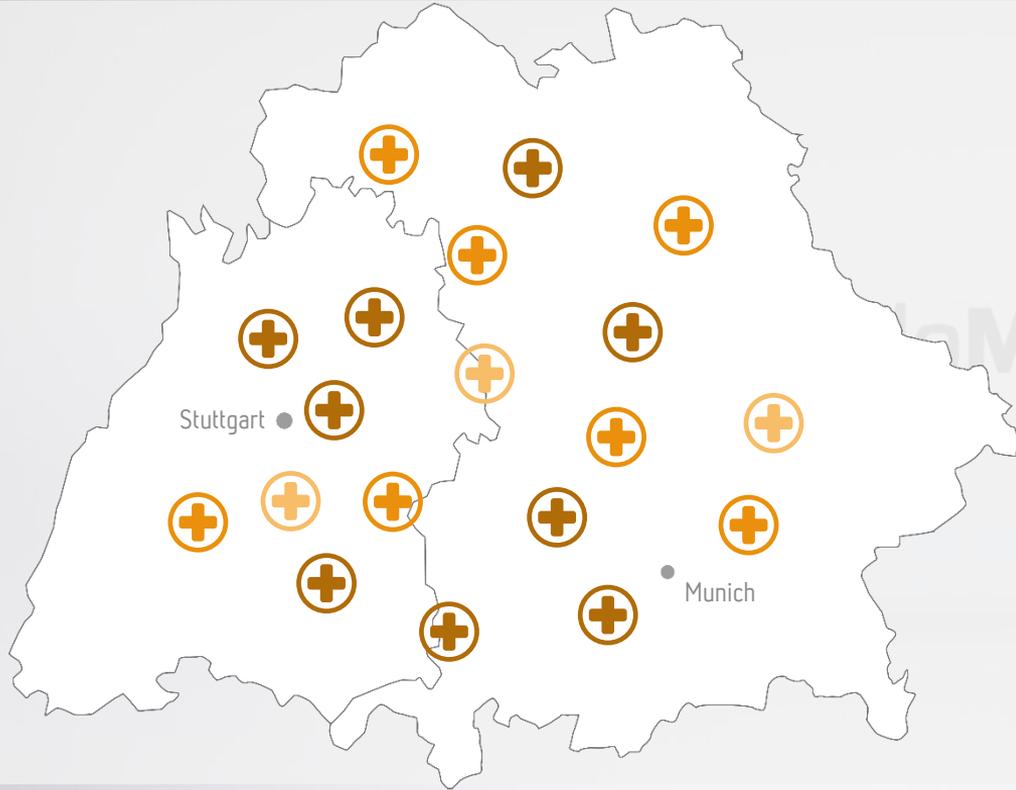


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motivation

The goal of the study was to gain insights into the attitude medical staff currently have towards augmented reality in medicine.

PARTICIPANTS IN THE STUDY



04 

15 



e-mail



9 x medical specialists



7 x doctors in training



3 x other professions

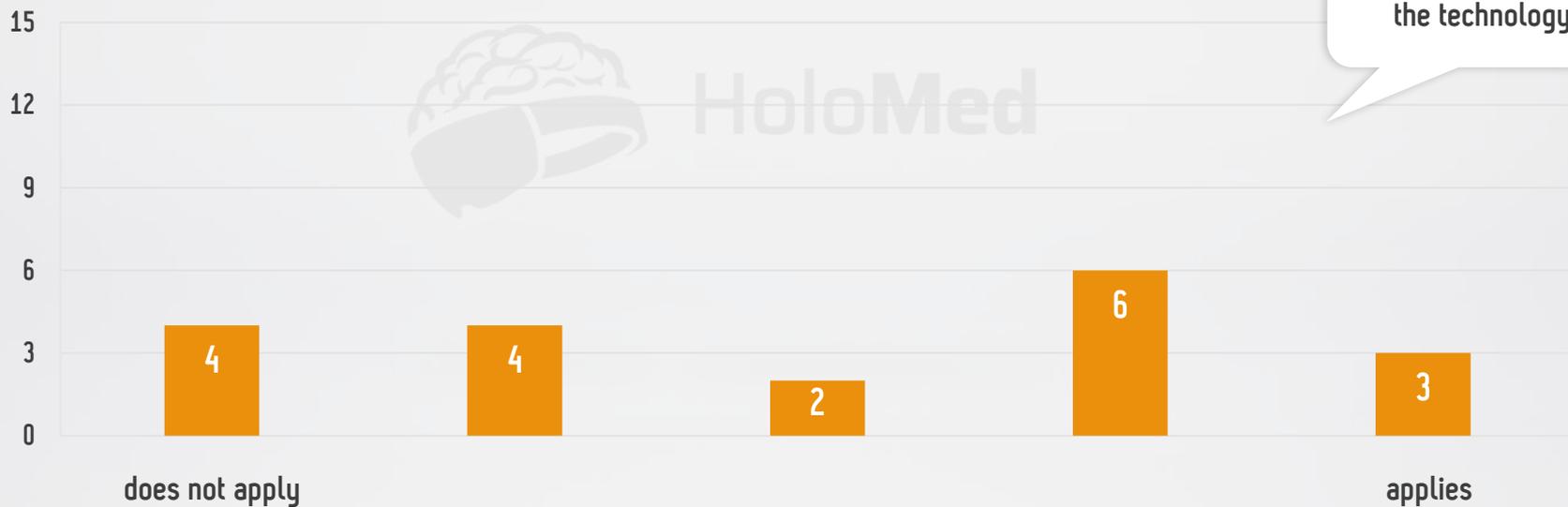


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FINDINGS

KNOWLEDGE ABOUT THE TECHNOLOGY

“I am familiar with the possibilities of this technology.”

19 answers

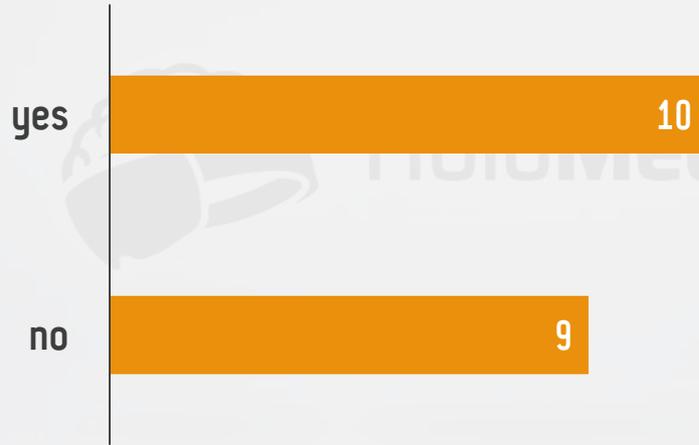


42 % know little about the technology.

EXPERIENCE WITH AR

“Have you ever used augmented reality?”

19 answers

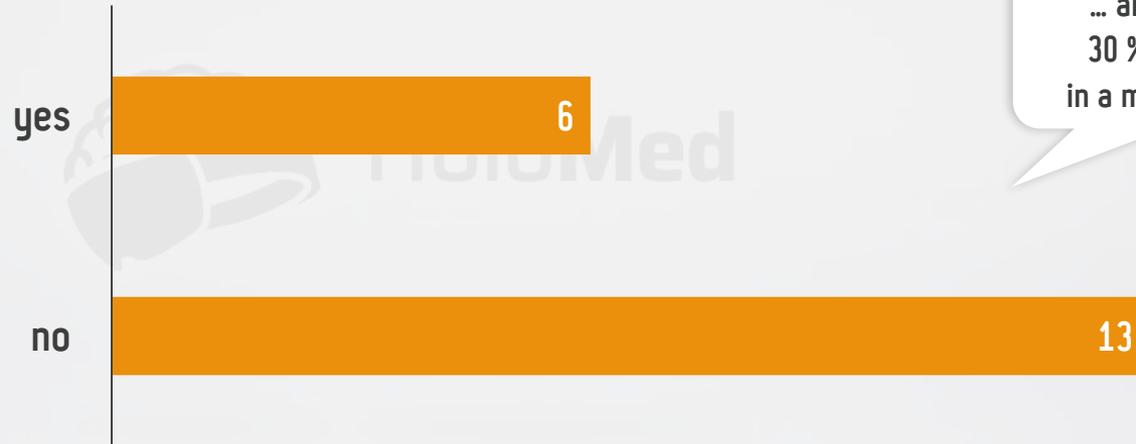


Only about half of the participants have used AR ...

EXPERIENCE WITH AR IN MEDICINE

“Have you ever used AR in a medical context (university, work)?”

19 answers

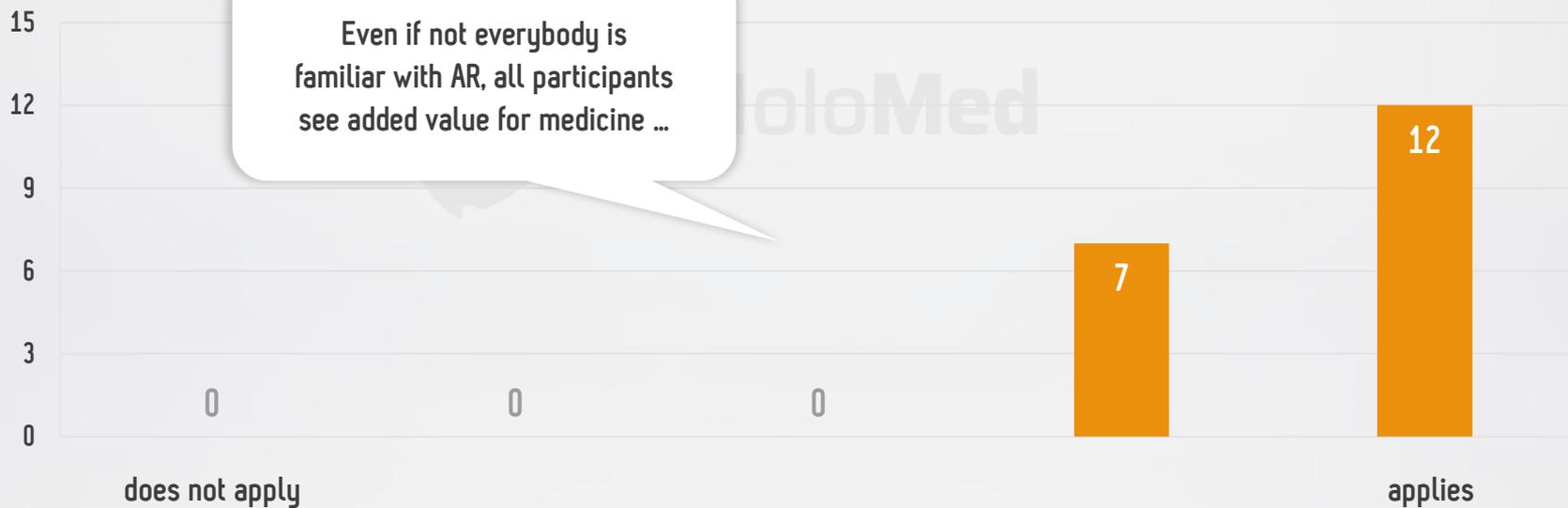


... and only about
30 % have used it
in a medical context.

USE OF AR IN MEDICINE

“I can imagine that, in general, it makes sense to use this technology for medical purposes.”

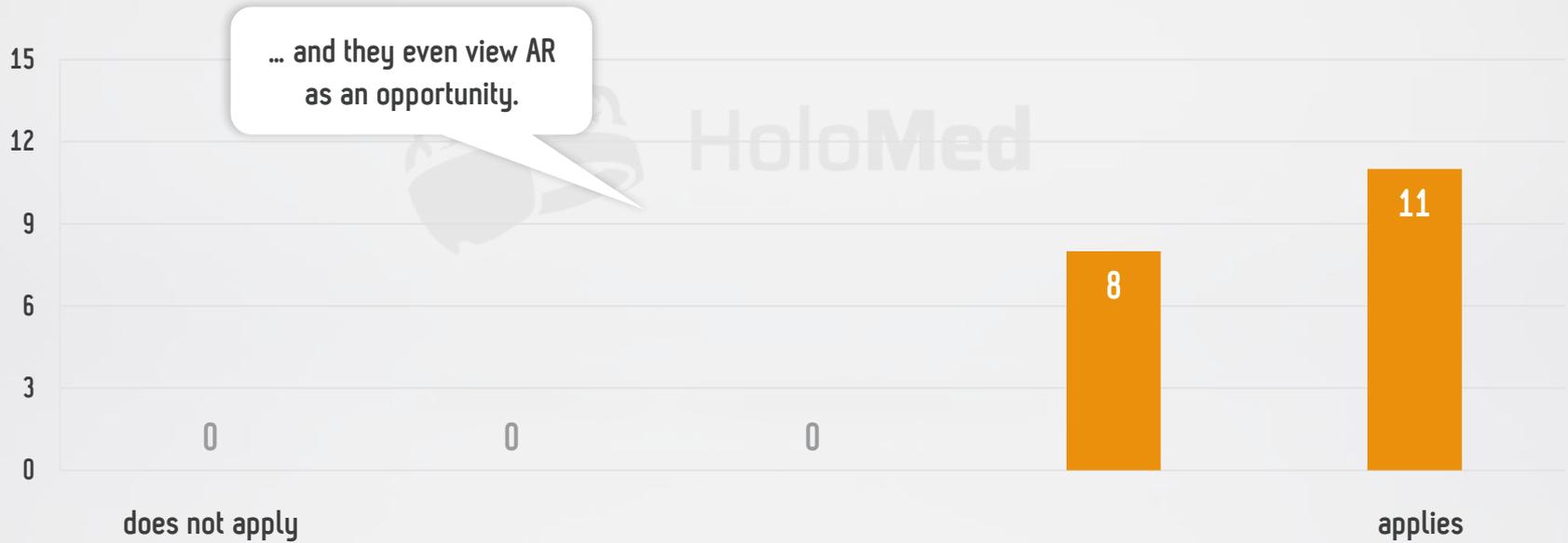
19 answers



AR AS AN OPPORTUNITY

“The use of augmented reality offers benefits for medicine.”

19 answers



TECHNOLOGICAL ADVANCEMENTS IN MEDICINE

“I think that the introduction of new technology in medicine is important.”

19 answers

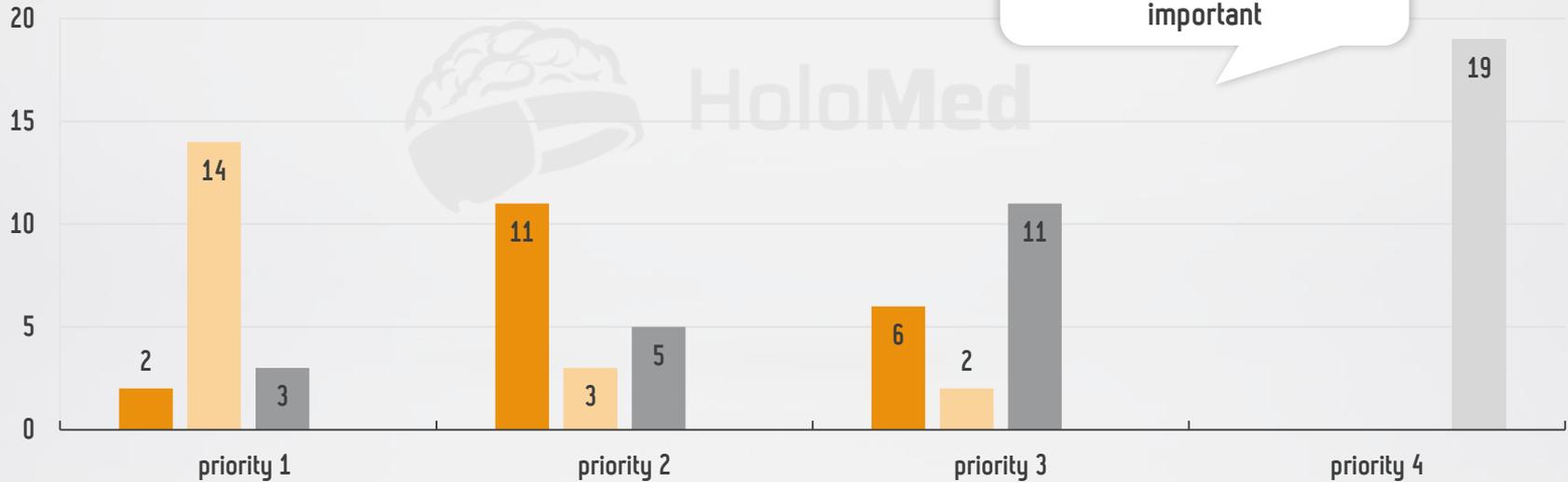


MOST IMPORTANT GAIN OF AR IN MEDICINE

“What advantages do you think an augmented reality system would need to offer?”

19 answers
(prioritized)

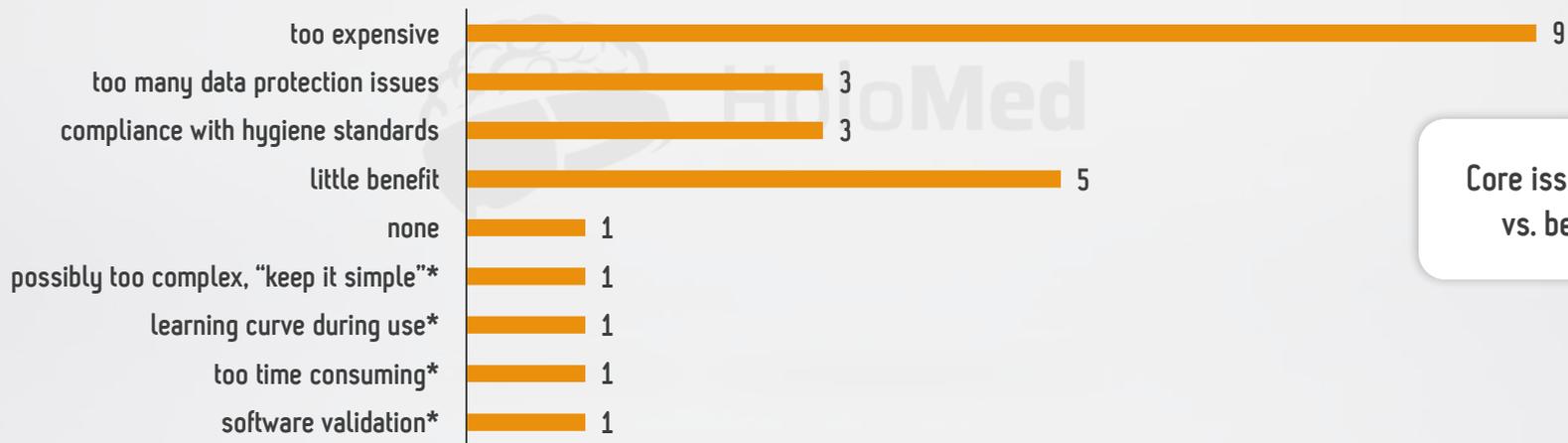
- greater efficiency
- greater safety for patients
- assistance and feedback
- cost reduction for the procedure



CONCERNS WITH REGARD TO AR

“What are your concerns with regard to the use of augmented reality?”

18 answers
(multiple answers possible)



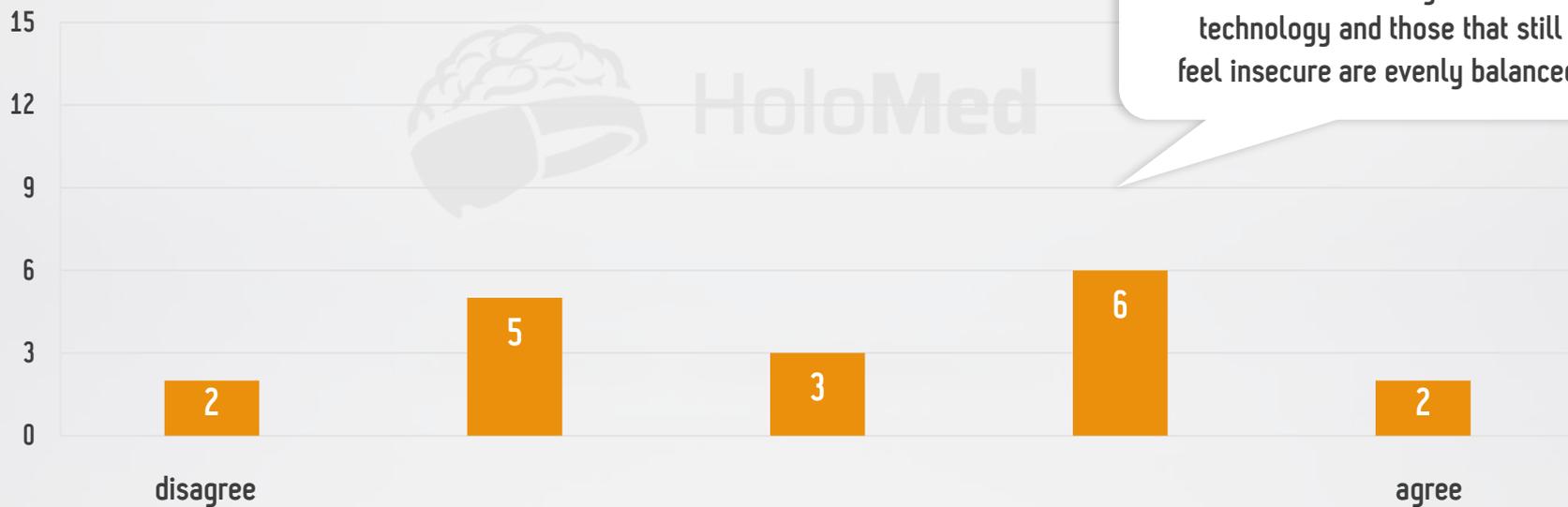
*additional answers

Core issue: costs
vs. benefits

TRUST IN THE TECHNOLOGY

“I would be reluctant to trust the technology.”

18 answers



PROS AND CONS OF AUGMENTED REALITY

“In your opinion, what are the pros and cons of the use of augmented reality in medicine?”

“complements traditional
imaging”

“generates
publications”

“better notion of
anatomy”



“improved
visualization”

“simulation/
planning of surgery”

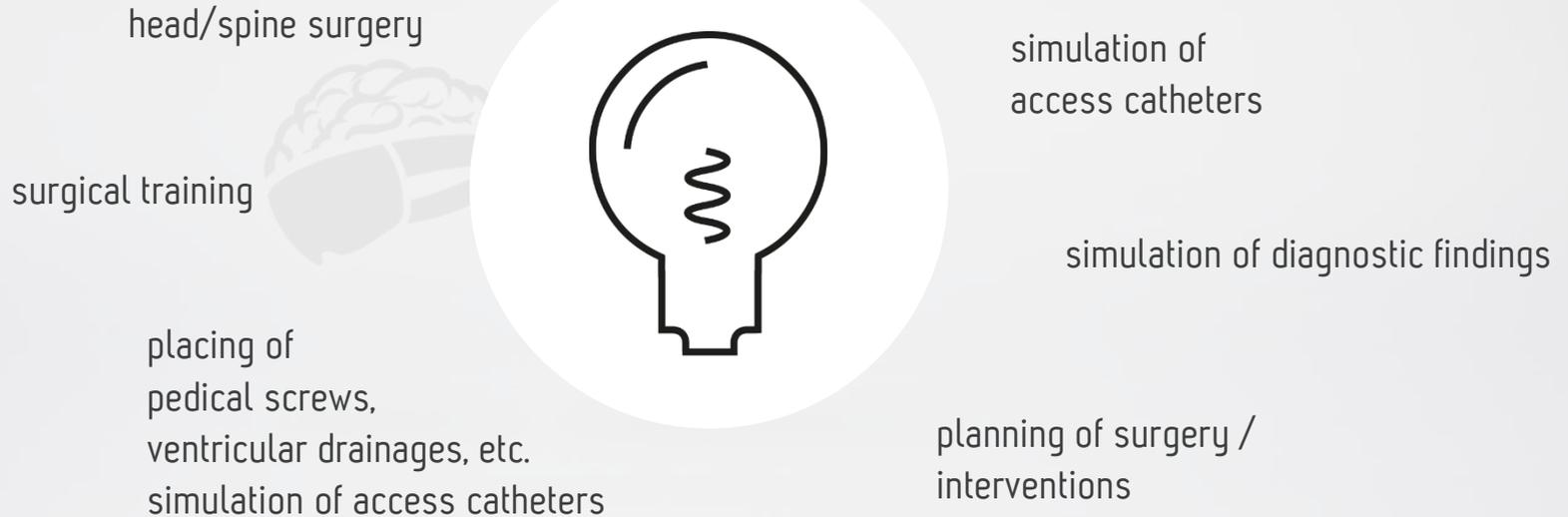


“additional (possibly useless)
costs and time consumption”

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FURTHER IDEAS—THERE ARE QUITE A FEW

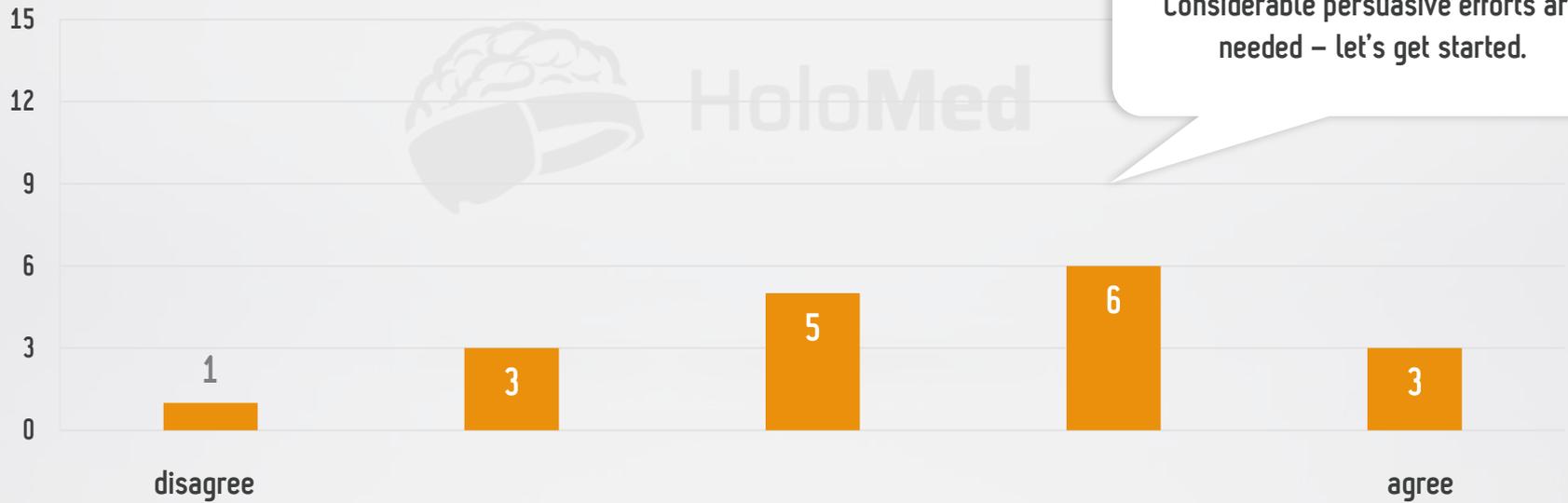
“For which medical purposes could AR be used in your opinion?”



GERMANY'S ROLE IN THE DEVELOPMENT OF NEW TECHNOLOGY

“Germany plays a leading role in the development of novel technologies.”

18 answers



CONCLUSION

New stuff

Using AR will be a novelty for many people.
Therefore, the familiarization process needs to be as easy as possible.

Must be worth it

The cost-benefit ratio is an important subject. BUT:
Where AR applications have added value, costs seem secondary..

In AR we trust

Even though the technology might appear unfamiliar to some people, everyone sees the potential. The HoloMed project is on the right track.



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AUTHORS

ABOUT THE USER INTERFACE DESIGN GMBH

We, the User Interface Design GmbH (UID), are market leaders and pioneers in user experience design.

More than 100 experts for usability, design and software in our team act as creative user interface architects, accompanying our customers all the way from idea to implementation.

Together with our customers from the automotive, consumer, enterprise, manufacturing and medical & pharmaceutical industries, we have successfully accomplished more than 3,500 projects since 1998.

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